

From: [Anwar Wagdy](#)
To: [Fredy Bonilla](#)
Subject: Approved TIA
Date: Tuesday, June 15, 2021 10:20:27 AM

Hi Fredy,

I have reviewed and approved the following traffic studies:

- Topaz Rd and Eucalyptus St Residential, Plan21-00011
- Balsam/Winnona Apartments Plan20-00009

Thanks,
Anwar

BALSAM AT WINONA APARTMENTS TRAFFIC IMPACT ANALYSIS

City of Victorville



Engineering Review:
Approved
by: Fredy A. Bonilla, PE
Date: 11/23/2021

December 15, 2020

gandini

Traffic Engineering • Transportation Planning • Parking • Noise & Vibration
Air Quality • Global Climate Change • Health Risk Assessment

BALSAM AT WINONA APARTMENTS TRAFFIC IMPACT ANALYSIS

City of Victorville

December 15, 2020

prepared by

Bryan Crawford
Giancarlo Ganddini, PE, PTP



GANDDINI GROUP, INC.

550 Parkcenter Drive, Suite 202
Santa Ana, California 92705
714.795.3100 | ganddini.com

Project No. 19305

TABLE OF CONTENTS

EXECUTIVE SUMMARY	IV
1. INTRODUCTION.....	1
Purpose and Objectives	1
Project Description.....	1
Study Area.....	1
Analysis Scenarios	2
2. METHODOLOGY.....	5
Level of Service/General Plan Conformance (Non-CEQA).....	5
Intersection Delay Methodology	5
Performance Standards	6
Requirements for Improvements	6
Vehicle Miles Traveled Methodology (CEQA)	6
3. EXISTING CONDITIONS.....	7
Existing Roadway System.....	7
General Plan Context	7
Transit Service	7
Bicycle Facilities	7
Existing Pedestrian Facilities.....	7
Existing Roadway Volumes	7
Existing Level of Service	8
4. PROJECT TRIP FORECASTS	23
Project Trip Generation	23
Project Trip Distribution and Assignment.....	23
5. FUTURE VOLUME FORECASTS	29
Cumulative Trips	29
Ambient Growth Rate.....	29
Other Development	29
Analysis Scenario Volume Forecasts	29
Opening Year (2022) Without Project	29
Opening Year (2022) With Project.....	29
Future Year (2032) Without Project.....	29
Future Year (2032) With Project	30
6. FUTURE OPERATIONAL ANALYSIS.....	48
Opening Year (2022) Without Project.....	48
Opening Year (2022) With Project	48
Future Year (2032) Without Project	48
Future Year (2032) With Project.....	48
7. SITE ACCESS AND CIRCULATION.....	53
Project Design Features.....	53
8. VEHICLES MILES TRAVELED	55
Background	55
Screening Assessment.....	55

9. CONCLUSIONS	56
Project Trips	56
Levels of Service	56
VMT Analysis	56

APPENDICES

- Appendix A Glossary
- Appendix B Scoping Agreement
- Appendix C Volume Count Worksheets
- Appendix D Level of Service Worksheets

LIST OF TABLES

Table 1. Existing Levels of Service.....	9
Table 2. Project Trip Generation.....	24
Table 3. Other Development Project List.....	31
Table 4. Opening Year (2022) Without Project Intersection Level of Service	49
Table 5. Opening Year (2022) With Project Intersection Levels of Service.....	50
Table 6. Future Year (2032) Without Project Intersection Level of Service.....	51
Table 7. Future Year (2032) With Project Intersection Level of Service	52

LIST OF FIGURES

Figure 1. Project Location Map.....	3
Figure 2. Site Plan	4
Figure 3. Existing Lane Geometry and Intersection Traffic Controls.....	10
Figure 4. City of Victorville General Plan Circulation Element.....	11
Figure 5. City of Victorville General Plan Roadway Cross-Sections	12
Figure 6. Victor Valley Transit Routes.....	17
Figure 7. City of Victorville General Plan Non-Motorized Transportation Plan Map.....	18
Figure 8. Existing Pedestrian Facilities	19
Figure 9. Existing Average Daily Traffic Volumes	20
Figure 10. Existing AM Peak Hour Intersection Turning Movement Volumes.....	21
Figure 11. Existing PM Peak Hour Intersection Turning Movement Volumes.....	22
Figure 12. Project Trip Distribution.....	25
Figure 13. Project Average Daily Traffic Volumes	26
Figure 14. Project AM Peak Hour Intersection Turning Movement Volumes.....	27
Figure 15. Project PM Peak Hour Intersection Turning Movement Volumes	28
Figure 16. Other Development Location Map	32
Figure 17. Other Development Average Daily Traffic Volumes.....	33
Figure 18. Other Development AM Peak Hour Intersection Turning Movement Volumes	34
Figure 19. Other Development PM Peak Hour Intersection Turning Movement Volumes.....	35
Figure 20. Opening Year (2022) Without Project Average Daily Traffic Volumes.....	36
Figure 21. Opening Year (2022) Without Project AM Peak Hour Intersection Turning Movement Volumes.....	37
Figure 22. Opening Year (2022) Without Project PM Peak Hour Intersection Turning Movement Volumes.....	38
Figure 23. Opening Year (2022) With Project Average Daily Traffic Volumes.....	39

Figure 24.	Opening Year (2022) With Project AM Peak Hour Intersection Turning Movement Volumes.....	40
Figure 25.	Opening Year (2022) With Project PM Peak Hour Intersection Turning Movement Volumes.....	41
Figure 26.	Future Year (2032) Without Project Average Daily Traffic Volumes.....	42
Figure 27.	Future Year (2032) Without Project AM Peak Hour Intersection Turning Movement Volumes.....	43
Figure 28.	Future Year (2032) Without Project PM Peak Hour Intersection Turning Movement Volumes.....	44
Figure 29.	Future Year (2032) With Project Average Daily Traffic Volumes.....	45
Figure 30.	Future Year (2032) With Project AM Peak Hour Intersection Turning Movement Volumes.....	46
Figure 31.	Future Year (2032) Without Project PM Peak Hour Intersection Turning Movement Volumes.....	47

EXECUTIVE SUMMARY

The 11.44-acre project site is located at the southeast corner of Balsam Avenue and the future extension of Winona Street in the City of Victorville.

The currently vacant site is proposed to be developed with 212 multi-family housing (mid-rise) dwelling units. The project proposes three full access driveways to Balsam Avenue and one full access driveway to Winona Street. For purposes of this analysis, the proposed project is anticipated to be constructed and fully operational by year 2022.

Project Trips

The proposed project is forecast to generate 1,153 daily trips, including 76 trips during the AM peak hour and 76 trips during the PM peak hour.

Levels of Service

The study intersections are forecast to continue operating within acceptable Levels of Service (D or better) during the peak hours for all analysis scenarios; therefore, no improvements relating to Levels of Service are necessary.

Vehicle Miles Traveled (VMT) Analysis

Since the net project trip generation forecast is less than 1,285 daily weekday trips, the proposed project satisfies the daily vehicle trip threshold screening criteria established by the City of Victorville and may be presumed to result in a less than significant VMT impact.

1. INTRODUCTION

This section describes the purpose of this study and the project description. Although this is a technical report, effort has been made to write the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with technical terms related to transportation engineering and planning.

This section describes the purpose of this traffic impact analysis, project location, proposed development, and study area.

PURPOSE AND OBJECTIVES

The purpose of this traffic impact analysis is to assess potential transportation impacts resulting from development of the proposed project both in the context of the California Environmental Quality Act (CEQA) and City of Victorville discretionary authority. This study has been prepared in consultation with the City of Victorville as documented in Appendix B.

For CEQA purposes, this study evaluates the significance of project-related transportation impacts with respect to vehicle miles traveled (VMT) thresholds established by the City of Victorville, as the lead agency, and identifies the appropriate measures to mitigate such impacts, if any. This study also evaluates non-CEQA impacts and the need for corrective measures, if necessary, relating to General Plan Level of Service standards.

PROJECT DESCRIPTION

The 11.44-acre project site is located at the southeast corner of Balsam Avenue and the future extension of Winona Street in the City of Victorville. Figure 1 shows the project location map.

The currently vacant site is proposed to be developed with 212 multi-family housing (mid-rise) dwelling units. The project proposes three full access driveways to Balsam Avenue and one full access driveway to Winona Street. For purposes of this analysis, the proposed project is anticipated to be constructed and fully operational by year 2022. Figure 2 illustrates the project site plan.

STUDY AREA

Based on the study intersections identified in the approved scoping agreement (Appendix B), the study area consists of the following study intersections within the City of Victorville and California Department of Transportation (Caltrans) jurisdictions:

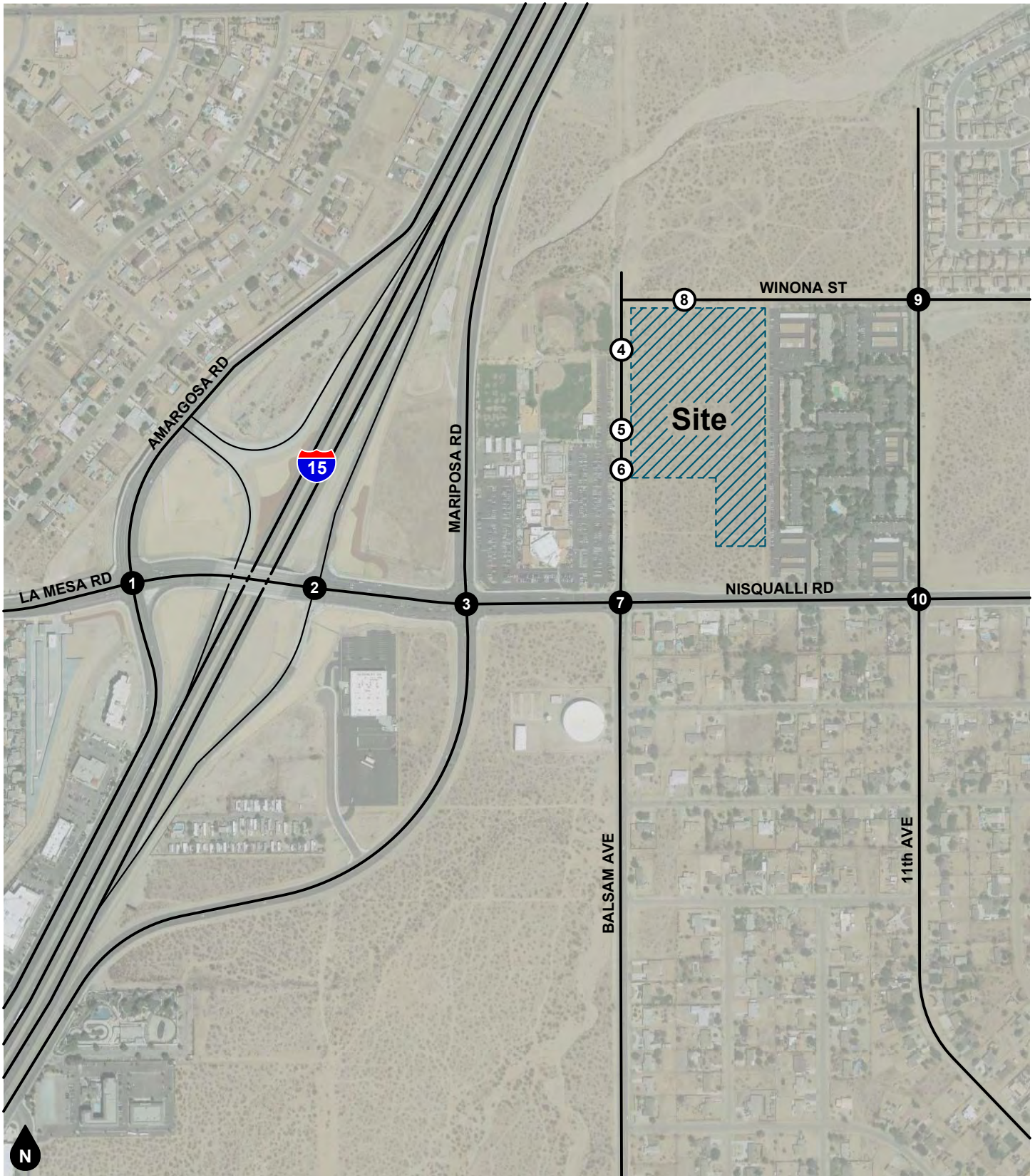
Study Intersections ¹	Jurisdiction
1. Amargosa Road (NS) at La Mesa Road (EW)	City of Victorville
2. Interstate 15 (I-15) NB Ramps (NS) at Nisqualli Road (EW)	Caltrans
3. Mariposa Road (NS) at Nisqualli Road (EW)	City of Victorville
4. Balsam Avenue (NS) at Project Driveway 1 (EW)	City of Victorville
5. Balsam Avenue (NS) at Project Driveway 2 (EW)	City of Victorville
6. Balsam Avenue (NS) at Project Driveway 3 (EW)	City of Victorville
7. Balsam Avenue (NS) at Nisqualli Road (EW)	City of Victorville
8. Project Driveway 4 (NS) at Winona Street (EW)	City of Victorville
9. 11th Avenue (NS) at Winona Street (EW)	City of Victorville
10. 11th Avenue (NS) at Nisqualli Road (EW)	City of Victorville

¹ (NS) = north-south roadway; (EW) = east-west roadway; NB = Northbound

ANALYSIS SCENARIOS

The following scenarios are analyzed during typical weekday AM and PM peak hour conditions:

- Existing
- Opening Year (2022) Without Project
- Opening Year (2022) With Project
- Future Year (2032) Without Project
- Future Year (2032) With Project



Legend

- # Study Intersection
- # Project Driveway

Figure 1
Project Location Map



Figure 2
Site Plan

2. METHODOLOGY

This section discusses the analysis methodologies used to assess transportation facility performance as adopted by the respective jurisdictional agencies. This traffic impact analysis was conducted in accordance with the guidelines established within the City of Victorville *General Guidelines for Conducting Traffic Studies and Determination of Intersection Level of Service and Improvement Needs* (December 22, 2004), Resolution No. 20-010 adopted by the City of Victorville during a June 16, 2020 City Council meeting, and the San Bernardino County *Transportation Impact Study Guidelines* (July 9, 2019).

LEVEL OF SERVICE/GENERAL PLAN CONFORMANCE (NON-CEQA)

Intersection Delay Methodology

The technique used to assess the performance of intersections is known as the intersection delay methodology based on the procedures contained in the *Highway Capacity Manual* (Transportation Research Board, 6th Edition). The methodology considers the traffic volume and distribution of movements, traffic composition, geometric characteristics, and signalization details to calculate the average control delay per vehicle and corresponding Level of Service. Control delay is defined as the portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign) and includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay. The intersection control delay is then correlated to Level of Service based on the following thresholds:

Level of Service	Intersection Control Delay (Seconds / Vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board, *Highway Capacity Manual* (6th Edition).

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). At intersections with traffic signal or all way stop control, Level of Service is determined by the average control delay for the overall intersection. At intersections with cross street stop control (i.e., one- or two-way stop control), Level of Service is determined by the average control delay for the worst individual movement (or movements sharing a single lane).

In accordance with Section 3.4.1 of the San Bernardino County *Transportation Impact Study Guidelines* (July 9, 2019), Existing and Opening Year (2022) conditions were analyzed using optimized signal timing, four seconds of lost time per critical phase, and a heavy vehicle factor of two percent. The following saturation flow rates were utilized:

- 1,800 vehicles per hour for exclusive thru and exclusive right turn lanes
- 1,700 vehicles per hour for exclusive left turn lanes
- 1,600 vehicles per hour for exclusive dual left turn lanes
- 1,500 vehicles per hour for exclusive triple left turn lanes

For cumulative and general plan buildout scenarios (Future Year 2032) a peak hour factor of 0.95 was used along with the following saturation flow rates:

- 1,900 vehicles per hour for exclusive thru and exclusive right turn lanes
- 1,800 vehicles per hour for exclusive double right turn lanes
- 1,800 vehicles per hour for exclusive left turn lanes
- 1,700 vehicles per hour for exclusive dual left turn lanes
- 1,600 vehicles per hour for exclusive triple left turn lanes

Intersection delay analysis was performed using the Vistro software.

Performance Standards

City of Victorville. The City of Victorville has established LOS D or better as acceptable LOS for all intersections along the designated street and highway system in the City's General Plan Circulation Element.

Caltrans. As stated in the *Guide for the Preparation of Traffic Impact Studies* (State of California, 2002), "California Department of Transportation endeavors to maintain a target LOS [Level of Service] at the transition between LOS "C" and LOS "D" on State highway facilities". Caltrans acknowledges this may not always be feasible and recommends consultation with the Caltrans to determine the appropriate target Level of Service. For consistency with local requirements, this analysis defines Level of Service D as the minimum acceptable Level of Service for State Highway facilities.

Requirements for Improvements

City of Victorville. A project is required to provide improvements or corrective measures to City of Victorville intersection deficiencies under the following conditions:

- If the project contributes measurable traffic to an intersection or roadway segment operating at LOS D or better or a volume-to-capacity ratio of 0.95 or lower for without project conditions, and the addition of project trips causes intersection LOS to degrade to LOS E or worse, or volume-to-capacity ratio to increase it greater than 0.95.
- If a project contributes measurable traffic to an intersection or roadway segment operating at a deficient LOS (LOS E or F) for without project conditions.

Caltrans. A project is required to provide improvements or corrective measures to Caltrans intersection deficiencies under the following conditions:

- The addition of project-generated trips is forecast to cause the performance of a study intersection to deteriorate from acceptable Level of Service (D or better) to unacceptable Level of Service (E or F); or,
- The addition of project generated trips is forecast to worsen the performance of a study intersection operating at unacceptable Level of Service (E or F) in the baseline condition.

VEHICLE MILES TRAVELED METHODOLOGY (CEQA)

The methodology used to evaluate the impact of land use and transportation projects under CEQA is known as vehicle miles traveled (VMT). In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. Additional information and a project assessment is provided in the "Vehicle Miles Traveled" section presented later in this report.

3. EXISTING CONDITIONS

EXISTING ROADWAY SYSTEM

Figure 3 identifies the lane geometry and intersection traffic controls for Existing conditions based on a field survey of the study area. Regional access to the project site is provided by the I-15 Freeway located approximately 1,000 feet west of the project site. Key roadways providing local circulation include Amargosa Road, Mariposa Road, Balsam Avenue, 11th Avenue, Winona Street, La Mesa Road, and Nisqualli Road.

GENERAL PLAN CONTEXT

Figure 4 shows the City of Victorville General Plan Circulation Element roadway classifications map. This figure shows the nature and extent of arterial and collector highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. The City of Victorville standard roadway cross-sections are illustrated on Figure 5.

TRANSIT SERVICE

Figure 7 shows Existing public transit facilities and routes in the project vicinity. As shown on Figure 6, the study area is currently served by Victor Valley Transit Route 52 along La Mesa Road and Amargosa Road south of La Mesa Road, Route 68 along Amargosa Road south of La Mesa Road, Nisqualli Road between Amargosa Road and Mariposa Road, and Mariposa Road south of Nisqualli Road, and Route 50 on Mariposa Road north of Nisqualli Road and Nisqualli Road east of Mariposa Road. Bus stops are located for Route 50 on Nisqualli Road between Balsam Road and 11th Avenue for both eastbound and westbound travel.

BICYCLE FACILITIES

The City of Victorville Non-Motorized Transportation Plan is illustrated on Figure 7. This plan shows existing and proposed bike paths within the City of Victorville. There are currently no existing bike routes near the project site but Nisqualli Road west of Balsam Avenue, Balsam Avenue from Winona Street to Nisqualli Road (adjacent to the project site), and Winona Street east of Balsam Avenue (adjacent to the project site) are Proposed Class 3 Shared Routes.

EXISTING PEDESTRIAN FACILITIES

Existing pedestrian facilities in the project vicinity are shown on Figure 8. Sidewalks are provided on the west side of Balsam Avenue adjacent to the project site.

EXISTING ROADWAY VOLUMES

Figure 9 shows the Existing average daily traffic volumes. The Existing average daily traffic volumes have been obtained from the 2017 Traffic Volumes on California State Highways by the California Department of Transportation (Caltrans), and factored from peak hour intersection turning movement volumes using the following formula for each intersection leg:

$$\text{PM peak hour (Approach Volume + Exit Volume)} \times 11.5 = \text{Leg Volume.}$$

Existing peak hour traffic conditions are based upon morning peak period and evening peak period intersection turning movement counts obtained in October 2020 during typical weekday conditions. The weekday morning peak period was counted between 7:00 AM and 9:00 AM, and the weekday evening peak period was counted between 4:00 PM and 6:00 PM. The actual peak hour within the peak period is the four consecutive 15 minute periods with the highest total volume when all movements are added together. Thus, the weekday PM

peak hour at one intersection may be 4:45 PM to 5:45 PM if those four consecutive 15 minute periods have the highest combined volume. Intersection turning movement count worksheets are provided in Appendix C.

The current COVID-19 pandemic and related stay-at-home orders imposed by state and local municipalities have resulted in a substantial decrease in traffic volumes. In addition to the current public health restrictions, it is anticipated that the pandemic may have a lasting effect on travel behaviors, such as an increase telecommuting. To provide a conservative analysis, the City of Victorville conducted manual 24-hour roadway segment counts throughout the City and compared them to historical 24-hour roadway segment counts. The current roadway segment on Nisqualli Road near the project site experienced an increase in travel volumes compared to the historical roadway segment count at the same location; therefore, City of Victorville Public Works Department staff concluded that no factoring was necessary for this analysis to account for the current COVID-19 pandemic.

Figure 10 and Figure 11 show the Existing AM and PM peak hour intersection turning movement volumes.

EXISTING LEVEL OF SERVICE

The intersection Levels of Service for Existing conditions have been calculated and are shown in Table 1. Detailed intersection Level of Service worksheets are provided in Appendix C.

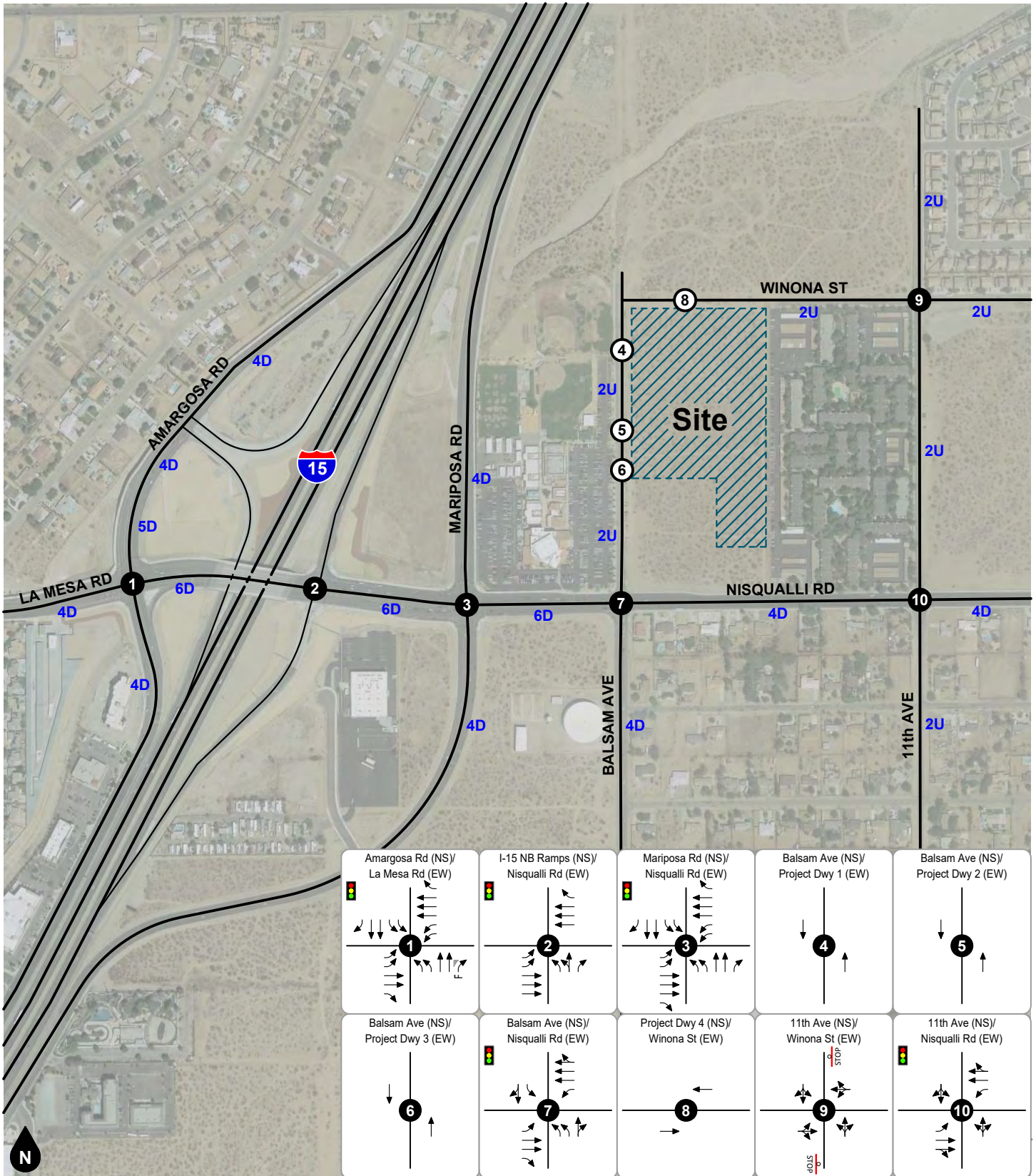
As shown in Table 1, the study intersections currently operate within acceptable Levels of Service during the peak hours for Existing conditions.

**Table 1
Existing Intersection Levels of Service**

Study Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
		Delay ²	LOS ³	Delay ²	LOS ³
1. Amargosa Rd at La Mesa Rd	TS	30.2	C	31.7	C
2. I-15 NB Ramps at Nisqualli Rd	TS	18.0	B	15.1	B
3. Mariposa Rd at Nisqualli Rd	TS	25.4	C	27.7	C
7. Balsam Ave at Nisqualli Rd	TS	27.9	C	28.5	C
9. 11th Ave at Winona St	AWS	9.4	A	9.4	A
10. 11th Ave at Nisqualli Rd	TS	23.1	C	19.3	B

Notes:

- (1) TS = Traffic Signal; AWS = All Way Stop
- (2) Delay is shown in seconds/vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).
- (3) LOS = Level of Service



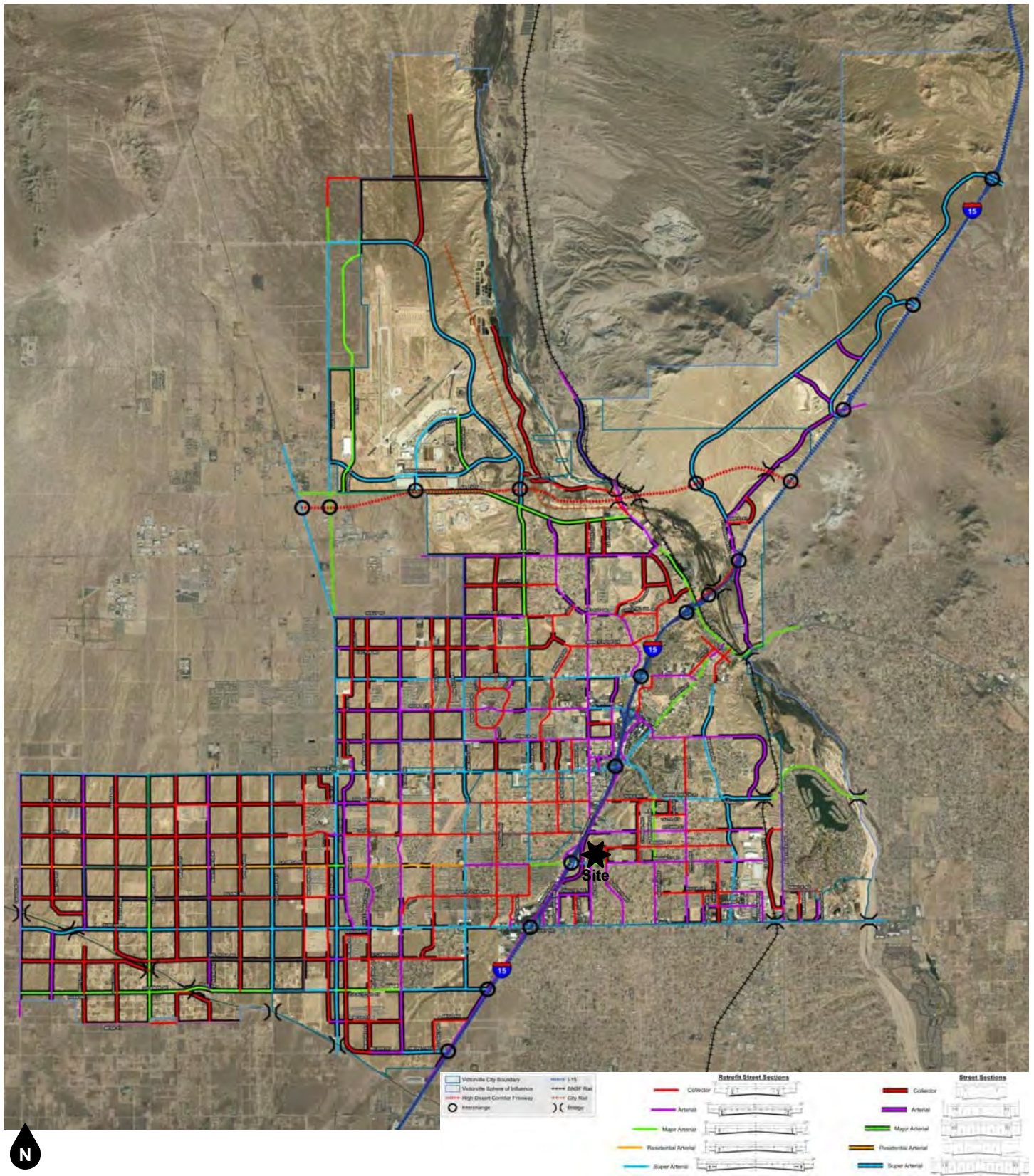
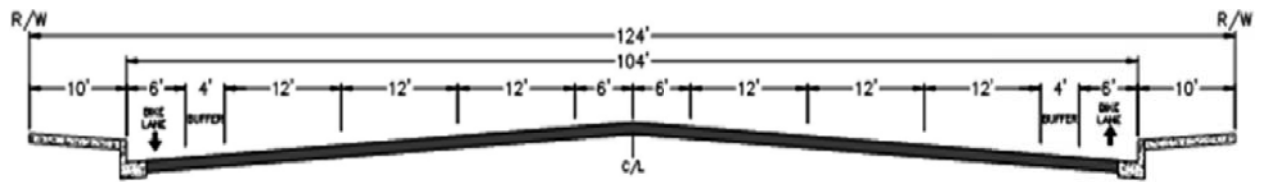


Figure 4

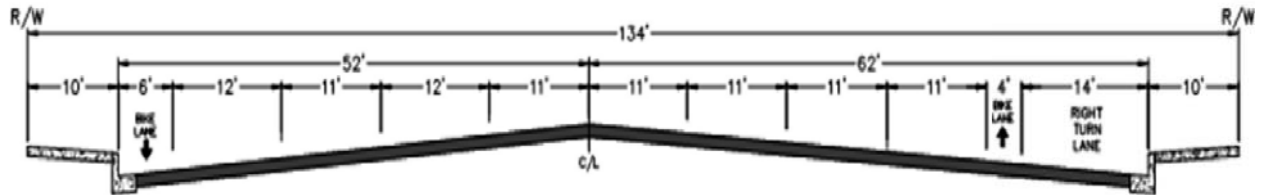
City of Victorville General Plan Circulation Element

Source: City of Victorville

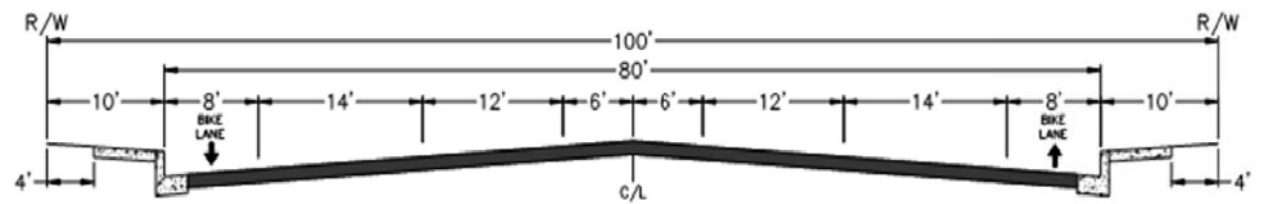




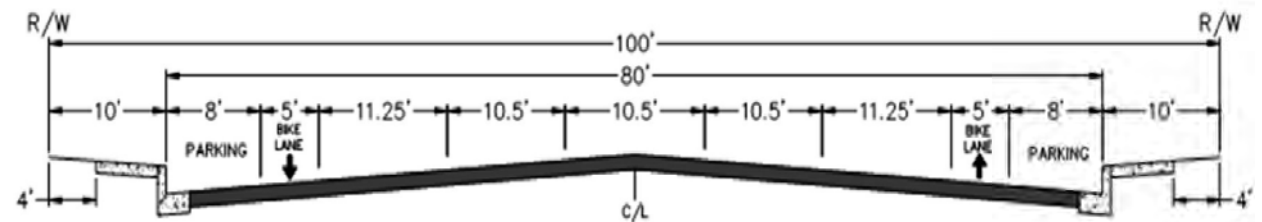
SUPER ARTERIAL
NO PARKING



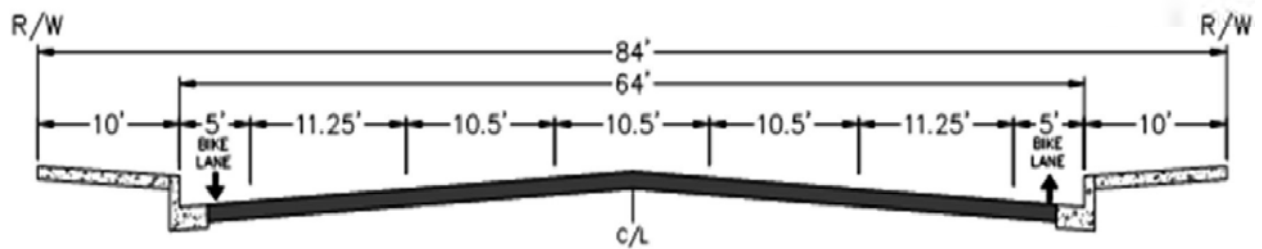
SUPER ARTERIAL AT INTERSECTIONS
WITH DUAL LEFT TURN LANES/ RIGHT TURN LANE



MAJOR ARTERIAL
NO PARKING



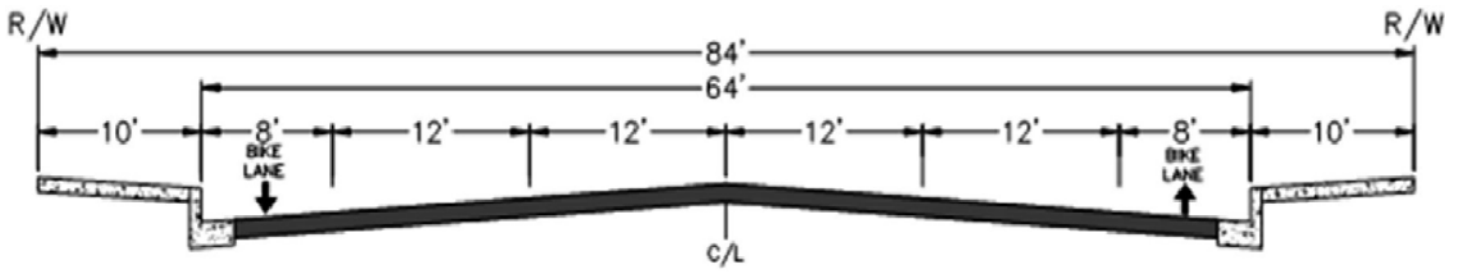
MAJOR ARTERIAL
WITH PARKING



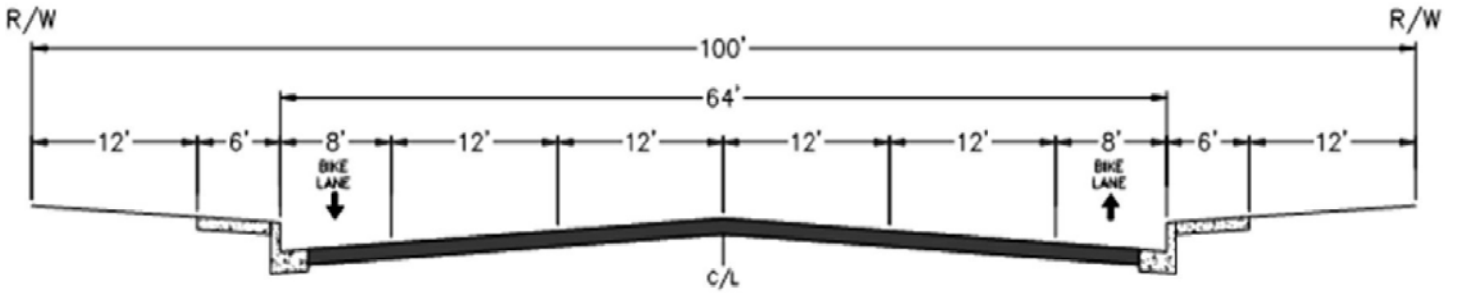
ARTERIAL ROADWAY WITH CENTER
LEFT TURN LANE

Figure 5

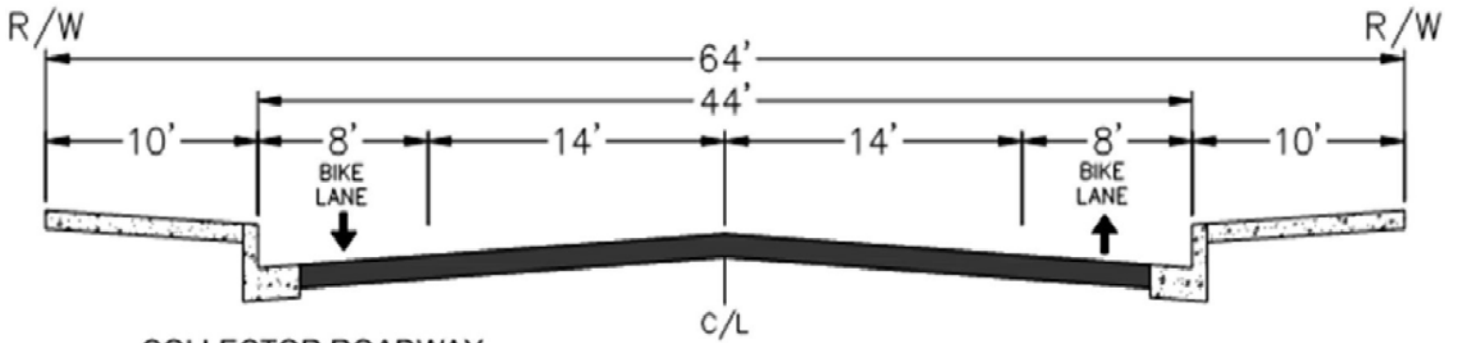
City of Victorville General Plan Roadway Cross-Sections (1 of 5)



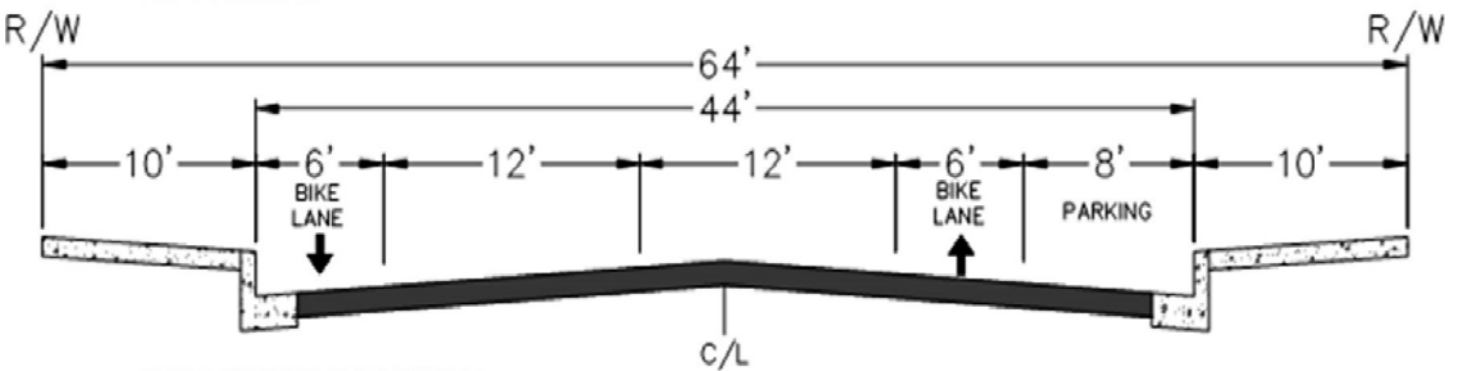
ARTERIAL ROADWAY
NO PARKING & NO CENTER LEFT TURN LANE



RESIDENTIAL ARTERIAL



COLLECTOR ROADWAY
NO PARKING



COLLECTOR ROADWAY
PARKING - ONE SIDE

Figure 5

City of Victorville General Plan Roadway Cross-Sections (2 of 5)

Source: City of Victorville



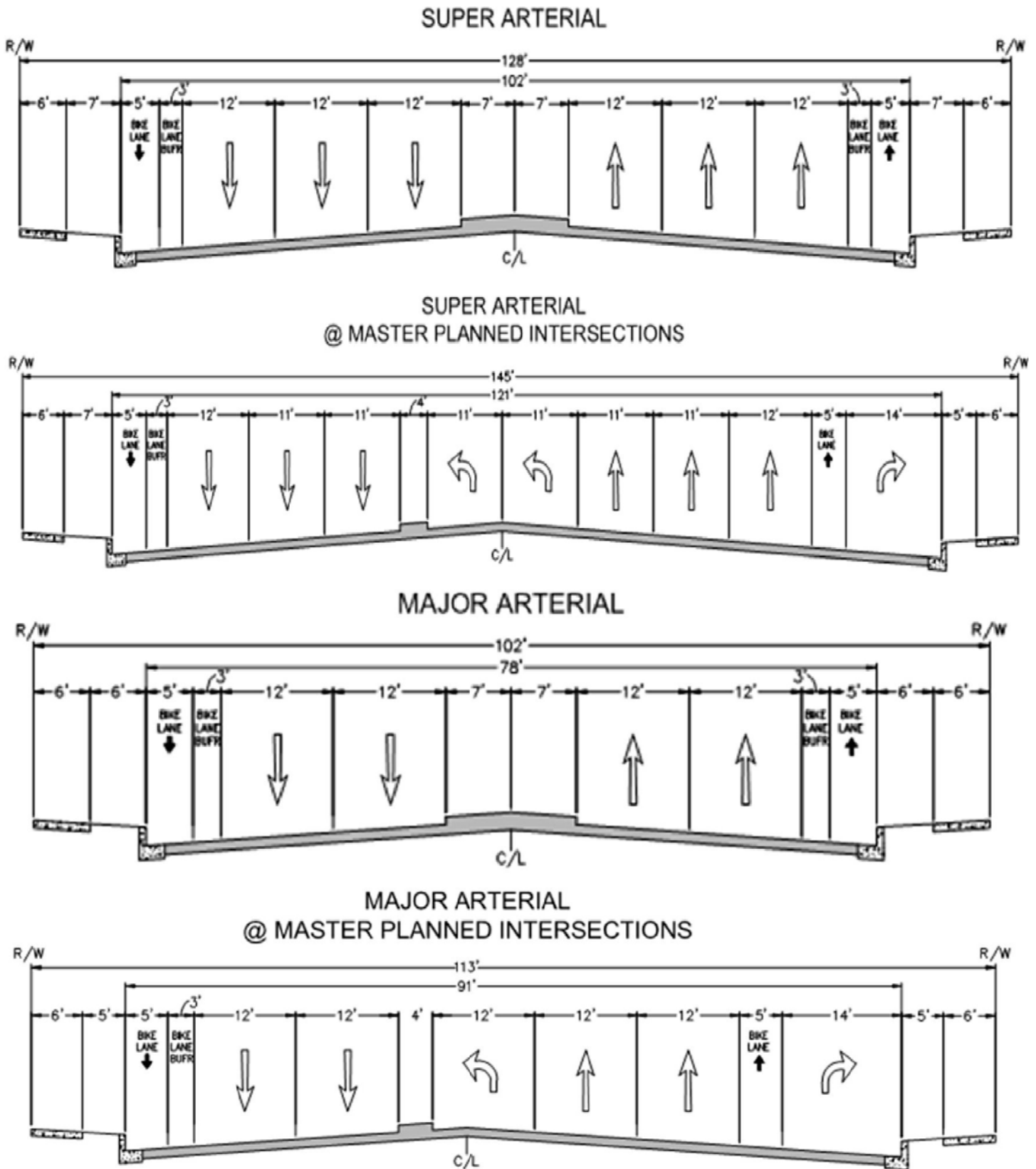


Figure 5

City of Victorville General Plan Roadway Cross-Sections (3 of 5)

Source: City of Victorville



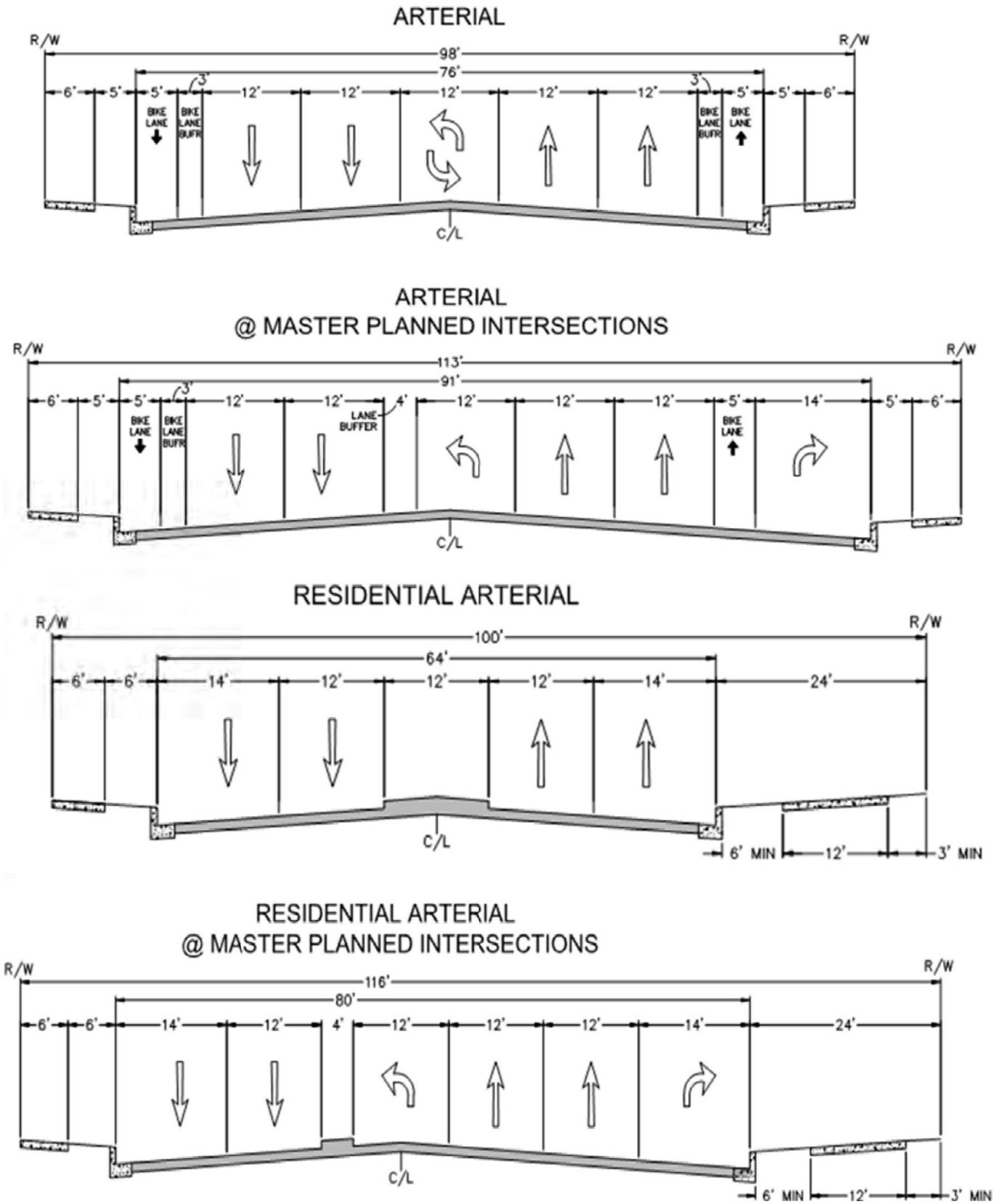


Figure 5

City of Victorville General Plan Roadway Cross-Sections (4 of 5)

Source: City of Victorville



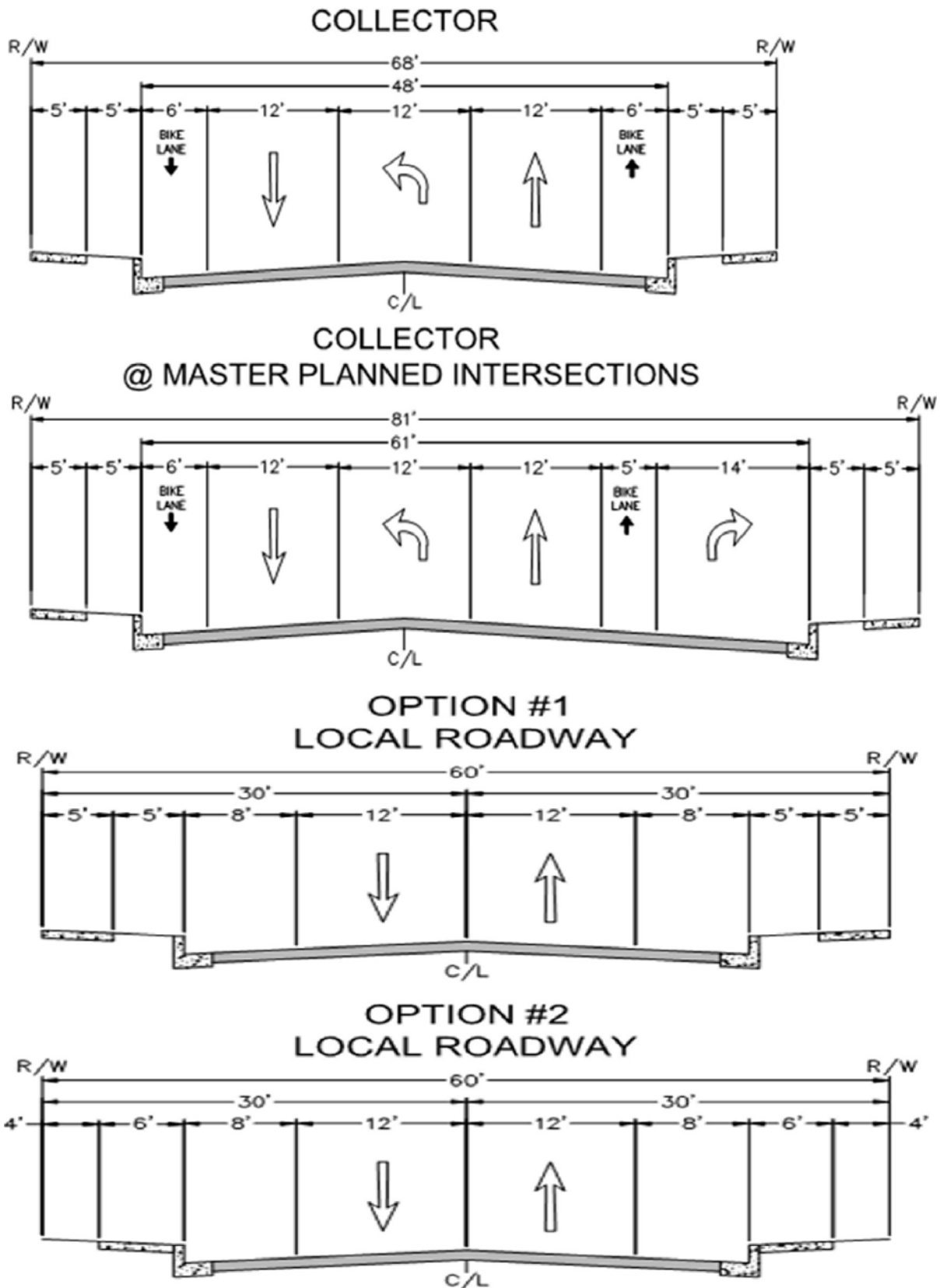
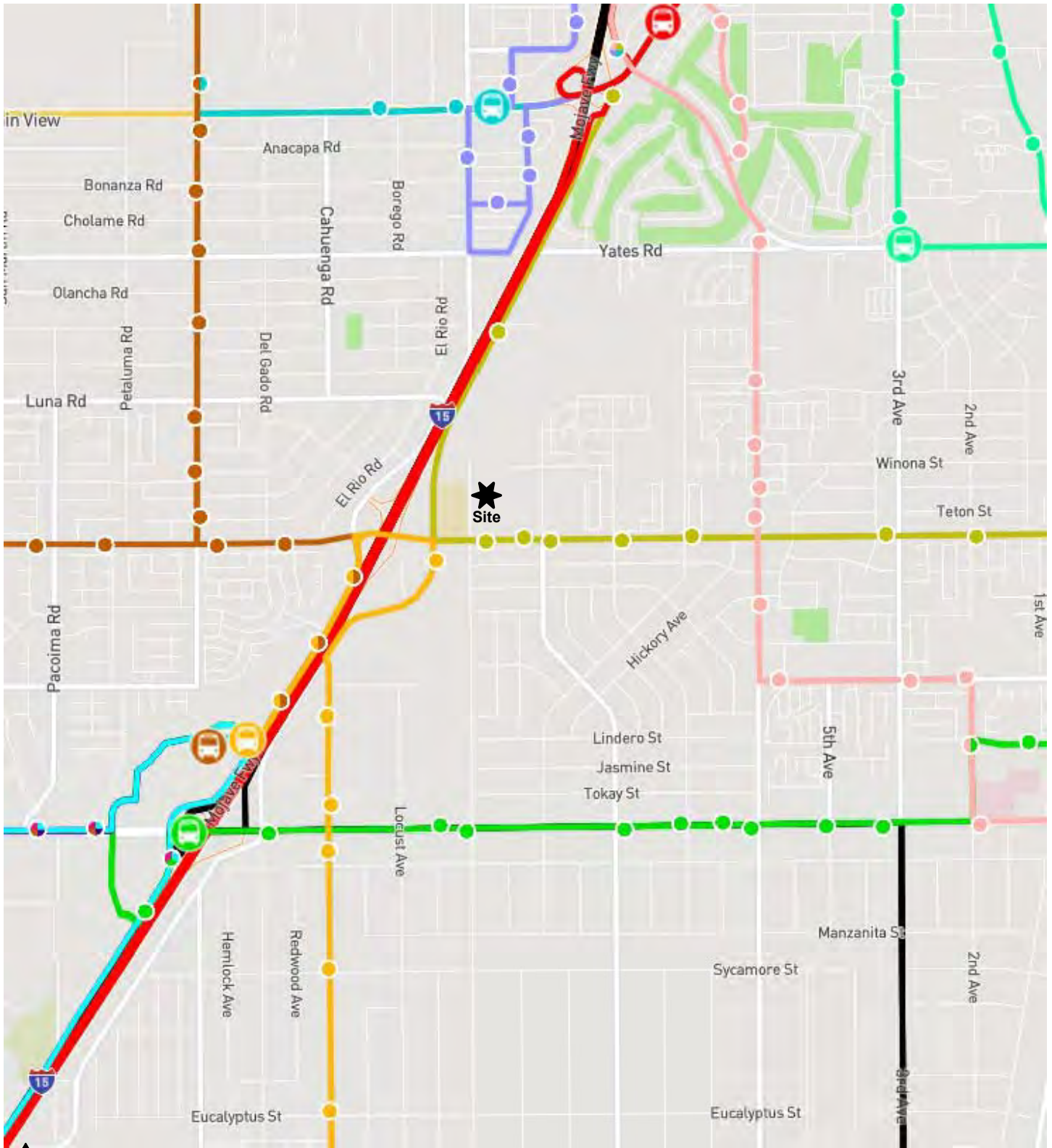


Figure 5

City of Victorville General Plan Roadway Cross-Sections (5 of 5)

Source: City of Victorville





-  15: B-V Link
-  53: Victor Valley Mall – Victor Valley College
-  50: Victorville - Hesperia Post Office
-  55: Lorene-7th - Victor Valley College
-  52: Lorene-7th - Victor Valley Mall
-  68: Hesperia - Victor Valley Mall

Figure 6
Victor Valley Transit Routes

Source: Victor Valley Transit Authority



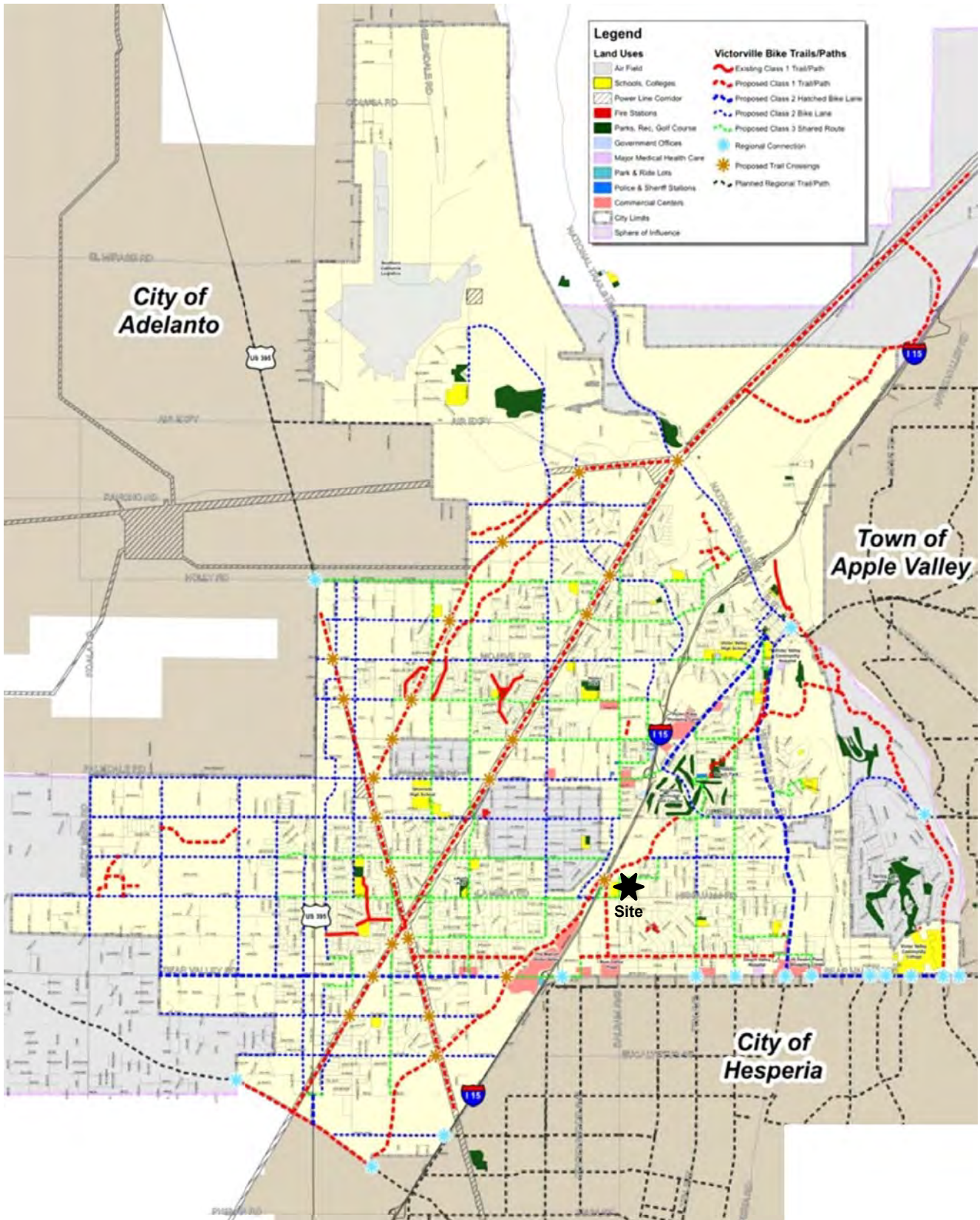
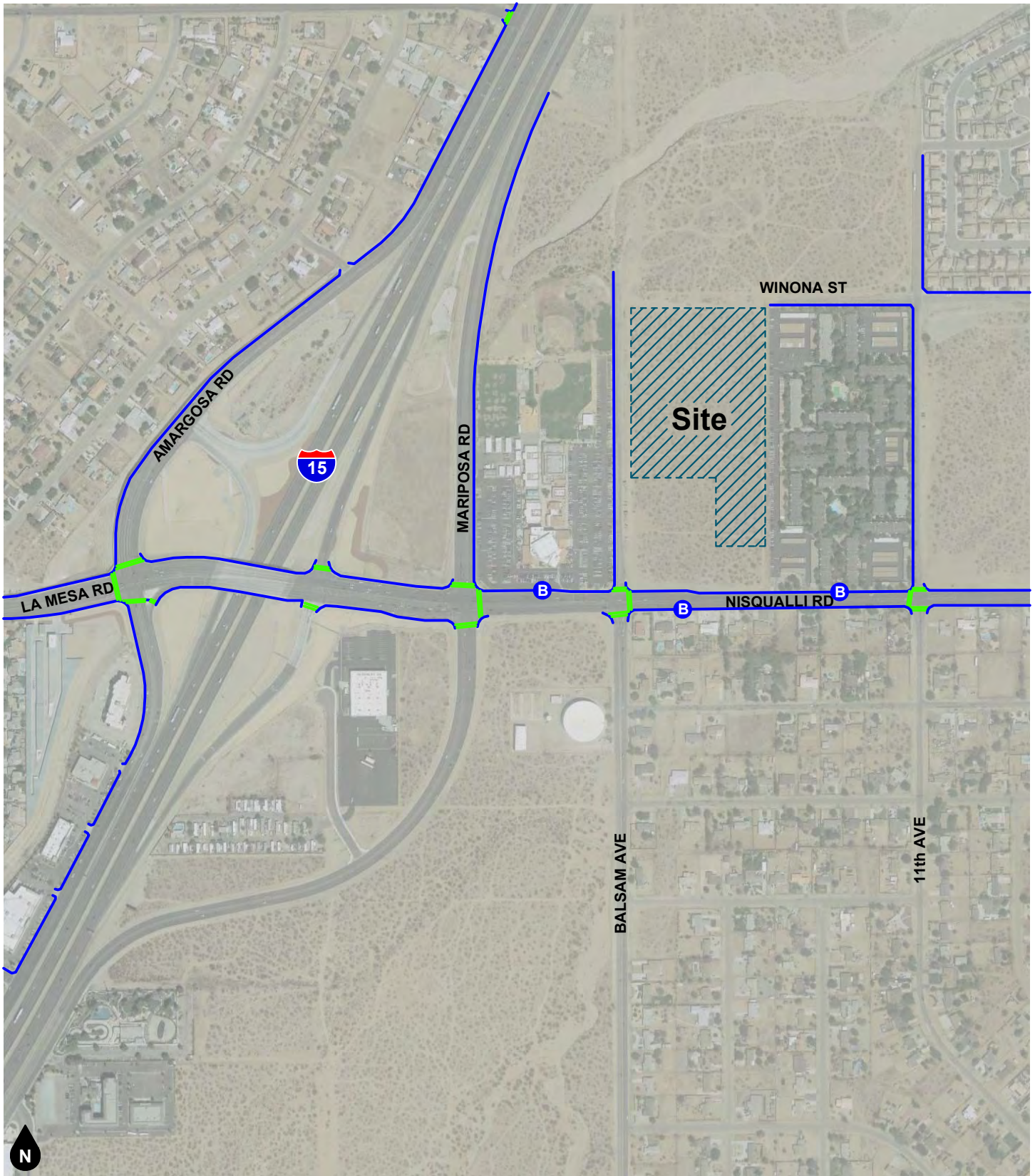


Figure 7
City of Victorville General Plan
Non-Motorized Transportation Plan Map

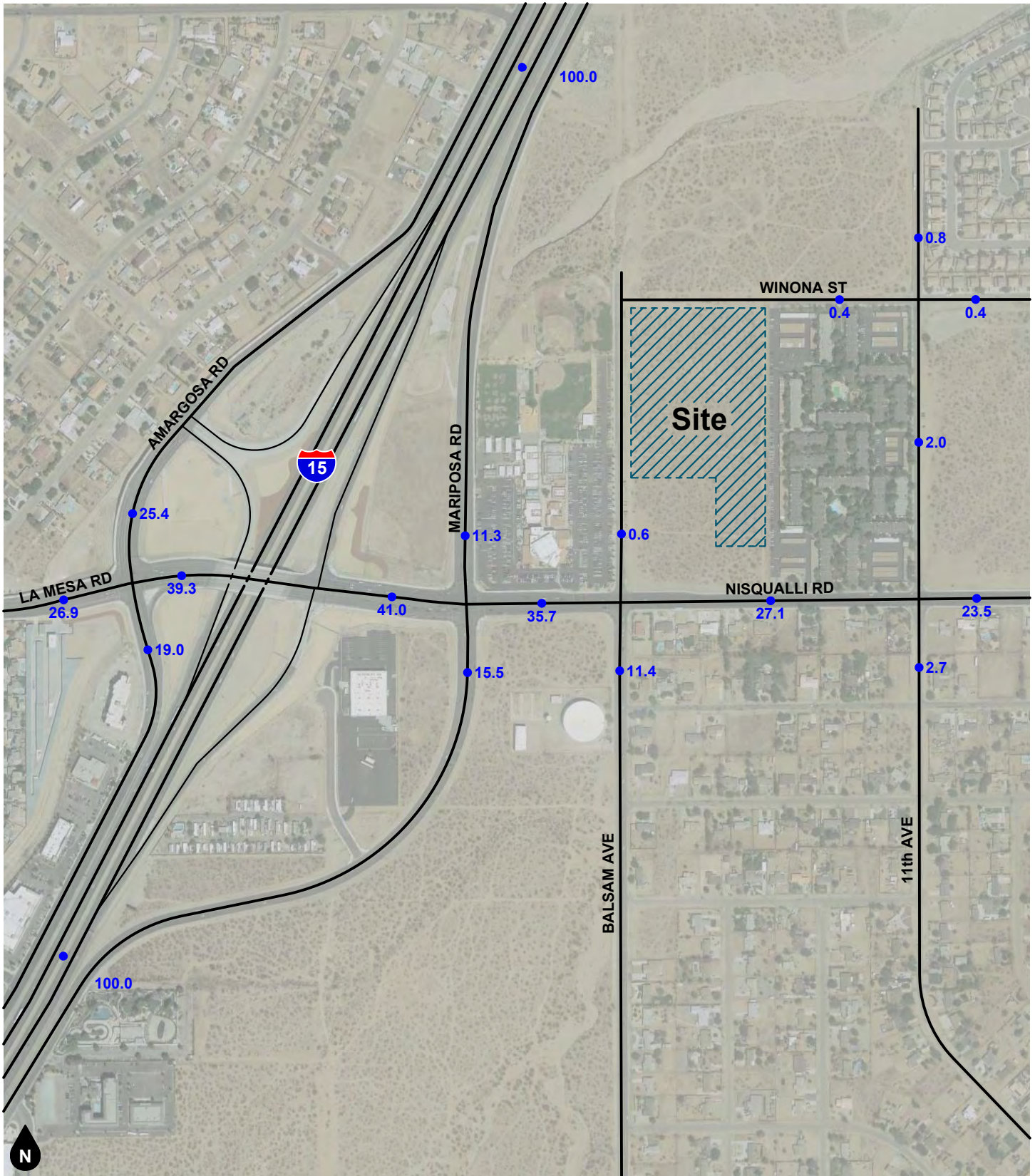
Source: City of Victorville





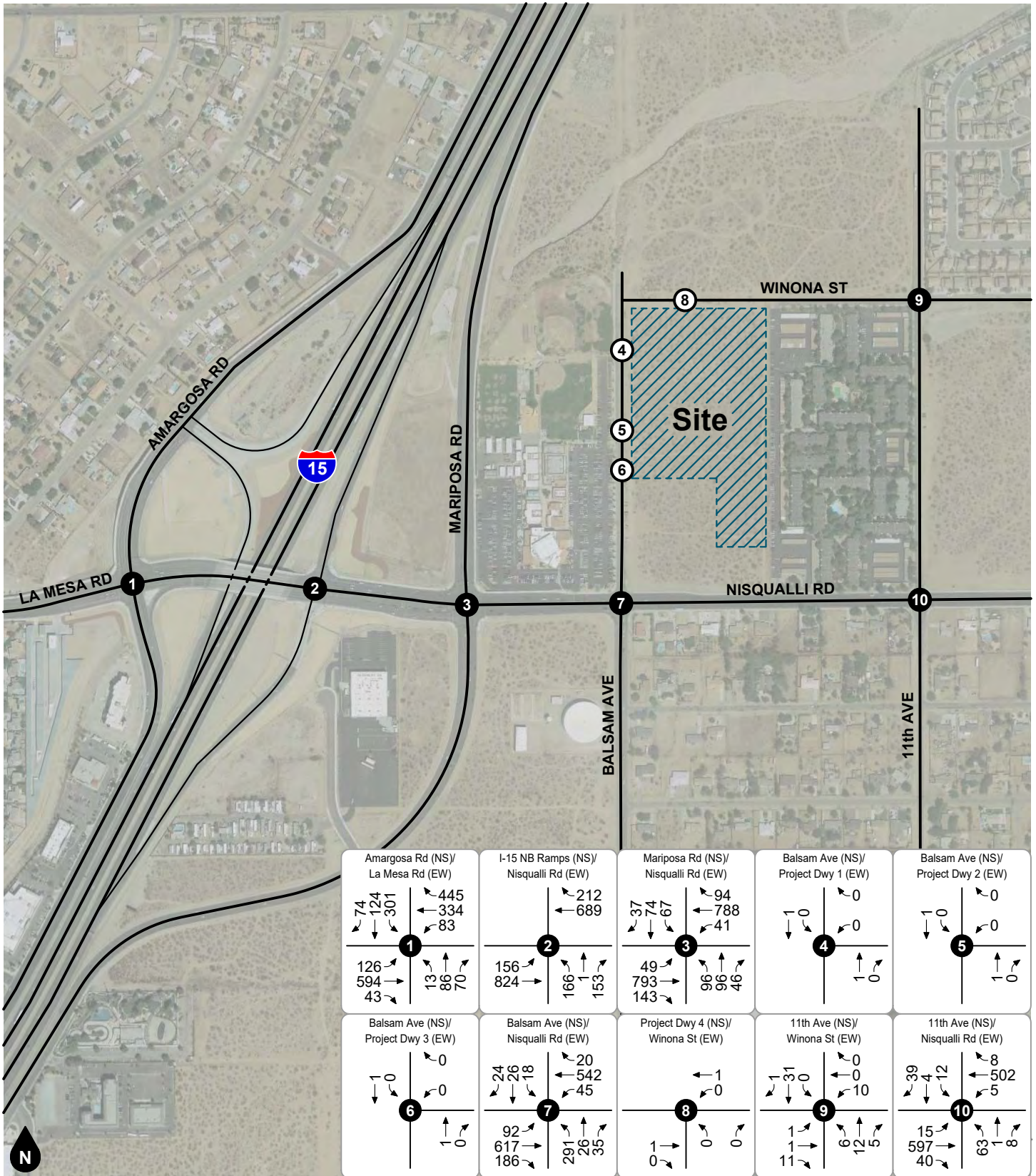
- Legend**
- Sidewalk
 - - - Cross Walk
 - B Bus Stop

Figure 8
Existing Pedestrian Facilities



Legend
 ●## Vehicles Per Day (1,000's)

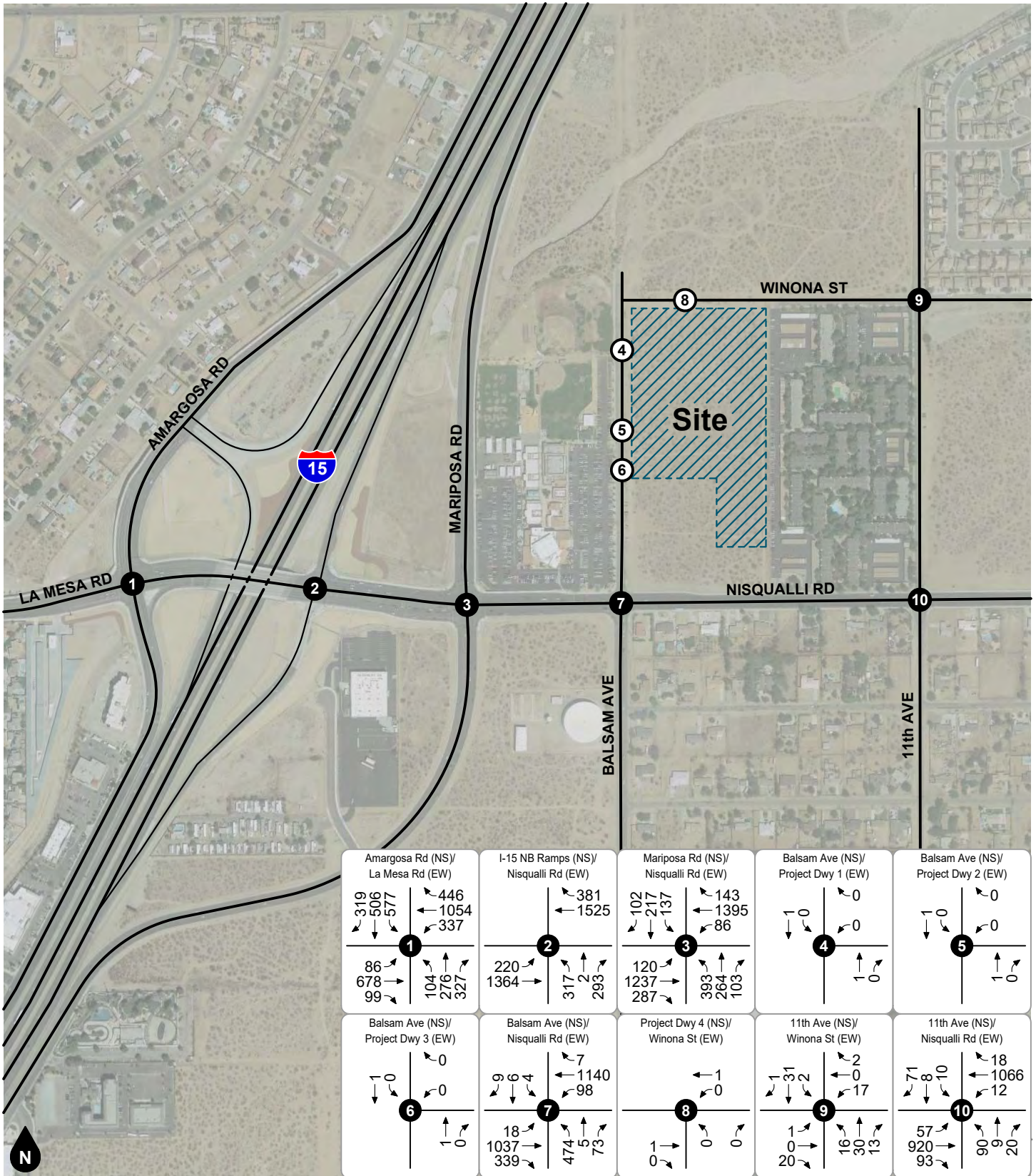
Figure 9
Existing Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 10
Existing AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 11
Existing PM Peak Hour Intersection Turning Movement Volumes

4. PROJECT TRIP FORECASTS

This section describes how project trip generation, trip distribution, and trip assignment forecasts were developed. The forecast project volumes are illustrated on figures contained in this section.

PROJECT TRIP GENERATION

Table 2 shows the project trip generation based upon trip generation rates obtained from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition, 2017). Trip generation rates were determined for daily trips, AM peak hour inbound and outbound trips, and PM peak hour inbound and outbound trips for the proposed land uses. The number of trips forecast to be generated by the proposed project are determined by multiplying the trip generation rates by the land use quantities.

As shown in Table 2, the proposed project is forecast to generate 1,153 daily trips, including 76 trips during the AM peak hour and 76 trips during the PM peak hour.

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Figure 12 shows the forecast directional distribution patterns for the project generated trips. The project trip distribution patterns are based on review of existing volume data, surrounding land uses, designated truck routes, and the local and regional roadway facilities in the project vicinity.

Based on the identified project trip generation and distributions, project average daily traffic volumes have been calculated and shown on Figure 13. Project AM and PM peak hour intersection turning movement volumes expected from the project are depicted on Figure 14 and Figure 15, respectively.

**Table 2
Project Trip Generation**

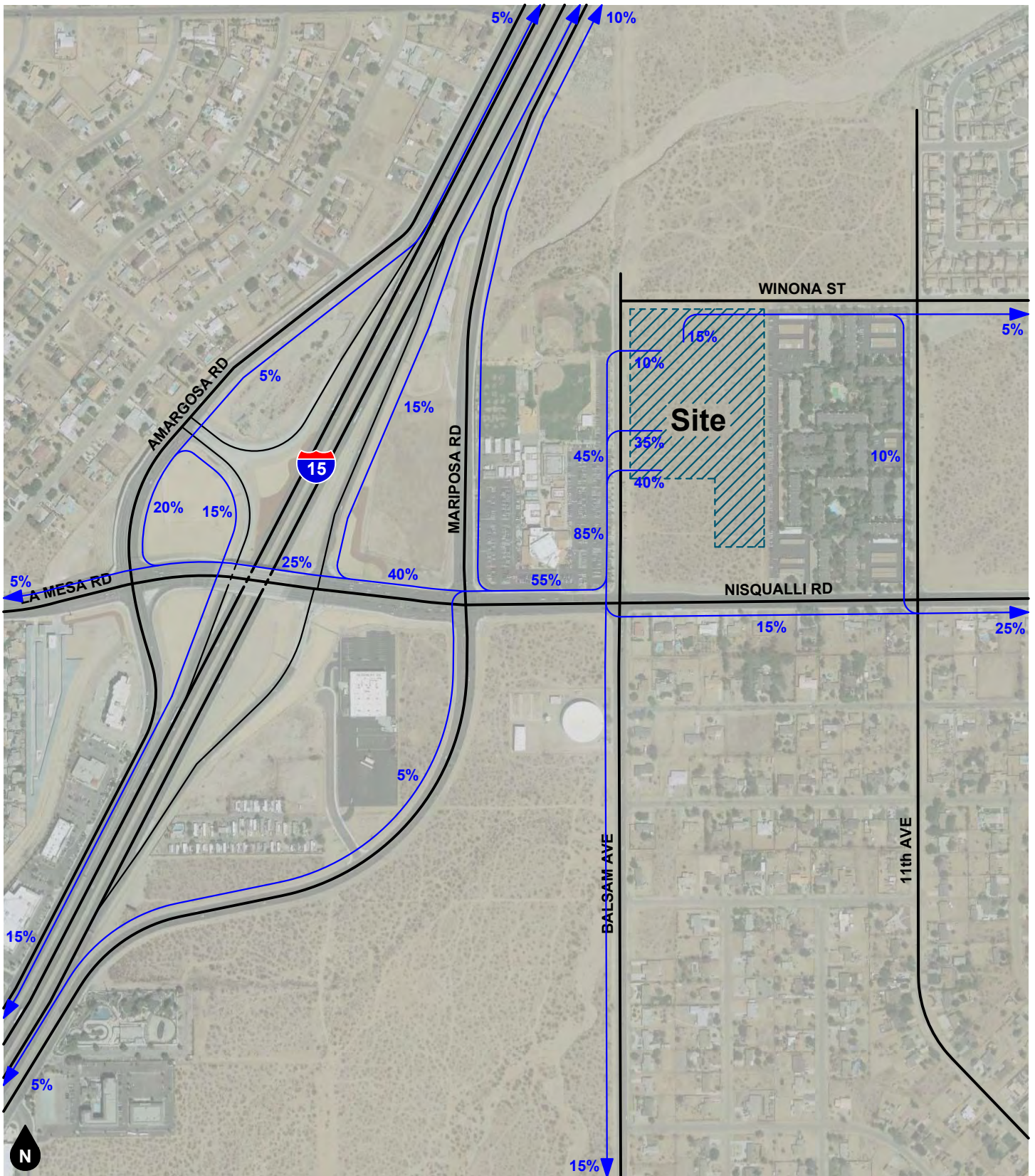
Trip Generation Rates									
Land Use	Source ¹	Unit ²	AM Peak Hour			PM Peak Hour			Daily Rate
			% In	% Out	Rate	% In	% Out	Rate	
Multifamily Housing (Mid-Rise)	ITE 221	DU	26%	74%	0.36	61%	39%	0.44	5.44

Trips Generated									
Land Use	Quantity	Unit ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Multifamily Housing (Mid-Rise)	212	DU	20	56	76	57	36	93	1,153

Notes:

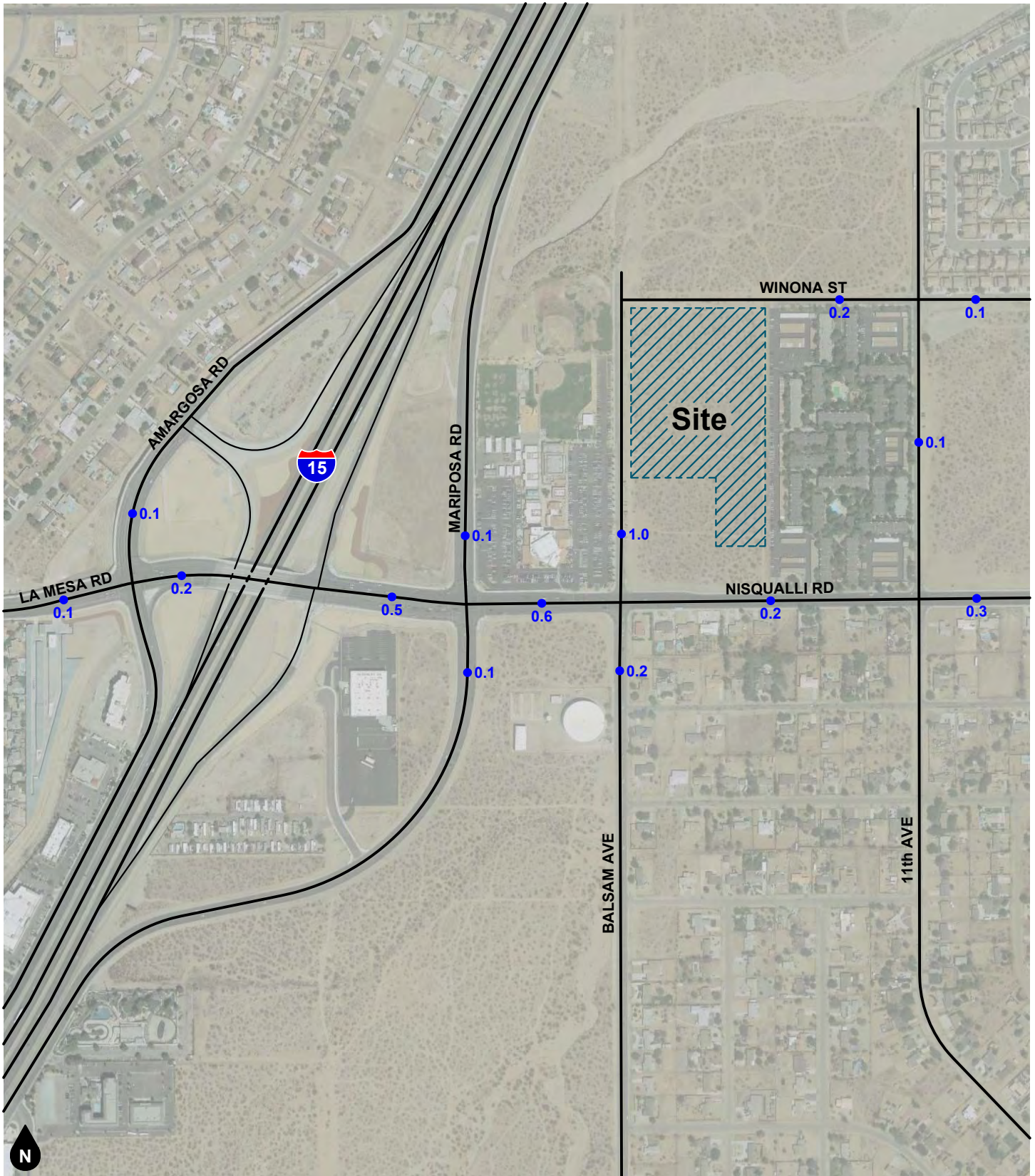
(1) ITE = Institute of Transportation Engineers *Trip Generation Manual* (10th Edition, 2017); ### = Land Use Code

(2) DU = Dwelling Units



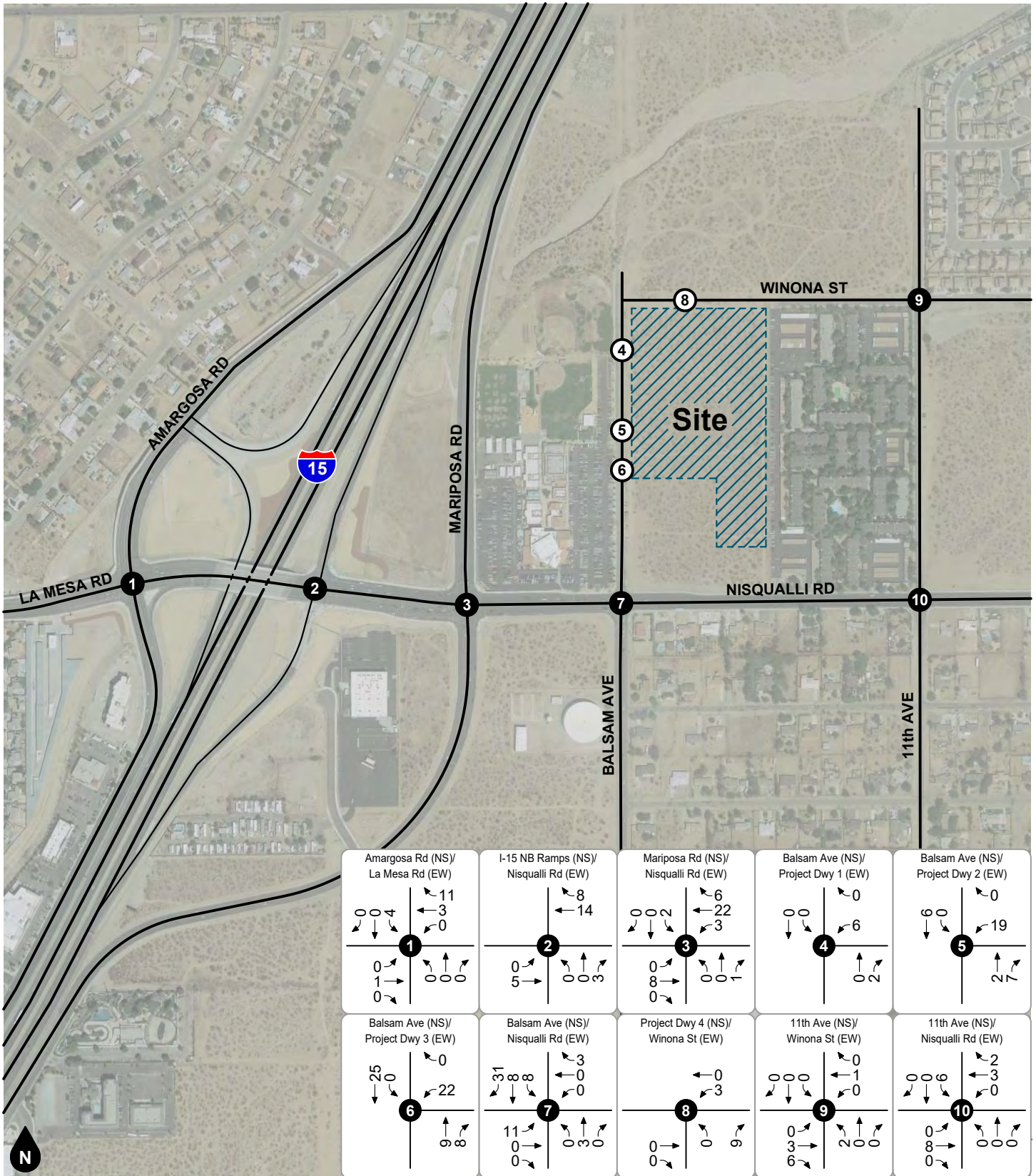
Legend
 ← 10% Percent To/From Project

Figure 12
Project Trip Distribution



Legend
 ●## Vehicles Per Day (1,000's)

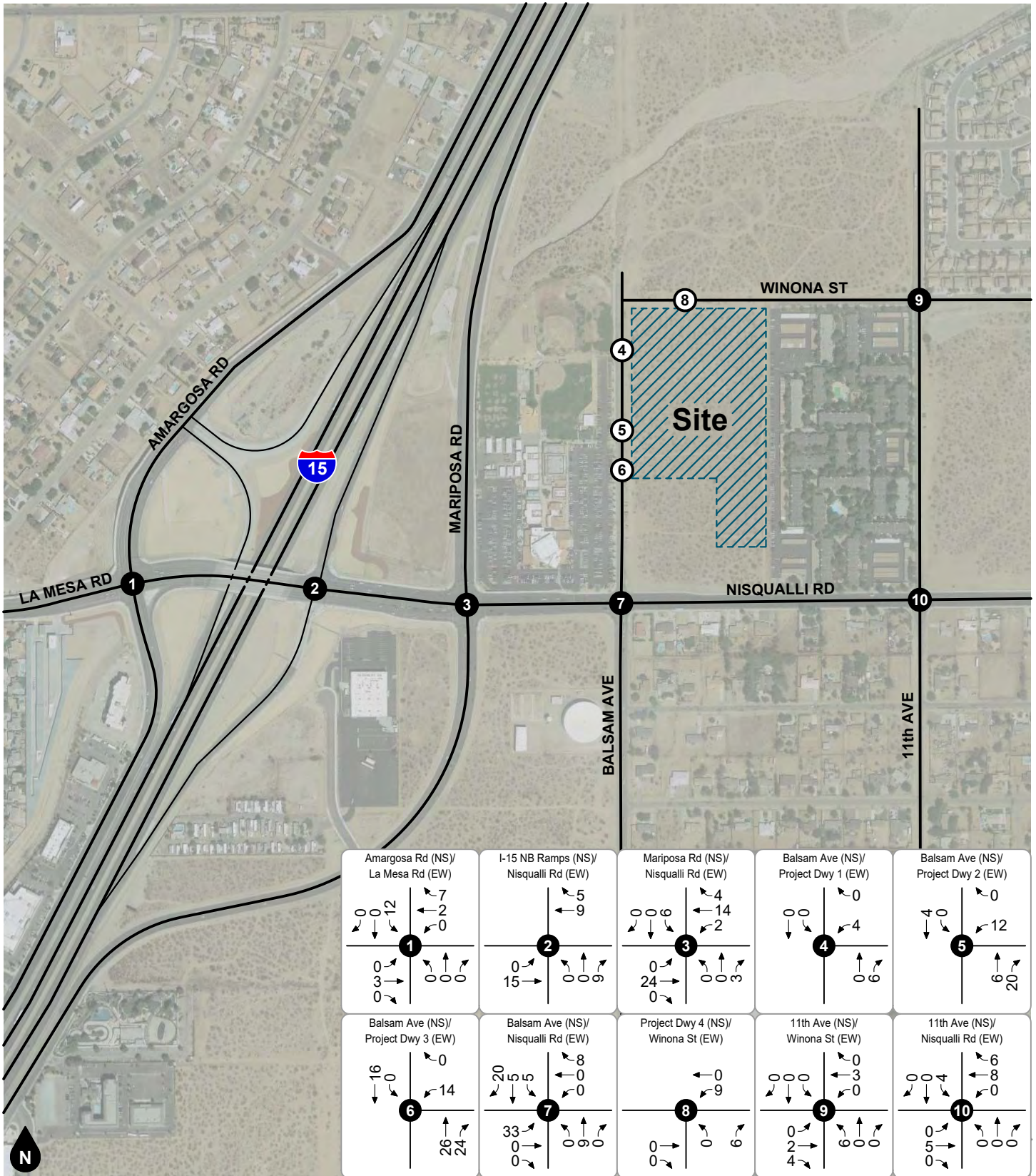
Figure 13
Project Average Daily Traffic Volumes



Legend

- Study Intersection
- Project Driveway

Figure 14
Project AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 15
Project PM Peak Hour Intersection Turning Movement Volumes

5. FUTURE VOLUME FORECASTS

This section describes how future volume forecasts for each analysis scenario were developed. Forecast study area volumes are illustrated on figures contained in this section.

CUMULATIVE TRIPS

Ambient Growth Rate

To account for ambient growth on roadways, existing 2020 volumes were increased by a growth rate of two percent (2%) per year over two years for Opening Year (2020) conditions; this equates to a total growth factor of approximately 1.04. Existing 2020 volumes were increased by a growth rate of two percent (2%) per year over twelve years for Future Year (2032) conditions; this equates to a total growth factor of approximately 1.27. The ambient growth rate was conservatively applied to all movements at the study intersections.

Other Development

To account for trips generated by future development, trips generated by pending or approved other development projects in the Cities of Victorville and Hesperia were added to the study area. Table 3 shows the other development project list for projects anticipated to contribute appreciable trips to the study area intersections and Figure 16 exhibits the other development location map.

Figure 17 shows the forecast average daily traffic volumes for the other development. Figure 18 and Figure 19 show the forecast AM and PM peak hour intersection turning movement volumes for trips generated by other developments.

ANALYSIS SCENARIO VOLUME FORECASTS

Opening Year (2022) Without Project

To develop Opening Year (2022) Without Project volume forecasts, existing volumes were combined with ambient growth and trips generated by other developments. Opening Year (2022) Without Project average daily traffic volumes are shown on Figure 20. Opening Year (2022) Without Project AM and PM peak hour intersection turning movement volumes are shown Figure 21 and Figure 22.

Opening Year (2022) With Project

Opening Year (2022) With Project volume forecasts were developed by adding project generated trips to the Opening Year (2022) Without Project forecast. Opening Year (2022) With Project average daily traffic volumes are shown on Figure 23. Opening Year (2022) With Project AM and PM peak hour intersection turning movement volumes are shown on Figure 24 and Figure 25.

Future Year (2032) Without Project

To develop Future Year (2022) Without Project volume forecasts, Existing volumes were combined with ambient growth and trips generated by other developments. Future Year (2032) Without Project average daily traffic volumes are shown on Figure 26. Future Year (2032) Without Project AM and PM peak hour intersection turning movement volumes are shown on Figure 27 and Figure 28.

Future Year (2032) With Project

Future Year (2032) With Project volume forecasts were developed by adding project generated trips to the Future Year (2032) Without Project forecast. Future Year (2032) With Project average daily traffic volumes are shown on Figure 29. Future Year (2032) With Project AM and PM peak hour intersection turning movement volumes are shown on Figure 30 and Figure 31.

**Table 3
Other Development Trip Generation**

Map ID	Project Name	Land Use	Quantity	Units ¹	Trips Generated ²						
					AM Peak Hour			PM Peak Hour			Daily
					In	Out	Total	In	Out	Total	
1	PLN 15-00035/PLAN20-00016	Hotel	98	RM	27	19	46	30	29	59	819
2	PLN14-00010	Nursing Facility	170	BD	20	12	32	17	27	44	442
3	PLN16-0021	Super Convenience Market/Gas Station	20.000	FP	281	281	562	230	230	460	4,610
Total					328	312	640	277	286	563	5,871

Notes: Notes:

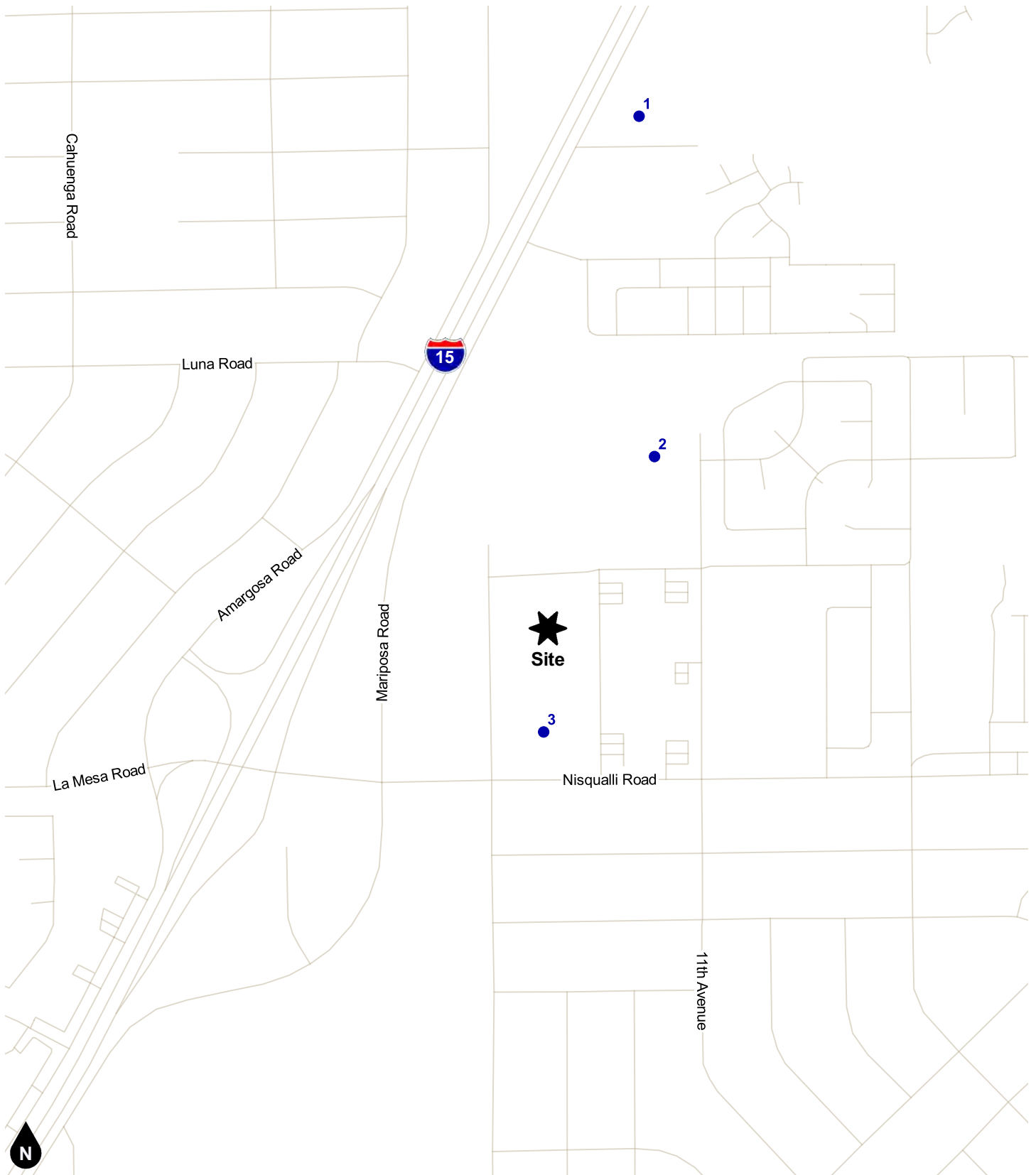
(1) RM = Rooms; BD = Beds; FP = Fueling Positions

(2) Based on trip generation rates from:

Institute of Transportation Engineers *Trip Generation Manual* (10th Edition, 2017);

San Diego Association of Governments *Brief Guide of Vehicular Traffic Generation Rates for San Diego Region* (April 2002).

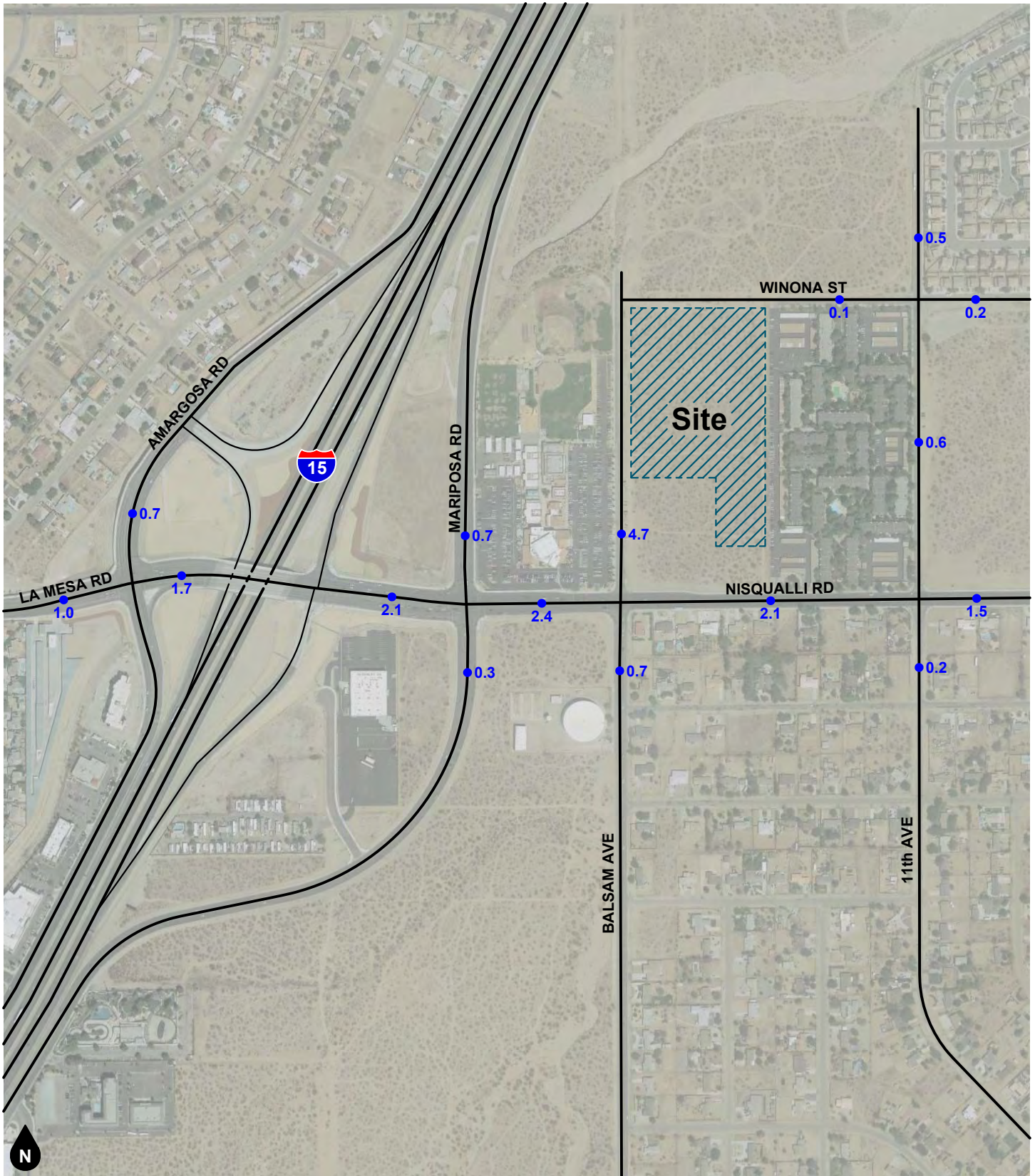
(3) Source: March Plaza Traffic Impact Analysis (Kunzman Associates, Inc., February 17, 2017)



Legend

- Other Development Location

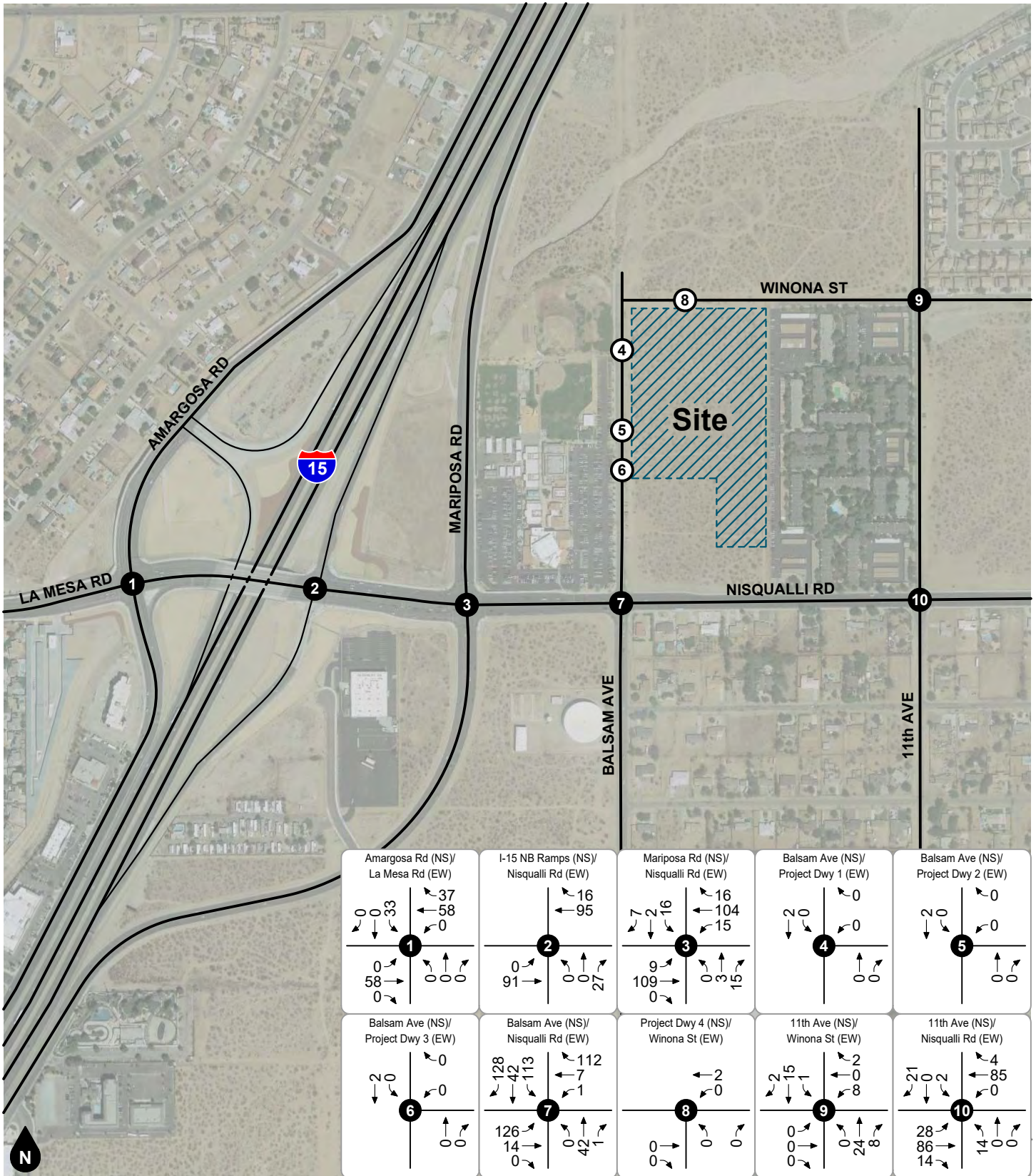
Figure 16
Other Development Location Map



Legend

●## Vehicles Per Day (1,000's)

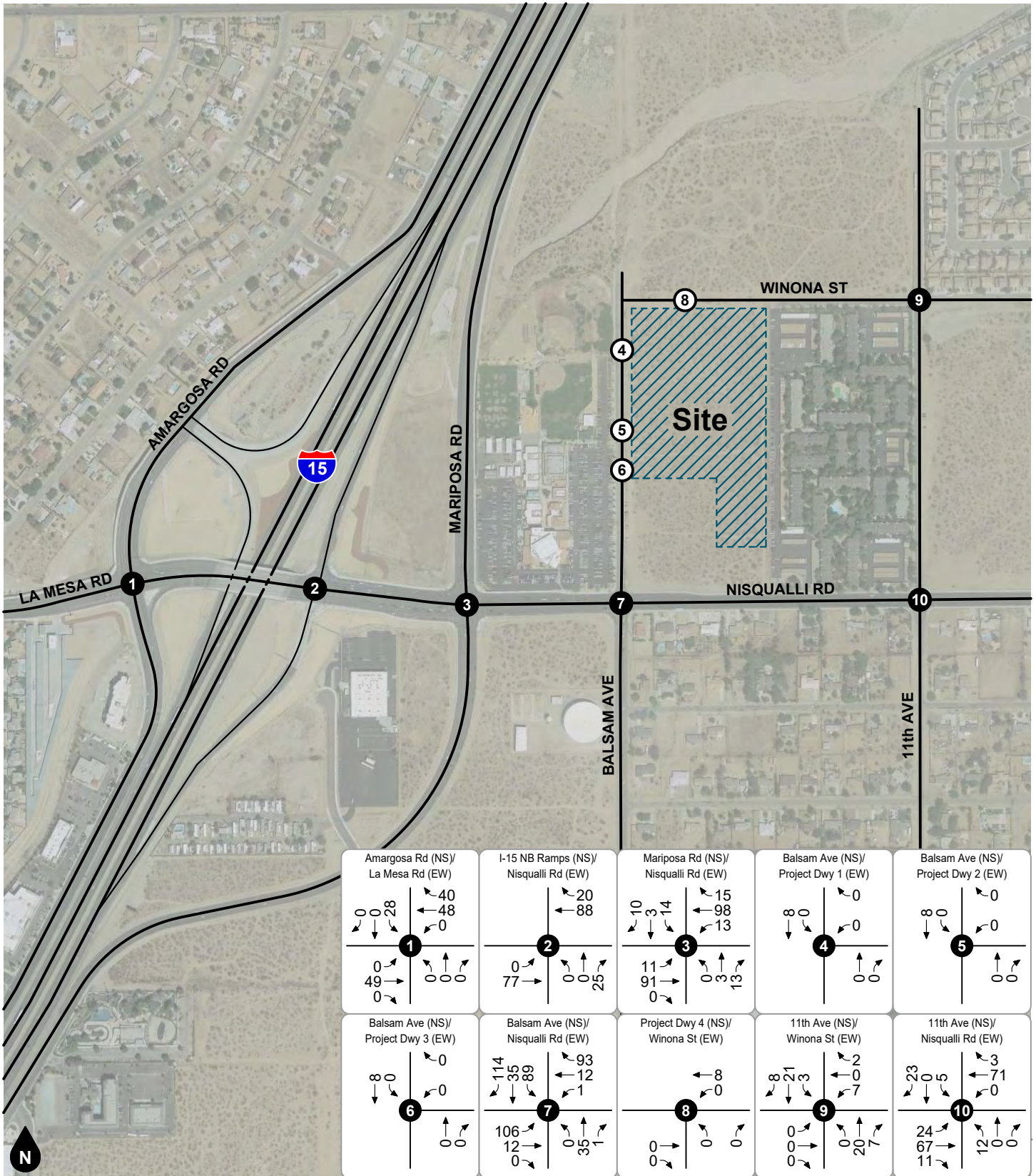
Figure 17
Other Development Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway

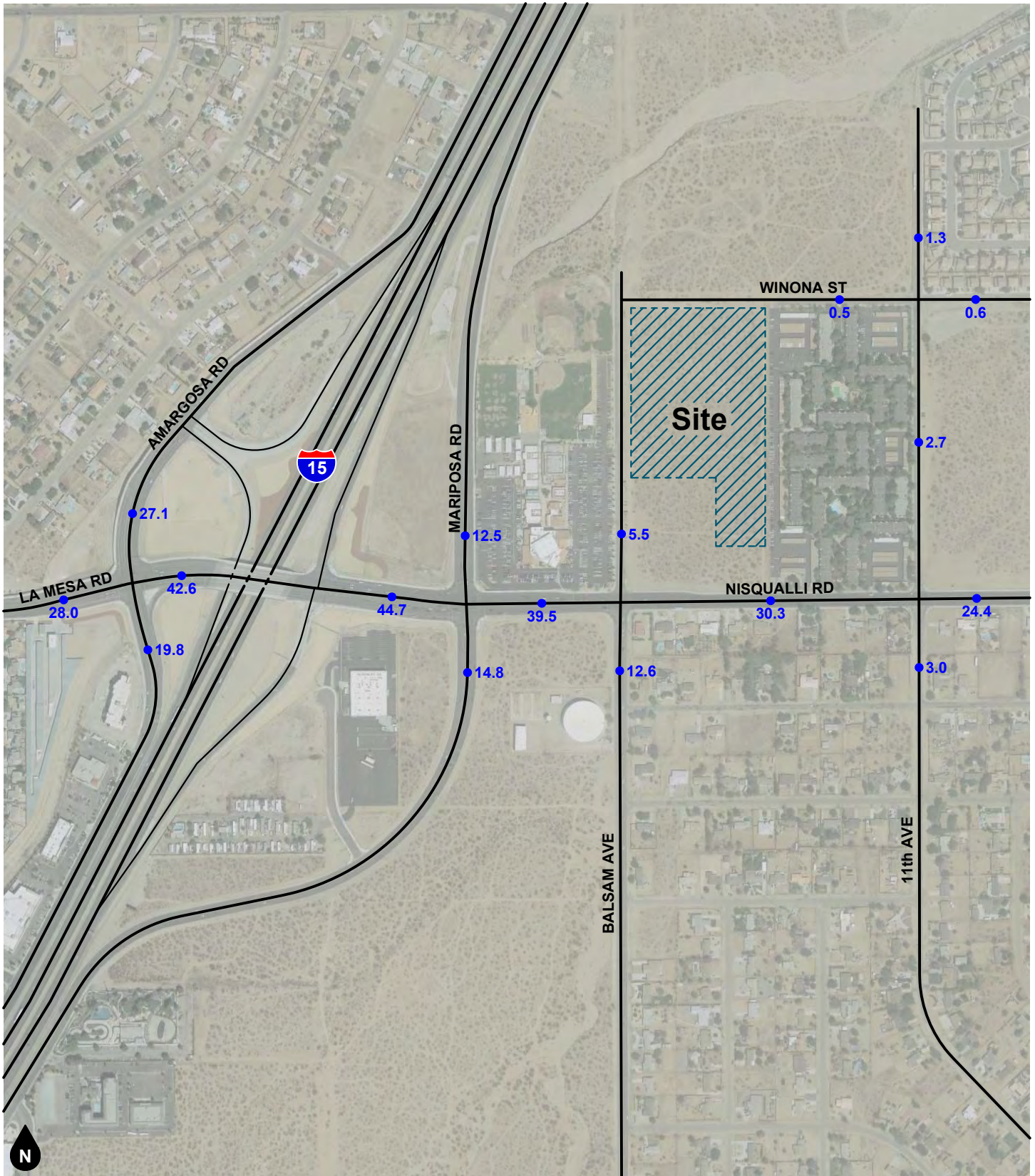
Figure 18
Other Development
AM Peak Hour Intersection Turning Movement Volumes



Legend

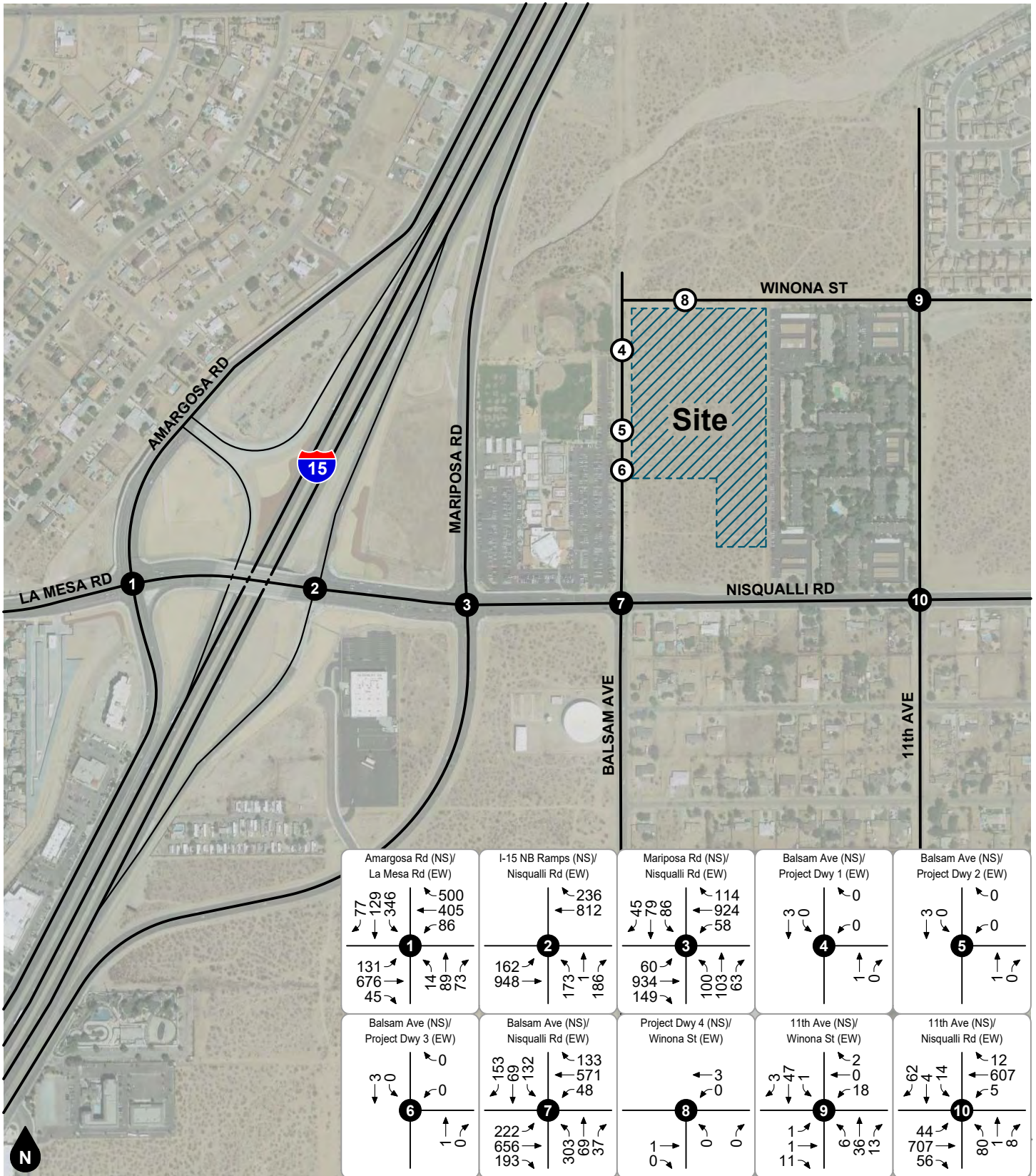
- # Study Intersection
- # Project Driveway

Figure 19
Other Development
PM Peak Hour Intersection Turning Movement Volumes



Legend
 ●## Vehicles Per Day (1,000's)

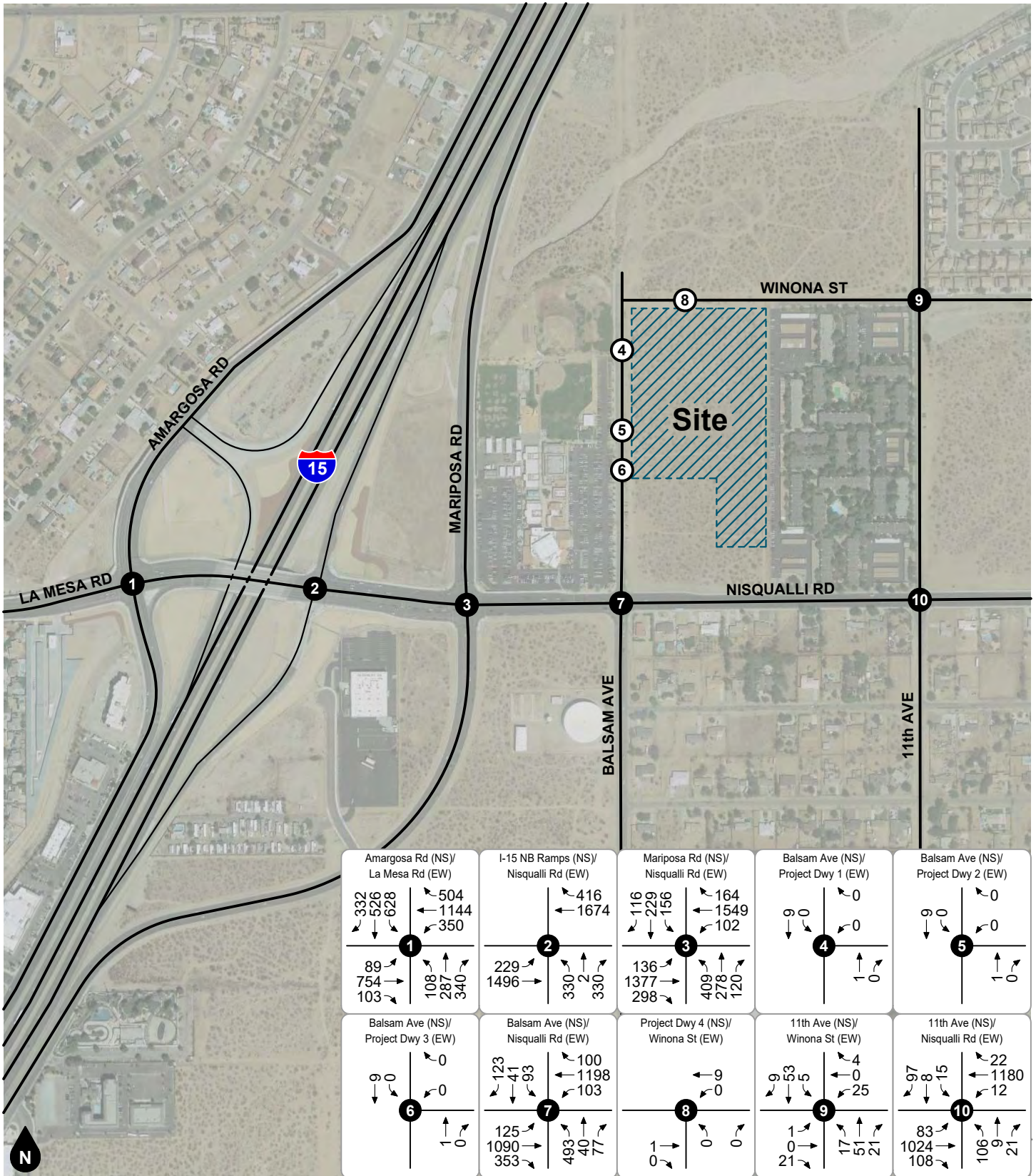
Figure 20
Opening Year (2022) Without Project Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway

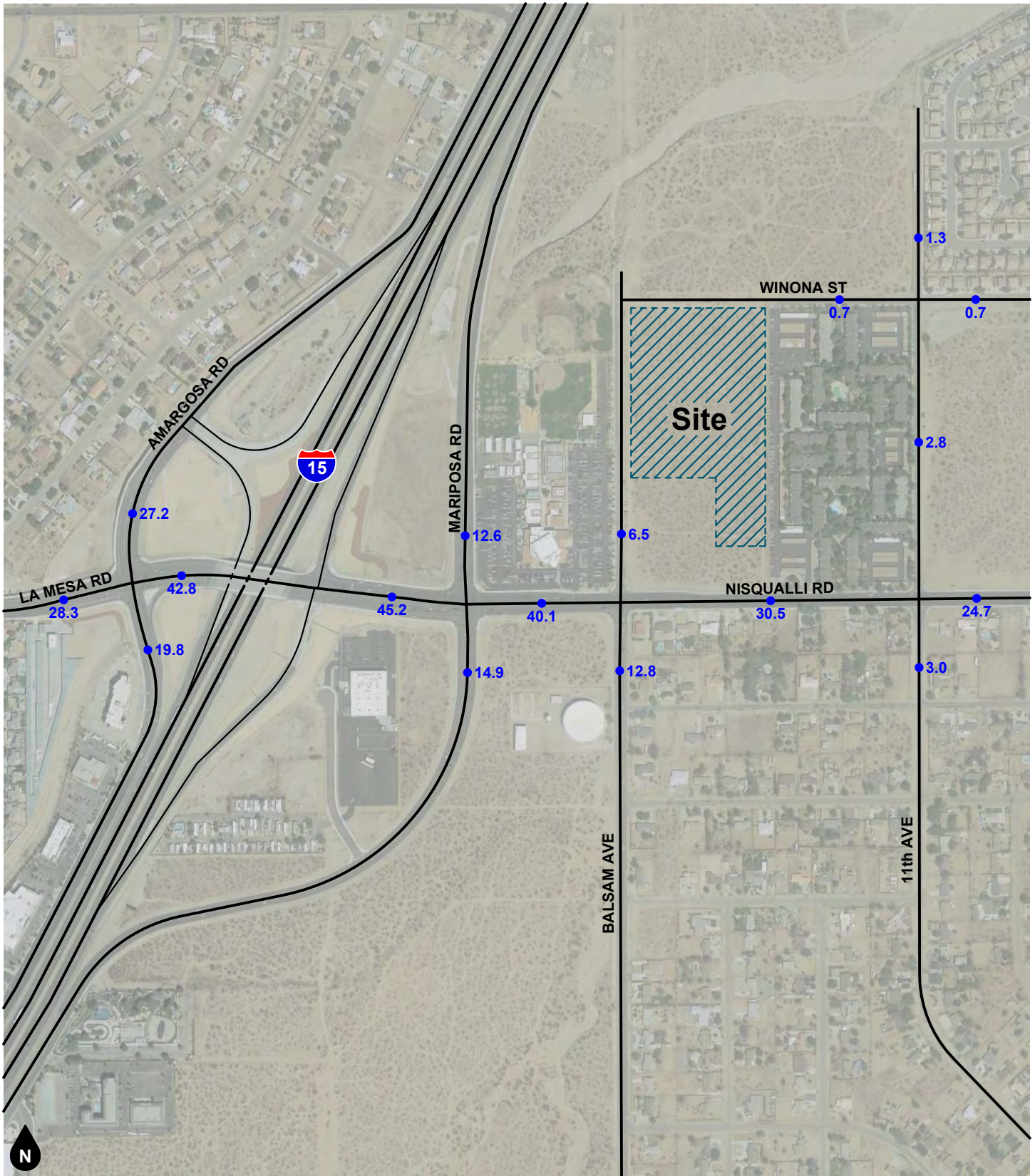
Figure 21
Opening Year (2022) Without Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway

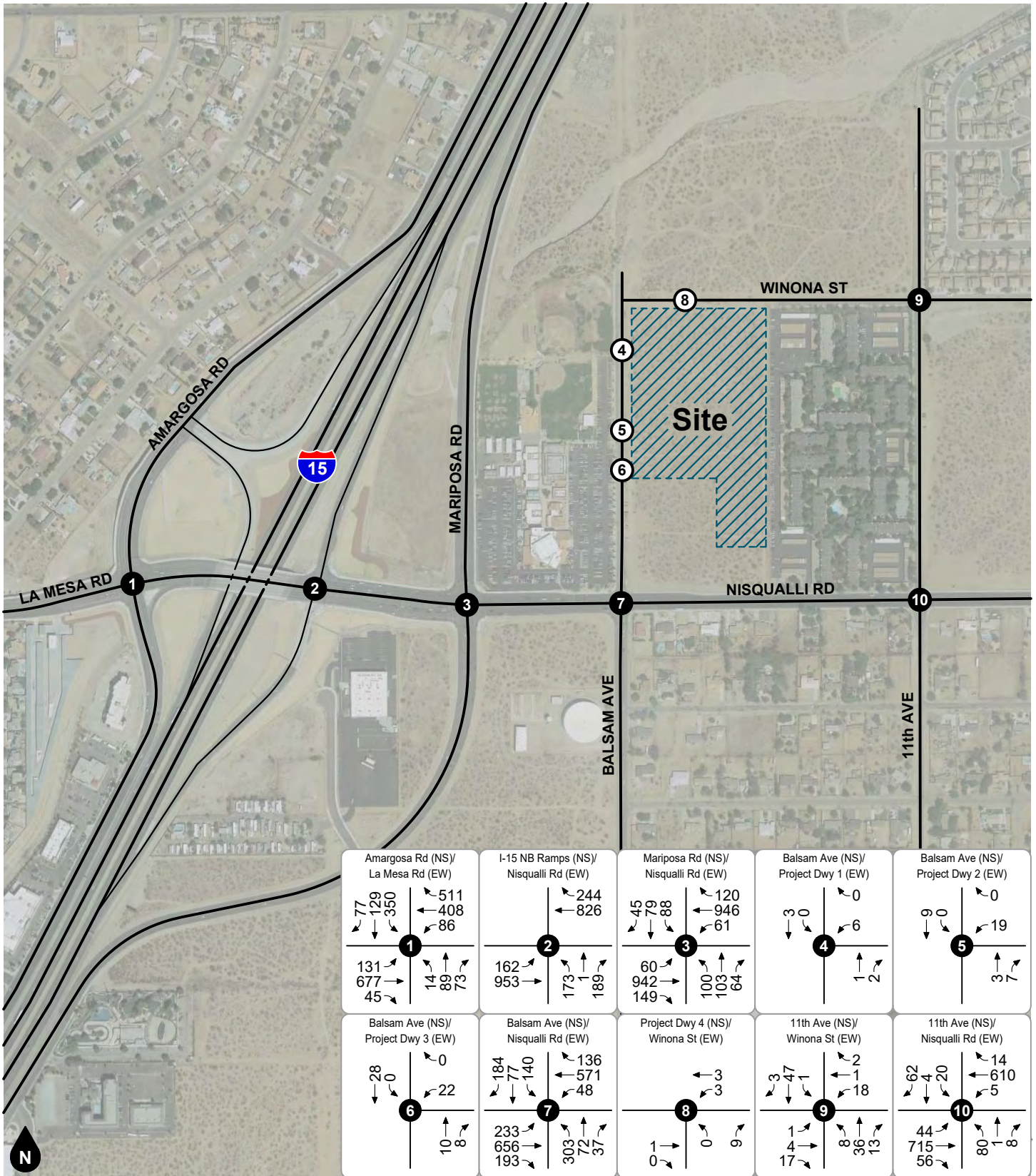
Figure 22
Opening Year (2022) Without Project
PM Peak Hour Intersection Turning Movement Volumes



Legend

●## Vehicles Per Day (1,000's)

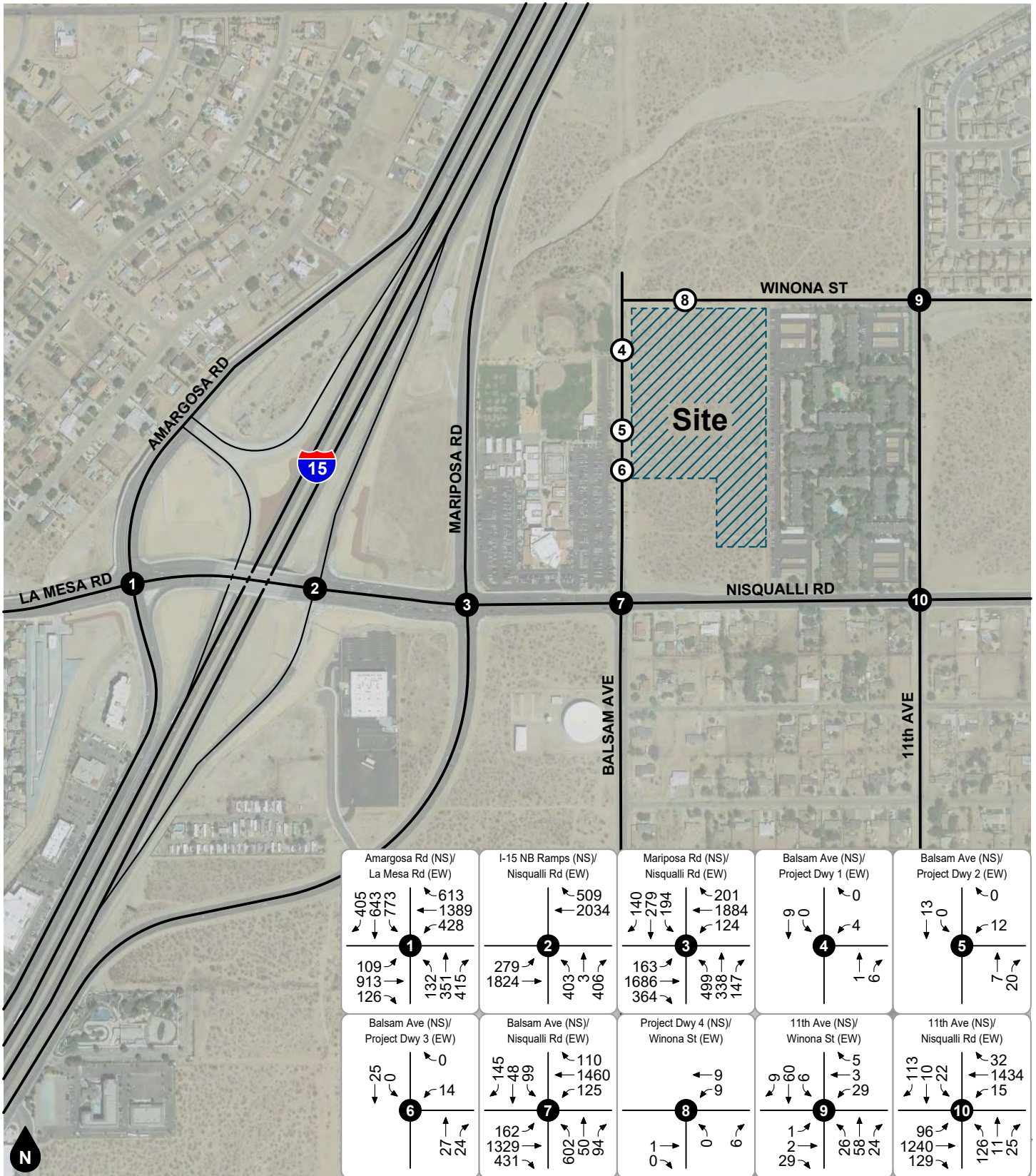
Figure 23
Opening Year (2022) With Project Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway

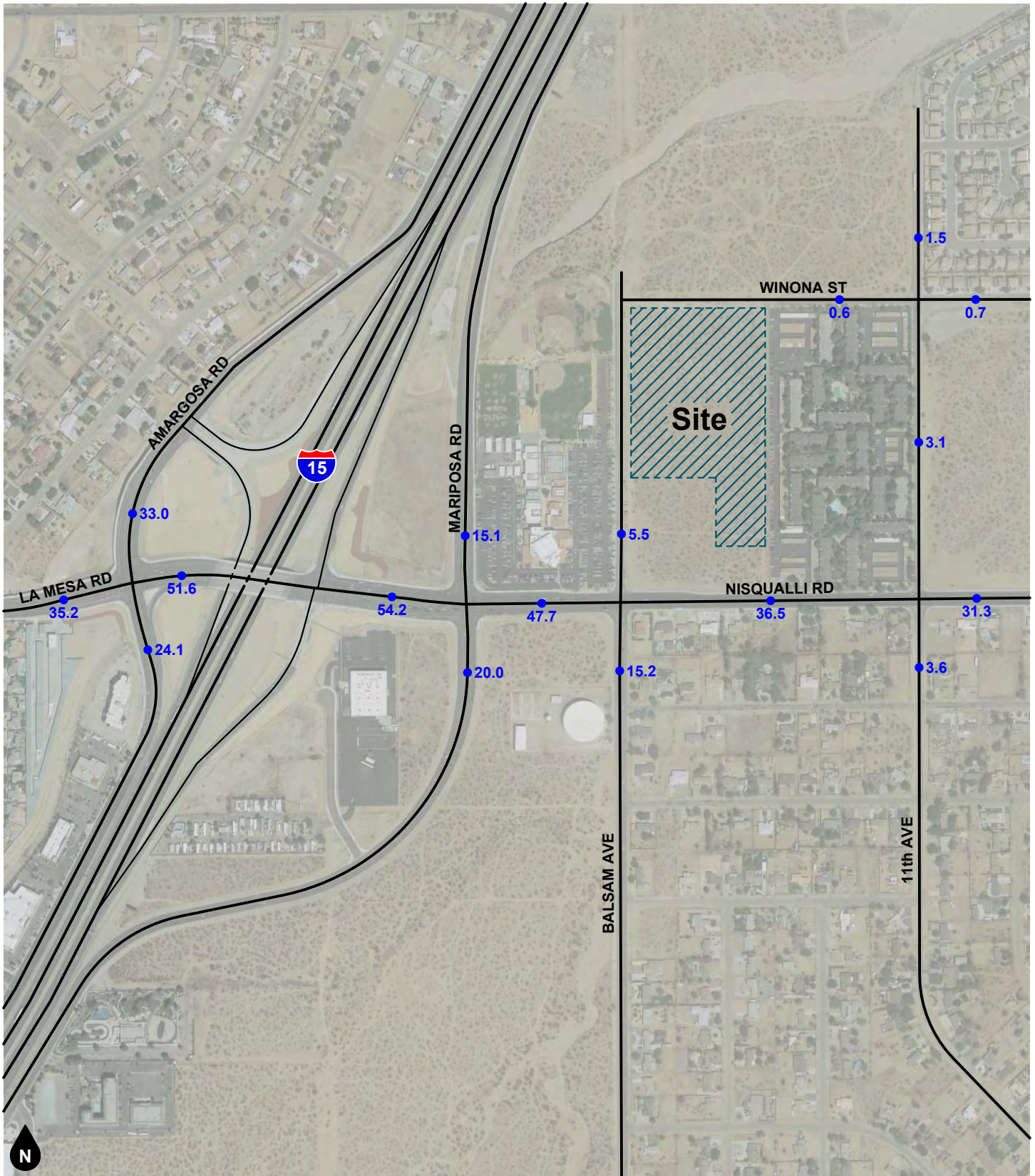
Figure 24
Opening Year (2022) With Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

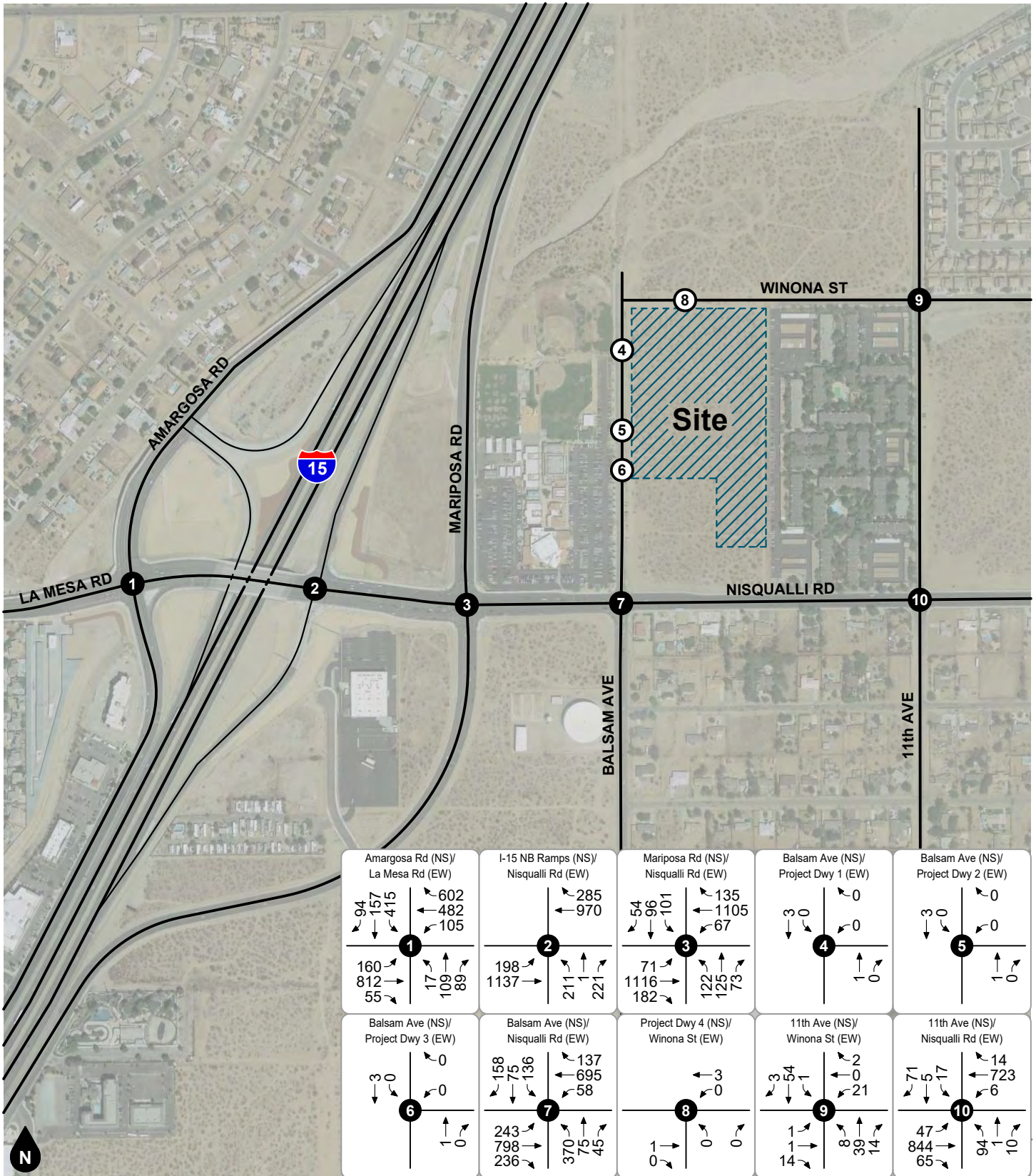
- #** Study Intersection
- #** Project Driveway

Figure 25
Opening Year (2022) With Project
PM Peak Hour Intersection Turning Movement Volumes



Legend
 ●## Vehicles Per Day (1,000's)

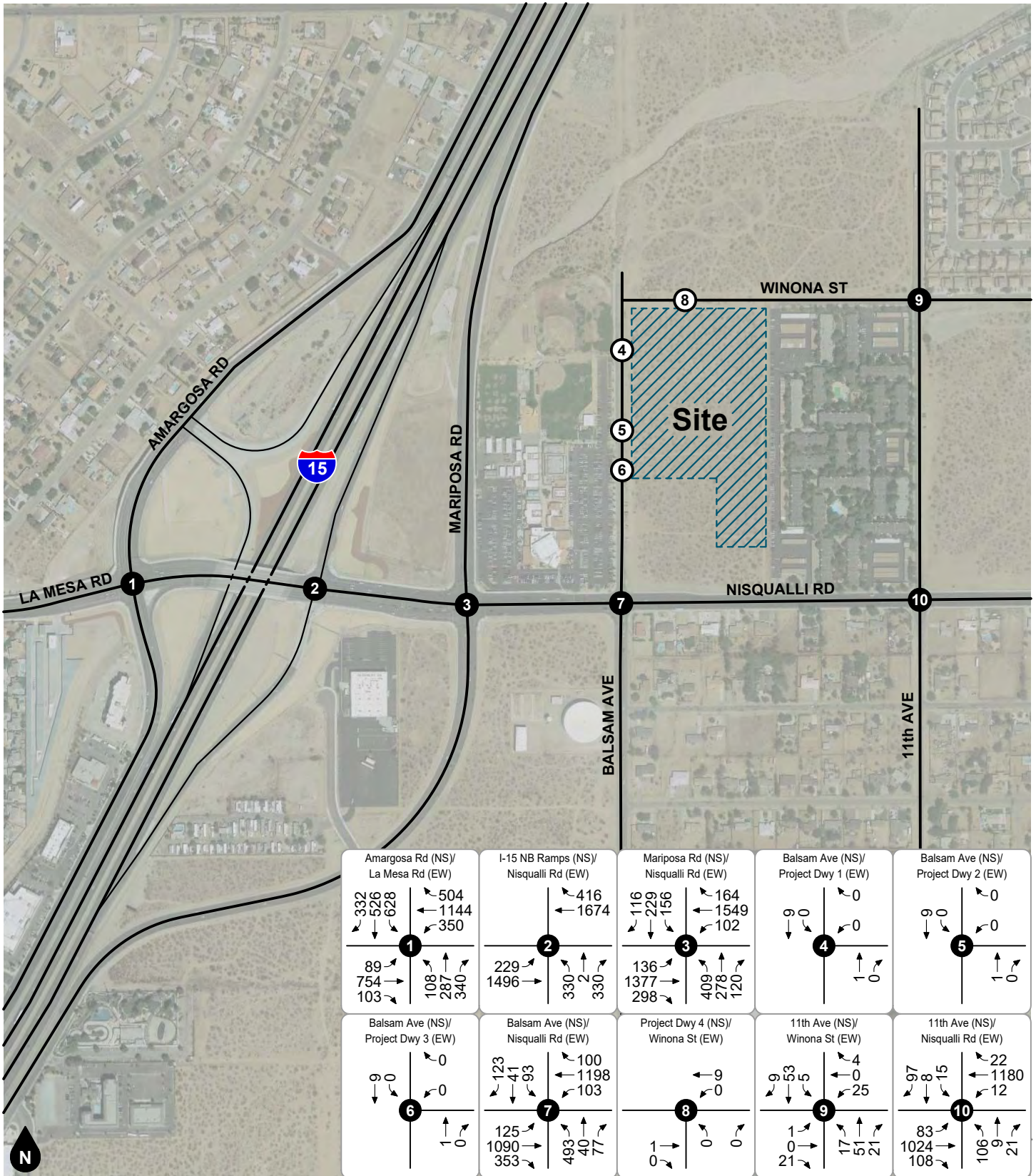
Figure 26
Future Year (2032) Without Project Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway

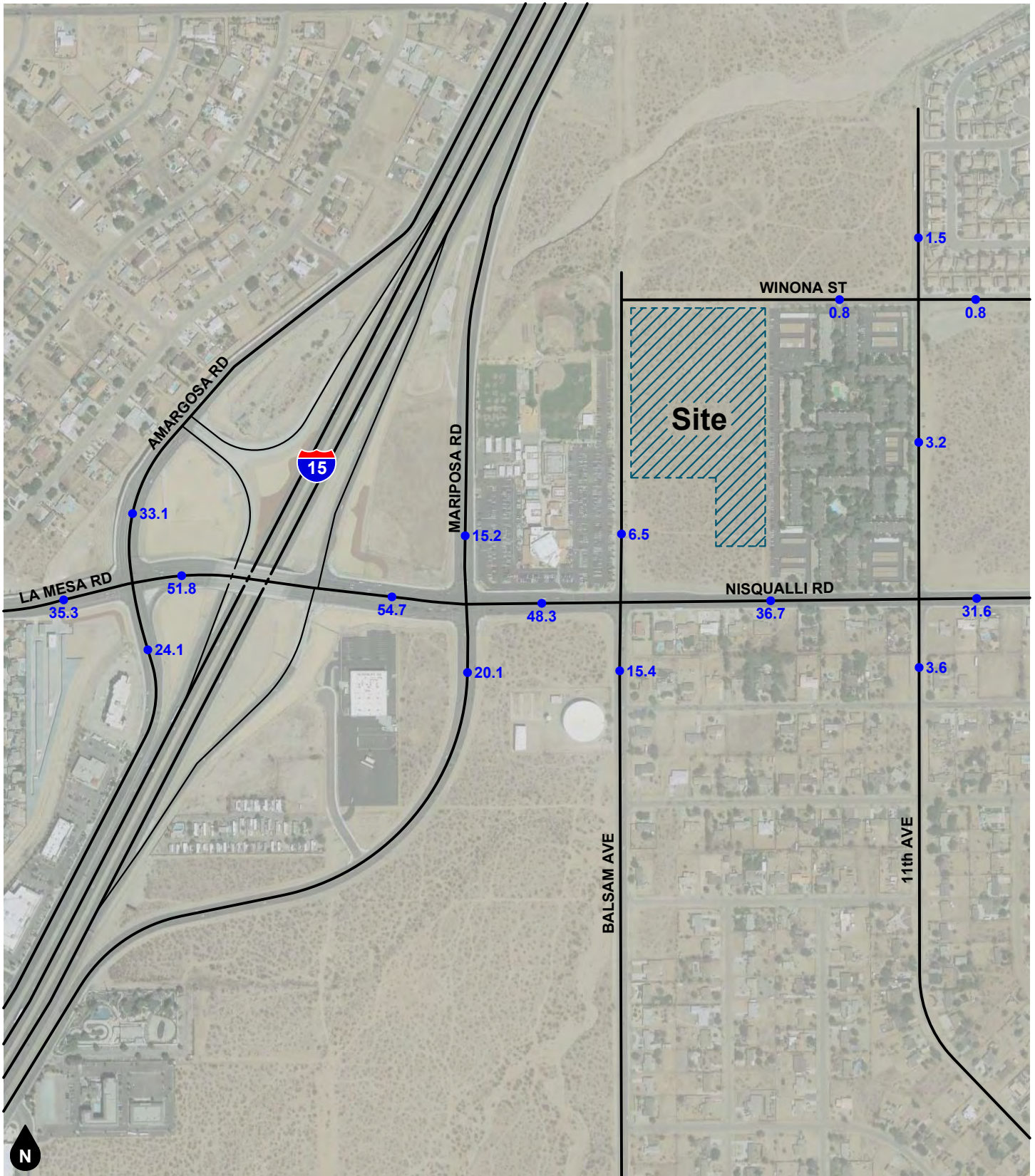
Figure 27
Future Year (2032) Without Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

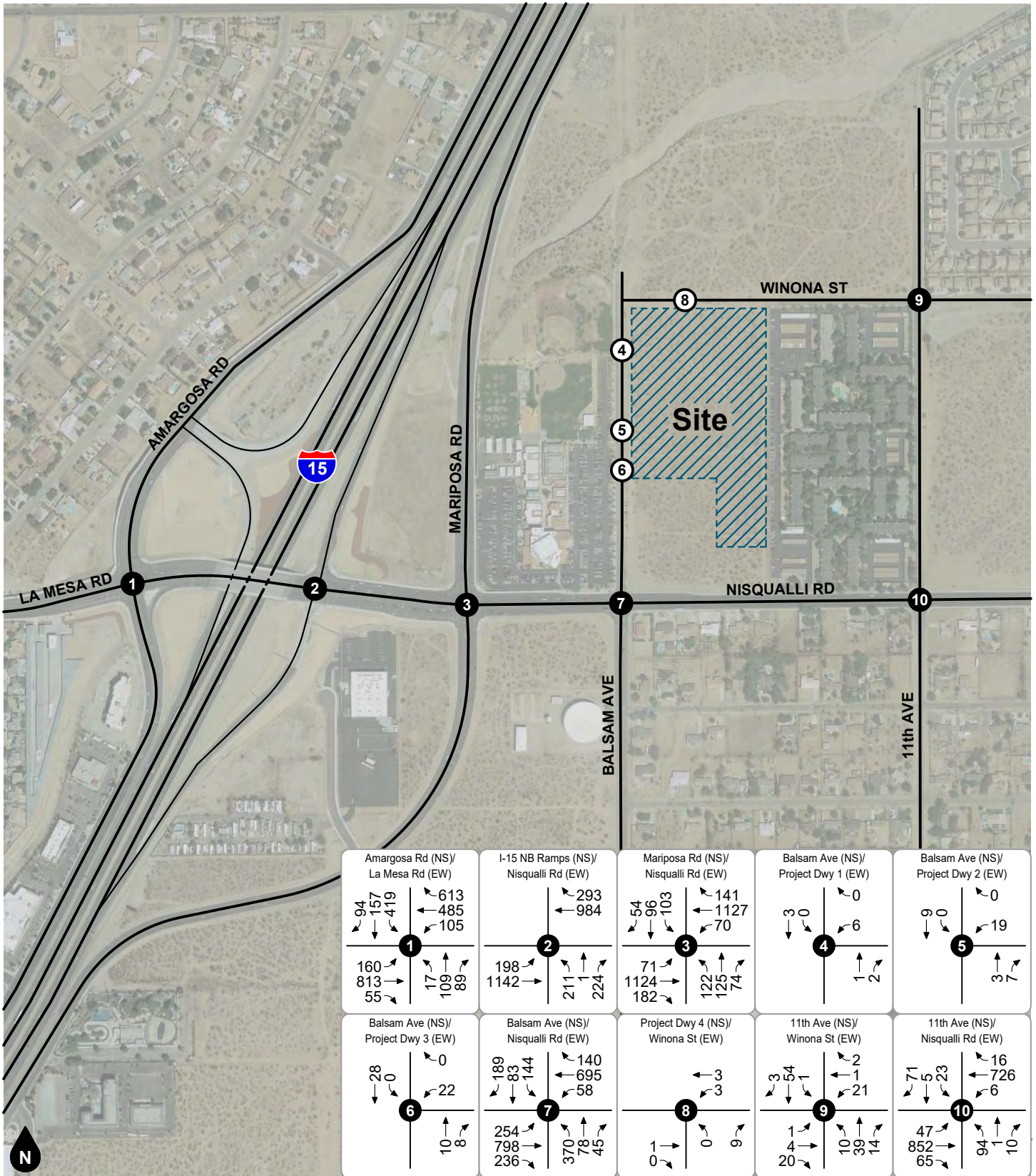
- # Study Intersection
- # Project Driveway

Figure 28
Future Year (2032) Without Project
PM Peak Hour Intersection Turning Movement Volumes



Legend
 ●## Vehicles Per Day (1,000's)

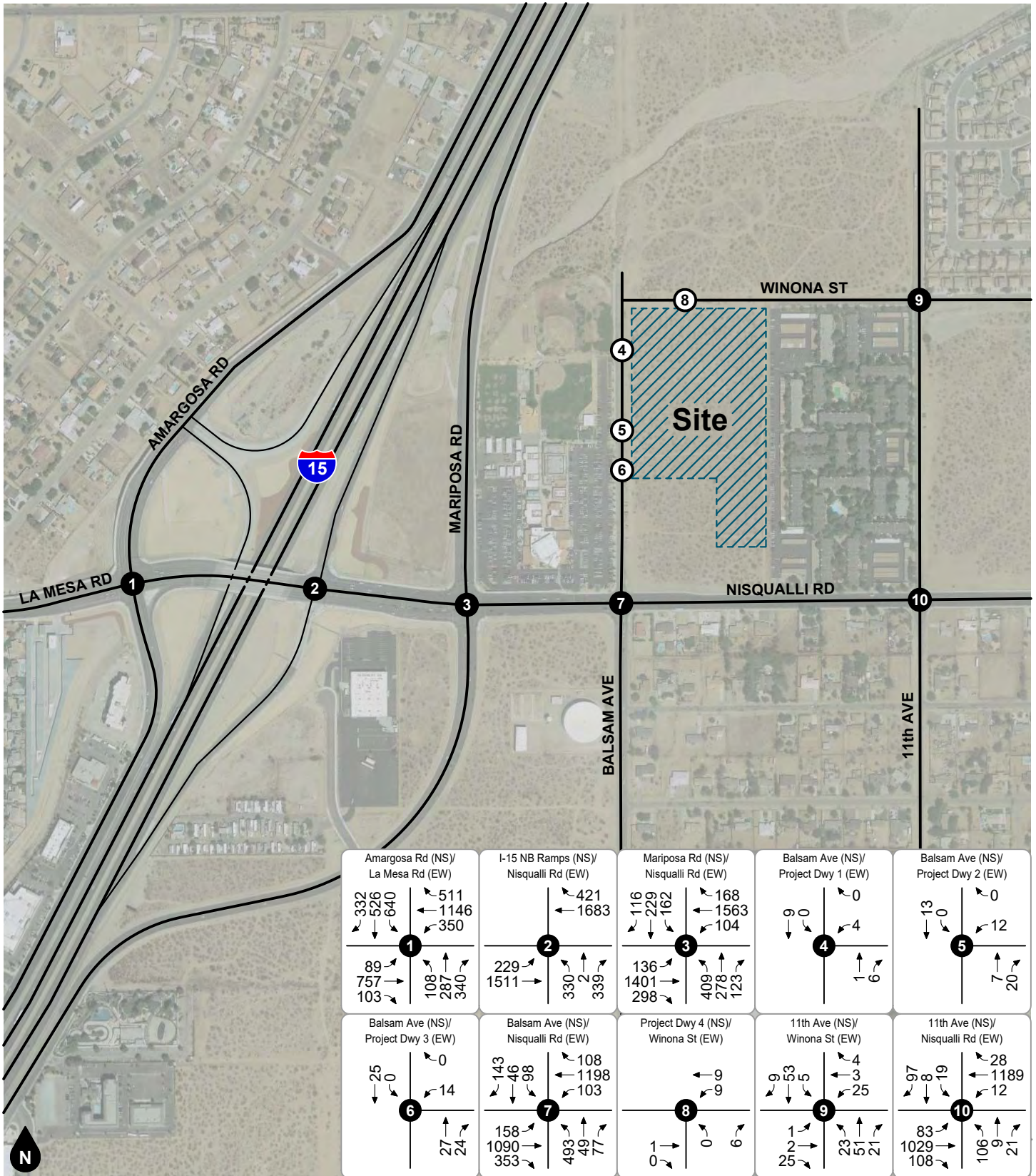
Figure 29
 Future Year (2032) With Project Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 30
Future Year (2032) With Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 31
Future Year (2032) With Project
PM Peak Hour Intersection Turning Movement Volumes

6. FUTURE OPERATIONAL ANALYSIS

Detailed intersection Level of Service calculation worksheets for each of the following analysis scenarios are provided in Appendix D.

OPENING YEAR (2022) WITHOUT PROJECT

The intersection Levels of Service for Opening Year (2022) Without Project conditions are shown in Table 4. As shown in Table 4, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2022) Without Project conditions.

OPENING YEAR (2022) WITH PROJECT

The intersection Levels of Service for Opening Year (2022) With Project conditions are shown in Table 5. As shown in Table 5, the study intersections are projected to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2022) With Project conditions; therefore, no improvements relating to Levels of Service are necessary.

FUTURE YEAR (2032) WITHOUT PROJECT

The intersection Levels of Service for Future Year (2032) Without Project conditions are shown in Table 6. As shown in Table 6, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Future Year (2032) Without Project conditions.

FUTURE YEAR (2032) WITH PROJECT

The intersection Levels of Service for Future Year (2032) With Project conditions are shown in Table 7. As shown in Table 7, the study intersections are projected to operate within acceptable Levels of Service (D or better) during the peak hours for Future Year (2032) With Project conditions; therefore, no improvements relating to Levels of Service are necessary.

Table 4
Opening Year (2022) Without Project Intersection Levels of Service

Study Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
		Delay ²	LOS ³	Delay ²	LOS ³
1. Amargosa Rd at La Mesa Rd	TS	27.4	C	34.7	C
2. I-15 NB Ramps at Nisqualli Rd	TS	17.4	B	16.7	B
3. Mariposa Rd at Nisqualli Rd	TS	23.5	C	28.4	C
7. Balsam Ave at Nisqualli Rd	TS	28.9	C	32.9	C
9. 11th Ave at Winona St	AWS	9.7	A	9.9	A
10. 11th Ave at Nisqualli Rd	TS	22.9	C	19.0	B

Notes:

- (1) TS = Traffic Signal; AWS = All Way Stop
- (2) Delay is shown in seconds/vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).
- (3) LOS = Level of Service

Table 5
Opening Year (2022) With Project Intersection Levels of Service

Study Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
		Delay ²	LOS ³	Delay ²	LOS ³
1. Amargosa Rd at La Mesa Rd	TS	27.6	C	35.2	D
2. I-15 NB Ramps at Nisqualli Rd	TS	17.3	B	17.2	B
3. Mariposa Rd at Nisqualli Rd	TS	23.5	C	28.6	C
4. Balsam Ave at Project Dwy 1	CSS	8.6	A	8.6	A
5. Balsam Ave at Project Dwy 2	CSS	8.7	A	8.7	A
6. Balsam Ave at Project Dwy 3	CSS	8.8	A	8.9	A
7. Balsam Ave at Nisqualli Rd	TS	29.3	C	34.4	C
8. Project Dwy 4 at Winona St	CSS	8.4	A	8.3	A
9. 11th Ave at Winona St	AWS	9.8	A	10.3	B
10. 11th Ave at Nisqualli Rd	TS	22.9	C	18.9	B

Notes:

- (1) TS = Traffic Signal; CSS = Cross Street Stop; AWS = All Way Stop
- (2) Delay is shown in seconds/vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).

**Table 6
Future Year (2032) Without Project Intersection Levels of Service**

Study Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
		Delay ²	LOS ³	Delay ²	LOS ³
1. Amargosa Rd at La Mesa Rd	TS	29.8	C	34.7	C
2. I-15 NB Ramps at Nisqualli Rd	TS	16.7	B	16.7	B
3. Mariposa Rd at Nisqualli Rd	TS	23.2	C	28.4	C
7. Balsam Ave at Nisqualli Rd	TS	30.1	C	32.9	C
9. 11th Ave at Winona St	AWS	9.8	A	9.9	A
10. 11th Ave at Nisqualli Rd	TS	22.3	C	19.0	B

Notes:

- (1) TS = Traffic Signal; AWS = All Way Stop
- (2) Delay is shown in seconds/vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).
- (3) LOS = Level of Service

**Table 7
Future Year (2032) With Project Intersection Levels of Service**

Study Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
		Delay ²	LOS ³	Delay ²	LOS ³
1. Amargosa Rd at La Mesa Rd	TS	30.0	C	35.2	D
2. I-15 NB Ramps at Nisqualli Rd	TS	16.6	B	17.2	B
3. Mariposa Rd at Nisqualli Rd	TS	23.3	C	28.6	C
4. Balsam Ave at Project Dwy 1	CSS	8.6	A	8.6	A
5. Balsam Ave at Project Dwy 2	CSS	8.7	A	8.7	A
6. Balsam Ave at Project Dwy 3	CSS	8.8	A	8.9	A
7. Balsam Ave at Nisqualli Rd	TS	30.4	C	34.4	C
8. Project Dwy 4 at Winona St	CSS	8.4	A	8.3	A
9. 11th Ave at Winona St	AWS	9.9	A	10.3	B
10. 11th Ave at Nisqualli Rd	TS	22.3	C	18.9	B

Notes:

- (1) TS = Traffic Signal; CSS = Cross Street Stop; AWS = All Way Stop
- (2) Delay is shown in seconds/vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).
- (3) LOS = Level of Service

7. SITE ACCESS AND CIRCULATION

This section includes a description of project improvements necessary to provide site access and an evaluation of site access and circulation.

PROJECT DESIGN FEATURES

This analysis assumes the following improvements will be constructed by the project as project design features to provide project site access:

- Construct Balsam Avenue (EW) at Project Driveway 1 (NS) to provide one inbound lane and one outbound lane with westbound stop-control and the following lane configurations:
 - Northbound: one shared through/right turn lane
 - Southbound: one shared left/through lane
 - Westbound: one shared left/right turn lane
- Construct Balsam Avenue (EW) at Project Driveway 2 (NS) to provide one inbound lane and one outbound lane with westbound stop-control and the following lane configurations:
 - Northbound: one shared through/right turn lane
 - Southbound: one shared left/through lane
 - Westbound: one shared left/right turn lane
- Construct Balsam Avenue (EW) at Project Driveway 3 (NS) to provide one inbound lane and one outbound lane with westbound stop-control and the following lane configurations:
 - Northbound: one shared through/right turn lane
 - Southbound: one shared left/through lane
 - Westbound: one shared left/right turn lane
- Construct Project Driveway 4 (EW) at Winona Street (NS) to provide one inbound lane and one outbound lane with northbound stop-control and the following lane configurations:
 - Northbound: one shared left/right turn lane
 - Eastbound: one shared through/right turn lane
 - Westbound: one shared left/through lane

This analysis also assumes the project shall comply with the following conditions as part of the City of Victorville standard development review process:

- A construction work site traffic control plan shall comply with State standards set forth in the California Manual of Uniform Traffic Control Devices and shall be submitted to the City for review and approval prior to the issuance of a grading permit or start of construction. The plan shall identify any roadway, sidewalk, bike route, or bus stop closures and detours as well as haul routes and hours of operation. All construction related trips shall be restricted to off-peak hours to the extent possible.
- All on-site and off-site roadway design, traffic signing and striping, and traffic control improvements relating to the proposed project shall be constructed in accordance with applicable State/Federal engineering standards and to the satisfaction of the City of Victorville.

- Site-adjacent roadways shall be constructed or repaired at their ultimate half-section width, including landscaping and parkway improvements in conjunction with development, or as otherwise required by the City of Victorville.
- Adequate off-street parking shall be provided to the satisfaction of City of Victorville.
- Adequate emergency vehicle access shall be provided to the satisfaction of the Victorville Fire Department.
- The final grading, landscaping, and street improvement plans shall demonstrate that sight distance requirements are met in accordance with applicable City of Victorville/California Department of Transportation sight distance standards.

8. VEHICLES MILES TRAVELED

BACKGROUND

California Senate Bill 743 (SB 743) directed the State Office of Planning and Research (OPR) to amend the California Environmental Quality Act (CEQA) Guidelines for evaluating transportation impacts to provide alternatives to Level of Service that “promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.” In December 2018, the California Natural Resources Agency certified and adopted the updated CEQA Guidelines package. The amended CEQA Guidelines, specifically Section 15064.3, recommend the use of Vehicle Miles Travelled (VMT) as the primary metric for the evaluation of transportation impacts associated with land use and transportation projects. In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. All agencies and projects State-wide are required to utilize the updated CEQA guidelines recommending use of VMT for evaluating transportation impacts as of July 1, 2020.

The updated CEQA Guidelines allow for lead agency discretion in establishing methodologies and thresholds provided there is substantial evidence to demonstrate that the established procedures promote the intended goals of the legislation. Where quantitative models or methods are unavailable, Section 15064.3 allows agencies to assess VMT qualitatively using factors such as availability of transit and proximity to other destinations. The Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (State of California, December 2018) [“OPR Technical Advisory”] provides technical considerations regarding methodologies and thresholds with a focus on office, residential, and retail developments as these projects tend to have the greatest influence on VMT.

SCREENING ASSESSMENT

Resolution No. 20-010, as adopted by the City of Victorville on June 16, 2020, establishes VMT thresholds of significance for analyzing transportation impacts under CEQA. Exhibit 1 of this resolution also provides screening criteria that exempts certain types of projects from performing a detailed VMT analysis for which a less than significant impact may be presumed based on the negligible or VMT-reducing effect of the project. The screening criteria includes a daily vehicle trip threshold for projects that result in a net increase of 1,285 or less weekday daily trips.

The proposed project is forecast to result in a net increase of 1,153 weekday daily trips. Since the net project trip generation forecast is less than 1,285 daily weekday trips, the proposed project satisfies the daily vehicle trip threshold screening criteria established by the City of Victorville and may be presumed to result in a less than significant VMT impact.

9. CONCLUSIONS

This section summarizes the findings from the previous sections of this report.

PROJECT TRIPS

The proposed project is forecast to generate 1,153 daily trips, including 76 trips during the AM peak hour and 76 trips during the PM peak hour.

LEVELS OF SERVICE

The study intersections are forecast to continue operating within acceptable Levels of Service (D or better) during the peak hours for all analysis scenarios; therefore, no improvements relating to Levels of Service are necessary.

VMT ANALYSIS

Since the net project trip generation forecast is less than 1,285 daily weekday trips, the proposed project satisfies the daily vehicle trip threshold screening criteria established by the City of Victorville and may be presumed to result in a less than significant VMT impact.

APPENDICES

- Appendix A Glossary
- Appendix B Scoping Agreement
- Appendix C Volume Count Worksheets
- Appendix D Level of Service Worksheets

APPENDIX A

GLOSSARY

GLOSSARY OF TERMS

ACRONYMS

AC	Acres
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
DU	Dwelling Unit
ICU	Intersection Capacity Utilization
LOS	Level of Service
TSF	Thousand Square Feet
V/C	Volume/Capacity
VMT	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The average 24-hour volume for a stated period divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A point of constriction along a roadway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CONTROL DELAY: The component of delay, typically expressed in seconds per vehicle, resulting from the type of traffic control at an intersection. Control delay is measured by comparison with the uncontrolled condition; it includes delay incurred by slowing down, stopping/waiting, and speeding up.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CORNER SIGHT DISTANCE: The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic travelling at a given speed to radically alter their speed or trajectory. Corner sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 36 inches above the pavement in the center of the nearest approach lane.

CYCLE LENGTH: The time period in seconds required for a traffic signal to complete one full cycle of indications.

CUL-DE-SAC: A local street open at one end only and with special provisions for turning around.

DAILY CAPACITY: A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

PASSENGER CAR EQUIVALENT (PCE): A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

QUEUE: The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

QUEUE LENGTH: The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SHARED/RECIPROCAL PARKING AGREEMENT: A written binding document executed between property owners to provide a designated number of off-street parking stalls within a designated area to be available for specified businesses or land uses.

SIGHT DISTANCE: The continuous length of roadway visible to a driver or roadway user.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STACKING DISTANCE: The length of area available behind a service area, such as a traffic signal or gate, for vehicle queuing to occur.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through an intersection.

STOPPING SIGHT DISTANCE: The minimum distance required by the driver of a vehicle on the major roadway travelling at a given speed to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 6 inches above the pavement.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination (i.e., each trip has two trip-ends). A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

TURNING RADIUS: The circular arc formed by the smallest turning path radius of the front outside tire of a vehicle, such as that performed by a U-turn maneuver. This is based on the length and width of the wheel base as well as the steering mechanism of the vehicle.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B
SCOPING AGREEMENT



MEMORANDUM OF UNDERSTANDING

TO: Mr. Anwar Wagdy | CITY OF VICTORVILLE
Mr. Lee Logsdon | CITY OF VICTORVILLE

FROM: Bryan Crawford | GANDDINI GROUP, INC.

DATE: October 27, 2020

SUBJECT: Balsam at Winona Apartments Traffic Study Scope
19305

INTRODUCTION

The purpose of this scoping document is to outline the proposed traffic analysis parameters and assumptions for review/concurrence by City of Victorville staff.

PROJECT DESCRIPTION

Figure 1 shows the project location map. The project site is located at the southeast corner of the intersection of Balsam Avenue and the future extension of Winona Street in the City of Victorville.

The site plan is illustrated on Figure 2. The project site is currently vacant. The proposed project involves construction of 212 multifamily housing (mid-rise) dwelling units

The project proposes three full accesses to Balsam Road, and one full access to Winona Street.

PROJECT TRIP GENERATION & DISTRIBUTION

Table 1 shows the project trip generation based upon rates obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition, 2017). As shown in Table 1, the proposed project is forecast to generate approximately 1,153 daily trips, including 76 trips during the AM peak hour and 93 trips during the PM peak hour.

Figure 3 illustrates the forecast directional distribution patterns of project-generated trips.

STUDY AREA

The study area is proposed to consist of the following eight (8) study intersections:

Study Intersections

1. Amargosa Road (NS) at La Mesa Road/Nisqualli Road (EW)
2. I-15 Northbound Ramps (NS) at Nisqualli Road (EW)
3. Mariposa Road (NS) Nisqualli Road (EW)
4. Balsam Avenue (NS) at Project Driveway 1 (EW)

5. Balsam Avenue (NS) at Project Driveway 2 (EW)
6. Balsam Avenue (NS) at Project Driveway 3 (EW)
7. Balsam Avenue (NS) at Nisqualli Road (EW)
8. Project Driveway 4 (NS) at Winona Street (EW)
9. 11th Avenue (NS) at Winona Street (EW)
10. 11th Avenue (NS) at Nisqualli Road (EW)

TRAFFIC COUNTS

New intersection turning movement counts will be collected at the study intersections during the AM peak period (7:00 AM – 9:00 AM) and PM peak period (4:00 PM – 6:00 PM) on a typical weekday (Tuesday, Wednesday, or Thursday) when historical traffic counts are not available. Historical traffic counts will be acquired for all study intersections where available. These historical traffic counts will be adjusted with a growth rate for 2020 traffic conditions. Intersections without historical traffic count data will be manually adjusted based on the traffic volumes at nearby intersections with historical data to forecast pre-pandemic traffic conditions. This COVID adjustment rate will be approved by City of Victorville staff.

ANALYSIS SCENARIOS

The traffic study shall evaluate the following analysis scenarios for weekday AM and PM peak hour conditions:

- Existing
- Opening Year (2022) Without Project
- Opening Year (2022) With Project
- Future Year (2032) Without Project
- Future Year (2032) With Project

ANALYSIS METHODOLOGY

To assess the performance of an intersection, the City of Victorville uses the intersection delay method based on procedures contained in the [Highway Capacity Manual](#) (Transportation Research Board, 6th Edition). The methodology considers the traffic volume and distribution of movements, traffic composition, geometric characteristics, and signalization details to calculate the average control delay per vehicle and corresponding Level of Service (LOS). Control delay is defined as the portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign) and includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay. The intersection control delay is then correlated to Level of Service based on the following thresholds:

Level of Service	Intersection Control Delay (Seconds / Vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0

F	> 80.0	> 50.0
---	--------	--------

Source: Transportation Research Board, Highway Capacity Manual (6th Edition).

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). At intersections with traffic signal or all way stop control, Level of Service is determined by the average control delay for the overall intersection. At intersections with cross street stop control (i.e., one- or two-way stop control), Level of Service is determined by the average control delay for the worst individual movement (or movements sharing a single lane).

Intersection Level of Service analysis shall be performed using the Vistro software.

PERFORMANCE STANDARDS

City of Victorville

The City of Victorville has established LOS D or better as acceptable LOS for all intersections along the designated street and highway system in the City's General Plan Circulation Element.

Caltrans

As stated in the Guide for the Preparation of Traffic Impact Studies (State of California, 2002), "California Department of Transportation endeavors to maintain a target LOS [Level of Service] at the transition between LOS "C" and LOS "D" on State highway facilities". The California Department of Transportation acknowledges this may not always be feasible and recommends consultation with the California Department of Transportation to determine the appropriate target Level of Service. For consistency with local requirements, this analysis defines Level of Service C as the minimum acceptable Level of Service for State Highway facilities.

OPERATIONAL THRESHOLDS

City of Victorville

City of Victorville intersection deficiencies would occur under the following conditions:

- If the project contributes measurable traffic to an intersection or roadway segment operating at LOS D or better or a volume-to-capacity ratio of 0.95 or lower for without project conditions, and the addition of project trips causes intersection LOS to degrade to LOS E or worse, or volume-to-capacity ratio to increase it greater than 0.95.
- If a project contributes measurable traffic to an intersection or roadway segment operating at a deficient LOS (LOS E or F) for without project conditions.

Caltrans

Based on the Caltrans-established performance standards, a potentially significant traffic impact is defined to occur if the addition of project generated trips is forecast to cause the performance of a State Highway study intersection to change from acceptable Level of Service (C or better) to unacceptable Level of Service (D, E, or F).

FORECASTING METHODOLOGY

To account for ambient growth, existing roadway volumes shall be increased by a growth rate of 2 percent (2%) per year over a two-year period for Opening Year (2022) conditions and a twelve-year period for Future Year (2032) conditions. .

In addition, a list of pending and approved other development projects shall be requested from the Cities of Victorville and Hesperia. Trip forecasts for other development projects within the project study area shall be determined based on the Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition, 2017 and will be added to existing roadway volumes for the applicable analysis scenarios.

CONGESTION MANAGEMENT PROGRAM (CMP) ANALYSIS

State highway and CMP analysis guidelines are prescribed in Appendix B of the County of San Bernardino Congestion Management Program (2016 Update) (CMP), which state that a California Department of Transportation (Caltrans) or CMP analysis is required if the project is expected to contribute:

- 100 or more peak hour trips (two-way) to a freeway facility; or
- 50 or more peak hour trips to a CMP facility within another jurisdiction.

No CMP or Caltrans analysis is required if the project generates fewer than 100 peak hour trips.

Since the project generates fewer than 100 peak hour trips and is not forecast to contribute 50 or more peak hour trips to a CMP facility, no further State highway or CMP analysis is required for the project.

VEHICLES MILES TRAVELED (VMT) ANALYSIS

California Senate Bill 743 (SB 743) directs the State Office of Planning and Research (OPR) to amend the California Environmental Quality Act (CEQA) Guidelines for evaluating transportation impacts to provide alternatives to Level of Service that “promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.” In December 2018, the California Natural Resources Agency certified and adopted the updated CEQA Guidelines package. The amended CEQA Guidelines, specifically Section 15064.3, recommend the use of Vehicle Miles Travelled (VMT) as the primary metric for the evaluation of transportation impacts associated with land use and transportation projects. In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. Agencies may currently opt-in to applying the updated CEQA guidelines for VMT analysis and implementation is required State-wide by July 1, 2020.

The updated CEQA Guidelines allow for lead agency discretion in establishing methodologies and thresholds provided there is substantial evidence to demonstrate that the established procedures promote the intended goals of the legislation. Where quantitative models or methods are unavailable, Section 15064.3 allows agencies to assess VMT qualitatively using factors such as availability of transit and proximity to other destinations. The Technical Advisory on Evaluating Transportation Impacts in CEQA (State of California, December 2018) [Technical Advisory] provides technical considerations regarding methodologies and thresholds with a focus on office, residential, and retail developments as these projects tend to have the greatest influence on VMT.

The June 16, 2020 City Council meeting adopted Resolution No. 20-010 which provided guidelines for VMT thresholds of significance for analyzing traffic impacts under CEQA. Exhibit 1 of this resolution provides project screening criteria which exempts projects from conducting a detailed VMT analysis. The project

screening includes a daily vehicle limit threshold whereas a project that results in a net increase of 1,285 or less weekday daily trips (using the latest edition of the ITE Trip generation Manual) is screened out and not required to conduct a VMT analysis.

The proposed project will result in a net increase of 1,153 weekday daily trips. Since this is less than the 1,285 weekday daily trip threshold, the proposed project is screened out and exempt from a VMT analysis.

CONCLUSION

We appreciate the opportunity to provide this scoping document for your review. Should you have any questions or comments regarding the proposed scope, please contact Bryan Crawford at (714) 795-3100 x 104.

**Table 1
Project Trip Generation**

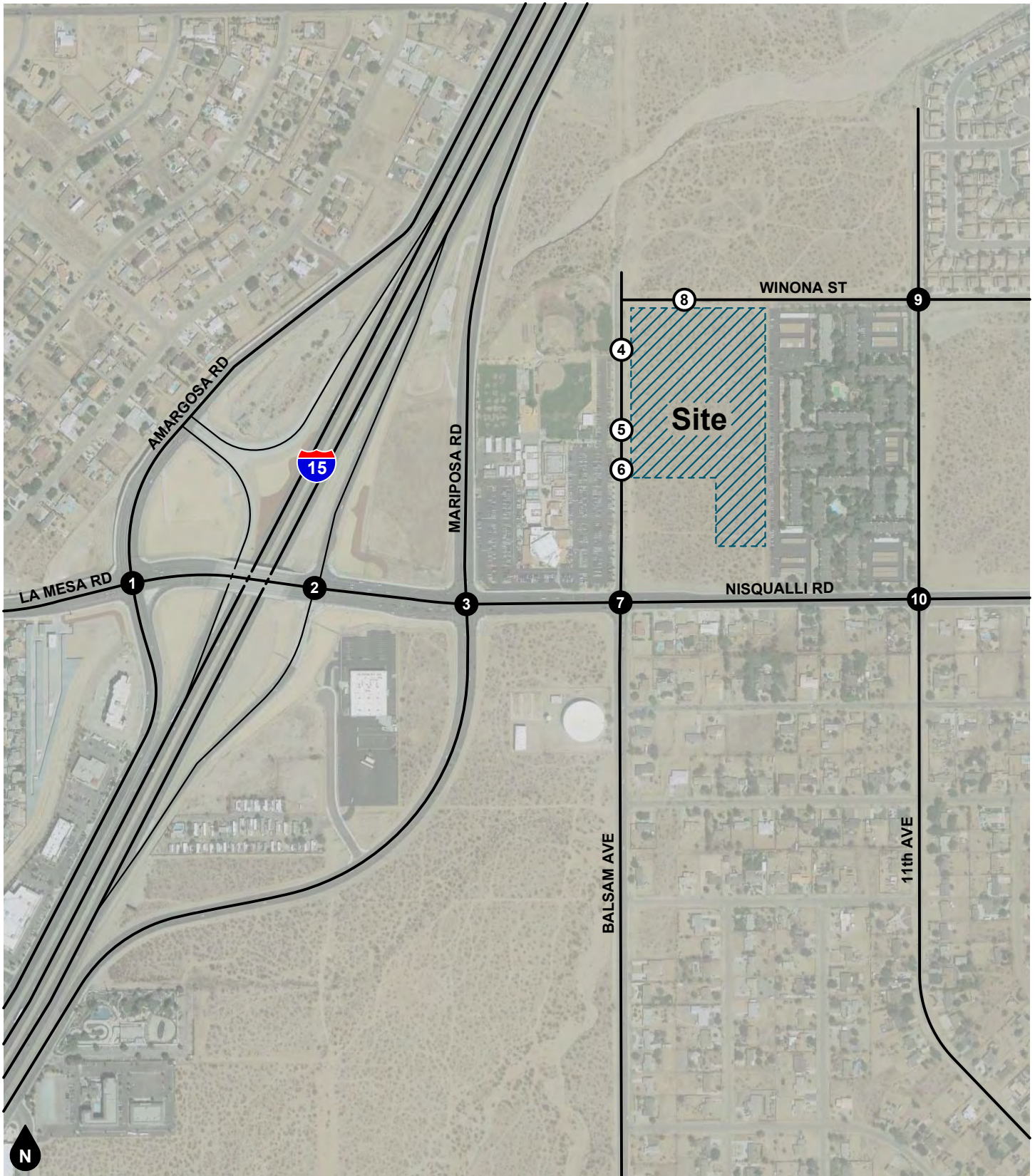
Trip Generation Rates									
Land Use	Source ¹	Unit ²	AM Peak Hour			PM Peak Hour			Daily Rate
			% In	% Out	Rate	% In	% Out	Rate	
Multifamily Housing (Mid-Rise)	ITE 221	DU	26%	74%	0.36	61%	39%	0.44	5.44

Trips Generated									
Land Use	Quantity	Unit ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Balsam at Winona Apartments	212	DU	20	56	76	57	36	93	1,153
Net New Trips Generated			20	56	76	57	36	93	1,153

Notes:

(1) ITE = Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017; ### = Land Use Code

(2) DU = Dwelling Units

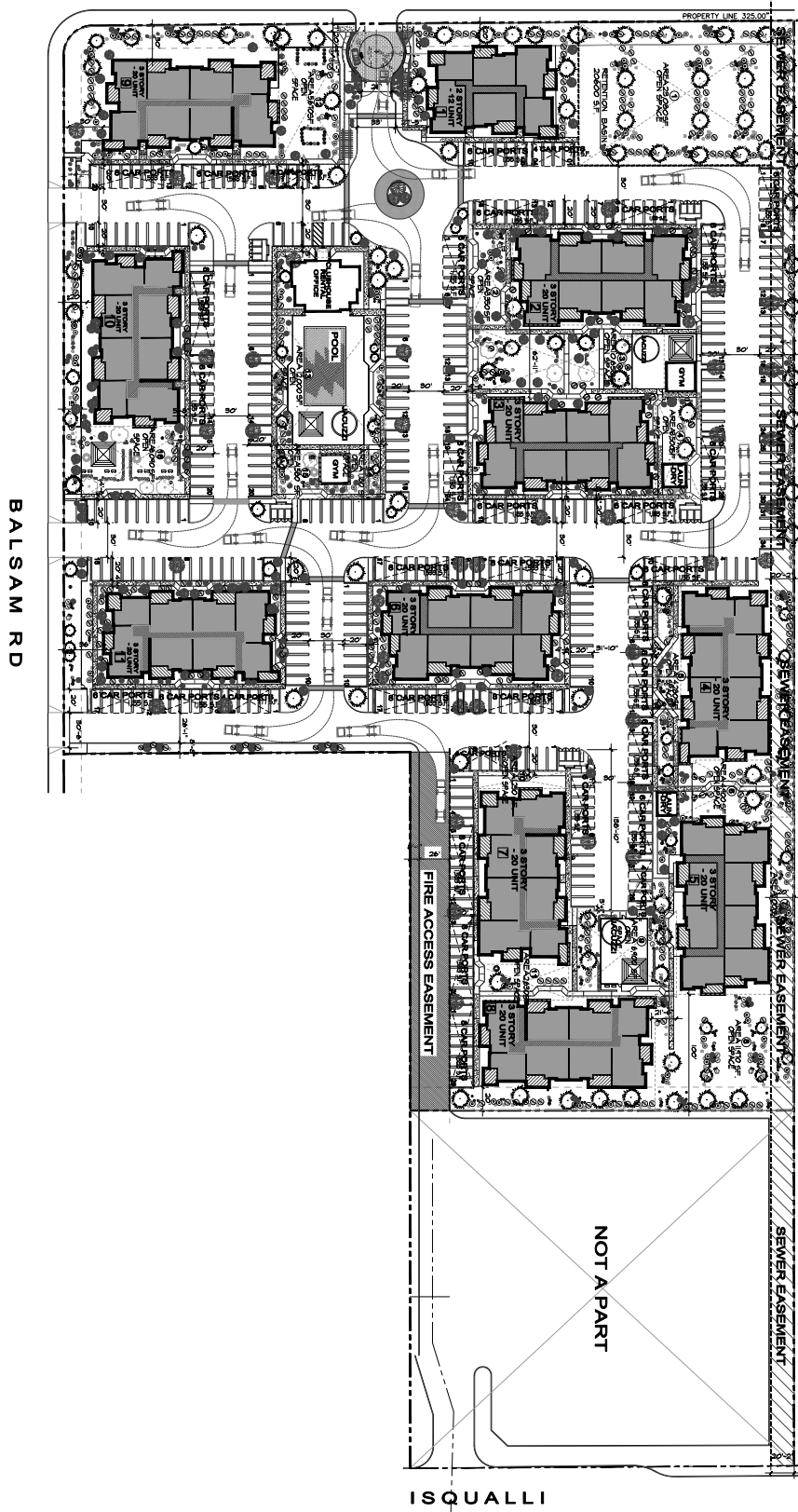


Legend

- # Study Intersection
- # Project Driveway

Figure 1
Project Location Map

WINONA



BALSAM RD

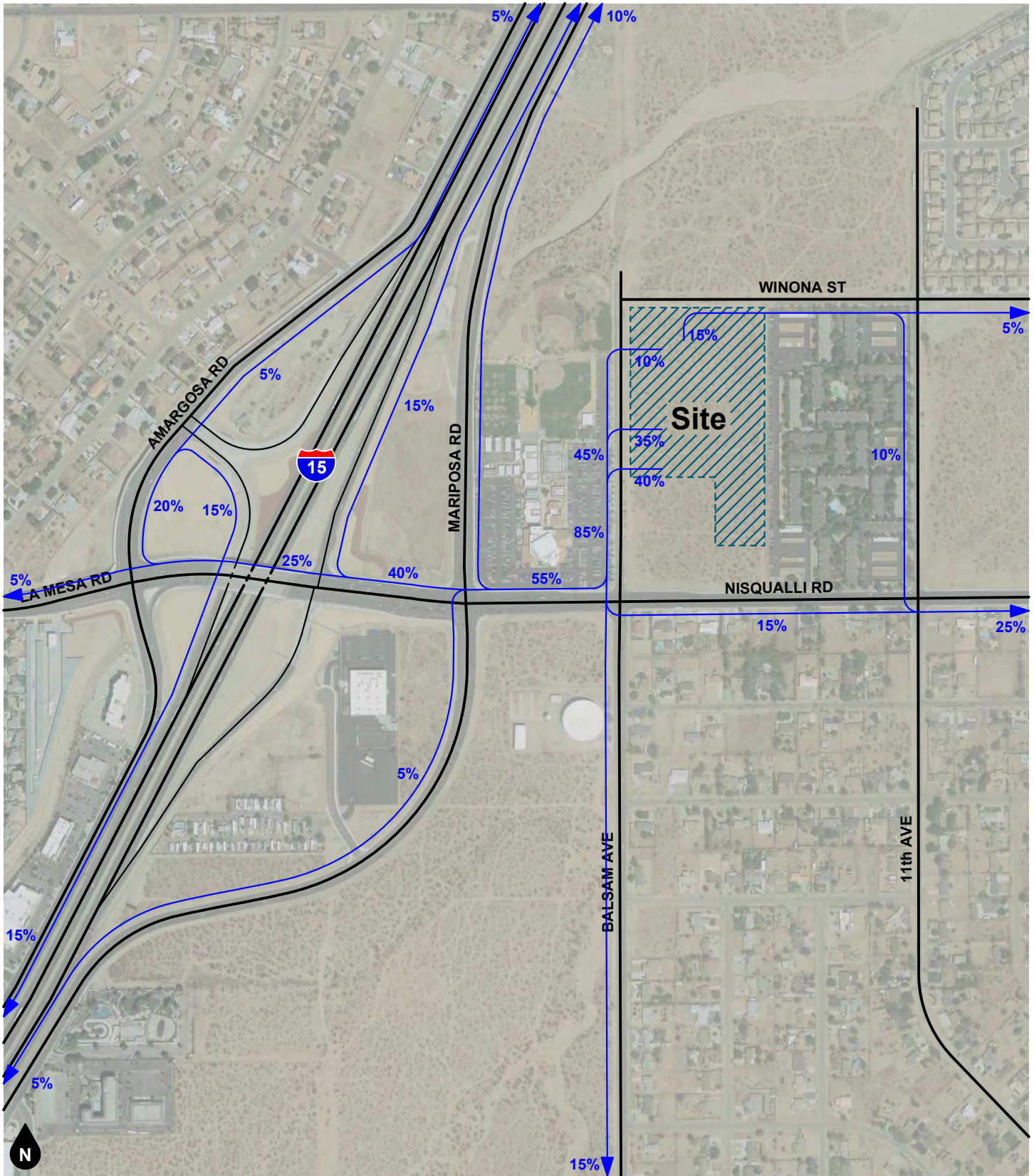
PROPERTY LINE 225.00'

ISQUALLI

NOT A PART

Figure 2
Site Plan





Legend
 ← 10% Percent To/From Project

Figure 3
Project Trip Distribution



Bryan Crawford <bryandavidcrawford@gmail.com>

Balsam at Winona Apartments MOU for traffic study

9 messages

Bryan Crawford <bryan@ganddini.com>

Wed, Oct 21, 2020 at 3:55 PM

To: awagdy@victorvilleca.gov, llogsdon@victorvilleca.gov

Gentlemen,

Attached is the MOU for a traffic study for the Balsam at Winona Apartments project in the City. The VMT section is based on the adopted resolution from a June 2020 City Council hearing and the LOS analysis is based upon the 2004 TIA guidelines. Can you send the new City VMT/LOS guidelines for traffic studies for use in this and future studies?

Please review and let me know if you have any questions/comments and/or revisions to be made to the MOU. Also, does the City have any historical data for the study area intersections? Thank you and please let me know if you'd like to set up a phone call to discuss the MOU in further detail including how we have been handling traffic counts during Covid (basically applying growth rates to historical counts when available and/or getting new counts and comparing them to a historical count to determine a growth rate to apply to intersections where historical data is not available).

--

Kind Regards,

Bryan Crawford

Senior Transportation Planner

GANDDINI GROUP, INC.

550 Parkcenter Drive, Suite 202

Santa Ana, CA 92705

o. 714 795 3100 x 104

c. 714 376 0224

www.ganddini.com**Balsam at Winona Apartments MOU -10-21-20.pdf**

2115K

Anwar Wagdy <awagdy@victorvilleca.gov>

Mon, Oct 26, 2020 at 1:19 PM

To: Bryan Crawford <bryan@ganddini.com>

Cc: Fredy Bonilla <fbonilla@victorvilleca.gov>

Hi Bryan,

Thanks for submitting the TIA scoping details.

Please add the following:

- The two intersections of 11th Ave/ Nisqualli and 11th Ave/Winona.
- Future year 2032 scenarios using 2% annual growth rate.

Please include ambient growth, especially from pending and approved projects around the study area.

Also, we need to approve the COVID adjustment growth rate. If you are using Counts Unlimited, they are currently conducting several counts to compare with pre-Covid condition.

Thanks,



From: Bryan Crawford <bryan@ganddini.com>
Sent: Wednesday, October 21, 2020 1:56 PM
To: Anwar Wagdy <awagdy@victorvilleca.gov>; Lee Logsdon <llogsdon@victorvilleca.gov>
Subject: Balsam at Winona Apartments MOU for traffic study

[EXTERNAL EMAIL]: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

[Quoted text hidden]

Bryan Crawford <bryan@ganddini.com>
To: Brandon Alvarado <brandon@ganddini.com>

Mon, Oct 26, 2020 at 1:34 PM

[Quoted text hidden]

Bryan Crawford <bryan@ganddini.com>
To: Anwar Wagdy <awagdy@victorvilleca.gov>
Cc: Fredy Bonilla <fbonilla@victorvilleca.gov>

Tue, Oct 27, 2020 at 11:43 AM

Anwar,

Attached is the updated scoping agreements based on your comments. I'm going to contact Counts Unlimited about the traffic counts they are currently conducting.

[Quoted text hidden]

 **Balsam at Winona Apartments MOU -10-27-20.pdf**
2108K

Anwar Wagdy <awagdy@victorvilleca.gov>
To: Bryan Crawford <bryan@ganddini.com>
Cc: Fredy Bonilla <fbonilla@victorvilleca.gov>

Tue, Oct 27, 2020 at 2:42 PM



Bryan Crawford <bryandavidcrawford@gmail.com>

Balsam at Winona Apartments MOU for traffic study

Anwar Wagdy <awagdy@victorvilleca.gov>
To: Bryan Crawford <bryan@ganddini.com>
Cc: Fredy Bonilla <fbonilla@victorvilleca.gov>

Tue, Oct 27, 2020 at 2:42 PM

Thanks for the revision. The scope is OK to proceed.

Anwar

[Quoted text hidden]

APPENDIX C
VOLUME COUNT WORKSHEETS

City of Victorville
 N/S: Amargosa Road
 E/W: La Mesa Road/Nisqualli Road
 Weather: Clear

File Name : 01_VIC_Amargosa_Nisqualli AM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 1

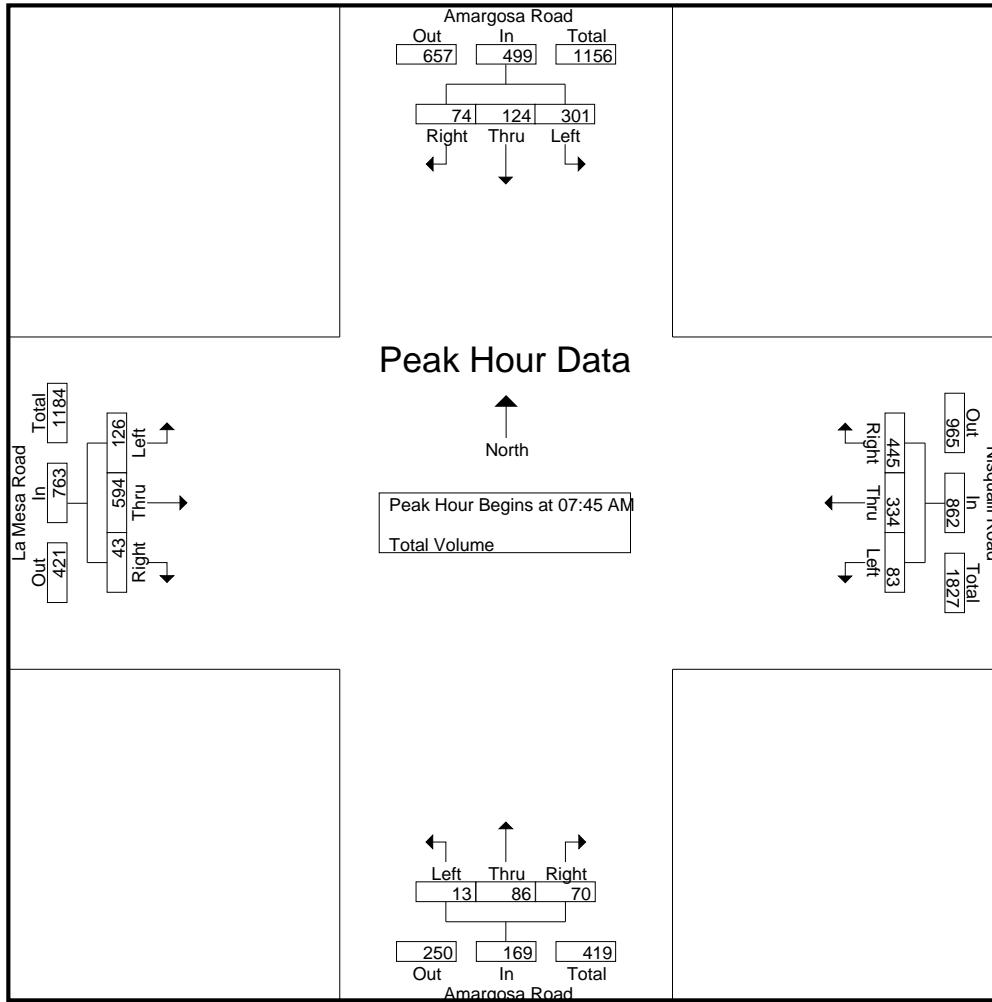
Groups Printed- Total Volume

Start Time	Amargosa Road Southbound				Nisqualli Road Westbound				Amargosa Road Northbound				La Mesa Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	29	7	17	53	8	46	108	162	1	12	13	26	28	128	3	159	400
07:15 AM	59	12	18	89	8	62	88	158	2	19	8	29	27	141	1	169	445
07:30 AM	68	16	20	104	25	80	107	212	7	21	10	38	26	186	6	218	572
07:45 AM	75	25	16	116	28	105	138	271	0	25	17	42	34	214	10	258	687
Total	231	60	71	362	69	293	441	803	10	77	48	135	115	669	20	804	2104
08:00 AM	73	25	28	126	14	83	94	191	4	13	12	29	41	114	15	170	516
08:15 AM	72	34	17	123	15	61	102	178	2	21	16	39	24	133	12	169	509
08:30 AM	81	40	13	134	26	85	111	222	7	27	25	59	27	133	6	166	581
08:45 AM	82	42	14	138	27	86	91	204	6	19	19	44	19	178	16	213	599
Total	308	141	72	521	82	315	398	795	19	80	72	171	111	558	49	718	2205
Grand Total	539	201	143	883	151	608	839	1598	29	157	120	306	226	1227	69	1522	4309
Apprch %	61	22.8	16.2		9.4	38	52.5		9.5	51.3	39.2		14.8	80.6	4.5		
Total %	12.5	4.7	3.3	20.5	3.5	14.1	19.5	37.1	0.7	3.6	2.8	7.1	5.2	28.5	1.6	35.3	

Start Time	Amargosa Road Southbound				Nisqualli Road Westbound				Amargosa Road Northbound				La Mesa Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	75	25	16	116	28	105	138	271	0	25	17	42	34	214	10	258	687
08:00 AM	73	25	28	126	14	83	94	191	4	13	12	29	41	114	15	170	516
08:15 AM	72	34	17	123	15	61	102	178	2	21	16	39	24	133	12	169	509
08:30 AM	81	40	13	134	26	85	111	222	7	27	25	59	27	133	6	166	581
Total Volume	301	124	74	499	83	334	445	862	13	86	70	169	126	594	43	763	2293
% App. Total	60.3	24.8	14.8		9.6	38.7	51.6		7.7	50.9	41.4		16.5	77.9	5.6		
PHF	.929	.775	.661	.931	.741	.795	.806	.795	.464	.796	.700	.716	.768	.694	.717	.739	.834

City of Victorville
 N/S: Amargosa Road
 E/W: La Mesa Road/Nisqualli Road
 Weather: Clear

File Name : 01_VIC_Amargosa_Nisqualli AM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	08:00 AM				07:45 AM				08:00 AM				07:15 AM			
+0 mins.	73	25	28	126	28	105	138	271	4	13	12	29	27	141	1	169
+15 mins.	72	34	17	123	14	83	94	191	2	21	16	39	26	186	6	218
+30 mins.	81	40	13	134	15	61	102	178	7	27	25	59	34	214	10	258
+45 mins.	82	42	14	138	26	85	111	222	6	19	19	44	41	114	15	170
Total Volume	308	141	72	521	83	334	445	862	19	80	72	171	128	655	32	815
% App. Total	59.1	27.1	13.8		9.6	38.7	51.6		11.1	46.8	42.1		15.7	80.4	3.9	
PHF	.939	.839	.643	.944	.741	.795	.806	.795	.679	.741	.720	.725	.780	.765	.533	.790

City of Victorville
 N/S: Amargosa Road
 E/W: La Mesa Road/Nisqualli Road
 Weather: Clear

File Name : 01_VIC_Amargosa_Nisqualli PM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 1

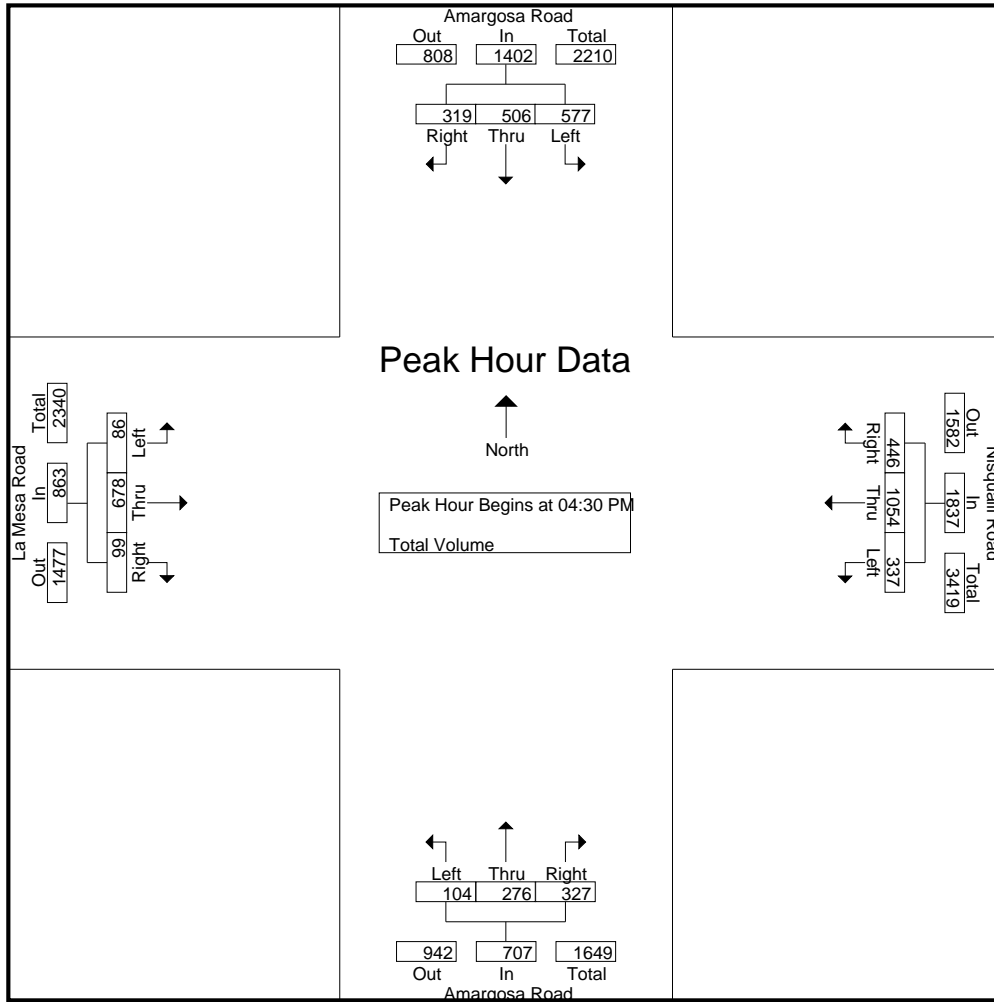
Groups Printed- Total Volume

Start Time	Amargosa Road Southbound				Nisqualli Road Westbound				Amargosa Road Northbound				La Mesa Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	125	144	64	333	64	226	120	410	26	76	83	185	32	177	22	231	1159
04:15 PM	117	109	68	294	90	240	94	424	19	62	67	148	35	149	31	215	1081
04:30 PM	131	129	79	339	84	243	106	433	24	64	81	169	16	183	22	221	1162
04:45 PM	153	125	69	347	92	265	103	460	23	78	78	179	25	156	27	208	1194
Total	526	507	280	1313	330	974	423	1727	92	280	309	681	108	665	102	875	4596
05:00 PM	133	125	86	344	82	281	122	485	22	56	93	171	28	177	18	223	1223
05:15 PM	160	127	85	372	79	265	115	459	35	78	75	188	17	162	32	211	1230
05:30 PM	113	116	54	283	66	299	100	465	34	67	73	174	28	171	27	226	1148
05:45 PM	125	109	44	278	78	253	88	419	21	60	65	146	25	133	24	182	1025
Total	531	477	269	1277	305	1098	425	1828	112	261	306	679	98	643	101	842	4626
Grand Total	1057	984	549	2590	635	2072	848	3555	204	541	615	1360	206	1308	203	1717	9222
Apprch %	40.8	38	21.2		17.9	58.3	23.9		15	39.8	45.2		12	76.2	11.8		
Total %	11.5	10.7	6	28.1	6.9	22.5	9.2	38.5	2.2	5.9	6.7	14.7	2.2	14.2	2.2	18.6	

Start Time	Amargosa Road Southbound				Nisqualli Road Westbound				Amargosa Road Northbound				La Mesa Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	131	129	79	339	84	243	106	433	24	64	81	169	16	183	22	221	1162
04:45 PM	153	125	69	347	92	265	103	460	23	78	78	179	25	156	27	208	1194
05:00 PM	133	125	86	344	82	281	122	485	22	56	93	171	28	177	18	223	1223
05:15 PM	160	127	85	372	79	265	115	459	35	78	75	188	17	162	32	211	1230
Total Volume	577	506	319	1402	337	1054	446	1837	104	276	327	707	86	678	99	863	4809
% App. Total	41.2	36.1	22.8		18.3	57.4	24.3		14.7	39	46.3		10	78.6	11.5		
PHF	.902	.981	.927	.942	.916	.938	.914	.947	.743	.885	.879	.940	.768	.926	.773	.967	.977

City of Victorville
 N/S: Amargosa Road
 E/W: La Mesa Road/Nisqualli Road
 Weather: Clear

File Name : 01_VIC_Amargosa_Nisqualli PM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:30 PM				04:45 PM				04:45 PM				04:00 PM			
+0 mins.	131	129	79	339	92	265	103	460	23	78	78	179	32	177	22	231
+15 mins.	153	125	69	347	82	281	122	485	22	56	93	171	35	149	31	215
+30 mins.	133	125	86	344	79	265	115	459	35	78	75	188	16	183	22	221
+45 mins.	160	127	85	372	66	299	100	465	34	67	73	174	25	156	27	208
Total Volume	577	506	319	1402	319	1110	440	1869	114	279	319	712	108	665	102	875
% App. Total	41.2	36.1	22.8		17.1	59.4	23.5		16	39.2	44.8		12.3	76	11.7	
PHF	.902	.981	.927	.942	.867	.928	.902	.963	.814	.894	.858	.947	.771	.908	.823	.947

City of Victorville
 N/S: I-15 Northbound Ramps
 E/W: Nisqualli Road
 Weather: Clear

File Name : 02_VIC_15N_Nisqualli AM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 1

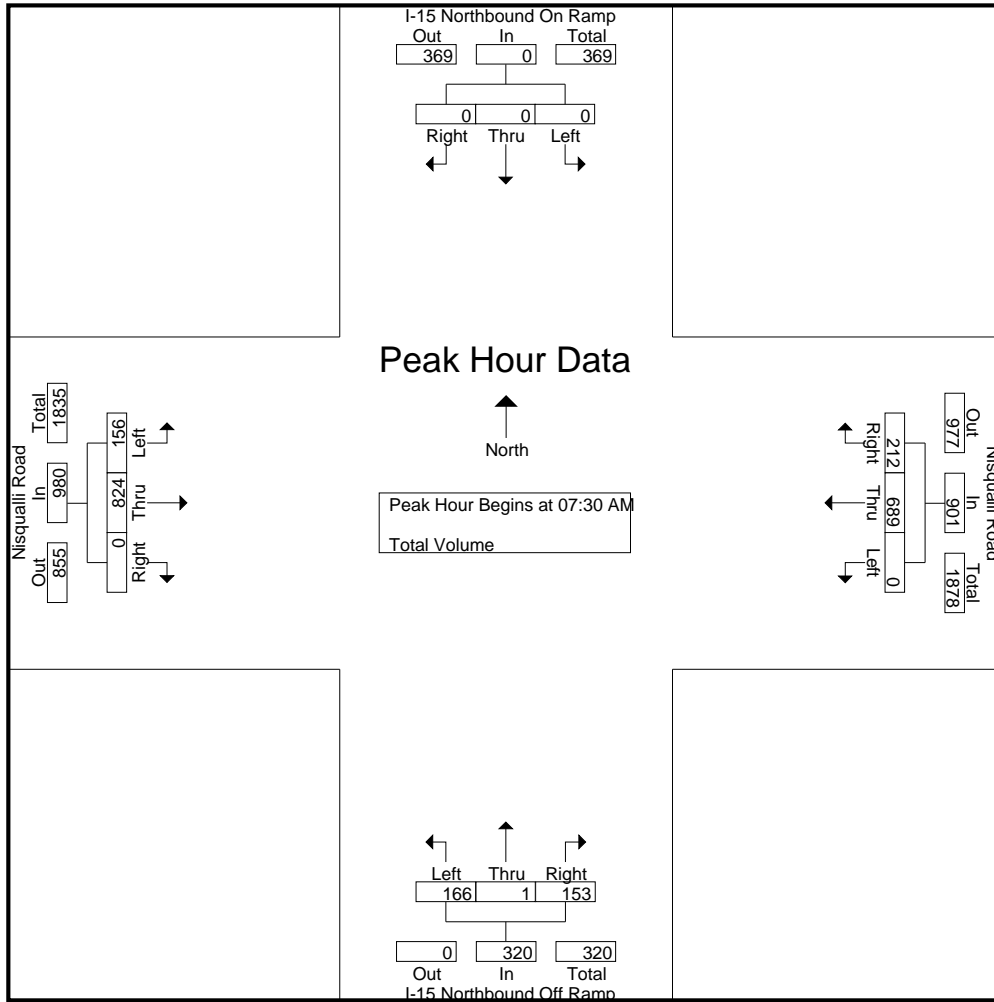
Groups Printed- Total Volume

Start Time	I-15 Northbound On Ramp Southbound				Nisqualli Road Westbound				I-15 Northbound Off Ramp Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	134	31	165	26	0	24	50	44	131	0	175	390
07:15 AM	0	0	0	0	0	153	50	203	30	0	37	67	32	189	0	221	491
07:30 AM	0	0	0	0	0	148	63	211	44	0	47	91	41	204	0	245	547
07:45 AM	0	0	0	0	0	236	59	295	48	1	46	95	52	263	0	315	705
Total	0	0	0	0	0	671	203	874	148	1	154	303	169	787	0	956	2133
08:00 AM	0	0	0	0	0	155	32	187	40	0	31	71	27	172	0	199	457
08:15 AM	0	0	0	0	0	150	58	208	34	0	29	63	36	185	0	221	492
08:30 AM	0	0	0	0	0	185	36	221	39	0	17	56	31	212	0	243	520
08:45 AM	0	0	0	0	0	171	39	210	40	1	24	65	53	226	0	279	554
Total	0	0	0	0	0	661	165	826	153	1	101	255	147	795	0	942	2023
Grand Total	0	0	0	0	0	1332	368	1700	301	2	255	558	316	1582	0	1898	4156
Apprch %	0	0	0		0	78.4	21.6		53.9	0.4	45.7		16.6	83.4	0		
Total %	0	0	0	0	0	32.1	8.9	40.9	7.2	0	6.1	13.4	7.6	38.1	0	45.7	

Start Time	I-15 Northbound On Ramp Southbound				Nisqualli Road Westbound				I-15 Northbound Off Ramp Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	148	63	211	44	0	47	91	41	204	0	245	547
07:45 AM	0	0	0	0	0	236	59	295	48	1	46	95	52	263	0	315	705
08:00 AM	0	0	0	0	0	155	32	187	40	0	31	71	27	172	0	199	457
08:15 AM	0	0	0	0	0	150	58	208	34	0	29	63	36	185	0	221	492
Total Volume	0	0	0	0	0	689	212	901	166	1	153	320	156	824	0	980	2201
% App. Total	0	0	0		0	76.5	23.5		51.9	0.3	47.8		15.9	84.1	0		
PHF	.000	.000	.000	.000	.000	.730	.841	.764	.865	.250	.814	.842	.750	.783	.000	.778	.780

City of Victorville
 N/S: I-15 Northbound Ramps
 E/W: Nisqualli Road
 Weather: Clear

File Name : 02_VIC_15N_Nisqualli AM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:45 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	236	59	295	30	0	37	67	32	189	0	221
+15 mins.	0	0	0	0	0	155	32	187	44	0	47	91	41	204	0	245
+30 mins.	0	0	0	0	0	150	58	208	48	1	46	95	52	263	0	315
+45 mins.	0	0	0	0	0	185	36	221	40	0	31	71	27	172	0	199
Total Volume	0	0	0	0	0	726	185	911	162	1	161	324	152	828	0	980
% App. Total	0	0	0	0	0	79.7	20.3		50	0.3	49.7		15.5	84.5	0	
PHF	.000	.000	.000	.000	.000	.769	.784	.772	.844	.250	.856	.853	.731	.787	.000	.778

City of Victorville
 N/S: I-15 Northbound Ramps
 E/W: Nisqualli Road
 Weather: Clear

File Name : 02_VIC_15N_Nisqualli PM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 1

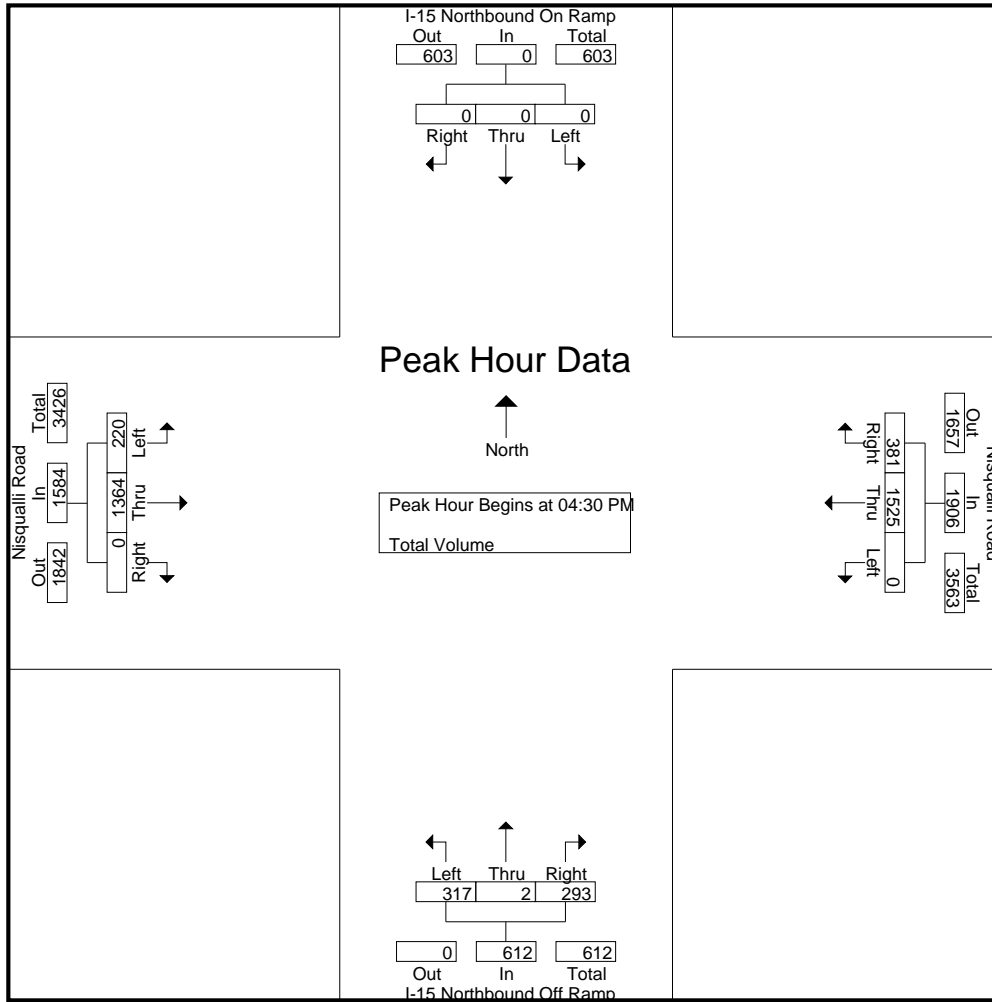
Groups Printed- Total Volume

Start Time	I-15 Northbound On Ramp Southbound				Nisqualli Road Westbound				I-15 Northbound Off Ramp Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	346	86	432	77	0	61	138	67	326	0	393	963
04:15 PM	0	0	0	0	0	325	85	410	94	0	98	192	47	295	0	342	944
04:30 PM	0	0	0	0	0	348	89	437	84	1	84	169	65	329	0	394	1000
04:45 PM	0	0	0	0	0	392	91	483	80	0	69	149	52	339	0	391	1023
Total	0	0	0	0	0	1411	351	1762	335	1	312	648	231	1289	0	1520	3930
05:00 PM	0	0	0	0	0	399	96	495	79	0	68	147	60	342	0	402	1044
05:15 PM	0	0	0	0	0	386	105	491	74	1	72	147	43	354	0	397	1035
05:30 PM	0	0	0	0	0	349	81	430	106	1	85	192	62	296	0	358	980
05:45 PM	0	0	0	0	0	342	57	399	86	1	74	161	54	278	0	332	892
Total	0	0	0	0	0	1476	339	1815	345	3	299	647	219	1270	0	1489	3951
Grand Total	0	0	0	0	0	2887	690	3577	680	4	611	1295	450	2559	0	3009	7881
Apprch %	0	0	0		0	80.7	19.3		52.5	0.3	47.2		15	85	0		
Total %	0	0	0		0	36.6	8.8	45.4	8.6	0.1	7.8	16.4	5.7	32.5	0	38.2	

Start Time	I-15 Northbound On Ramp Southbound				Nisqualli Road Westbound				I-15 Northbound Off Ramp Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	348	89	437	84	1	84	169	65	329	0	394	1000
04:45 PM	0	0	0	0	0	392	91	483	80	0	69	149	52	339	0	391	1023
05:00 PM	0	0	0	0	0	399	96	495	79	0	68	147	60	342	0	402	1044
05:15 PM	0	0	0	0	0	386	105	491	74	1	72	147	43	354	0	397	1035
Total Volume	0	0	0	0	0	1525	381	1906	317	2	293	612	220	1364	0	1584	4102
% App. Total	0	0	0		0	80	20		51.8	0.3	47.9		13.9	86.1	0		
PHF	.000	.000	.000	.000	.000	.956	.907	.963	.943	.500	.872	.905	.846	.963	.000	.985	.982

City of Victorville
 N/S: I-15 Northbound Ramps
 E/W: Nisqualli Road
 Weather: Clear

File Name : 02_VIC_15N_Nisqualli PM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM				04:30 PM				04:15 PM				04:30 PM			
+0 mins.	0	0	0	0	0	348	89	437	94	0	98	192	65	329	0	394
+15 mins.	0	0	0	0	0	392	91	483	84	1	84	169	52	339	0	391
+30 mins.	0	0	0	0	0	399	96	495	80	0	69	149	60	342	0	402
+45 mins.	0	0	0	0	0	386	105	491	79	0	68	147	43	354	0	397
Total Volume	0	0	0	0	0	1525	381	1906	337	1	319	657	220	1364	0	1584
% App. Total	0	0	0	0	0	80	20		51.3	0.2	48.6		13.9	86.1	0	
PHF	.000	.000	.000	.000	.000	.956	.907	.963	.896	.250	.814	.855	.846	.963	.000	.985

City of Victorville
 N/S: Mariposa Road
 E/W: Nisqualli Road
 Weather: Clear

File Name : 03_VIC_Mariposa_Nisqualli AM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 1

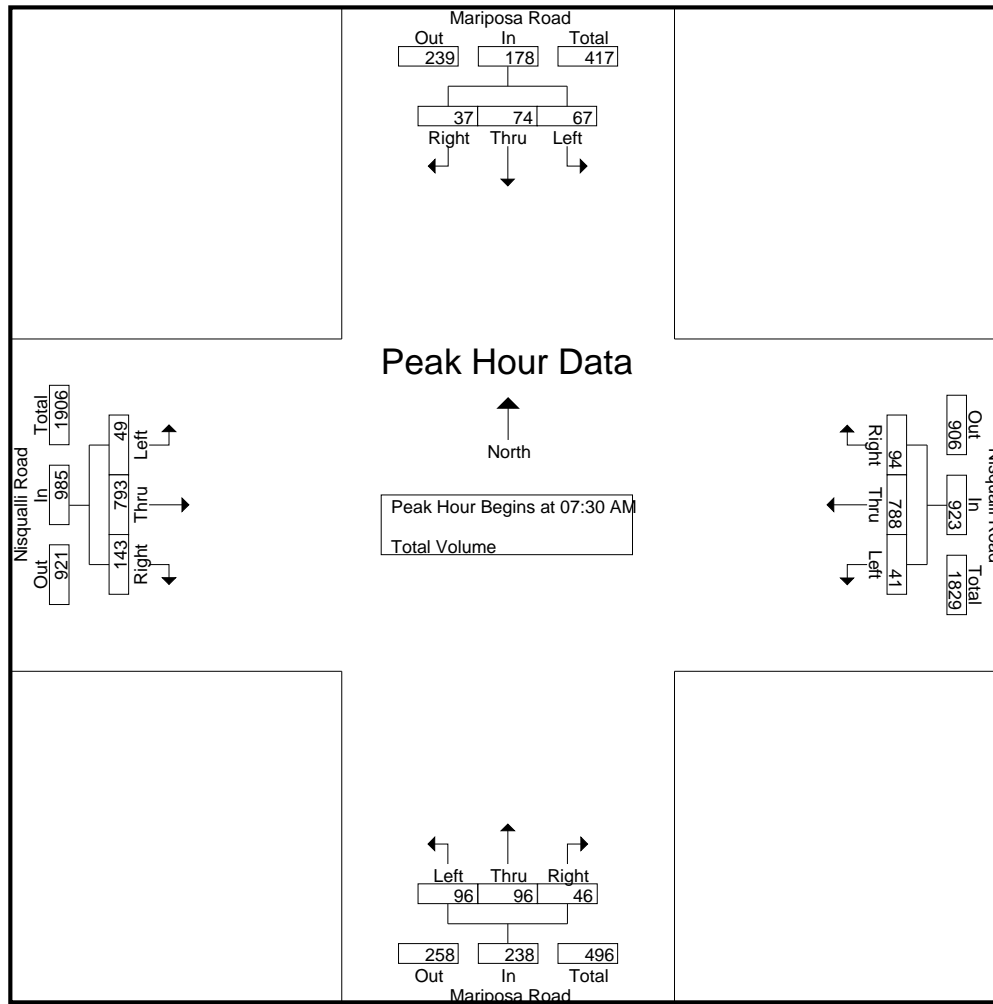
Groups Printed- Total Volume

Start Time	Mariposa Road Southbound				Nisqualli Road Westbound				Mariposa Road Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	10	11	15	36	6	146	14	166	16	12	2	30	11	125	19	155	387
07:15 AM	18	10	6	34	8	132	29	169	30	25	18	73	17	168	14	199	475
07:30 AM	24	18	12	54	13	195	26	234	27	23	16	66	15	213	26	254	608
07:45 AM	15	20	11	46	14	254	32	300	25	28	12	65	14	252	45	311	722
Total	67	59	44	170	41	727	101	869	98	88	48	234	57	758	104	919	2192
08:00 AM	12	15	4	31	5	166	22	193	20	16	10	46	7	160	31	198	468
08:15 AM	16	21	10	47	9	173	14	196	24	29	8	61	13	168	41	222	526
08:30 AM	19	24	12	55	10	192	17	219	27	22	15	64	8	182	35	225	563
08:45 AM	17	33	19	69	10	151	28	189	30	29	10	69	12	172	56	240	567
Total	64	93	45	202	34	682	81	797	101	96	43	240	40	682	163	885	2124
Grand Total	131	152	89	372	75	1409	182	1666	199	184	91	474	97	1440	267	1804	4316
Apprch %	35.2	40.9	23.9		4.5	84.6	10.9		42	38.8	19.2		5.4	79.8	14.8		
Total %	3	3.5	2.1	8.6	1.7	32.6	4.2	38.6	4.6	4.3	2.1	11	2.2	33.4	6.2	41.8	

Start Time	Mariposa Road Southbound				Nisqualli Road Westbound				Mariposa Road Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	24	18	12	54	13	195	26	234	27	23	16	66	15	213	26	254	608
07:45 AM	15	20	11	46	14	254	32	300	25	28	12	65	14	252	45	311	722
08:00 AM	12	15	4	31	5	166	22	193	20	16	10	46	7	160	31	198	468
08:15 AM	16	21	10	47	9	173	14	196	24	29	8	61	13	168	41	222	526
Total Volume	67	74	37	178	41	788	94	923	96	96	46	238	49	793	143	985	2324
% App. Total	37.6	41.6	20.8		4.4	85.4	10.2		40.3	40.3	19.3		5	80.5	14.5		
PHF	.698	.881	.771	.824	.732	.776	.734	.769	.889	.828	.719	.902	.817	.787	.794	.792	.805

City of Victorville
 N/S: Mariposa Road
 E/W: Nisqualli Road
 Weather: Clear

File Name : 03_VIC_Mariposa_Nisqualli AM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	08:00 AM				07:30 AM				07:15 AM				07:30 AM			
+0 mins.	12	15	4	31	13	195	26	234	30	25	18	73	15	213	26	254
+15 mins.	16	21	10	47	14	254	32	300	27	23	16	66	14	252	45	311
+30 mins.	19	24	12	55	5	166	22	193	25	28	12	65	7	160	31	198
+45 mins.	17	33	19	69	9	173	14	196	20	16	10	46	13	168	41	222
Total Volume	64	93	45	202	41	788	94	923	102	92	56	250	49	793	143	985
% App. Total	31.7	46	22.3		4.4	85.4	10.2		40.8	36.8	22.4		5	80.5	14.5	
PHF	.842	.705	.592	.732	.732	.776	.734	.769	.850	.821	.778	.856	.817	.787	.794	.792

City of Victorville
 N/S: Mariposa Road
 E/W: Nisqualli Road
 Weather: Clear

File Name : 03_VIC_Mariposa_Nisqualli PM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 1

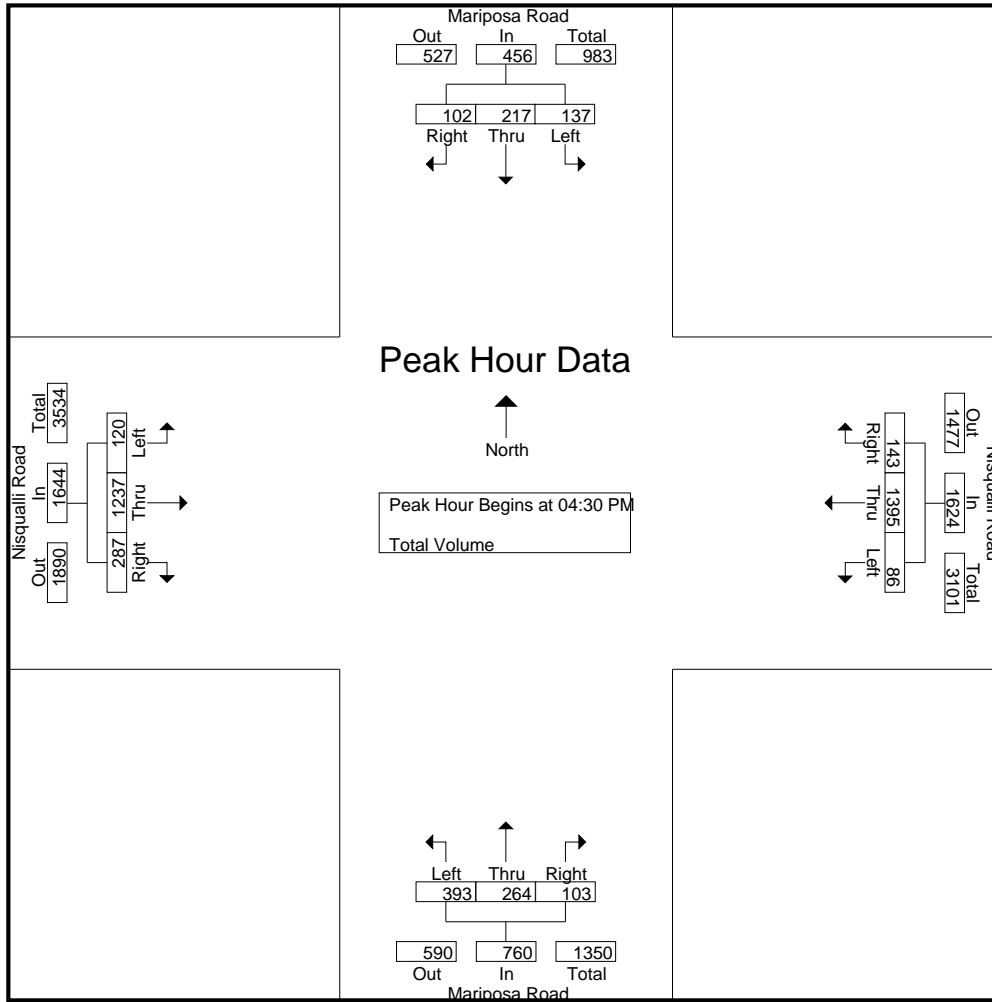
Groups Printed- Total Volume

Start Time	Mariposa Road Southbound				Nisqualli Road Westbound				Mariposa Road Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	34	37	17	88	24	327	35	386	85	60	31	176	28	293	68	389	1039
04:15 PM	32	67	24	123	19	298	35	352	93	61	29	183	30	282	70	382	1040
04:30 PM	25	48	24	97	14	324	30	368	86	67	26	179	26	317	67	410	1054
04:45 PM	41	64	34	139	23	345	34	402	105	77	32	214	29	311	70	410	1165
Total	132	216	99	447	80	1294	134	1508	369	265	118	752	113	1203	275	1591	4298
05:00 PM	44	56	22	122	31	366	39	436	100	56	17	173	30	312	70	412	1143
05:15 PM	27	49	22	98	18	360	40	418	102	64	28	194	35	297	80	412	1122
05:30 PM	43	50	17	110	17	327	26	370	90	50	36	176	32	288	71	391	1047
05:45 PM	45	54	26	125	16	282	31	329	87	45	29	161	20	261	76	357	972
Total	159	209	87	455	82	1335	136	1553	379	215	110	704	117	1158	297	1572	4284
Grand Total	291	425	186	902	162	2629	270	3061	748	480	228	1456	230	2361	572	3163	8582
Apprch %	32.3	47.1	20.6		5.3	85.9	8.8		51.4	33	15.7		7.3	74.6	18.1		
Total %	3.4	5	2.2	10.5	1.9	30.6	3.1	35.7	8.7	5.6	2.7	17	2.7	27.5	6.7	36.9	

Start Time	Mariposa Road Southbound				Nisqualli Road Westbound				Mariposa Road Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	25	48	24	97	14	324	30	368	86	67	26	179	26	317	67	410	1054
04:45 PM	41	64	34	139	23	345	34	402	105	77	32	214	29	311	70	410	1165
05:00 PM	44	56	22	122	31	366	39	436	100	56	17	173	30	312	70	412	1143
05:15 PM	27	49	22	98	18	360	40	418	102	64	28	194	35	297	80	412	1122
Total Volume	137	217	102	456	86	1395	143	1624	393	264	103	760	120	1237	287	1644	4484
% App. Total	30	47.6	22.4		5.3	85.9	8.8		51.7	34.7	13.6		7.3	75.2	17.5		
PHF	.778	.848	.750	.820	.694	.953	.894	.931	.936	.857	.805	.888	.857	.976	.897	.998	.962

City of Victorville
 N/S: Mariposa Road
 E/W: Nisqualli Road
 Weather: Clear

File Name : 03_VIC_Mariposa_Nisqualli PM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:45 PM				04:30 PM				04:30 PM			
+0 mins.	32	67	24	123	23	345	34	402	86	67	26	179	26	317	67	410
+15 mins.	25	48	24	97	31	366	39	436	105	77	32	214	29	311	70	410
+30 mins.	41	64	34	139	18	360	40	418	100	56	17	173	30	312	70	412
+45 mins.	44	56	22	122	17	327	26	370	102	64	28	194	35	297	80	412
Total Volume	142	235	104	481	89	1398	139	1626	393	264	103	760	120	1237	287	1644
% App. Total	29.5	48.9	21.6		5.5	86	8.5		51.7	34.7	13.6		7.3	75.2	17.5	
PHF	.807	.877	.765	.865	.718	.955	.869	.932	.936	.857	.805	.888	.857	.976	.897	.998

City of Victorville
 N/S: Balsam Avenue
 E/W: Nisqualli Road
 Weather: Clear

File Name : 04_VIC_Balsam_Nisqualli AM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 1

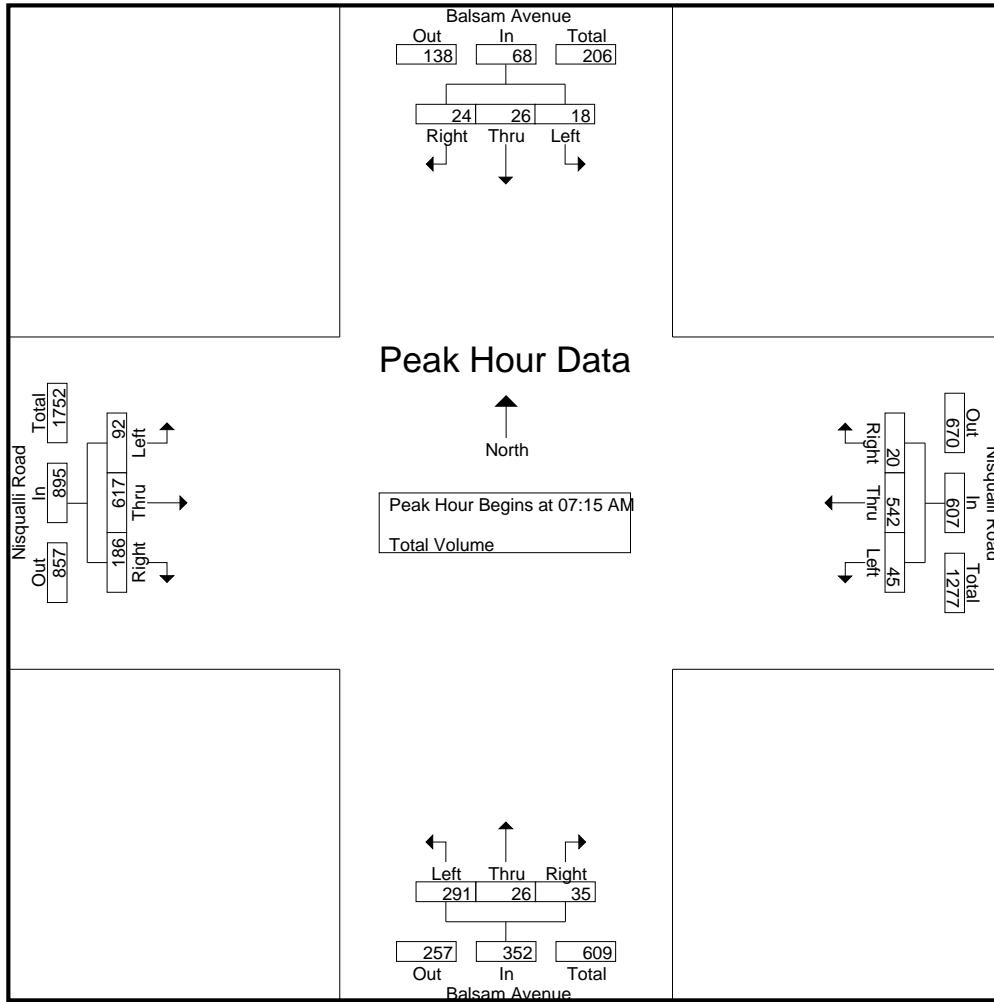
Groups Printed- Total Volume

Start Time	Balsam Avenue Southbound				Nisqualli Road Westbound				Balsam Avenue Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	1	1	13	106	1	120	58	1	3	62	2	103	21	126	309
07:15 AM	2	0	4	6	11	116	1	128	64	1	6	71	13	157	37	207	412
07:30 AM	4	3	6	13	8	127	9	144	78	8	8	94	33	150	52	235	486
07:45 AM	7	20	13	40	13	185	8	206	80	16	12	108	38	181	52	271	625
Total	13	23	24	60	45	534	19	598	280	26	29	335	86	591	162	839	1832
08:00 AM	5	3	1	9	13	114	2	129	69	1	9	79	8	129	45	182	399
08:15 AM	2	4	3	9	16	134	1	151	61	0	10	71	3	138	36	177	408
08:30 AM	0	0	1	1	12	142	2	156	63	1	8	72	3	163	38	204	433
08:45 AM	0	0	0	0	10	139	0	149	58	1	6	65	3	147	43	193	407
Total	7	7	5	19	51	529	5	585	251	3	33	287	17	577	162	756	1647
Grand Total	20	30	29	79	96	1063	24	1183	531	29	62	622	103	1168	324	1595	3479
Apprch %	25.3	38	36.7		8.1	89.9	2		85.4	4.7	10		6.5	73.2	20.3		
Total %	0.6	0.9	0.8	2.3	2.8	30.6	0.7	34	15.3	0.8	1.8	17.9	3	33.6	9.3	45.8	

Start Time	Balsam Avenue Southbound				Nisqualli Road Westbound				Balsam Avenue Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	2	0	4	6	11	116	1	128	64	1	6	71	13	157	37	207	412
07:30 AM	4	3	6	13	8	127	9	144	78	8	8	94	33	150	52	235	486
07:45 AM	7	20	13	40	13	185	8	206	80	16	12	108	38	181	52	271	625
08:00 AM	5	3	1	9	13	114	2	129	69	1	9	79	8	129	45	182	399
Total Volume	18	26	24	68	45	542	20	607	291	26	35	352	92	617	186	895	1922
% App. Total	26.5	38.2	35.3		7.4	89.3	3.3		82.7	7.4	9.9		10.3	68.9	20.8		
PHF	.643	.325	.462	.425	.865	.732	.556	.737	.909	.406	.729	.815	.605	.852	.894	.826	.769

City of Victorville
 N/S: Balsam Avenue
 E/W: Nisqualli Road
 Weather: Clear

File Name : 04_VIC_Balsam_Nisqualli AM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:45 AM				07:15 AM				07:15 AM			
+0 mins.	4	3	6	13	13	185	8	206	64	1	6	71	13	157	37	207
+15 mins.	7	20	13	40	13	114	2	129	78	8	8	94	33	150	52	235
+30 mins.	5	3	1	9	16	134	1	151	80	16	12	108	38	181	52	271
+45 mins.	2	4	3	9	12	142	2	156	69	1	9	79	8	129	45	182
Total Volume	18	30	23	71	54	575	13	642	291	26	35	352	92	617	186	895
% App. Total	25.4	42.3	32.4		8.4	89.6	2		82.7	7.4	9.9		10.3	68.9	20.8	
PHF	.643	.375	.442	.444	.844	.777	.406	.779	.909	.406	.729	.815	.605	.852	.894	.826

City of Victorville
 N/S: Balsam Avenue
 E/W: Nisqualli Road
 Weather: Clear

File Name : 04_VIC_Balsam_Nisqualli PM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 1

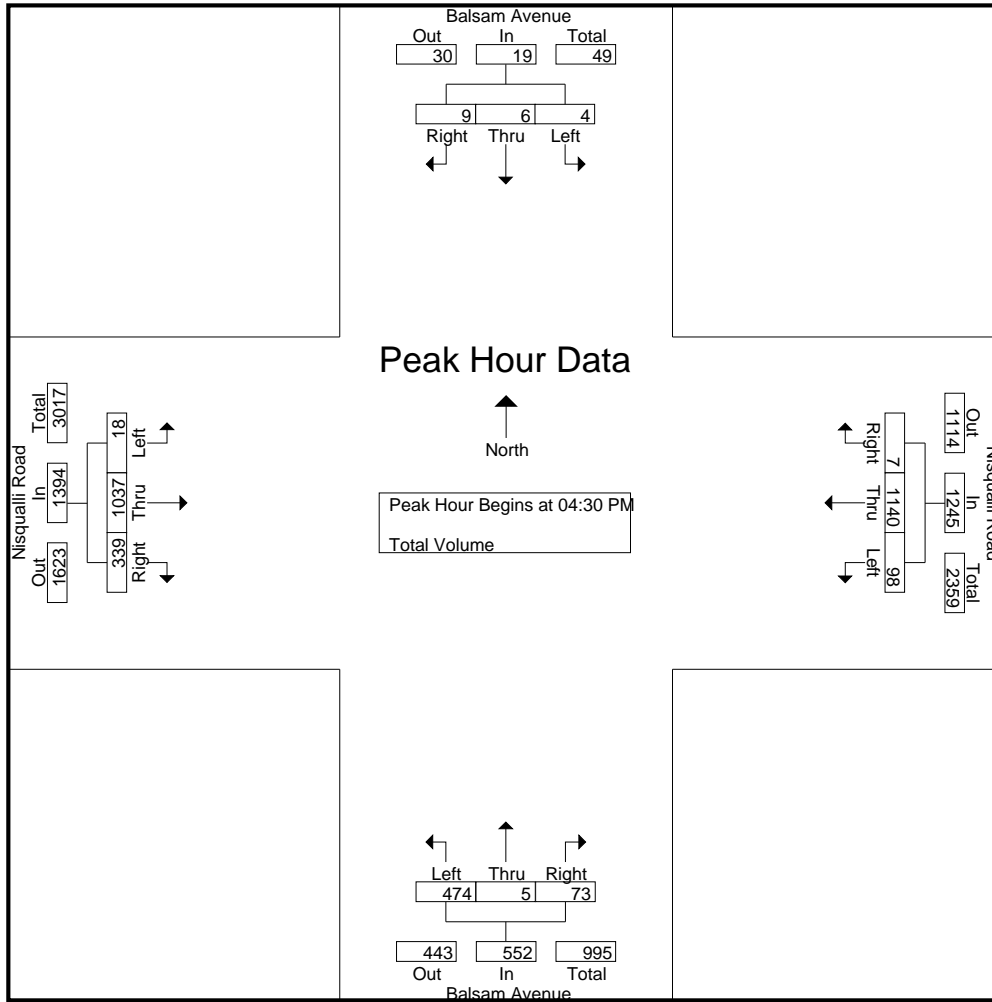
Groups Printed- Total Volume

Start Time	Balsam Avenue Southbound				Nisqualli Road Westbound				Balsam Avenue Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	2	1	1	4	23	275	3	301	130	1	19	150	4	260	75	339	794
04:15 PM	2	1	7	10	21	227	1	249	117	1	15	133	8	240	78	326	718
04:30 PM	1	4	5	10	26	242	1	269	119	1	14	134	7	263	78	348	761
04:45 PM	1	0	0	1	19	294	2	315	109	2	21	132	7	262	101	370	818
Total	6	6	13	25	89	1038	7	1134	475	5	69	549	26	1025	332	1383	3091
05:00 PM	1	0	3	4	29	303	1	333	127	1	21	149	0	263	95	358	844
05:15 PM	1	2	1	4	24	301	3	328	119	1	17	137	4	249	65	318	787
05:30 PM	2	2	0	4	21	274	2	297	104	1	21	126	1	247	79	327	754
05:45 PM	1	0	2	3	19	193	0	212	120	0	19	139	4	264	69	337	691
Total	5	4	6	15	93	1071	6	1170	470	3	78	551	9	1023	308	1340	3076
Grand Total	11	10	19	40	182	2109	13	2304	945	8	147	1100	35	2048	640	2723	6167
Apprch %	27.5	25	47.5		7.9	91.5	0.6		85.9	0.7	13.4		1.3	75.2	23.5		
Total %	0.2	0.2	0.3	0.6	3	34.2	0.2	37.4	15.3	0.1	2.4	17.8	0.6	33.2	10.4	44.2	

Start Time	Balsam Avenue Southbound				Nisqualli Road Westbound				Balsam Avenue Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	1	4	5	10	26	242	1	269	119	1	14	134	7	263	78	348	761
04:45 PM	1	0	0	1	19	294	2	315	109	2	21	132	7	262	101	370	818
05:00 PM	1	0	3	4	29	303	1	333	127	1	21	149	0	263	95	358	844
05:15 PM	1	2	1	4	24	301	3	328	119	1	17	137	4	249	65	318	787
Total Volume	4	6	9	19	98	1140	7	1245	474	5	73	552	18	1037	339	1394	3210
% App. Total	21.1	31.6	47.4		7.9	91.6	0.6		85.9	0.9	13.2		1.3	74.4	24.3		
PHF	1.00	.375	.450	.475	.845	.941	.583	.935	.933	.625	.869	.926	.643	.986	.839	.942	.951

City of Victorville
 N/S: Balsam Avenue
 E/W: Nisqualli Road
 Weather: Clear

File Name : 04_VIC_Balsam_Nisqualli PM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM				04:45 PM				04:30 PM				04:15 PM			
+0 mins.	2	1	1	4	19	294	2	315	119	1	14	134	8	240	78	326
+15 mins.	2	1	7	10	29	303	1	333	109	2	21	132	7	263	78	348
+30 mins.	1	4	5	10	24	301	3	328	127	1	21	149	7	262	101	370
+45 mins.	1	0	0	1	21	274	2	297	119	1	17	137	0	263	95	358
Total Volume	6	6	13	25	93	1172	8	1273	474	5	73	552	22	1028	352	1402
% App. Total	24	24	52		7.3	92.1	0.6		85.9	0.9	13.2		1.6	73.3	25.1	
PHF	.750	.375	.464	.625	.802	.967	.667	.956	.933	.625	.869	.926	.688	.977	.871	.947

City of Victorville
 N/S: 11th Avenue
 E/W: Winona Street
 Weather: Clear

File Name : 05_VIC_11th_Winona AM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 1

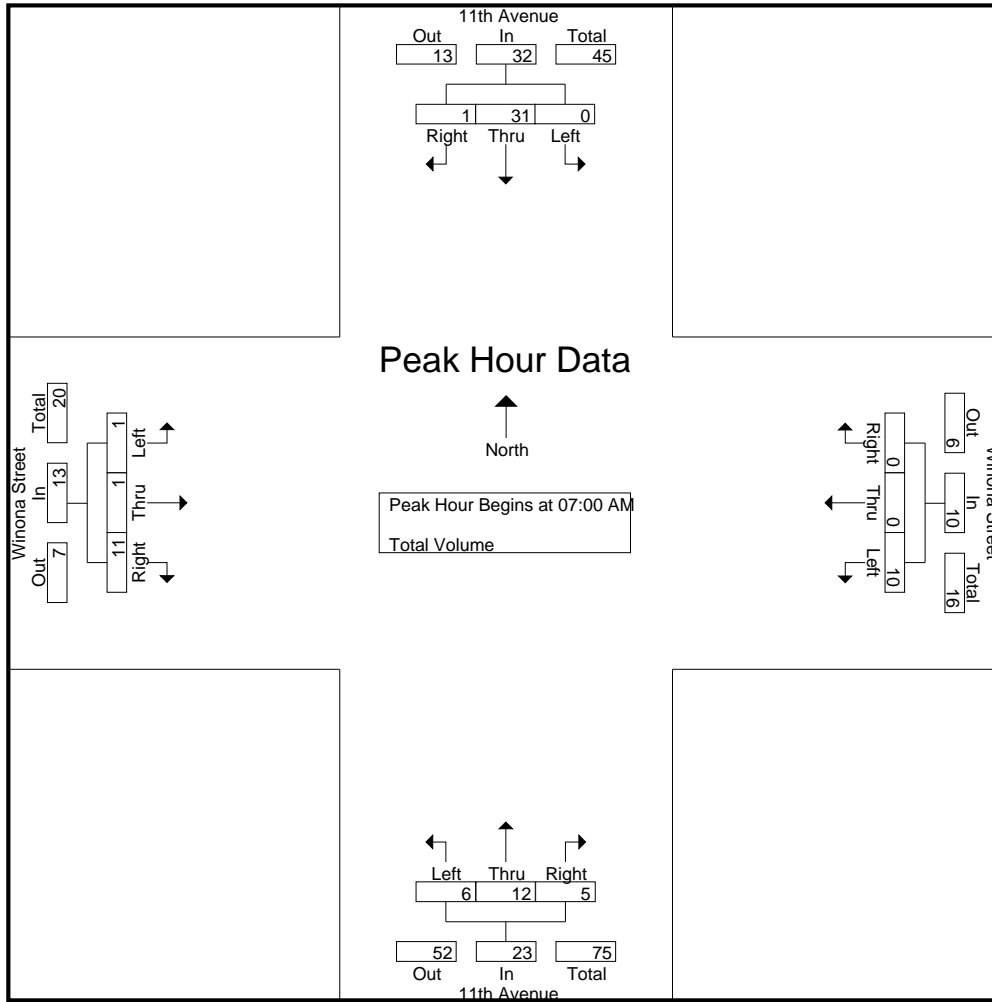
Groups Printed- Total Volume

Start Time	11th Avenue Southbound				Winona Street Westbound				11th Avenue Northbound				Winona Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	7	0	7	1	0	0	1	1	5	1	7	1	0	2	3	18
07:15 AM	0	9	1	10	3	0	0	3	3	3	2	8	0	0	1	1	22
07:30 AM	0	7	0	7	0	0	0	0	0	1	1	2	0	1	6	7	16
07:45 AM	0	8	0	8	6	0	0	6	2	3	1	6	0	0	2	2	22
Total	0	31	1	32	10	0	0	10	6	12	5	23	1	1	11	13	78
08:00 AM	0	2	0	2	3	0	1	4	2	1	0	3	0	0	4	4	13
08:15 AM	0	5	0	5	2	0	0	2	3	3	0	6	0	1	4	5	18
08:30 AM	0	2	0	2	3	0	0	3	1	2	2	5	0	0	3	3	13
08:45 AM	1	1	0	2	3	0	0	3	2	3	3	8	0	0	5	5	18
Total	1	10	0	11	11	0	1	12	8	9	5	22	0	1	16	17	62
Grand Total	1	41	1	43	21	0	1	22	14	21	10	45	1	2	27	30	140
Apprch %	2.3	95.3	2.3		95.5	0	4.5		31.1	46.7	22.2		3.3	6.7	90		
Total %	0.7	29.3	0.7	30.7	15	0	0.7	15.7	10	15	7.1	32.1	0.7	1.4	19.3	21.4	

Start Time	11th Avenue Southbound				Winona Street Westbound				11th Avenue Northbound				Winona Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	7	0	7	1	0	0	1	1	5	1	7	1	0	2	3	18
07:15 AM	0	9	1	10	3	0	0	3	3	3	2	8	0	0	1	1	22
07:30 AM	0	7	0	7	0	0	0	0	0	1	1	2	0	1	6	7	16
07:45 AM	0	8	0	8	6	0	0	6	2	3	1	6	0	0	2	2	22
Total Volume	0	31	1	32	10	0	0	10	6	12	5	23	1	1	11	13	78
% App. Total	0	96.9	3.1		100	0	0		26.1	52.2	21.7		7.7	7.7	84.6		
PHF	.000	.861	.250	.800	.417	.000	.000	.417	.500	.600	.625	.719	.250	.250	.458	.464	.886

City of Victorville
 N/S: 11th Avenue
 E/W: Winona Street
 Weather: Clear

File Name : 05_VIC_11th_Winona AM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:45 AM				07:00 AM				07:30 AM			
+0 mins.	0	7	0	7	6	0	0	6	1	5	1	7	0	1	6	7
+15 mins.	0	9	1	10	3	0	1	4	3	3	2	8	0	0	2	2
+30 mins.	0	7	0	7	2	0	0	2	0	1	1	2	0	0	4	4
+45 mins.	0	8	0	8	3	0	0	3	2	3	1	6	0	1	4	5
Total Volume	0	31	1	32	14	0	1	15	6	12	5	23	0	2	16	18
% App. Total	0	96.9	3.1		93.3	0	6.7		26.1	52.2	21.7		0	11.1	88.9	
PHF	.000	.861	.250	.800	.583	.000	.250	.625	.500	.600	.625	.719	.000	.500	.667	.643

City of Victorville
 N/S: 11th Avenue
 E/W: Winona Street
 Weather: Clear

File Name : 05_VIC_11th_Winona PM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 1

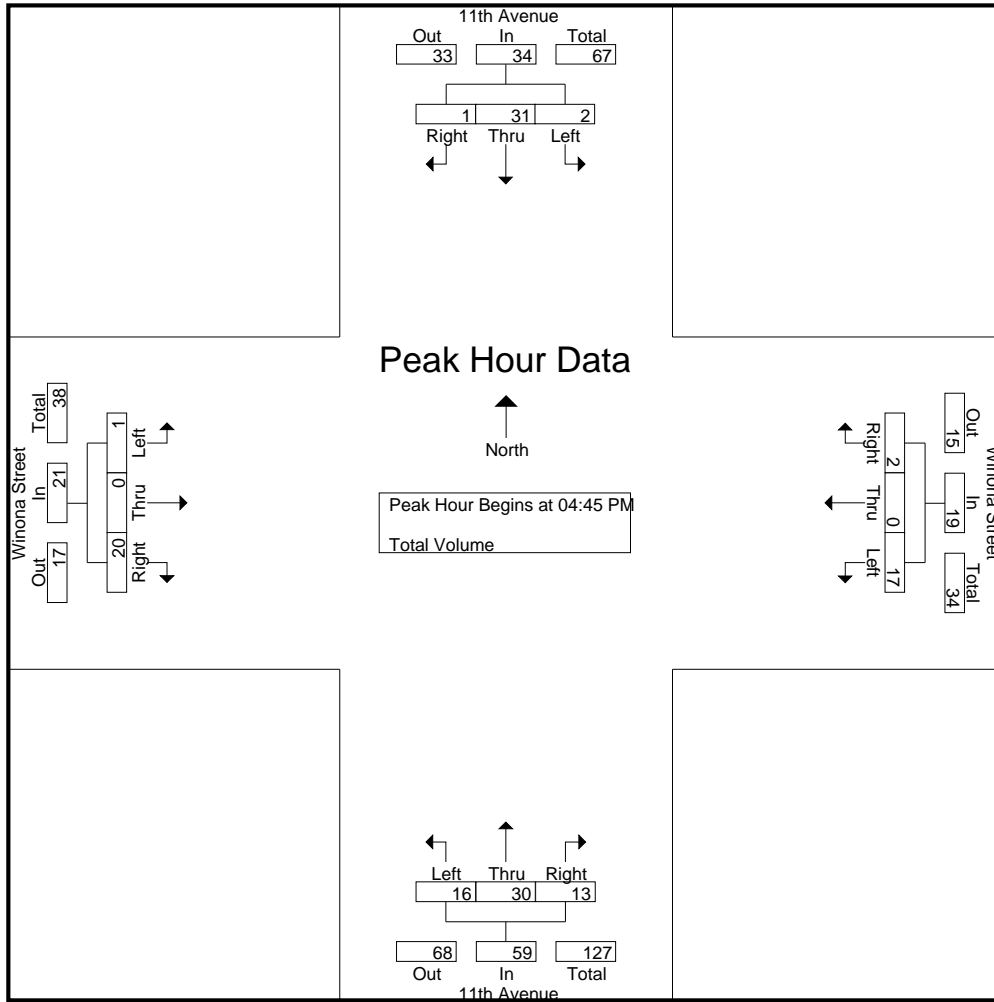
Groups Printed- Total Volume

Start Time	11th Avenue Southbound				Winona Street Westbound				11th Avenue Northbound				Winona Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	3	0	3	1	0	0	1	7	8	4	19	0	0	3	3	26
04:15 PM	0	4	0	4	5	0	0	5	5	5	6	16	0	0	2	2	27
04:30 PM	0	9	0	9	3	0	0	3	2	2	1	5	0	0	5	5	22
04:45 PM	0	5	0	5	5	0	0	5	4	8	3	15	0	0	7	7	32
Total	0	21	0	21	14	0	0	14	18	23	14	55	0	0	17	17	107
05:00 PM	1	12	0	13	0	0	0	0	2	7	3	12	1	0	6	7	32
05:15 PM	0	6	1	7	6	0	2	8	2	3	4	9	0	0	4	4	28
05:30 PM	1	8	0	9	6	0	0	6	8	12	3	23	0	0	3	3	41
05:45 PM	0	7	0	7	3	0	0	3	5	4	8	17	0	0	3	3	30
Total	2	33	1	36	15	0	2	17	17	26	18	61	1	0	16	17	131
Grand Total	2	54	1	57	29	0	2	31	35	49	32	116	1	0	33	34	238
Apprch %	3.5	94.7	1.8		93.5	0	6.5		30.2	42.2	27.6		2.9	0	97.1		
Total %	0.8	22.7	0.4	23.9	12.2	0	0.8	13	14.7	20.6	13.4	48.7	0.4	0	13.9	14.3	

Start Time	11th Avenue Southbound				Winona Street Westbound				11th Avenue Northbound				Winona Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	5	0	5	5	0	0	5	4	8	3	15	0	0	7	7	32
05:00 PM	1	12	0	13	0	0	0	0	2	7	3	12	1	0	6	7	32
05:15 PM	0	6	1	7	6	0	2	8	2	3	4	9	0	0	4	4	28
05:30 PM	1	8	0	9	6	0	0	6	8	12	3	23	0	0	3	3	41
Total Volume	2	31	1	34	17	0	2	19	16	30	13	59	1	0	20	21	133
% App. Total	5.9	91.2	2.9		89.5	0	10.5		27.1	50.8	22		4.8	0	95.2		
PHF	.500	.646	.250	.654	.708	.000	.250	.594	.500	.625	.813	.641	.250	.000	.714	.750	.811

City of Victorville
 N/S: 11th Avenue
 E/W: Winona Street
 Weather: Clear

File Name : 05_VIC_11th_Winona PM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:00 PM				04:45 PM				05:00 PM				04:30 PM			
+0 mins.	1	12	0	13	5	0	0	5	2	7	3	12	0	0	5	5
+15 mins.	0	6	1	7	0	0	0	0	2	3	4	9	0	0	7	7
+30 mins.	1	8	0	9	6	0	2	8	8	12	3	23	1	0	6	7
+45 mins.	0	7	0	7	6	0	0	6	5	4	8	17	0	0	4	4
Total Volume	2	33	1	36	17	0	2	19	17	26	18	61	1	0	22	23
% App. Total	5.6	91.7	2.8		89.5	0	10.5		27.9	42.6	29.5		4.3	0	95.7	
PHF	.500	.688	.250	.692	.708	.000	.250	.594	.531	.542	.563	.663	.250	.000	.786	.821

City of Victorville
 N/S: 11th Avenue
 E/W: Nisqualli Road
 Weather: Clear

File Name : 06_VIC_11th_Nisqualli AM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 1

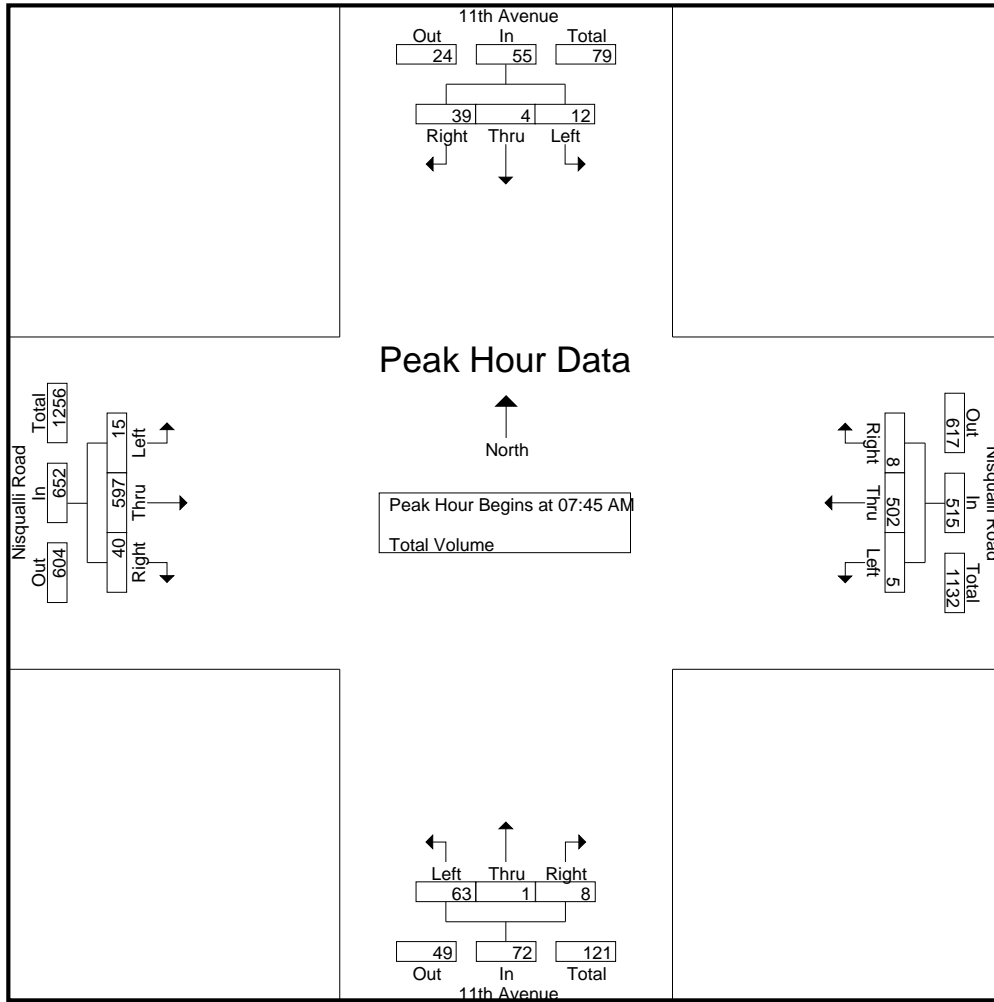
Groups Printed- Total Volume

Start Time	11th Avenue Southbound				Nisqualli Road Westbound				11th Avenue Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	3	1	8	12	0	98	0	98	8	1	1	10	7	96	3	106	226
07:15 AM	2	1	12	15	0	94	0	94	9	1	1	11	7	143	14	164	284
07:30 AM	5	1	7	13	1	126	1	128	13	0	0	13	3	150	10	163	317
07:45 AM	2	1	16	19	1	157	1	159	24	0	2	26	3	187	12	202	406
Total	12	4	43	59	2	475	2	479	54	2	4	60	20	576	39	635	1233
08:00 AM	3	1	6	10	1	102	2	105	9	0	4	13	2	125	7	134	262
08:15 AM	5	2	9	16	2	112	2	116	17	0	1	18	7	127	12	146	296
08:30 AM	2	0	8	10	1	131	3	135	13	1	1	15	3	158	9	170	330
08:45 AM	1	0	11	12	3	124	2	129	9	0	0	9	6	133	9	148	298
Total	11	3	34	48	7	469	9	485	48	1	6	55	18	543	37	598	1186
Grand Total	23	7	77	107	9	944	11	964	102	3	10	115	38	1119	76	1233	2419
Apprch %	21.5	6.5	72		0.9	97.9	1.1		88.7	2.6	8.7		3.1	90.8	6.2		
Total %	1	0.3	3.2	4.4	0.4	39	0.5	39.9	4.2	0.1	0.4	4.8	1.6	46.3	3.1	51	

Start Time	11th Avenue Southbound				Nisqualli Road Westbound				11th Avenue Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	2	1	16	19	1	157	1	159	24	0	2	26	3	187	12	202	406
08:00 AM	3	1	6	10	1	102	2	105	9	0	4	13	2	125	7	134	262
08:15 AM	5	2	9	16	2	112	2	116	17	0	1	18	7	127	12	146	296
08:30 AM	2	0	8	10	1	131	3	135	13	1	1	15	3	158	9	170	330
Total Volume	12	4	39	55	5	502	8	515	63	1	8	72	15	597	40	652	1294
% App. Total	21.8	7.3	70.9		1	97.5	1.6		87.5	1.4	11.1		2.3	91.6	6.1		
PHF	.600	.500	.609	.724	.625	.799	.667	.810	.656	.250	.500	.692	.536	.798	.833	.807	.797

City of Victorville
 N/S: 11th Avenue
 E/W: Nisqualli Road
 Weather: Clear

File Name : 06_VIC_11th_Nisqualli AM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:45 AM				07:45 AM				07:15 AM			
+0 mins.	3	1	8	12	1	157	1	159	24	0	2	26	7	143	14	164
+15 mins.	2	1	12	15	1	102	2	105	9	0	4	13	3	150	10	163
+30 mins.	5	1	7	13	2	112	2	116	17	0	1	18	3	187	12	202
+45 mins.	2	1	16	19	1	131	3	135	13	1	1	15	2	125	7	134
Total Volume	12	4	43	59	5	502	8	515	63	1	8	72	15	605	43	663
% App. Total	20.3	6.8	72.9		1	97.5	1.6		87.5	1.4	11.1		2.3	91.3	6.5	
PHF	.600	1.000	.672	.776	.625	.799	.667	.810	.656	.250	.500	.692	.536	.809	.768	.821

City of Victorville
 N/S: 11th Avenue
 E/W: Nisqualli Road
 Weather: Clear

File Name : 06_VIC_11th_Nisqualli PM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 1

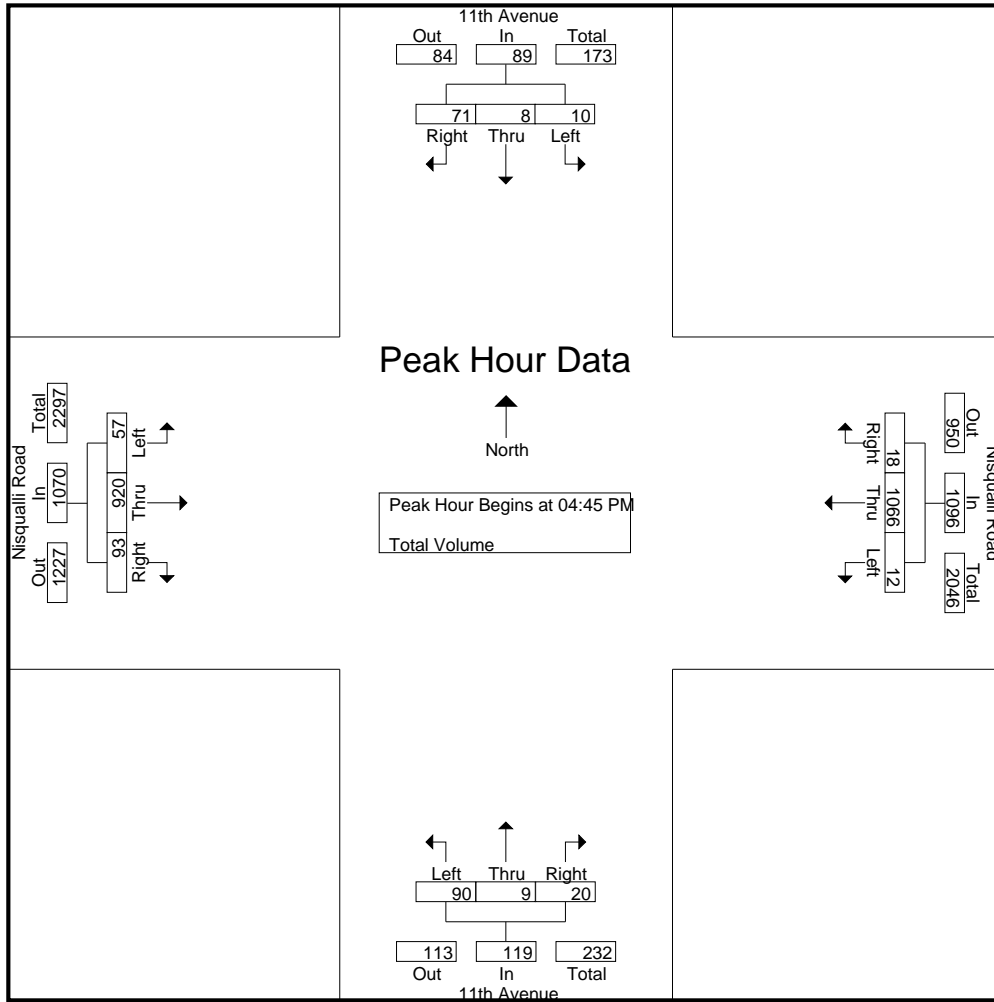
Groups Printed- Total Volume

Start Time	11th Avenue Southbound				Nisqualli Road Westbound				11th Avenue Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	6	1	12	19	3	284	6	293	22	4	5	31	15	248	24	287	630
04:15 PM	4	1	11	16	4	236	2	242	23	1	3	27	17	230	13	260	545
04:30 PM	4	2	13	19	2	201	3	206	25	1	5	31	6	239	24	269	525
04:45 PM	3	2	18	23	5	261	5	271	23	3	2	28	13	231	30	274	596
Total	17	6	54	77	14	982	16	1012	93	9	15	117	51	948	91	1090	2296
05:00 PM	2	1	20	23	2	282	5	289	24	1	7	32	16	234	23	273	617
05:15 PM	4	2	15	21	0	271	5	276	22	1	4	27	12	229	18	259	583
05:30 PM	1	3	18	22	5	252	3	260	21	4	7	32	16	226	22	264	578
05:45 PM	3	1	14	18	3	194	5	202	18	1	1	20	17	235	18	270	510
Total	10	7	67	84	10	999	18	1027	85	7	19	111	61	924	81	1066	2288
Grand Total	27	13	121	161	24	1981	34	2039	178	16	34	228	112	1872	172	2156	4584
Apprch %	16.8	8.1	75.2		1.2	97.2	1.7		78.1	7	14.9		5.2	86.8	8		
Total %	0.6	0.3	2.6	3.5	0.5	43.2	0.7	44.5	3.9	0.3	0.7	5	2.4	40.8	3.8	47	

Start Time	11th Avenue Southbound				Nisqualli Road Westbound				11th Avenue Northbound				Nisqualli Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	3	2	18	23	5	261	5	271	23	3	2	28	13	231	30	274	596
05:00 PM	2	1	20	23	2	282	5	289	24	1	7	32	16	234	23	273	617
05:15 PM	4	2	15	21	0	271	5	276	22	1	4	27	12	229	18	259	583
05:30 PM	1	3	18	22	5	252	3	260	21	4	7	32	16	226	22	264	578
Total Volume	10	8	71	89	12	1066	18	1096	90	9	20	119	57	920	93	1070	2374
% App. Total	11.2	9	79.8		1.1	97.3	1.6		75.6	7.6	16.8		5.3	86	8.7		
PHF	.625	.667	.888	.967	.600	.945	.900	.948	.938	.563	.714	.930	.891	.983	.775	.976	.962

City of Victorville
 N/S: 11th Avenue
 E/W: Nisqualli Road
 Weather: Clear

File Name : 06_VIC_11th_Nisqualli PM
 Site Code : 22520413
 Start Date : 10/29/2020
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:00 PM			
+0 mins.	3	2	18	23	5	261	5	271	23	3	2	28	15	248	24	287
+15 mins.	2	1	20	23	2	282	5	289	24	1	7	32	17	230	13	260
+30 mins.	4	2	15	21	0	271	5	276	22	1	4	27	6	239	24	269
+45 mins.	1	3	18	22	5	252	3	260	21	4	7	32	13	231	30	274
Total Volume	10	8	71	89	12	1066	18	1096	90	9	20	119	51	948	91	1090
% App. Total	11.2	9	79.8		1.1	97.3	1.6		75.6	7.6	16.8		4.7	87	8.3	
PHF	.625	.667	.888	.967	.600	.945	.900	.948	.938	.563	.714	.930	.750	.956	.758	.949

APPENDIX D
LEVEL OF SERVICE WORKSHEETS

Existing

Balsam at Winona Apartments

Vistro File: C:\...\AME.vistro
Report File: C:\...\AME.pdf

Scenario 1 Existing AM Peak Hour
12/15/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Amargosa Rd (NS) at La Mesa Rd (EW)	Signalized	HCM 6th Edition	NB Left	0.569	30.2	C
2	I-15 NB Ramps (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	EB Left	0.372	18.0	B
3	Mariposa Rd (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.308	25.4	C
7	Balsam Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.443	27.9	C
9	11th Ave (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.001	9.4	A
10	11th Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.295	23.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Amargosa Rd (NS) at La Mesa Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.569

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTL			TTL			TTL			TTL		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	285.00	100.00	100.00	385.00	100.00	100.00	135.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	45.00			45.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	13	86	70	301	124	74	126	594	43	83	334	445
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	86	70	301	124	74	126	594	43	83	334	445
Peak Hour Factor	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	26	0	90	37	22	38	178	13	25	100	133
Total Analysis Volume [veh/h]	16	103	0	361	149	89	151	712	52	100	400	534
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	15	25	0	11	22	0	32	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	27	27	11	36	36	7	30	30	6	29	29
g / C, Green / Cycle	0.02	0.30	0.30	0.12	0.40	0.40	0.07	0.33	0.33	0.07	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.00	0.03	0.00	0.10	0.04	0.05	0.04	0.18	0.03	0.03	0.07	0.30
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	3373	1506	2912	4826	1506
c, Capacity [veh/h]	66	1005	449	357	1342	599	219	1124	502	201	1578	492
d1, Uniform Delay [s]	43.28	22.81	0.00	38.73	16.97	17.19	40.33	24.35	20.65	40.25	21.96	29.01
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	1.45	0.17	0.00	5.74	0.14	0.42	2.41	0.39	0.07	1.36	0.07	7.14
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.20	0.09	0.00	0.84	0.09	0.12	0.58	0.53	0.09	0.41	0.21	0.90
d, Delay for Lane Group [s/veh]	44.73	22.98	0.00	44.47	17.11	17.62	42.74	24.74	20.72	41.62	22.02	36.15
Lane Group LOS	D	C	A	D	B	B	D	C	C	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.15	0.64	0.00	3.37	0.76	0.96	1.36	4.80	0.59	0.88	1.60	9.37
50th-Percentile Queue Length [ft/ln]	3.74	16.01	0.00	84.33	19.11	24.09	34.08	119.88	14.79	22.04	39.99	234.32
95th-Percentile Queue Length [veh/ln]	0.27	1.15	0.00	6.07	1.38	1.73	2.45	8.39	1.06	1.59	2.88	14.39
95th-Percentile Queue Length [ft/ln]	6.74	28.83	0.00	151.80	34.39	43.37	61.35	209.67	26.62	39.68	71.98	359.84

Movement, Approach, & Intersection Results

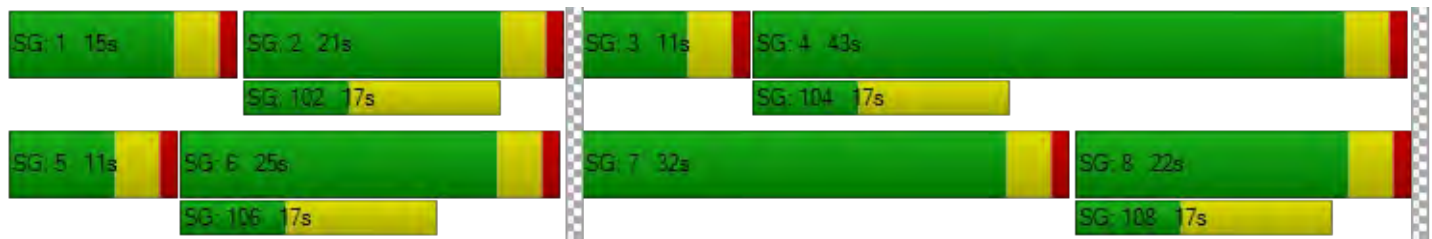
d_M, Delay for Movement [s/veh]	44.73	22.98	0.00	44.47	17.11	17.62	42.74	24.74	20.72	41.62	22.02	36.15
Movement LOS	D	C	A	D	B	B	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	25.83			33.69			27.48			31.20		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	30.24											
Intersection LOS	C											
Intersection V/C	0.569											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.666	2.835	2.941	3.134
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	378	467	400	867
d_b, Bicycle Delay [s]	29.61	26.45	28.80	14.45
I_b,int, Bicycle LOS Score for Intersection	1.641	1.971	2.189	2.034
Bicycle LOS	A	A	B	B

Sequence





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



Intersection Level Of Service Report
Intersection 2: I-15 NB Ramps (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	18.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.372

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
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 Pocket	2	0	0	0	0	0	2	0	0	0	0	0
Pocket Length [ft]	410.00	100.00	100.00	100.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	166	1	153	0	0	0	156	824	0	0	689	212
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	166	1	153	0	0	0	156	824	0	0	689	212
Peak Hour Factor	0.7800	0.7800	0.7800	0.7800	0.7800	0.7800	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	0	49	0	0	0	50	264	0	0	221	68
Total Analysis Volume [veh/h]	213	1	196	0	0	0	200	1056	0	0	883	272
Presence of On-Street Parking	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	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
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]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	21	0	0	0	0	12	39	0	0	27	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		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	R		L	C	C	R
C, Cycle Length [s]	60	60	60		60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	29		7	23	12	12
g / C, Green / Cycle	0.49	0.49	0.49		0.11	0.38	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.10		0.05	0.17	0.14	0.14
s, saturation flow rate [veh/h]	1593	1688	1506		2912	4826	4826	1506
c, Capacity [veh/h]	771	817	729		321	1850	999	312
d1, Uniform Delay [s]	8.46	8.46	8.94		25.23	13.83	22.12	22.07
k, delay calibration	0.50	0.50	0.50		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	0.26	0.66		1.15	0.17	0.87	2.64
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.11	0.21		0.49	0.45	0.69	0.68
d, Delay for Lane Group [s/veh]	8.73	8.72	9.59		26.38	13.99	22.99	24.71
Lane Group LOS	A	A	A		C	B	C	C
Critical Lane Group	No	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.55	0.58	1.11		0.98	2.27	2.68	2.62
50th-Percentile Queue Length [ft/ln]	13.68	14.40	27.66		24.60	56.75	66.97	65.56
95th-Percentile Queue Length [veh/ln]	0.98	1.04	1.99		1.77	4.09	4.82	4.72
95th-Percentile Queue Length [ft/ln]	24.62	25.92	49.78		44.29	102.15	120.55	118.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.73	8.72	9.59	0.00	0.00	0.00	26.38	13.99	0.00	0.00	22.99	24.71
Movement LOS	A	A	A				C	B			C	C
d_A, Approach Delay [s/veh]	9.14			0.00			15.97			23.39		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	18.01											
Intersection LOS	B											
Intersection V/C	0.372											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.022	1.872	0.000	0.000
Crosswalk LOS	B	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	0	1167	767
d_b, Bicycle Delay [s]	15.41	30.00	5.21	11.41
I_b,int, Bicycle LOS Score for Intersection	2.088	4.132	2.099	2.055
Bicycle LOS	B	D	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Mariposa Rd (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.308

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	T			T			T			T		
Lane Configuration	T			T			T			T		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	305.00	100.00	100.00	210.00	100.00	100.00	355.00	100.00	100.00	180.00	100.00	100.00
Speed [mph]	50.00			50.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	96	96	46	67	74	37	49	793	143	41	788	94
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	96	46	67	74	37	49	793	143	41	788	94
Peak Hour Factor	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050
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]	30	30	14	21	23	11	15	246	44	13	245	29
Total Analysis Volume [veh/h]	119	119	57	83	92	46	61	985	178	51	979	117
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	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
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]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	27	0	11	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	29	29	5	29	29	4	16	16	4	15	15
g / C, Green / Cycle	0.09	0.42	0.42	0.07	0.41	0.41	0.06	0.22	0.22	0.06	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.16	0.09	0.01	0.16	0.06
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	4826	1506	2912	4826	1506
c, Capacity [veh/h]	250	1414	631	217	1375	614	184	1072	334	165	1040	325
d1, Uniform Delay [s]	30.35	12.19	12.22	30.80	12.60	12.63	31.35	25.43	23.48	31.70	25.82	23.04
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	0.97	0.09	0.22	0.80	0.07	0.19	0.77	1.03	0.87	0.78	1.16	0.49
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.38	0.07	0.07	0.31	0.05	0.06	0.27	0.74	0.43	0.25	0.76	0.29
d, Delay for Lane Group [s/veh]	31.32	12.29	12.44	31.60	12.67	12.82	32.12	26.46	24.35	32.48	26.99	23.53
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.73	0.39	0.39	0.51	0.31	0.32	0.39	3.77	1.91	0.33	3.79	1.22
50th-Percentile Queue Length [ft/ln]	18.24	9.71	9.87	12.82	7.65	8.12	9.65	94.24	47.82	8.15	94.79	30.48
95th-Percentile Queue Length [veh/ln]	1.31	0.70	0.71	0.92	0.55	0.58	0.69	6.79	3.44	0.59	6.82	2.19
95th-Percentile Queue Length [ft/ln]	32.84	17.47	17.76	23.07	13.77	14.61	17.36	169.64	86.07	14.67	170.62	54.86

Movement, Approach, & Intersection Results

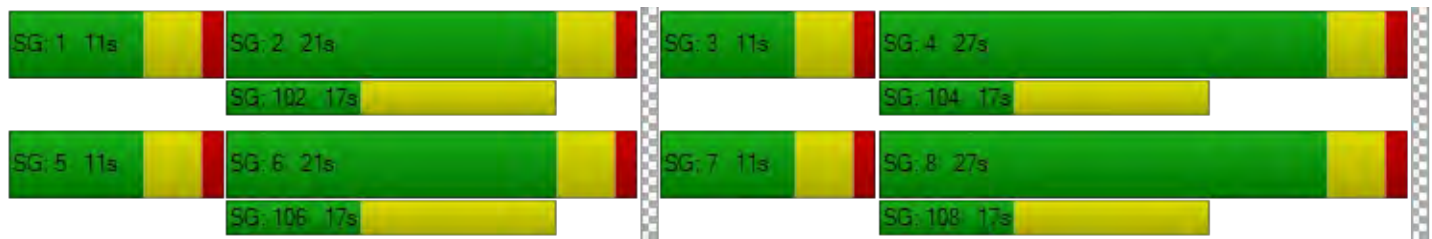
d_M, Delay for Movement [s/veh]	31.32	12.29	12.44	31.60	12.67	12.82	32.12	26.46	24.35	32.48	26.99	23.53
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	19.99			19.83			26.43			26.88		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	25.44											
Intersection LOS	C											
Intersection V/C	0.308											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.695	2.677	3.231	3.133
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]	486	486	657	657
d_b, Bicycle Delay [s]	20.06	20.06	15.78	15.78
I_b,int, Bicycle LOS Score for Intersection	1.756	1.706	2.101	2.067
Bicycle LOS	A	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 7: Balsam Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	27.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.443

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TT			TTT			TTT		
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 Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	85.00	100.00	100.00	115.00	100.00	100.00	250.00	100.00	100.00
Speed [mph]	30.00			30.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	291	26	35	18	26	24	92	617	186	45	542	20
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	291	26	35	18	26	24	92	617	186	45	542	20
Peak Hour Factor	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690
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]	95	8	11	6	8	8	30	201	60	15	176	7
Total Analysis Volume [veh/h]	378	34	46	23	34	31	120	802	242	59	705	26
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	23	0	11	21	0	15	25	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	32	2	25	6	16	16	4	14	14
g / C, Green / Cycle	0.13	0.46	0.03	0.36	0.08	0.23	0.23	0.06	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.10	0.04	0.01	0.03	0.06	0.18	0.12	0.03	0.11	0.11
s, saturation flow rate [veh/h]	2912	1609	1593	1633	1593	3373	1506	1593	3373	1740
c, Capacity [veh/h]	370	733	49	587	135	761	340	96	677	349
d1, Uniform Delay [s]	29.74	10.82	33.34	14.85	31.21	25.77	24.02	31.93	25.19	25.21
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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]	3.86	0.22	4.48	0.29	6.06	2.17	1.38	3.61	0.69	1.36
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	0.79	0.08	0.36	0.09	0.68	0.81	0.55	0.47	0.55	0.55
d, Delay for Lane Group [s/veh]	33.60	11.04	37.82	15.14	37.27	27.94	25.40	35.54	25.88	26.57
Lane Group LOS	C	B	D	B	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.48	0.53	0.35	0.54	1.62	4.58	2.58	0.78	2.56	2.72
50th-Percentile Queue Length [ft/ln]	62.07	13.33	8.82	13.49	40.53	114.52	64.40	19.48	64.01	68.09
95th-Percentile Queue Length [veh/ln]	4.47	0.96	0.64	0.97	2.92	8.09	4.64	1.40	4.61	4.90
95th-Percentile Queue Length [ft/ln]	111.72	23.99	15.88	24.28	72.96	202.27	115.92	35.06	115.22	122.56

Movement, Approach, & Intersection Results

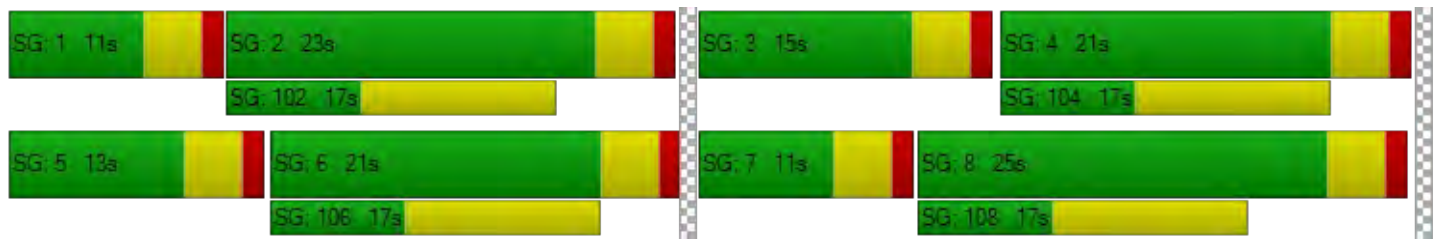
d_M, Delay for Movement [s/veh]	33.60	11.04	11.04	37.82	15.14	15.14	37.27	27.94	25.40	35.54	26.10	26.57
Movement LOS	C	B	B	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	29.69			21.14			28.37			26.82		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.87											
Intersection LOS	C											
Intersection V/C	0.443											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.266	1.993	3.032	2.750
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	543	486	600	486
d_b, Bicycle Delay [s]	18.58	20.06	17.15	20.06
I_b,int, Bicycle LOS Score for Intersection	2.140	1.672	2.298	1.893
Bicycle LOS	B	A	B	A

Sequence

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



**Intersection Level Of Service Report
Intersection 9: 11th Ave (NS) at Winona St (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	6	12	5	0	31	1	1	1	11	10	0	0
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	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
Total Hourly Volume [veh/h]	6	12	5	0	31	1	1	1	11	10	0	0
Peak Hour Factor	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860
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	3	1	0	9	0	0	0	3	3	0	0
Total Analysis Volume [veh/h]	7	14	6	0	35	1	1	1	12	11	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	7.29	0.00	0.00	7.25	0.00	0.00	8.89	9.40	8.50	8.97	9.38	8.42
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.00	0.00	0.00	0.04	0.04	0.04	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.29	0.29	0.29	0.00	0.00	0.00	0.97	0.97	0.97	0.83	0.83	0.83
d_A, Approach Delay [s/veh]	1.90			0.00			8.60			8.97		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.14											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 10: 11th Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.295

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			T T T			T T T		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	120.00	100.00	100.00
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			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	63	1	8	12	4	39	15	597	40	5	502	8
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	1	8	12	4	39	15	597	40	5	502	8
Peak Hour Factor	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970
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]	20	0	3	4	1	12	5	187	13	2	157	3
Total Analysis Volume [veh/h]	79	1	10	15	5	49	19	749	50	6	630	10
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	130	0	0	130	0	130	130	0	130	130	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	16	27	0	12	23	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
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	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34	2	14	14	1	13	13
g / C, Green / Cycle	0.56	0.56	0.03	0.23	0.23	0.01	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.05	0.04	0.01	0.18	0.18	0.00	0.14	0.14
s, saturation flow rate [veh/h]	1410	1515	1593	1772	1733	1593	1772	1762
c, Capacity [veh/h]	902	922	44	407	398	17	377	375
d1, Uniform Delay [s]	6.07	6.02	28.73	21.82	21.83	29.54	21.79	21.79
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	0.12	4.66	3.59	3.71	9.62	2.17	2.19
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.06	0.34	0.79	0.79	0.30	0.68	0.68
d, Delay for Lane Group [s/veh]	6.24	6.15	33.39	25.41	25.54	39.16	23.95	23.98
Lane Group LOS	A	A	C	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.39	0.30	0.25	4.06	4.00	0.11	3.09	3.08
50th-Percentile Queue Length [ft/ln]	9.84	7.43	6.21	101.57	99.95	2.75	77.23	76.95
95th-Percentile Queue Length [veh/ln]	0.71	0.54	0.45	7.31	7.20	0.20	5.56	5.54
95th-Percentile Queue Length [ft/ln]	17.71	13.38	11.18	182.83	179.90	4.95	139.01	138.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.24	6.24	6.24	6.15	6.15	6.15	33.39	25.47	25.54	39.16	23.97	23.98
Movement LOS	A	A	A	A	A	A	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	6.24			6.15			25.66			24.11		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	23.13											
Intersection LOS	C											
Intersection V/C	0.295											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	20.01			20.01			20.01			0.00		
I_p,int, Pedestrian LOS Score for Intersection	1.741			1.724			2.826			0.000		
Crosswalk LOS	A			A			C			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	567			567			767			633		
d_b, Bicycle Delay [s]	15.41			15.41			11.41			14.01		
I_b,int, Bicycle LOS Score for Intersection	1.678			1.650			2.098			1.984		
Bicycle LOS	A			A			B			A		

Sequence

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



Balsam at Winona Apartments

Vistro File: C:\...\PME.vistro
Report File: C:\...\PME.pdf

Scenario 1 Existing PM Peak Hour
12/15/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Amargosa Rd (NS) at La Mesa Rd (EW)	Signalized	HCM 6th Edition	WB Right	0.746	31.7	C
2	I-15 NB Ramps (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	EB Left	0.732	15.1	B
3	Mariposa Rd (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.666	27.7	C
7	Balsam Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.676	28.5	C
9	11th Ave (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	WB Left	0.020	9.4	A
10	11th Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.532	19.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Amargosa Rd (NS) at La Mesa Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	31.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.746

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	קוורט			קוורט			קוורט			קוורט		
Lane Configuration	קוורט			קוורט			קוורט			קוורט		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	285.00	100.00	100.00	385.00	100.00	100.00	135.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	45.00			45.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	104	276	327	577	506	319	86	678	99	337	1054	446
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	276	327	577	506	319	86	678	99	337	1054	446
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	71	0	148	129	82	22	173	25	86	270	114
Total Analysis Volume [veh/h]	106	282	0	591	518	327	88	694	101	345	1079	456
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	23	33	0	11	23	0	18	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	18	18	19	30	30	6	21	21	12	27	27
g / C, Green / Cycle	0.08	0.21	0.21	0.22	0.35	0.35	0.07	0.25	0.25	0.14	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.04	0.08	0.00	0.20	0.15	0.21	0.03	0.20	0.07	0.12	0.22	0.30
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	3373	1506	2912	4826	1506
c, Capacity [veh/h]	220	702	313	637	1185	529	209	828	370	406	1512	472
d1, Uniform Delay [s]	37.69	29.04	0.00	32.37	21.05	22.70	37.75	30.30	25.92	35.60	25.66	28.50
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	1.58	1.66	0.00	5.68	1.13	5.13	1.30	2.11	0.38	4.57	0.59	12.69
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.47	0.39	0.00	0.91	0.43	0.60	0.41	0.82	0.27	0.83	0.70	0.95
d, Delay for Lane Group [s/veh]	39.28	30.70	0.00	38.06	22.18	27.83	39.05	32.41	26.30	40.18	26.26	41.19
Lane Group LOS	D	C	A	D	C	C	D	C	C	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.03	2.44	0.00	5.86	3.69	5.52	0.85	6.28	1.55	3.45	5.76	9.67
50th-Percentile Queue Length [ft/ln]	25.84	60.98	0.00	146.52	92.26	137.98	21.28	157.03	38.69	86.30	144.05	241.70
95th-Percentile Queue Length [veh/ln]	1.86	4.39	0.00	9.83	6.64	9.37	1.53	10.39	2.79	6.21	9.70	14.77
95th-Percentile Queue Length [ft/ln]	46.52	109.77	0.00	245.78	166.07	234.30	38.30	259.78	69.64	155.35	242.46	369.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.28	30.70	0.00	38.06	22.18	27.83	39.05	32.41	26.30	40.18	26.26	41.19
Movement LOS	D	C	A	D	C	C	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	33.05			30.00			32.37			32.43		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	31.71											
Intersection LOS	C											
Intersection V/C	0.746											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.21	32.21	32.21	32.21
I_p,int, Pedestrian LOS Score for Intersection	2.867	3.052	3.150	3.348
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	682	447	612
d_b, Bicycle Delay [s]	27.20	18.45	25.62	20.48
I_b,int, Bicycle LOS Score for Intersection	1.873	2.716	2.272	2.570
Bicycle LOS	A	B	B	B

Sequence




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



Intersection Level Of Service Report
Intersection 2: I-15 NB Ramps (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.732

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
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 Pocket	2	0	0	0	0	0	2	0	0	0	0	0
Pocket Length [ft]	410.00	100.00	100.00	100.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	317	2	293	0	0	0	220	1364	0	0	1525	381
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	317	2	293	0	0	0	220	1364	0	0	1525	381
Peak Hour Factor	0.9820	0.9820	0.9820	0.7800	0.7800	0.7800	0.9820	0.9820	0.7800	0.7800	0.9820	0.9820
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]	81	1	75	0	0	0	56	347	0	0	388	97
Total Analysis Volume [veh/h]	323	2	298	0	0	0	224	1389	0	0	1553	388
Presence of On-Street Parking	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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	18	0	0	0	0	16	42	0	0	26	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		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	R		L	C	C	R
C, Cycle Length [s]	60	60	60		60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	17		7	35	24	24
g / C, Green / Cycle	0.29	0.29	0.29		0.11	0.58	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.19		0.08	0.28	0.32	0.25
s, saturation flow rate [veh/h]	1593	1688	1506		2912	4826	4826	1506
c, Capacity [veh/h]	460	487	434		334	2792	1917	598
d1, Uniform Delay [s]	16.87	16.87	18.91		25.49	7.45	15.97	14.63
k, delay calibration	0.50	0.50	0.50		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.99	1.88	8.47		2.23	0.13	0.79	1.14
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.34	0.67		0.66	0.49	0.80	0.64
d, Delay for Lane Group [s/veh]	18.86	18.75	27.38		27.72	7.58	16.76	15.77
Lane Group LOS	B	B	C		C	A	B	B
Critical Lane Group	No	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.80	1.89	4.30		1.44	2.23	4.95	3.49
50th-Percentile Queue Length [ft/ln]	44.95	47.24	107.41		35.95	55.69	123.86	87.34
95th-Percentile Queue Length [veh/ln]	3.24	3.40	7.70		2.59	4.01	8.61	6.29
95th-Percentile Queue Length [ft/ln]	80.91	85.04	192.39		64.71	100.25	215.13	157.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.80	18.75	27.38	0.00	0.00	0.00	27.72	7.58	0.00	0.00	16.76	15.77
Movement LOS	B	B	C				C	A			B	B
d_A, Approach Delay [s/veh]	22.91			0.00			10.38			16.56		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	15.12											
Intersection LOS	B											
Intersection V/C	0.732											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.117	1.986	0.000	0.000
Crosswalk LOS	B	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	467	0	1267	733
d_b, Bicycle Delay [s]	17.63	30.00	4.03	12.03
I_b,int, Bicycle LOS Score for Intersection	2.569	4.132	2.431	2.608
Bicycle LOS	B	D	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Mariposa Rd (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	27.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.666

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	305.00	100.00	100.00	210.00	100.00	100.00	355.00	100.00	100.00	180.00	100.00	100.00
Speed [mph]	50.00			50.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	393	264	103	137	217	102	120	1237	287	86	1395	143
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	393	264	103	137	217	102	120	1237	287	86	1395	143
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	102	69	27	36	56	27	31	321	75	22	363	37
Total Analysis Volume [veh/h]	409	274	107	142	226	106	125	1286	298	89	1450	149
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	21	0	18	21	0	12	30	0	11	29	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	25	25	7	19	19	7	26	26	6	26	26
g / C, Green / Cycle	0.16	0.32	0.32	0.08	0.24	0.24	0.08	0.33	0.33	0.07	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.13	0.08	0.07	0.05	0.06	0.07	0.04	0.26	0.19	0.03	0.29	0.09
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	4826	1506	2912	4826	1506
c, Capacity [veh/h]	464	1064	475	243	809	361	238	1574	491	218	1541	481
d1, Uniform Delay [s]	32.71	20.34	20.13	35.28	24.71	24.80	35.21	24.44	22.46	35.30	26.09	20.49
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	4.58	0.56	1.05	2.05	0.81	1.96	1.66	0.91	1.11	1.16	2.38	0.34
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.85	0.25	0.22	0.56	0.27	0.28	0.50	0.79	0.58	0.39	0.91	0.30
d, Delay for Lane Group [s/veh]	37.29	20.90	21.18	37.33	25.53	26.76	36.87	25.35	23.57	36.46	28.46	20.83
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.68	1.72	1.40	1.26	1.61	1.63	1.11	6.45	4.19	0.79	7.90	1.87
50th-Percentile Queue Length [ft/ln]	92.01	42.99	35.06	31.53	40.30	40.77	27.74	161.33	104.85	19.71	197.39	46.78
95th-Percentile Queue Length [veh/ln]	6.62	3.10	2.52	2.27	2.90	2.94	2.00	10.62	7.55	1.42	12.50	3.37
95th-Percentile Queue Length [ft/ln]	165.62	77.38	63.10	56.76	72.54	73.39	49.93	265.48	188.73	35.49	312.59	84.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.29	20.90	21.18	37.33	25.53	26.76	36.87	25.35	23.57	36.46	28.46	20.83
Movement LOS	D	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	29.42			29.35			25.88			28.22		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.68											
Intersection LOS	C											
Intersection V/C	0.666											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.76	29.76	29.76	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.901	2.815	3.477	3.346
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	425	425	650	625
d_b, Bicycle Delay [s]	24.81	24.81	18.23	18.91
I_b,int, Bicycle LOS Score for Intersection	2.187	1.936	2.464	2.453
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 7: Balsam Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.676

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TT			TTT			TTT		
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 Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	85.00	100.00	100.00	115.00	100.00	100.00	250.00	100.00	100.00
Speed [mph]	30.00			30.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	474	5	73	4	6	9	18	1037	339	98	1140	7
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	474	5	73	4	6	9	18	1037	339	98	1140	7
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	125	1	19	1	2	2	5	273	89	26	300	2
Total Analysis Volume [veh/h]	498	5	77	4	6	9	19	1090	356	103	1199	7
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	27	0	12	21	0	11	29	0	12	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	L	C	R	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	31	1	17	2	26	26	6	30	30
g / C, Green / Cycle	0.18	0.39	0.01	0.22	0.03	0.33	0.33	0.08	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.16	0.05	0.00	0.01	0.01	0.31	0.23	0.06	0.22	0.22
s, saturation flow rate [veh/h]	2912	1520	1593	1602	1593	3373	1506	1593	3373	1766
c, Capacity [veh/h]	510	587	12	351	46	1108	495	124	1272	666
d1, Uniform Delay [s]	32.53	15.89	39.51	24.65	38.16	26.06	23.29	36.26	19.98	19.98
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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]	9.41	0.47	15.79	0.23	5.33	4.93	1.71	11.51	0.44	0.85
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	0.93	0.13	0.33	0.04	0.39	0.94	0.69	0.79	0.59	0.59
d, Delay for Lane Group [s/veh]	41.94	16.35	55.30	24.88	43.48	30.99	25.00	47.77	20.43	20.83
Lane Group LOS	D	B	E	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.04	0.96	0.13	0.24	0.40	9.25	5.20	2.16	5.05	5.36
50th-Percentile Queue Length [ft/ln]	126.01	24.05	3.24	6.04	9.91	231.35	129.98	54.11	126.29	134.12
95th-Percentile Queue Length [veh/ln]	8.72	1.73	0.23	0.44	0.71	14.24	8.94	3.90	8.74	9.16
95th-Percentile Queue Length [ft/ln]	218.05	43.28	5.84	10.88	17.84	356.08	223.46	97.41	218.45	229.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.94	16.35	16.35	55.30	24.88	24.88	43.48	30.99	25.00	47.77	20.56	20.83
Movement LOS	D	B	B	E	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	38.32			31.28			29.69			22.71		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	28.48											
Intersection LOS	C											
Intersection V/C	0.676											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.76	29.76	29.76	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.367	1.949	3.270	3.021
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	575	425	625	650
d_b, Bicycle Delay [s]	20.31	24.81	18.91	18.23
I_b,int, Bicycle LOS Score for Intersection	2.470	1.591	2.710	2.244
Bicycle LOS	B	A	B	B

Sequence

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



**Intersection Level Of Service Report
Intersection 9: 11th Ave (NS) at Winona St (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	16	30	13	2	31	1	1	0	20	17	0	2
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	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
Total Hourly Volume [veh/h]	16	30	13	2	31	1	1	0	20	17	0	2
Peak Hour Factor	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110
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]	5	9	4	1	10	0	0	0	6	5	0	1
Total Analysis Volume [veh/h]	20	37	16	2	38	1	1	0	25	21	0	2
Pedestrian Volume [ped/h]	0			0			0			0		

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	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	7.30	0.00	0.00	7.30	0.00	0.00	9.23	9.74	8.53	9.39	9.73	8.57
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.00	0.00	0.00	0.06	0.06	0.06	0.07	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.77	0.77	0.77	0.10	0.10	0.10	1.56	1.56	1.56	1.70	1.70	1.70
d_A, Approach Delay [s/veh]	1.98			0.43			8.56			9.30		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.67											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 10: 11th Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.532

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			T T T			T T T		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	120.00	100.00	100.00
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			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	90	9	20	10	8	71	57	920	93	12	1066	18
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	9	20	10	8	71	57	920	93	12	1066	18
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	23	2	5	3	2	18	15	239	24	3	277	5
Total Analysis Volume [veh/h]	94	9	21	10	8	74	59	956	97	12	1108	19
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	130	0	0	130	0	130	130	0	130	130	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	27	0	12	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
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	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23	4	24	24	1	21	21
g / C, Green / Cycle	0.38	0.38	0.07	0.40	0.40	0.02	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.08	0.06	0.04	0.29	0.29	0.01	0.31	0.31
s, saturation flow rate [veh/h]	1427	1533	1593	1772	1715	1593	1772	1761
c, Capacity [veh/h]	641	642	117	713	691	36	624	620
d1, Uniform Delay [s]	12.62	12.46	26.79	15.13	15.13	28.95	18.22	18.22
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.64	0.45	3.16	1.41	1.45	5.35	4.16	4.19
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.19	0.14	0.49	0.72	0.72	0.33	0.87	0.87
d, Delay for Lane Group [s/veh]	13.26	12.91	29.95	16.53	16.58	34.31	22.38	22.41
Lane Group LOS	B	B	C	B	B	C	C	C
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.11	0.81	0.81	4.92	4.78	0.21	6.40	6.37
50th-Percentile Queue Length [ft/ln]	27.68	20.34	20.17	123.03	119.39	5.20	160.05	159.25
95th-Percentile Queue Length [veh/ln]	1.99	1.46	1.45	8.56	8.36	0.37	10.55	10.51
95th-Percentile Queue Length [ft/ln]	49.82	36.61	36.31	213.99	208.99	9.35	263.78	262.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.26	13.26	13.26	12.91	12.91	12.91	29.95	16.55	16.58	34.31	22.40	22.41
Movement LOS	B	B	B	B	B	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	13.26			12.91			17.27			22.53		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	19.33											
Intersection LOS	B											
Intersection V/C	0.532											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.787	1.763	3.118	0.000
Crosswalk LOS	A	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	767	800
d_b, Bicycle Delay [s]	15.41	15.41	11.41	10.80
I_b,int, Bicycle LOS Score for Intersection	1.756	1.706	2.442	2.464
Bicycle LOS	A	A	B	B

Sequence

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



Opening Year (2022) Without Project

Balsam at Winona Apartments

Vistro File: C:\...\AME.vistro

Scenario 2 Opening Year (2022) Without Project AM Peak Hour

Report File: C:\...\AMOYWO.pdf

12/15/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Amargosa Rd (NS) at La Mesa Rd (EW)	Signalized	HCM 6th Edition	NB Left	0.653	27.4	C
2	I-15 NB Ramps (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	EB Left	0.434	17.4	B
3	Mariposa Rd (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.378	23.5	C
7	Balsam Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	EB Left	0.683	28.9	C
9	11th Ave (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.001	9.7	A
10	11th Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.357	22.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Amargosa Rd (NS) at La Mesa Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	27.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.653

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTL			TTL			TTL			TTL		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	285.00	100.00	100.00	385.00	100.00	100.00	135.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	45.00			45.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	13	86	70	301	124	74	126	594	43	83	334	445
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	33	0	0	0	58	0	0	58	37
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	89	73	346	129	77	131	676	45	86	405	500
Peak Hour Factor	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	27	0	104	39	23	39	203	13	26	121	150
Total Analysis Volume [veh/h]	17	107	0	415	155	92	157	811	54	103	486	600
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	21	0	15	24	0	11	21	0	23	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	18	18	11	27	27	7	29	29	6	28	28
g / C, Green / Cycle	0.02	0.23	0.23	0.14	0.34	0.34	0.08	0.36	0.36	0.07	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.00	0.03	0.00	0.12	0.04	0.05	0.04	0.20	0.03	0.03	0.08	0.33
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	3373	1506	2912	4826	1506
c, Capacity [veh/h]	69	764	341	401	1149	513	241	1218	544	218	1704	532
d1, Uniform Delay [s]	38.33	24.58	0.00	33.78	18.09	18.34	35.24	20.42	16.83	35.30	18.28	25.07
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	1.45	0.31	0.00	6.01	0.20	0.62	1.91	0.40	0.06	1.17	0.07	10.51
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.20	0.12	0.00	0.86	0.11	0.15	0.54	0.55	0.08	0.40	0.24	0.94
d, Delay for Lane Group [s/veh]	39.78	24.89	0.00	39.78	18.29	18.96	37.15	20.82	16.89	36.47	18.35	35.58
Lane Group LOS	D	C	A	D	B	B	D	C	B	D	B	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.14	0.66	0.00	3.40	0.78	0.99	1.22	4.56	0.50	0.79	1.60	9.64
50th-Percentile Queue Length [ft/ln]	3.54	16.40	0.00	84.94	19.40	24.73	30.44	113.93	12.56	19.71	40.08	240.97
95th-Percentile Queue Length [veh/ln]	0.25	1.18	0.00	6.12	1.40	1.78	2.19	8.06	0.90	1.42	2.89	14.73
95th-Percentile Queue Length [ft/ln]	6.36	29.52	0.00	152.90	34.92	44.51	54.79	201.46	22.61	35.49	72.15	368.26

Movement, Approach, & Intersection Results

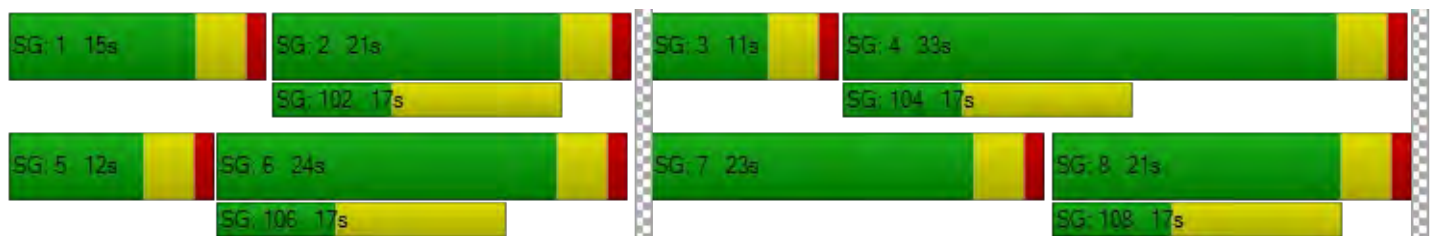
d_M, Delay for Movement [s/veh]	39.78	24.89	0.00	39.78	18.29	18.96	37.15	20.82	16.89	36.47	18.35	35.58
Movement LOS	D	C	A	D	B	B	D	C	B	D	B	D
d_A, Approach Delay [s/veh]	26.92			31.86			23.12			28.62		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.39											
Intersection LOS	C											
Intersection V/C	0.653											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.76	29.76	29.76	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.663	2.853	2.965	3.170
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	425	500	425	725
d_b, Bicycle Delay [s]	24.81	22.50	24.81	16.26
I_b,int, Bicycle LOS Score for Intersection	1.645	2.015	2.263	2.105
Bicycle LOS	A	B	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 2: I-15 NB Ramps (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	17.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.434

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
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 Pocket	2	0	0	0	0	0	2	0	0	0	0	0
Pocket Length [ft]	410.00	100.00	100.00	100.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	166	1	153	0	0	0	156	824	0	0	689	212
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	27	0	0	0	0	91	0	0	95	16
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	173	1	186	0	0	0	162	948	0	0	812	236
Peak Hour Factor	0.7800	0.7800	0.7800	0.7800	0.7800	0.7800	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	0	60	0	0	0	52	304	0	0	260	76
Total Analysis Volume [veh/h]	222	1	238	0	0	0	208	1215	0	0	1041	303
Presence of On-Street Parking	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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	21	0	0	0	0	13	39	0	0	26	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		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	R		L	C	C	R
C, Cycle Length [s]	60	60	60		60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	27	27		7	25	14	14
g / C, Green / Cycle	0.46	0.46	0.46		0.11	0.41	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.12		0.06	0.20	0.17	0.16
s, saturation flow rate [veh/h]	1593	1688	1506		2912	4826	4826	1506
c, Capacity [veh/h]	723	766	684		323	1995	1140	356
d1, Uniform Delay [s]	9.49	9.49	10.26		25.24	12.91	21.15	20.86
k, delay calibration	0.50	0.50	0.50		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.31	0.98		1.21	0.18	0.84	2.15
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.12	0.27		0.50	0.48	0.71	0.66
d, Delay for Lane Group [s/veh]	9.82	9.80	11.24		26.45	13.09	22.00	23.01
Lane Group LOS	A	A	B		C	B	C	C
Critical Lane Group	No	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.62	0.65	1.51		1.02	2.50	3.09	2.79
50th-Percentile Queue Length [ft/ln]	15.53	16.35	37.67		25.60	62.38	77.16	69.75
95th-Percentile Queue Length [veh/ln]	1.12	1.18	2.71		1.84	4.49	5.56	5.02
95th-Percentile Queue Length [ft/ln]	27.95	29.43	67.80		46.08	112.29	138.88	125.55

Movement, Approach, & Intersection Results

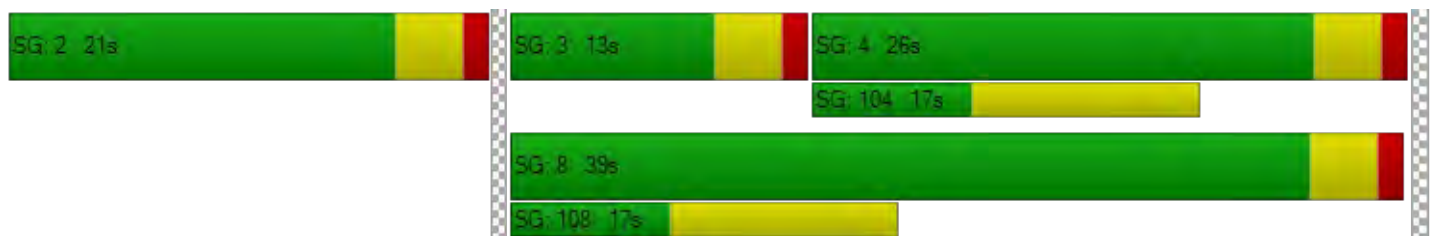
d_M, Delay for Movement [s/veh]	9.81	9.80	11.24	0.00	0.00	0.00	26.45	13.09	0.00	0.00	22.00	23.01
Movement LOS	A	A	B				C	B			C	C
d_A, Approach Delay [s/veh]	10.55			0.00			15.04			22.22		
Approach LOS	B			A			B			C		
d_I, Intersection Delay [s/veh]	17.39											
Intersection LOS	B											
Intersection V/C	0.434											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.035	1.887	0.000	0.000
Crosswalk LOS	B	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	0	1167	733
d_b, Bicycle Delay [s]	15.41	30.00	5.21	12.03
I_b,int, Bicycle LOS Score for Intersection	2.154	4.132	2.170	2.136
Bicycle LOS	B	D	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Mariposa Rd (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.378

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	T			T			T			T		
Lane Configuration	T			T			T			T		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	305.00	100.00	100.00	210.00	100.00	100.00	355.00	100.00	100.00	180.00	100.00	100.00
Speed [mph]	50.00			50.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	96	96	46	67	74	37	49	793	143	41	788	94
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	15	16	2	7	9	109	0	15	104	16
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	103	63	86	79	45	60	934	149	58	924	114
Peak Hour Factor	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050
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]	31	32	20	27	25	14	19	290	46	18	287	35
Total Analysis Volume [veh/h]	124	128	78	107	98	56	75	1160	185	72	1148	142
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	21	0	12	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	23	23	6	23	23	5	16	16	5	16	16
g / C, Green / Cycle	0.09	0.35	0.35	0.09	0.35	0.35	0.07	0.24	0.24	0.07	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.04	0.03	0.02	0.03	0.02	0.19	0.10	0.02	0.19	0.08
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	4826	1506	2912	4826	1506
c, Capacity [veh/h]	266	1189	531	252	1172	523	213	1178	368	209	1172	366
d1, Uniform Delay [s]	27.88	14.11	14.28	28.05	14.22	14.32	28.61	23.10	20.68	28.68	23.12	20.23
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	0.88	0.14	0.46	0.80	0.11	0.32	0.72	1.26	0.72	0.72	1.23	0.48
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.38	0.09	0.12	0.34	0.07	0.09	0.28	0.79	0.41	0.28	0.79	0.31
d, Delay for Lane Group [s/veh]	28.76	14.25	14.73	28.85	14.33	14.64	29.33	24.36	21.40	29.39	24.36	20.71
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.69	0.44	0.59	0.59	0.34	0.42	0.43	4.03	1.74	0.41	3.99	1.30
50th-Percentile Queue Length [ft/ln]	17.19	11.10	14.69	14.82	8.54	10.46	10.65	100.86	43.57	10.31	99.71	32.42
95th-Percentile Queue Length [veh/ln]	1.24	0.80	1.06	1.07	0.62	0.75	0.77	7.26	3.14	0.74	7.18	2.33
95th-Percentile Queue Length [ft/ln]	30.94	19.98	26.44	26.67	15.38	18.82	19.17	181.54	78.43	18.56	179.48	58.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.76	14.25	14.73	28.85	14.33	14.64	29.33	24.36	21.40	29.39	24.36	20.71
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	19.82			20.34			24.23			24.24		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	23.50											
Intersection LOS	C											
Intersection V/C	0.378											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.704	2.689	3.272	3.185
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]	523	523	523	554
d_b, Bicycle Delay [s]	17.72	17.72	17.72	16.99
I_b,int, Bicycle LOS Score for Intersection	1.779	1.733	2.188	2.162
Bicycle LOS	A	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 7: Balsam Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.683

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TT			TTT			TTT		
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 Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	85.00	100.00	100.00	115.00	100.00	100.00	250.00	100.00	100.00
Speed [mph]	30.00			30.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	291	26	35	18	26	24	92	617	186	45	542	20
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	42	1	113	42	128	126	14	0	1	7	112
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	303	69	37	132	69	153	222	656	193	48	571	133
Peak Hour Factor	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690
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]	99	22	12	43	22	50	72	213	63	16	186	43
Total Analysis Volume [veh/h]	394	90	48	172	90	199	289	853	251	62	743	173
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	21	0	13	21	0	15	25	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	23	7	21	11	19	19	4	13	13
g / C, Green / Cycle	0.13	0.33	0.10	0.31	0.16	0.28	0.28	0.06	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.10	0.06	0.08	0.14	0.14	0.19	0.13	0.03	0.14	0.14
s, saturation flow rate [veh/h]	2912	1669	1593	1579	1593	3373	1506	1593	3373	1608
c, Capacity [veh/h]	376	552	165	483	251	928	414	99	607	289
d1, Uniform Delay [s]	29.73	16.78	30.75	19.69	28.96	22.91	21.17	31.83	27.47	27.57
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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]	4.26	0.77	9.09	3.16	11.29	1.01	0.82	3.65	2.26	5.21
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	0.81	0.19	0.80	0.46	0.88	0.71	0.47	0.48	0.78	0.80
d, Delay for Lane Group [s/veh]	33.99	17.55	39.85	22.85	40.25	23.92	21.99	35.48	29.73	32.78
Lane Group LOS	C	B	D	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.60	1.27	2.52	3.17	4.10	4.42	2.43	0.83	3.61	3.76
50th-Percentile Queue Length [ft/ln]	65.10	31.63	62.93	79.28	102.51	110.58	60.70	20.72	90.16	94.00
95th-Percentile Queue Length [veh/ln]	4.69	2.28	4.53	5.71	7.38	7.87	4.37	1.49	6.49	6.77
95th-Percentile Queue Length [ft/ln]	117.17	56.93	113.28	142.70	184.52	196.80	109.26	37.29	162.28	169.20

Movement, Approach, & Intersection Results

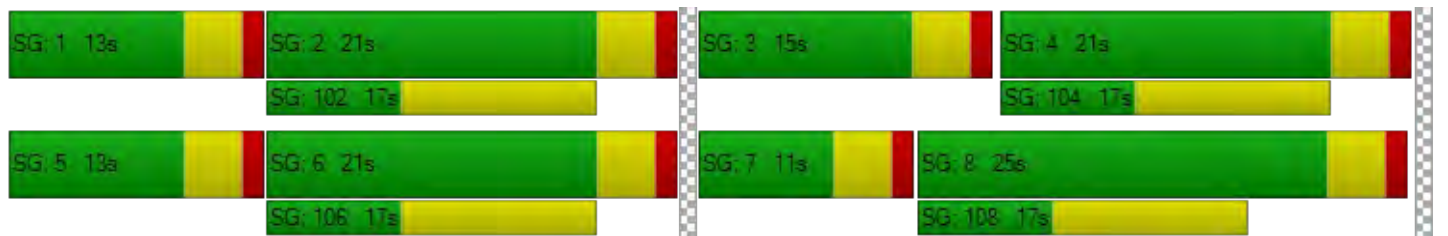
d_M, Delay for Movement [s/veh]	33.99	17.55	17.55	39.85	22.85	22.85	40.25	23.92	21.99	35.48	30.25	32.78
Movement LOS	C	B	B	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	29.73			29.19			26.96			31.03		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.89											
Intersection LOS	C											
Intersection V/C	0.683											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.293			2.179			3.095			2.823		
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]	486			486			600			486		
d_b, Bicycle Delay [s]	20.06			20.06			17.15			20.06		
I_b,int, Bicycle LOS Score for Intersection	2.234			2.144			2.443			1.973		
Bicycle LOS	B			B			B			A		

Sequence

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



Intersection Level Of Service Report
Intersection 9: 11th Ave (NS) at Winona St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	6	12	5	0	31	1	1	1	11	10	0	0
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	24	8	1	15	2	0	0	0	8	0	2
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]	6	36	13	1	47	3	1	1	11	18	0	2
Peak Hour Factor	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860
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	10	4	0	13	1	0	0	3	5	0	1
Total Analysis Volume [veh/h]	7	41	15	1	53	3	1	1	12	20	0	2
Pedestrian Volume [ped/h]	0			0			0			0		

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	7.32	0.00	0.00	7.31	0.00	0.00	9.19	9.69	8.58	9.31	9.71	8.60
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.00	0.00	0.00	0.04	0.04	0.04	0.07	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.29	0.29	0.29	0.05	0.05	0.05	1.00	1.00	1.00	1.77	1.77	1.77
d_A, Approach Delay [s/veh]	0.80			0.14			8.71			9.24		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.51											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 10: 11th Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.357

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			T T T			T T T		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	120.00	100.00	100.00
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			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	63	1	8	12	4	39	15	597	40	5	502	8
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	0	2	0	21	28	86	14	0	85	4
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	1	8	14	4	62	44	707	56	5	607	12
Peak Hour Factor	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970
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]	25	0	3	4	1	19	14	222	18	2	190	4
Total Analysis Volume [veh/h]	100	1	10	18	5	78	55	887	70	6	762	15
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	130	0	0	130	0	130	130	0	130	130	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	16	27	0	12	23	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
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	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	4	16	16	1	13	13
g / C, Green / Cycle	0.52	0.52	0.06	0.27	0.27	0.01	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.06	0.05	0.03	0.22	0.22	0.00	0.18	0.18
s, saturation flow rate [veh/h]	1392	1516	1593	1772	1726	1593	1772	1759
c, Capacity [veh/h]	832	853	100	485	472	17	393	390
d1, Uniform Delay [s]	7.42	7.42	27.19	20.30	20.31	29.54	22.09	22.10
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.22	3.09	3.12	3.22	9.62	3.70	3.74
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.09	0.44	0.80	0.80	0.30	0.79	0.79
d, Delay for Lane Group [s/veh]	7.68	7.64	30.28	23.43	23.52	39.16	25.79	25.83
Lane Group LOS	A	A	C	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.57	0.51	0.63	4.66	4.55	0.11	3.95	3.94
50th-Percentile Queue Length [ft/ln]	14.16	12.66	15.82	116.41	113.83	2.75	98.86	98.39
95th-Percentile Queue Length [veh/ln]	1.02	0.91	1.14	8.20	8.05	0.20	7.12	7.08
95th-Percentile Queue Length [ft/ln]	25.48	22.79	28.47	204.88	201.32	4.95	177.95	177.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.68	7.68	7.68	7.64	7.64	7.64	30.28	23.47	23.52	39.16	25.81	25.83
Movement LOS	A	A	A	A	A	A	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	7.68			7.64			23.84			25.92		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	22.94											
Intersection LOS	C											
Intersection V/C	0.357											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.755	1.748	2.923	0.000
Crosswalk LOS	A	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	767	633
d_b, Bicycle Delay [s]	15.41	15.41	11.41	14.01
I_b,int, Bicycle LOS Score for Intersection	1.706	1.692	2.225	2.074
Bicycle LOS	A	A	B	B

Sequence

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



Balsam at Winona Apartments

Vistro File: C:\...\PME.vistro

Scenario 2 Opening Year (2022) Without Project PM Peak
Hour

Report File: C:\...\PMOYWO.pdf

12/15/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Amargosa Rd (NS) at La Mesa Rd (EW)	Signalized	HCM 6th Edition	NB Left	0.801	34.7	C
2	I-15 NB Ramps (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	EB Left	0.791	16.7	B
3	Mariposa Rd (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.731	28.4	C
7	Balsam Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.815	32.9	C
9	11th Ave (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	WB Left	0.033	9.9	A
10	11th Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.611	19.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Amargosa Rd (NS) at La Mesa Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	34.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.801

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	285.00	100.00	100.00	385.00	100.00	100.00	135.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	45.00			45.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	104	276	327	577	506	319	86	678	99	337	1054	446
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	28	0	0	0	49	0	0	48	40
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	287	340	628	526	332	89	754	103	350	1144	504
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	73	0	161	135	85	23	193	26	90	293	129
Total Analysis Volume [veh/h]	111	294	0	643	538	340	91	772	105	358	1171	516
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	21	0	26	21	0	11	25	0	23	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	17	17	22	33	33	6	26	26	14	33	33
g / C, Green / Cycle	0.07	0.18	0.18	0.23	0.34	0.34	0.07	0.27	0.27	0.14	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.04	0.09	0.00	0.22	0.16	0.22	0.03	0.22	0.07	0.12	0.24	0.33
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	3373	1506	2912	4826	1506
c, Capacity [veh/h]	203	616	275	674	1162	519	195	923	412	420	1692	528
d1, Uniform Delay [s]	42.72	34.71	0.00	35.78	24.19	26.20	42.69	32.31	26.93	39.58	26.26	30.12
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	2.18	2.55	0.00	7.35	1.28	6.11	1.68	1.88	0.31	4.60	0.48	13.27
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.53	0.47	0.00	0.93	0.45	0.64	0.46	0.82	0.25	0.83	0.68	0.95
d, Delay for Lane Group [s/veh]	44.90	37.26	0.00	43.13	25.47	32.31	44.37	34.18	27.24	44.17	26.74	43.39
Lane Group LOS	D	D	A	D	C	C	D	C	C	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.24	3.05	0.00	7.38	4.49	6.74	1.01	7.81	1.76	4.05	6.85	12.21
50th-Percentile Queue Length [ft/ln]	30.97	76.14	0.00	184.54	112.30	168.45	25.31	195.24	43.99	101.34	171.25	305.36
95th-Percentile Queue Length [veh/ln]	2.23	5.48	0.00	11.84	7.97	11.00	1.82	12.39	3.17	7.30	11.14	17.95
95th-Percentile Queue Length [ft/ln]	55.75	137.06	0.00	295.93	199.19	274.88	45.56	309.82	79.18	182.42	278.56	448.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.90	37.26	0.00	43.13	25.47	32.31	44.37	34.18	27.24	44.17	26.74	43.39
Movement LOS	D	D	A	D	C	C	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	39.35			34.46			34.38			33.99		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	34.65											
Intersection LOS	C											
Intersection V/C	0.801											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	37.14			37.14			37.14			37.14		
I_p,int, Pedestrian LOS Score for Intersection	2.883			3.090			3.190			3.401		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	358			358			442			695		
d_b, Bicycle Delay [s]	32.02			32.02			28.82			20.23		
I_b,int, Bicycle LOS Score for Intersection	1.885			2.786			2.340			2.659		
Bicycle LOS	A			C			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: I-15 NB Ramps (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	16.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.791

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
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 Pocket	2	0	0	0	0	0	2	0	0	0	0	0
Pocket Length [ft]	410.00	100.00	100.00	100.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	317	2	293	0	0	0	220	1364	0	0	1525	381
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	25	0	0	0	0	77	0	0	88	20
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	330	2	330	0	0	0	229	1496	0	0	1674	416
Peak Hour Factor	0.9820	0.9820	0.9820	0.7800	0.7800	0.7800	0.9820	0.9820	0.7800	0.7800	0.9820	0.9820
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]	84	1	84	0	0	0	58	381	0	0	426	106
Total Analysis Volume [veh/h]	336	2	336	0	0	0	233	1523	0	0	1705	424
Presence of On-Street Parking	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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	0	0	12	43	0	0	31	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		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	R		L	C	C	R
C, Cycle Length [s]	65	65	65		65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	19		7	38	27	27
g / C, Green / Cycle	0.30	0.30	0.30		0.11	0.58	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.22		0.08	0.31	0.35	0.28
s, saturation flow rate [veh/h]	1593	1688	1506		2912	4826	4826	1506
c, Capacity [veh/h]	477	505	451		312	2788	1975	616
d1, Uniform Delay [s]	17.77	17.77	20.46		28.16	8.41	17.39	15.69
k, delay calibration	0.50	0.50	0.50		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.92	1.82	10.68		3.42	0.16	1.09	1.31
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.34	0.73		0.73	0.54	0.85	0.68
d, Delay for Lane Group [s/veh]	19.70	19.59	31.14		31.58	8.57	18.48	17.00
Lane Group LOS	B	B	C		C	A	B	B
Critical Lane Group	No	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.01	2.11	5.47		1.71	2.97	6.26	4.30
50th-Percentile Queue Length [ft/ln]	50.26	52.87	136.85		42.76	74.24	156.45	107.49
95th-Percentile Queue Length [veh/ln]	3.62	3.81	9.31		3.08	5.35	10.36	7.70
95th-Percentile Queue Length [ft/ln]	90.47	95.16	232.77		76.97	133.63	259.01	192.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.64	19.59	31.14	0.00	0.00	0.00	31.58	8.57	0.00	0.00	18.48	17.00
Movement LOS	B	B	C				C	A			B	B
d_A, Approach Delay [s/veh]	25.38			0.00			11.62			18.19		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	16.72											
Intersection LOS	B											
Intersection V/C	0.791											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.137	2.012	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	554	0	1200	831
d_b, Bicycle Delay [s]	16.99	32.50	5.20	11.11
I_b,int, Bicycle LOS Score for Intersection	2.652	4.132	2.508	2.709
Bicycle LOS	B	D	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Mariposa Rd (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.731

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	T			T			T			T		
Lane Configuration	T			T			T			T		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	305.00	100.00	100.00	210.00	100.00	100.00	355.00	100.00	100.00	180.00	100.00	100.00
Speed [mph]	50.00			50.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	393	264	103	137	217	102	120	1237	287	86	1395	143
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	13	14	3	10	11	91	0	13	98	15
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	409	278	120	156	229	116	136	1377	298	102	1549	164
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	106	72	31	41	60	30	35	358	77	27	403	43
Total Analysis Volume [veh/h]	425	289	125	162	238	121	141	1431	310	106	1610	170
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	21	0	17	21	0	11	21	0	21	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	23	23	7	17	17	7	28	28	6	27	27
g / C, Green / Cycle	0.16	0.29	0.29	0.08	0.21	0.21	0.08	0.34	0.34	0.08	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.14	0.08	0.08	0.05	0.07	0.08	0.05	0.29	0.20	0.04	0.32	0.11
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	4826	1506	2912	4826	1506
c, Capacity [veh/h]	473	989	441	248	728	325	243	1656	517	229	1633	510
d1, Uniform Delay [s]	32.68	21.79	21.73	35.41	26.40	26.66	35.27	24.16	21.53	35.21	25.80	19.66
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	5.18	0.71	1.52	2.66	1.13	3.06	2.03	1.15	1.02	1.36	4.18	0.36
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.87	0.28	0.27	0.63	0.31	0.36	0.56	0.83	0.58	0.44	0.95	0.32
d, Delay for Lane Group [s/veh]	37.86	22.51	23.25	38.07	27.53	29.72	37.30	25.31	22.55	36.57	29.98	20.02
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.87	1.91	1.74	1.46	1.79	1.99	1.27	7.25	4.24	0.94	9.08	2.10
50th-Percentile Queue Length [ft/ln]	96.72	47.67	43.59	36.39	44.81	49.83	31.69	181.20	105.93	23.43	227.12	52.42
95th-Percentile Queue Length [veh/ln]	6.96	3.43	3.14	2.62	3.23	3.59	2.28	11.66	7.61	1.69	14.03	3.77
95th-Percentile Queue Length [ft/ln]	174.09	85.80	78.45	65.50	80.66	89.69	57.04	291.58	190.33	42.18	350.69	94.36

Movement, Approach, & Intersection Results

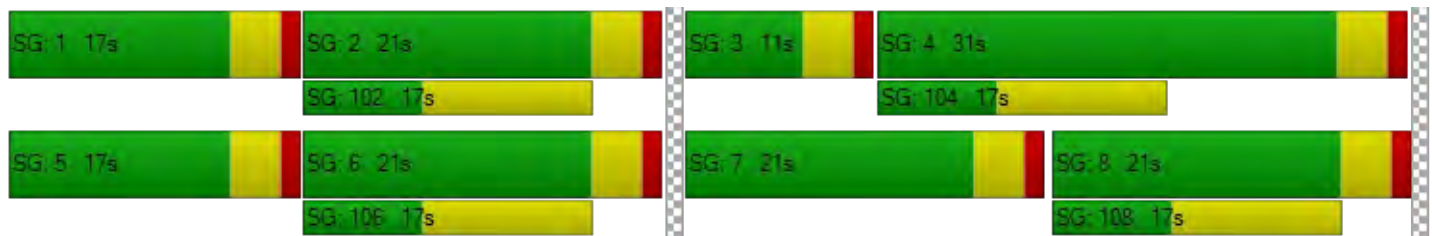
d_M, Delay for Movement [s/veh]	37.86	22.51	23.25	38.07	27.53	29.72	37.30	25.31	22.55	36.57	29.98	20.02
Movement LOS	D	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	30.40			31.32			25.76			29.45		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.44											
Intersection LOS	C											
Intersection V/C	0.731											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.76	29.76	29.76	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.921	2.838	3.528	3.406
Crosswalk LOS	C	C	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	425	425	425	675
d_b, Bicycle Delay [s]	24.81	24.81	24.81	17.56
I_b,int, Bicycle LOS Score for Intersection	2.225	1.973	2.556	2.558
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 7: Balsam Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	32.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.815

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TT			TTT			TTT		
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 Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	85.00	100.00	100.00	115.00	100.00	100.00	250.00	100.00	100.00
Speed [mph]	30.00			30.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	474	5	73	4	6	9	18	1037	339	98	1140	7
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	35	1	89	35	114	106	12	0	1	12	93
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	493	40	77	93	41	123	125	1090	353	103	1198	100
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	130	11	20	24	11	32	33	287	93	27	315	26
Total Analysis Volume [veh/h]	518	42	81	98	43	129	131	1146	371	108	1260	105
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	21	0	20	21	0	16	33	0	11	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	L	C	R	L	C	C
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	27	6	17	8	29	29	7	28	28
g / C, Green / Cycle	0.19	0.32	0.07	0.20	0.10	0.34	0.34	0.08	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.17	0.07	0.06	0.10	0.08	0.32	0.23	0.06	0.26	0.26
s, saturation flow rate [veh/h]	2912	1587	1593	1564	1593	3373	1506	1593	3373	1703
c, Capacity [veh/h]	548	506	117	319	154	1145	511	127	1089	550
d1, Uniform Delay [s]	33.73	21.30	38.76	30.09	37.67	27.41	24.23	38.49	26.19	26.19
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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]	6.11	1.07	12.30	5.90	10.68	6.24	1.69	12.53	1.35	2.67
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	0.90	0.23	0.79	0.51	0.81	0.95	0.69	0.81	0.79	0.79
d, Delay for Lane Group [s/veh]	39.84	22.37	51.06	35.99	48.36	33.65	25.92	51.02	27.55	28.87
Lane Group LOS	D	C	D	D	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.30	1.82	2.28	3.44	2.87	10.66	5.78	2.44	7.39	7.66
50th-Percentile Queue Length [ft/ln]	132.46	45.51	56.93	86.08	71.70	266.52	144.41	61.09	184.72	191.53
95th-Percentile Queue Length [veh/ln]	9.07	3.28	4.10	6.20	5.16	16.02	9.72	4.40	11.85	12.20
95th-Percentile Queue Length [ft/ln]	226.84	81.92	102.48	154.95	129.05	400.38	242.95	109.97	296.17	305.02

Movement, Approach, & Intersection Results

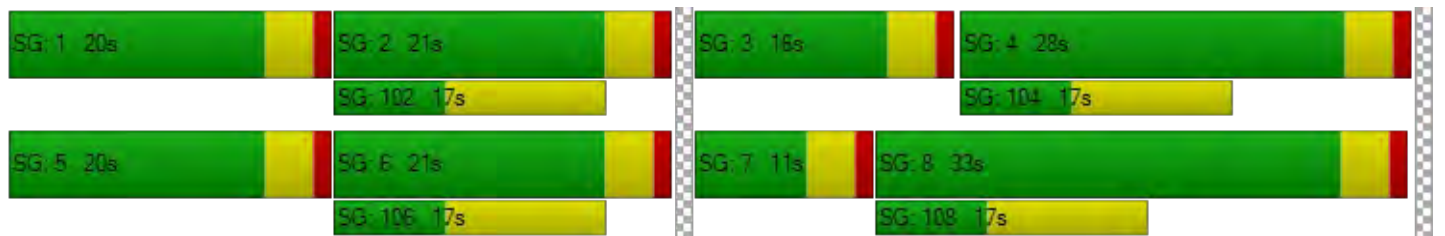
d_M, Delay for Movement [s/veh]	39.84	22.37	22.37	51.06	35.99	35.99	48.36	33.65	25.92	51.02	27.92	28.87
Movement LOS	D	C	C	D	D	D	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	36.49			41.44			33.08			29.68		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	32.94											
Intersection LOS	C											
Intersection V/C	0.815											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.21	32.21	32.21	32.21
I_p,int, Pedestrian LOS Score for Intersection	2.397	2.106	3.340	3.098
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]	400	400	682	565
d_b, Bicycle Delay [s]	27.20	27.20	18.45	21.89
I_b,int, Bicycle LOS Score for Intersection	2.566	1.984	2.853	2.330
Bicycle LOS	B	A	C	B

Sequence

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



**Intersection Level Of Service Report
Intersection 9: 11th Ave (NS) at Winona St (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.033

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	16	30	13	2	31	1	1	0	20	17	0	2
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	20	7	3	21	8	0	0	0	7	0	2
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]	17	51	21	5	53	9	1	0	21	25	0	4
Peak Hour Factor	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110
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]	5	16	6	2	16	3	0	0	6	8	0	1
Total Analysis Volume [veh/h]	21	63	26	6	65	11	1	0	26	31	0	5
Pedestrian Volume [ped/h]	0			0			0			0		

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	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	7.36	0.00	0.00	7.36	0.00	0.00	9.65	10.16	8.65	9.88	10.21	8.76
Movement LOS	A	A	A	A	A	A	A	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.01	0.01	0.01	0.07	0.07	0.07	0.11	0.11	0.11
95th-Percentile Queue Length [ft/ln]	0.84	0.84	0.84	0.25	0.25	0.25	1.69	1.69	1.69	2.86	2.86	2.86
d_A, Approach Delay [s/veh]	1.41			0.55			8.70			9.73		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.07											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 10: 11th Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.611

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			T T T			T T T		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	120.00	100.00	100.00
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			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	90	9	20	10	8	71	57	920	93	12	1066	18
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	0	0	5	0	23	24	67	11	0	71	3
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	106	9	21	15	8	97	83	1024	108	12	1180	22
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	28	2	5	4	2	25	22	266	28	3	307	6
Total Analysis Volume [veh/h]	110	9	22	16	8	101	86	1064	112	12	1227	23
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	130	0	0	130	0	130	130	0	130	130	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	27	0	12	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
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	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	5	27	27	1	23	23
g / C, Green / Cycle	0.33	0.33	0.09	0.45	0.45	0.02	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.05	0.32	0.33	0.01	0.34	0.34
s, saturation flow rate [veh/h]	1409	1528	1593	1772	1713	1593	1772	1760
c, Capacity [veh/h]	575	576	141	790	763	35	672	668
d1, Uniform Delay [s]	14.59	14.50	26.34	13.66	13.68	28.96	17.54	17.55
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.97	0.82	3.95	1.32	1.37	5.80	4.91	4.96
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.21	0.59	0.73	0.73	0.34	0.90	0.90
d, Delay for Lane Group [s/veh]	15.55	15.32	30.30	14.98	15.05	34.76	22.46	22.51
Lane Group LOS	B	B	C	B	B	C	C	C
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.41	1.23	1.17	5.12	4.97	0.21	7.11	7.08
50th-Percentile Queue Length [ft/ln]	35.30	30.85	29.36	127.90	124.31	5.26	177.75	176.93
95th-Percentile Queue Length [veh/ln]	2.54	2.22	2.11	8.83	8.63	0.38	11.48	11.44
95th-Percentile Queue Length [ft/ln]	63.54	55.54	52.85	220.63	215.74	9.47	287.08	286.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.55	15.55	15.55	15.32	15.32	15.32	30.30	15.01	15.05	34.76	22.48	22.51
Movement LOS	B	B	B	B	B	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	15.55			15.32			16.06			22.60		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	18.96											
Intersection LOS	B											
Intersection V/C	0.611											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.800	1.787	3.214	0.000
Crosswalk LOS	A	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	767	800
d_b, Bicycle Delay [s]	15.41	15.41	11.41	10.80
I_b,int, Bicycle LOS Score for Intersection	1.784	1.758	2.562	2.561
Bicycle LOS	A	A	B	B

Sequence

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



Opening Year (2022) With Project

Balsam at Winona Apartments

Vistro File: C:\...\AME.vistro

Scenario 3 Opening Year (2022) With Project AM Peak Hour

Report File: C:\...\AMOYW.pdf

12/15/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Amargosa Rd (NS) at La Mesa Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.664	27.6	C
2	I-15 NB Ramps (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	EB Left	0.440	17.3	B
3	Mariposa Rd (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	EB Left	0.384	23.5	C
4	Balsam Ave (NS) at Project Dwy 1 (EW)	Two-way stop	HCM 6th Edition	WB Left	0.006	8.6	A
5	Balsam Ave (NS) at Project Dwy 2 (EW)	Two-way stop	HCM 6th Edition	WB Left	0.019	8.7	A
6	Balsam Ave (NS) at Project Dwy 3 (EW)	Two-way stop	HCM 6th Edition	WB Left	0.023	8.8	A
7	Balsam Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	NB Left	0.726	29.3	C
8	Project Dwy 4 (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	NB Right	0.008	8.4	A
9	11th Ave (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.005	9.8	A
10	11th Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.359	22.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Amargosa Rd (NS) at La Mesa Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	27.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.664

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	TWO			TWO			TWO			TWO		
Lane Configuration	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Turning Movement												
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	285.00	100.00	100.00	385.00	100.00	100.00	135.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	45.00			45.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	13	86	70	301	124	74	126	594	43	83	334	445
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	37	0	0	0	59	0	0	61	48
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	89	73	350	129	77	131	677	45	86	408	511
Peak Hour Factor	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340	0.8340
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	27	0	105	39	23	39	203	13	26	122	153
Total Analysis Volume [veh/h]	17	107	0	420	155	92	157	812	54	103	489	613
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	15	25	0	11	21	0	23	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	18	18	11	27	27	7	29	29	6	29	29
g / C, Green / Cycle	0.02	0.22	0.22	0.14	0.33	0.33	0.08	0.37	0.37	0.07	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.00	0.03	0.00	0.12	0.04	0.05	0.04	0.20	0.03	0.03	0.08	0.34
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	3373	1506	2912	4826	1506
c, Capacity [veh/h]	69	748	334	401	1132	505	241	1235	551	218	1728	539
d1, Uniform Delay [s]	38.33	24.90	0.00	33.83	18.36	18.61	35.24	20.11	16.57	35.30	18.01	24.96
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	1.45	0.33	0.00	6.53	0.20	0.64	1.91	0.38	0.06	1.17	0.07	11.66
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.20	0.12	0.00	0.87	0.11	0.15	0.54	0.55	0.08	0.40	0.24	0.95
d, Delay for Lane Group [s/veh]	39.78	25.22	0.00	40.36	18.57	19.25	37.15	20.50	16.63	36.47	18.08	36.63
Lane Group LOS	D	C	A	D	B	B	D	C	B	D	B	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.14	0.66	0.00	3.47	0.78	1.00	1.22	4.51	0.50	0.79	1.60	10.01
50th-Percentile Queue Length [ft/ln]	3.54	16.56	0.00	86.68	19.61	25.00	30.44	112.86	12.42	19.71	39.97	250.32
95th-Percentile Queue Length [veh/ln]	0.25	1.19	0.00	6.24	1.41	1.80	2.19	8.00	0.89	1.42	2.88	15.20
95th-Percentile Queue Length [ft/ln]	6.36	29.80	0.00	156.02	35.30	45.00	54.79	199.98	22.36	35.49	71.94	380.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.78	25.22	0.00	40.36	18.57	19.25	37.15	20.50	16.63	36.47	18.08	36.63
Movement LOS	D	C	A	D	B	B	D	C	B	D	B	D
d_A, Approach Delay [s/veh]	27.20			32.38			22.85			29.09		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.62											
Intersection LOS	C											
Intersection V/C	0.664											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.76	29.76	29.76	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.663	2.856	2.966	3.173
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	425	525	425	725
d_b, Bicycle Delay [s]	24.81	21.76	24.81	16.26
I_b,int, Bicycle LOS Score for Intersection	1.645	2.018	2.263	2.112
Bicycle LOS	A	B	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 2: I-15 NB Ramps (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	17.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.440

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
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 Pocket	2	0	0	0	0	0	2	0	0	0	0	0
Pocket Length [ft]	410.00	100.00	100.00	100.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	166	1	153	0	0	0	156	824	0	0	689	212
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	30	0	0	0	0	96	0	0	109	24
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	173	1	189	0	0	0	162	953	0	0	826	244
Peak Hour Factor	0.7800	0.7800	0.7800	0.7800	0.7800	0.7800	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	0	61	0	0	0	52	305	0	0	265	78
Total Analysis Volume [veh/h]	222	1	242	0	0	0	208	1222	0	0	1059	313
Presence of On-Street Parking	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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	21	0	0	0	0	13	39	0	0	26	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		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	R		L	C	C	R
C, Cycle Length [s]	60	60	60		60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	27	27		7	25	14	14
g / C, Green / Cycle	0.45	0.45	0.45		0.11	0.42	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.13		0.06	0.20	0.17	0.16
s, saturation flow rate [veh/h]	1593	1688	1506		2912	4826	4826	1506
c, Capacity [veh/h]	718	760	678		323	2012	1156	361
d1, Uniform Delay [s]	9.62	9.62	10.41		25.24	12.78	21.03	20.80
k, delay calibration	0.50	0.50	0.50		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.32	1.02		1.21	0.17	0.84	2.24
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.12	0.28		0.50	0.47	0.71	0.68
d, Delay for Lane Group [s/veh]	9.95	9.93	11.44		26.45	12.95	21.87	23.04
Lane Group LOS	A	A	B		C	B	C	C
Critical Lane Group	No	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.63	0.66	1.55		1.02	2.49	3.13	2.89
50th-Percentile Queue Length [ft/ln]	15.67	16.50	38.75		25.60	62.20	78.25	72.24
95th-Percentile Queue Length [veh/ln]	1.13	1.19	2.79		1.84	4.48	5.63	5.20
95th-Percentile Queue Length [ft/ln]	28.21	29.70	69.74		46.08	111.96	140.85	130.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.94	9.93	11.44	0.00	0.00	0.00	26.45	12.95	0.00	0.00	21.87	23.04
Movement LOS	A	A	B				C	B			C	C
d_A, Approach Delay [s/veh]	10.72			0.00			14.91			22.14		
Approach LOS	B			A			B			C		
d_I, Intersection Delay [s/veh]	17.35											
Intersection LOS	B											
Intersection V/C	0.440											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.036	1.891	0.000	0.000
Crosswalk LOS	B	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	0	1167	733
d_b, Bicycle Delay [s]	15.41	30.00	5.21	12.03
I_b,int, Bicycle LOS Score for Intersection	2.159	4.132	2.173	2.148
Bicycle LOS	B	D	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Mariposa Rd (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.384

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	305.00	100.00	100.00	210.00	100.00	100.00	355.00	100.00	100.00	180.00	100.00	100.00
Speed [mph]	50.00			50.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	96	96	46	67	74	37	49	793	143	41	788	94
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	16	18	2	7	9	117	0	18	126	22
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	103	64	88	79	45	60	942	149	61	946	120
Peak Hour Factor	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050	0.8050
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]	31	32	20	27	25	14	19	293	46	19	294	37
Total Analysis Volume [veh/h]	124	128	80	109	98	56	75	1170	185	76	1175	149
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	12	22	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	23	23	6	22	22	5	16	16	5	16	16
g / C, Green / Cycle	0.09	0.35	0.35	0.09	0.34	0.34	0.07	0.25	0.25	0.07	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.04	0.03	0.02	0.03	0.02	0.20	0.10	0.02	0.20	0.08
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	4826	1506	2912	4826	1506
c, Capacity [veh/h]	266	1175	525	254	1161	518	213	1184	369	215	1187	370
d1, Uniform Delay [s]	27.88	14.28	14.46	28.02	14.36	14.45	28.61	23.08	20.62	28.59	23.07	20.15
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	0.88	0.15	0.48	0.81	0.11	0.33	0.72	1.28	0.71	0.72	1.28	0.50
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.38	0.09	0.12	0.35	0.07	0.09	0.28	0.80	0.40	0.28	0.80	0.32
d, Delay for Lane Group [s/veh]	28.76	14.43	14.93	28.83	14.47	14.78	29.33	24.36	21.33	29.30	24.35	20.65
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.69	0.45	0.60	0.61	0.34	0.42	0.43	4.07	1.74	0.43	4.09	1.36
50th-Percentile Queue Length [ft/ln]	17.19	11.20	15.08	15.15	8.61	10.53	10.65	101.75	43.47	10.82	102.19	34.09
95th-Percentile Queue Length [veh/ln]	1.24	0.81	1.09	1.09	0.62	0.76	0.77	7.33	3.13	0.78	7.36	2.45
95th-Percentile Queue Length [ft/ln]	30.94	20.16	27.14	27.28	15.49	18.96	19.17	183.16	78.25	19.48	183.93	61.37

Movement, Approach, & Intersection Results

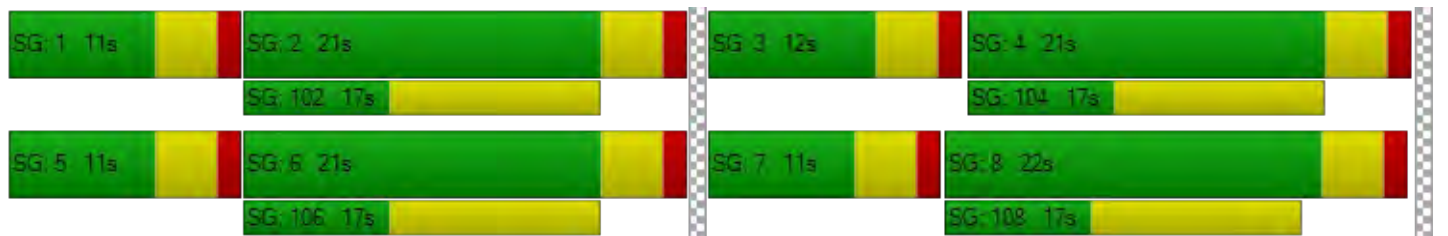
d_M, Delay for Movement [s/veh]	28.76	14.43	14.93	28.83	14.47	14.78	29.33	24.36	21.33	29.30	24.35	20.65
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	19.92			20.50			24.22			24.22		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	23.52											
Intersection LOS	C											
Intersection V/C	0.384											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	22.43			22.43			22.43			22.43		
I_p,int, Pedestrian LOS Score for Intersection	2.705			2.691			3.276			3.192		
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]	523			523			554			523		
d_b, Bicycle Delay [s]	17.72			17.72			16.99			17.72		
I_b,int, Bicycle LOS Score for Intersection	1.780			1.735			2.193			2.179		
Bicycle LOS	A			A			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 4: Balsam Ave (NS) at Project Dwy 1 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Northbound		Southbound		Westbound	
Approach						
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Westbound	
Base Volume Input [veh/h]	1	0	0	1	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	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	2	6	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]	1	2	0	3	6	0
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]	0	1	0	1	2	0
Total Analysis Volume [veh/h]	1	2	0	3	6	0
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	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.22	0.00	8.56	8.35
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.45	0.45
d_A, Approach Delay [s/veh]	0.00		0.00		8.56	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.28					
Intersection LOS	A					

**Intersection Level Of Service Report
Intersection 5: Balsam Ave (NS) at Project Dwy 2 (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Northbound		Southbound		Westbound	
Approach						
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Westbound	
Base Volume Input [veh/h]	1	0	0	1	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	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	7	0	8	19	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]	3	7	0	9	19	0
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]	1	2	0	2	5	0
Total Analysis Volume [veh/h]	3	7	0	9	20	0
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	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.24	0.00	8.66	8.41
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.06	0.06
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	1.45	1.45
d_A, Approach Delay [s/veh]	0.00		0.00		8.66	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.33					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Balsam Ave (NS) at Project Dwy 3 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.023

Intersection Setup

Name	Northbound		Southbound		Westbound	
Approach						
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Westbound	
Base Volume Input [veh/h]	1	0	0	1	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	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	8	0	27	22	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]	10	8	0	28	22	0
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]	3	2	0	7	6	0
Total Analysis Volume [veh/h]	11	8	0	29	23	0
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	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.25	0.00	8.80	8.46
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	1.74	1.74
d_A, Approach Delay [s/veh]	0.00		0.00		8.80	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.85					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Balsam Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	29.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.726

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TT			TTT			TTT		
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 Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	85.00	100.00	100.00	115.00	100.00	100.00	250.00	100.00	100.00
Speed [mph]	30.00			30.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	291	26	35	18	26	24	92	617	186	45	542	20
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	1	121	50	159	137	14	0	1	7	115
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	303	72	37	140	77	184	233	656	193	48	571	136
Peak Hour Factor	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690	0.7690
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]	99	23	12	46	25	60	76	213	63	16	186	44
Total Analysis Volume [veh/h]	394	94	48	182	100	239	303	853	251	62	743	177
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	21	0	12	21	0	16	26	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	22	8	22	12	20	20	4	13	13
g / C, Green / Cycle	0.11	0.31	0.11	0.31	0.17	0.29	0.29	0.06	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.10	0.07	0.09	0.17	0.15	0.19	0.13	0.03	0.14	0.14
s, saturation flow rate [veh/h]	2912	1671	1593	1576	1593	3373	1506	1593	3373	1605
c, Capacity [veh/h]	334	522	173	482	272	974	435	99	609	290
d1, Uniform Delay [s]	30.71	17.77	30.57	20.26	28.30	22.05	20.37	31.83	27.44	27.54
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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]	10.61	0.91	9.15	4.37	8.34	0.82	0.71	3.65	2.26	5.22
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	0.91	0.21	0.81	0.54	0.86	0.67	0.44	0.48	0.78	0.80
d, Delay for Lane Group [s/veh]	41.33	18.68	39.72	24.63	36.64	22.87	21.08	35.48	29.70	32.77
Lane Group LOS	D	B	D	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.92	1.36	2.66	3.91	4.07	4.30	2.36	0.83	3.62	3.77
50th-Percentile Queue Length [ft/ln]	73.03	33.88	66.61	97.70	101.71	107.45	59.06	20.72	90.54	94.28
95th-Percentile Queue Length [veh/ln]	5.26	2.44	4.80	7.03	7.32	7.70	4.25	1.49	6.52	6.79
95th-Percentile Queue Length [ft/ln]	131.45	60.99	119.90	175.85	183.09	192.45	106.30	37.29	162.98	169.70

Movement, Approach, & Intersection Results

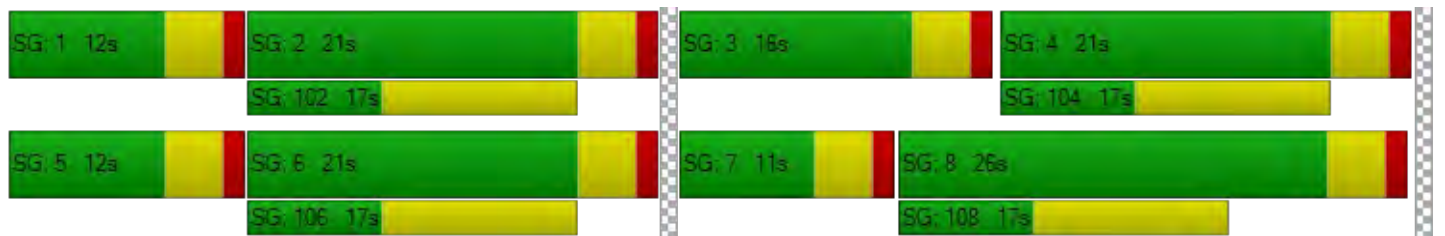
d_M, Delay for Movement [s/veh]	41.33	18.68	18.68	39.72	24.63	24.63	36.64	22.87	21.08	35.48	30.21	32.77
Movement LOS	D	B	B	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	35.33			29.90			25.51			31.01		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	29.27											
Intersection LOS	C											
Intersection V/C	0.726											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.295			2.200			3.103			2.826		
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]	486			486			629			486		
d_b, Bicycle Delay [s]	20.06			20.06			16.46			20.06		
I_b,int, Bicycle LOS Score for Intersection	2.239			2.221			2.452			1.975		
Bicycle LOS	B			B			B			A		

Sequence

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



Intersection Level Of Service Report
Intersection 8: Project Dwy 4 (NS) at Winona St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Northbound		Eastbound		Westbound	
Approach						
Lane Configuration	↔		↗		↖	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Eastbound		Westbound	
Base Volume Input [veh/h]	0	0	1	0	0	1
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	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	0	0	3	2
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]	0	9	1	0	3	3
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]	0	2	0	0	1	1
Total Analysis Volume [veh/h]	0	9	1	0	3	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
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	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.60	8.35	0.00	0.00	7.22	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.63	0.63	0.00	0.00	0.14	0.14
d_A, Approach Delay [s/veh]	8.35		0.00		3.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.05					
Intersection LOS	A					

**Intersection Level Of Service Report
Intersection 9: 11th Ave (NS) at Winona St (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	6	12	5	0	31	1	1	1	11	10	0	0
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	24	8	1	15	2	0	3	6	8	1	2
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	36	13	1	47	3	1	4	17	18	1	2
Peak Hour Factor	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860
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	10	4	0	13	1	0	1	5	5	0	1
Total Analysis Volume [veh/h]	9	41	15	1	53	3	1	5	19	20	1	2
Pedestrian Volume [ped/h]	0			0			0			0		

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	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	7.32	0.00	0.00	7.31	0.00	0.00	9.27	9.76	8.62	9.42	9.75	8.61
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.00	0.00	0.00	0.07	0.07	0.07	0.08	0.08	0.08
95th-Percentile Queue Length [ft/ln]	0.39	0.39	0.39	0.05	0.05	0.05	1.77	1.77	1.77	1.91	1.91	1.91
d_A, Approach Delay [s/veh]	1.03			0.14			8.86			9.36		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.03											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 10: 11th Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.359

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			T			T		
Lane Configuration	+			+			T			T		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	120.00	100.00	100.00
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			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	63	1	8	12	4	39	15	597	40	5	502	8
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	0	8	0	21	28	94	14	0	88	6
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	1	8	20	4	62	44	715	56	5	610	14
Peak Hour Factor	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970	0.7970
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]	25	0	3	6	1	19	14	224	18	2	191	4
Total Analysis Volume [veh/h]	100	1	10	25	5	78	55	897	70	6	765	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			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	130	0	0	130	0	130	130	0	130	130	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	16	27	0	12	23	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
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	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	4	16	16	1	13	13
g / C, Green / Cycle	0.52	0.52	0.06	0.27	0.27	0.01	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.03	0.22	0.22	0.00	0.18	0.18
s, saturation flow rate [veh/h]	1393	1508	1593	1772	1727	1593	1772	1758
c, Capacity [veh/h]	831	850	100	487	475	17	396	392
d1, Uniform Delay [s]	7.47	7.49	27.19	20.27	20.27	29.54	22.04	22.05
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.24	3.09	3.18	3.27	9.62	3.69	3.74
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.10	0.44	0.80	0.80	0.30	0.79	0.79
d, Delay for Lane Group [s/veh]	7.73	7.73	30.28	23.45	23.54	39.16	25.74	25.79
Lane Group LOS	A	A	C	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.57	0.55	0.63	4.71	4.61	0.11	3.98	3.96
50th-Percentile Queue Length [ft/ln]	14.22	13.73	15.82	117.72	115.14	2.75	99.60	99.05
95th-Percentile Queue Length [veh/ln]	1.02	0.99	1.14	8.27	8.12	0.20	7.17	7.13
95th-Percentile Queue Length [ft/ln]	25.60	24.72	28.47	206.69	203.12	4.95	179.28	178.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.73	7.73	7.73	7.73	7.73	7.73	30.28	23.49	23.54	39.16	25.76	25.79
Movement LOS	A	A	A	A	A	A	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	7.73			7.73			23.86			25.87		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	22.90											
Intersection LOS	C											
Intersection V/C	0.359											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.755	1.751	2.926	0.000
Crosswalk LOS	A	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	767	633
d_b, Bicycle Delay [s]	15.41	15.41	11.41	14.01
I_b,int, Bicycle LOS Score for Intersection	1.706	1.702	2.232	2.079
Bicycle LOS	A	A	B	B

Sequence

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



Balsam at Winona Apartments

Vistro File: C:\...\PME.vistro

Scenario 3 Opening Year (2022) With Project PM Peak Hour

Report File: C:\...\PMOYW.pdf

12/15/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Amargosa Rd (NS) at La Mesa Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.811	35.2	D
2	I-15 NB Ramps (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	NB Right	0.800	17.2	B
3	Mariposa Rd (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.735	28.6	C
4	Balsam Ave (NS) at Project Dwy 1 (EW)	Two-way stop	HCM 6th Edition	WB Left	0.004	8.6	A
5	Balsam Ave (NS) at Project Dwy 2 (EW)	Two-way stop	HCM 6th Edition	WB Left	0.012	8.7	A
6	Balsam Ave (NS) at Project Dwy 3 (EW)	Two-way stop	HCM 6th Edition	WB Left	0.015	8.9	A
7	Balsam Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.835	34.4	C
8	Project Dwy 4 (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	NB Right	0.006	8.3	A
9	11th Ave (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	WB Thru	0.004	10.3	B
10	11th Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.617	18.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Amargosa Rd (NS) at La Mesa Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	35.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.811

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	285.00	100.00	100.00	385.00	100.00	100.00	135.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	45.00			45.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	104	276	327	577	506	319	86	678	99	337	1054	446
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	40	0	0	0	52	0	0	50	47
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	287	340	640	526	332	89	757	103	350	1146	511
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	73	0	164	135	85	23	194	26	90	293	131
Total Analysis Volume [veh/h]	111	294	0	655	538	340	91	775	105	358	1173	523
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	26	36	0	11	24	0	24	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	17	17	22	32	32	6	26	26	14	34	34
g / C, Green / Cycle	0.07	0.18	0.18	0.23	0.34	0.34	0.07	0.28	0.28	0.14	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.04	0.09	0.00	0.22	0.16	0.22	0.03	0.22	0.07	0.12	0.24	0.34
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	3373	1506	2912	4826	1506
c, Capacity [veh/h]	202	608	272	674	1155	516	194	929	415	421	1703	531
d1, Uniform Delay [s]	42.72	34.89	0.00	35.96	24.34	26.35	42.69	32.18	26.79	39.53	26.09	30.11
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	2.19	2.63	0.00	9.68	1.30	6.25	1.69	1.84	0.31	4.52	0.47	15.04
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.53	0.47	0.00	0.95	0.46	0.64	0.46	0.82	0.25	0.83	0.67	0.96
d, Delay for Lane Group [s/veh]	44.91	37.52	0.00	45.64	25.64	32.60	44.37	34.02	27.10	44.05	26.56	45.16
Lane Group LOS	D	D	A	D	C	C	D	C	C	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.24	3.06	0.00	7.76	4.51	6.77	1.01	7.82	1.75	4.05	6.84	12.66
50th-Percentile Queue Length [ft/ln]	30.97	76.46	0.00	194.06	112.74	169.34	25.31	195.60	43.86	101.18	170.91	316.54
95th-Percentile Queue Length [veh/ln]	2.23	5.51	0.00	12.33	7.99	11.04	1.82	12.41	3.16	7.28	11.12	18.50
95th-Percentile Queue Length [ft/ln]	55.75	137.64	0.00	308.29	199.80	276.05	45.56	310.28	78.95	182.12	278.10	462.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.91	37.52	0.00	45.64	25.64	32.60	44.37	34.02	27.10	44.05	26.56	45.16
Movement LOS	D	D	A	D	C	C	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	39.54			35.73			34.24			34.35		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	35.18											
Intersection LOS	D											
Intersection V/C	0.811											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	37.14	37.14
I_p,int, Pedestrian LOS Score for Intersection	2.883	3.094	3.191	3.405
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	358	674	421	695
d_b, Bicycle Delay [s]	32.02	20.89	29.61	20.23
I_b,int, Bicycle LOS Score for Intersection	1.885	2.795	2.343	2.663
Bicycle LOS	A	C	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 2: I-15 NB Ramps (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	17.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.800

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
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 Pocket	2	0	0	0	0	0	2	0	0	0	0	0
Pocket Length [ft]	410.00	100.00	100.00	100.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	317	2	293	0	0	0	220	1364	0	0	1525	381
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	34	0	0	0	0	92	0	0	97	25
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	330	2	339	0	0	0	229	1511	0	0	1683	421
Peak Hour Factor	0.9820	0.9820	0.9820	0.7800	0.7800	0.7800	0.9820	0.9820	0.7800	0.7800	0.9820	0.9820
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]	84	1	86	0	0	0	58	385	0	0	428	107
Total Analysis Volume [veh/h]	336	2	345	0	0	0	233	1539	0	0	1714	429
Presence of On-Street Parking	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	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
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]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	23	0	0	0	0	20	42	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		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	R		L	C	C	R
C, Cycle Length [s]	65	65	65		65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	20		7	37	26	26
g / C, Green / Cycle	0.31	0.31	0.31		0.11	0.57	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.23		0.08	0.31	0.35	0.28
s, saturation flow rate [veh/h]	1593	1688	1506		2912	4826	4826	1506
c, Capacity [veh/h]	489	518	462		326	2752	1916	598
d1, Uniform Delay [s]	17.40	17.40	20.18		27.86	8.74	18.16	16.42
k, delay calibration	0.50	0.50	0.50		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.81	1.71	10.52		2.81	0.17	1.46	1.54
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.33	0.33	0.73		0.70	0.55	0.88	0.70
d, Delay for Lane Group [s/veh]	19.21	19.11	30.71		30.67	8.92	19.62	17.96
Lane Group LOS	B	B	C		C	A	B	B
Critical Lane Group	No	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.98	2.08	5.58		1.68	3.11	6.55	4.52
50th-Percentile Queue Length [ft/ln]	49.48	52.05	139.45		41.97	77.63	163.67	113.06
95th-Percentile Queue Length [veh/ln]	3.56	3.75	9.45		3.02	5.59	10.74	8.01
95th-Percentile Queue Length [ft/ln]	89.06	93.69	236.28		75.55	139.74	268.58	200.25

Movement, Approach, & Intersection Results

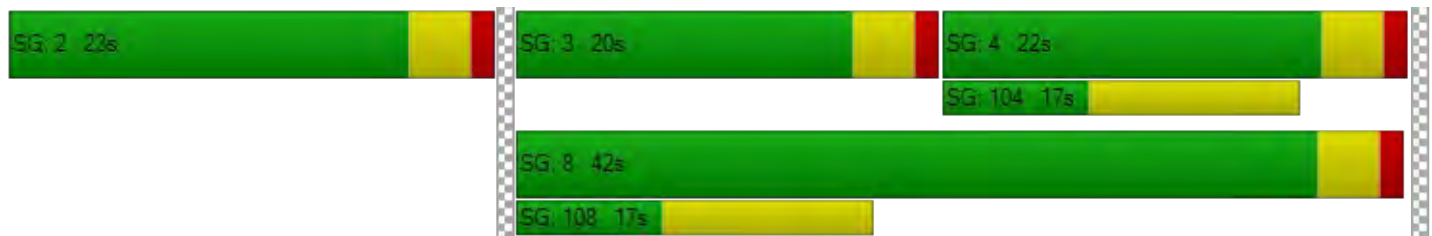
d_M, Delay for Movement [s/veh]	19.16	19.11	30.71	0.00	0.00	0.00	30.67	8.92	0.00	0.00	19.62	17.96
Movement LOS	B	B	C				C	A			B	B
d_A, Approach Delay [s/veh]	24.99			0.00			11.78			19.29		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	17.24											
Intersection LOS	B											
Intersection V/C	0.800											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.140	2.015	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	585	0	1169	554
d_b, Bicycle Delay [s]	16.28	32.50	5.61	16.99
I_b,int, Bicycle LOS Score for Intersection	2.667	4.132	2.517	2.717
Bicycle LOS	B	D	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Mariposa Rd (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.735

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	305.00	100.00	100.00	210.00	100.00	100.00	355.00	100.00	100.00	180.00	100.00	100.00
Speed [mph]	50.00			50.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	393	264	103	137	217	102	120	1237	287	86	1395	143
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	16	20	3	10	11	115	0	15	112	19
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	409	278	123	162	229	116	136	1401	298	104	1563	168
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	106	72	32	42	60	30	35	364	77	27	406	44
Total Analysis Volume [veh/h]	425	289	128	168	238	121	141	1456	310	108	1625	175
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	21	0	17	21	0	11	21	0	21	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	23	23	7	17	17	7	28	28	6	27	27
g / C, Green / Cycle	0.16	0.29	0.29	0.09	0.21	0.21	0.08	0.35	0.35	0.08	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.14	0.08	0.08	0.06	0.07	0.08	0.05	0.29	0.20	0.04	0.32	0.11
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	4826	1506	2912	4826	1506
c, Capacity [veh/h]	472	983	439	248	723	323	243	1662	519	230	1641	512
d1, Uniform Delay [s]	32.68	21.90	21.88	35.46	26.49	26.75	35.27	24.23	21.44	35.20	25.77	19.61
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	5.21	0.72	1.60	2.93	1.15	3.12	2.04	1.25	1.01	1.39	4.50	0.37
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.87	0.28	0.28	0.65	0.32	0.36	0.56	0.84	0.57	0.45	0.95	0.33
d, Delay for Lane Group [s/veh]	37.89	22.62	23.48	38.38	27.64	29.87	37.30	25.48	22.45	36.59	30.27	19.98
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C	B
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.87	1.91	1.80	1.52	1.80	2.00	1.27	7.42	4.23	0.96	9.23	2.15
50th-Percentile Queue Length [ft/ln]	96.76	47.80	44.95	37.99	44.91	49.97	31.69	185.57	105.70	23.91	230.64	53.73
95th-Percentile Queue Length [veh/ln]	6.97	3.44	3.24	2.74	3.23	3.60	2.28	11.89	7.60	1.72	14.21	3.87
95th-Percentile Queue Length [ft/ln]	174.16	86.04	80.91	68.38	80.83	89.95	57.05	297.27	190.00	43.03	355.18	96.71

Movement, Approach, & Intersection Results

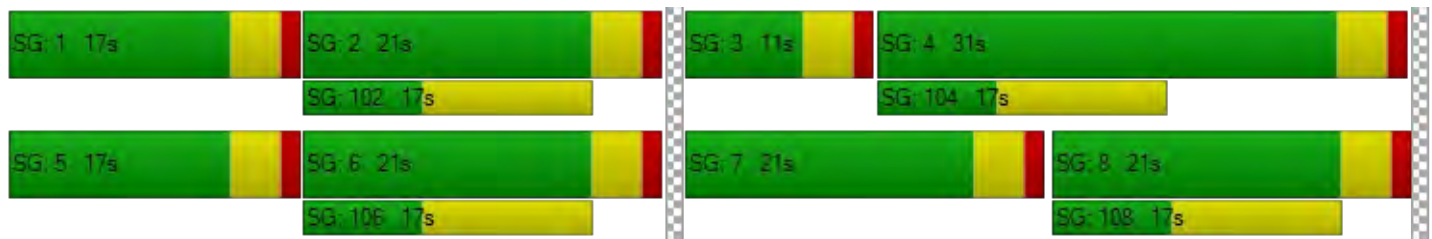
d_M, Delay for Movement [s/veh]	37.89	22.62	23.48	38.38	27.64	29.87	37.30	25.48	22.45	36.59	30.27	19.98
Movement LOS	D	C	C	D	C	C	D	C	C	D	C	B
d_A, Approach Delay [s/veh]	30.46			31.58			25.86			29.68		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.60											
Intersection LOS	C											
Intersection V/C	0.735											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.76	29.76	29.76	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.922	2.840	3.534	3.415
Crosswalk LOS	C	C	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	425	425	425	675
d_b, Bicycle Delay [s]	24.81	24.81	24.81	17.56
I_b,int, Bicycle LOS Score for Intersection	2.228	1.978	2.569	2.569
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 4: Balsam Ave (NS) at Project Dwy 1 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Northbound		Southbound		Westbound	
Approach						
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Westbound	
Base Volume Input [veh/h]	1	0	0	1	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	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	8	4	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]	1	6	0	9	4	0
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]	0	2	0	2	1	0
Total Analysis Volume [veh/h]	1	6	0	9	4	0
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	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.23	0.00	8.59	8.35
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.30	0.30
d_A, Approach Delay [s/veh]	0.00		0.00		8.59	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.72					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Balsam Ave (NS) at Project Dwy 2 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Northbound		Southbound		Westbound	
Approach						
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Westbound	
Base Volume Input [veh/h]	1	0	0	1	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	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	20	0	12	12	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]	7	20	0	13	12	0
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]	2	5	0	3	3	0
Total Analysis Volume [veh/h]	7	21	0	14	13	0
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	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.27	0.00	8.70	8.44
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.93	0.93
d_A, Approach Delay [s/veh]	0.00		0.00		8.70	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.01					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Balsam Ave (NS) at Project Dwy 3 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Northbound		Southbound		Westbound	
Approach						
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Westbound	
Base Volume Input [veh/h]	1	0	0	1	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	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	24	0	24	14	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]	27	24	0	25	14	0
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]	7	6	0	7	4	0
Total Analysis Volume [veh/h]	28	25	0	26	15	0
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	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.31	0.00	8.88	8.54
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.05	0.05
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	1.13	1.13
d_A, Approach Delay [s/veh]	0.00		0.00		8.88	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.38					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Balsam Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	34.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.835

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TT			TTT			TTT		
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 Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	85.00	100.00	100.00	115.00	100.00	100.00	250.00	100.00	100.00
Speed [mph]	30.00			30.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	474	5	73	4	6	9	18	1037	339	98	1140	7
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	44	1	94	40	134	139	12	0	1	12	101
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	493	49	77	98	46	143	158	1090	353	103	1198	108
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	130	13	20	26	12	38	42	287	93	27	315	28
Total Analysis Volume [veh/h]	518	52	81	103	48	150	166	1146	371	108	1260	114
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	21	0	19	21	0	18	33	0	12	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	L	C	R	L	C	C
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	26	7	18	10	29	29	7	26	26
g / C, Green / Cycle	0.18	0.31	0.08	0.21	0.12	0.35	0.35	0.08	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.17	0.08	0.06	0.12	0.10	0.32	0.23	0.06	0.26	0.26
s, saturation flow rate [veh/h]	2912	1599	1593	1563	1593	3373	1506	1593	3373	1698
c, Capacity [veh/h]	514	494	123	328	190	1165	520	127	1033	520
d1, Uniform Delay [s]	34.71	22.03	38.59	30.20	36.62	26.92	23.80	38.48	27.57	27.57
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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]	14.73	1.24	11.99	7.39	9.75	4.64	1.57	12.39	1.98	3.91
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	0.96	0.25	0.80	0.58	0.83	0.94	0.68	0.81	0.84	0.84
d, Delay for Lane Group [s/veh]	49.44	23.28	50.58	37.59	46.37	31.56	25.37	50.87	29.55	31.48
Lane Group LOS	D	C	D	D	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.97	2.01	2.39	4.07	3.54	10.31	5.70	2.44	7.77	8.10
50th-Percentile Queue Length [ft/ln]	149.18	50.23	59.63	101.72	88.48	257.83	142.57	60.99	194.37	202.62
95th-Percentile Queue Length [veh/ln]	9.97	3.62	4.29	7.32	6.37	15.58	9.62	4.39	12.35	12.77
95th-Percentile Queue Length [ft/ln]	249.33	90.42	107.33	183.09	159.26	389.49	240.49	109.77	308.69	319.34

Movement, Approach, & Intersection Results

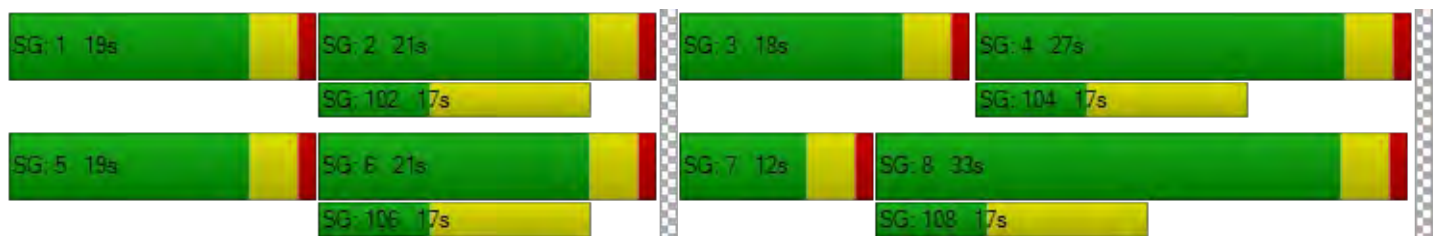
d_M, Delay for Movement [s/veh]	49.44	23.28	23.28	50.58	37.59	37.59	46.37	31.56	25.37	50.87	30.08	31.48
Movement LOS	D	C	C	D	D	D	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	44.12			42.03			31.65			31.71		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	34.40											
Intersection LOS	C											
Intersection V/C	0.835											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.401			2.132			3.350			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]	400			400			682			541		
d_b, Bicycle Delay [s]	27.20			27.20			18.45			22.61		
I_b,int, Bicycle LOS Score for Intersection	2.581			2.033			2.880			2.335		
Bicycle LOS	B			B			C			B		

Sequence

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



**Intersection Level Of Service Report
Intersection 8: Project Dwy 4 (NS) at Winona St (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	8.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Northbound		Eastbound		Westbound	
Approach						
Lane Configuration	↔		↗		↖	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Eastbound		Westbound	
Base Volume Input [veh/h]	0	0	1	0	0	1
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	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	0	9	8
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]	0	6	1	0	9	9
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]	0	2	0	0	2	2
Total Analysis Volume [veh/h]	0	6	1	0	9	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
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	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	8.69	8.34	0.00	0.00	7.23	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.42	0.42	0.00	0.00	0.42	0.42
d_A, Approach Delay [s/veh]	8.34		0.00		3.62	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.61					
Intersection LOS	A					

**Intersection Level Of Service Report
Intersection 9: 11th Ave (NS) at Winona St (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	16	30	13	2	31	1	1	0	20	17	0	2
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	20	7	3	21	8	0	2	4	7	3	2
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]	23	51	21	5	53	9	1	2	25	25	3	4
Peak Hour Factor	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110
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	16	6	2	16	3	0	1	8	8	1	1
Total Analysis Volume [veh/h]	28	63	26	6	65	11	1	2	31	31	4	5
Pedestrian Volume [ped/h]	0			0			0			0		

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	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	7.37	0.00	0.00	7.36	0.00	0.00	9.81	10.29	8.68	10.07	10.34	8.79
Movement LOS	A	A	A	A	A	A	A	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.01	0.01	0.01	0.09	0.09	0.09	0.13	0.13	0.13
95th-Percentile Queue Length [ft/ln]	1.14	1.14	1.14	0.25	0.25	0.25	2.24	2.24	2.24	3.29	3.29	3.29
d_A, Approach Delay [s/veh]	1.78			0.55			8.84			9.94		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.48											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 10: 11th Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.617

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			T T T			T T T		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	120.00	100.00	100.00
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			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	90	9	20	10	8	71	57	920	93	12	1066	18
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	0	0	9	0	23	24	72	11	0	80	9
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	106	9	21	19	8	97	83	1029	108	12	1189	28
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	28	2	5	5	2	25	22	267	28	3	309	7
Total Analysis Volume [veh/h]	110	9	22	20	8	101	86	1070	112	12	1236	29
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	130	0	0	130	0	130	130	0	130	130	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	27	0	12	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
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	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	5	27	27	1	23	23
g / C, Green / Cycle	0.33	0.33	0.09	0.45	0.45	0.02	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.05	0.33	0.33	0.01	0.34	0.34
s, saturation flow rate [veh/h]	1406	1525	1593	1772	1713	1593	1772	1757
c, Capacity [veh/h]	569	571	141	796	770	35	679	673
d1, Uniform Delay [s]	14.76	14.70	26.34	13.51	13.53	28.96	17.45	17.46
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.99	0.87	3.95	1.29	1.34	5.80	5.03	5.10
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.22	0.59	0.73	0.73	0.34	0.90	0.90
d, Delay for Lane Group [s/veh]	15.75	15.57	30.30	14.80	14.87	34.76	22.48	22.56
Lane Group LOS	B	B	C	B	B	C	C	C
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.42	1.29	1.17	5.09	4.95	0.21	7.21	7.17
50th-Percentile Queue Length [ft/ln]	35.62	32.23	29.36	127.22	123.69	5.26	180.19	179.18
95th-Percentile Queue Length [veh/ln]	2.56	2.32	2.11	8.79	8.60	0.38	11.61	11.56
95th-Percentile Queue Length [ft/ln]	64.11	58.01	52.85	219.71	214.89	9.47	290.27	288.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.75	15.75	15.75	15.57	15.57	15.57	30.30	14.83	14.87	34.76	22.52	22.56
Movement LOS	B	B	B	B	B	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	15.75			15.57			15.88			22.64		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	18.93											
Intersection LOS	B											
Intersection V/C	0.617											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.800	1.791	3.218	0.000
Crosswalk LOS	A	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	767	800
d_b, Bicycle Delay [s]	15.41	15.41	11.41	10.80
I_b,int, Bicycle LOS Score for Intersection	1.784	1.764	2.566	2.574
Bicycle LOS	A	A	B	B

Sequence

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



Future Year (2032) Without Project

Balsam at Winona Apartments

Vistro File: C:\...\AME.vistro

Scenario 4 Future Year (2032) Without Project AM Peak
Hour

Report File: C:\...\AM32WO.pdf

12/15/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Amargosa Rd (NS) at La Mesa Rd (EW)	Signalized	HCM 6th Edition	NB Left	0.724	29.8	C
2	I-15 NB Ramps (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	EB Left	0.492	16.7	B
3	Mariposa Rd (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.423	23.2	C
7	Balsam Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	EB Left	0.728	30.1	C
9	11th Ave (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.001	9.8	A
10	11th Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.405	22.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Amargosa Rd (NS) at La Mesa Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	29.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.724

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTL			TTL			TTL			TTL		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	285.00	100.00	100.00	385.00	100.00	100.00	135.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	45.00			45.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	13	86	70	301	124	74	126	594	43	83	334	445
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	33	0	0	0	58	0	0	58	37
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	109	89	415	157	94	160	812	55	105	482	602
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	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	29	0	109	41	25	42	214	14	28	127	158
Total Analysis Volume [veh/h]	18	115	0	437	165	99	168	855	58	111	507	634
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	18	28	0	11	26	0	25	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	18	18	14	29	29	7	36	36	6	36	36
g / C, Green / Cycle	0.03	0.20	0.20	0.15	0.32	0.32	0.08	0.40	0.40	0.07	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.01	0.03	0.00	0.13	0.04	0.06	0.05	0.23	0.03	0.03	0.09	0.38
s, saturation flow rate [veh/h]	3095	3560	1589	3095	3560	1589	3095	3560	1589	3095	5094	1589
c, Capacity [veh/h]	84	704	314	476	1155	516	237	1419	633	224	2009	627
d1, Uniform Delay [s]	42.84	29.89	0.00	37.22	21.49	21.84	40.49	21.09	16.87	40.10	18.24	26.58
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	1.18	0.47	0.00	5.43	0.25	0.78	3.42	0.37	0.06	1.54	0.06	12.75
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.20	0.15	0.00	0.87	0.14	0.18	0.68	0.57	0.09	0.47	0.24	0.96
d, Delay for Lane Group [s/veh]	44.02	30.36	0.00	42.65	21.74	22.62	43.91	21.46	16.93	41.64	18.30	39.33
Lane Group LOS	D	C	A	D	C	C	D	C	B	D	B	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.19	0.97	0.00	4.58	1.14	1.44	1.76	6.10	0.66	1.11	2.06	13.42
50th-Percentile Queue Length [ft/ln]	4.78	24.36	0.00	114.38	28.38	36.12	43.99	152.39	16.57	27.87	51.56	335.49
95th-Percentile Queue Length [veh/ln]	0.34	1.75	0.00	8.08	2.04	2.60	3.17	10.14	1.19	2.01	3.71	19.43
95th-Percentile Queue Length [ft/ln]	8.60	43.84	0.00	202.07	51.09	65.02	79.19	253.62	29.82	50.16	92.81	485.69

Movement, Approach, & Intersection Results

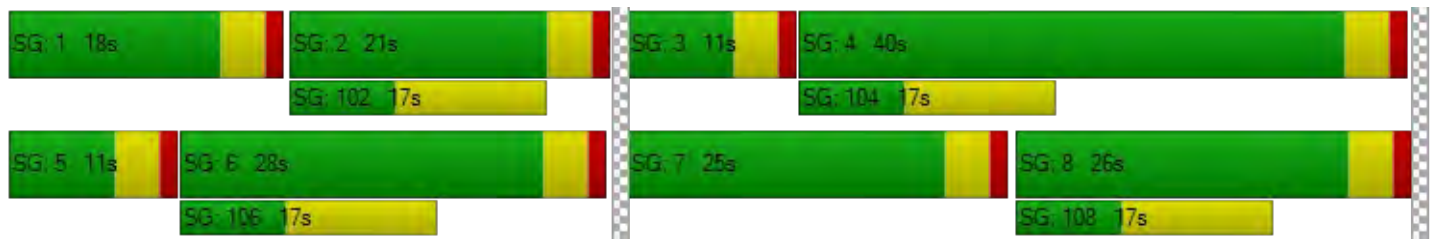
d_M, Delay for Movement [s/veh]	44.02	30.36	0.00	42.65	21.74	22.62	43.91	21.46	16.93	41.64	18.30	39.33
Movement LOS	D	C	A	D	C	C	D	C	B	D	B	D
d_A, Approach Delay [s/veh]	32.21			34.89			24.71			31.01		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	29.77											
Intersection LOS	C											
Intersection V/C	0.724											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.686	2.915	3.021	3.241
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	378	533	489	800
d_b, Bicycle Delay [s]	29.61	24.20	25.69	16.20
I_b,int, Bicycle LOS Score for Intersection	1.664	2.109	2.407	2.214
Bicycle LOS	A	B	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 2: I-15 NB Ramps (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	16.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.492

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
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 Pocket	2	0	0	0	0	0	2	0	0	0	0	0
Pocket Length [ft]	410.00	100.00	100.00	100.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	166	1	153	0	0	0	156	824	0	0	689	212
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.27	1.27	1.27	1.00	1.00	1.00	1.27	1.27	1.00	1.00	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	27	0	0	0	0	91	0	0	95	16
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	1	221	0	0	0	198	1137	0	0	970	285
Peak Hour Factor	0.9500	0.9500	0.9500	0.7800	0.7800	0.7800	0.9500	0.9500	0.7800	0.7800	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]	56	0	58	0	0	0	52	299	0	0	255	75
Total Analysis Volume [veh/h]	222	1	233	0	0	0	208	1197	0	0	1021	300
Presence of On-Street Parking	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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	19	0	0	0	0	17	41	0	0	24	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		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	R		L	C	C	R
C, Cycle Length [s]	60	60	60		60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	25		7	27	16	16
g / C, Green / Cycle	0.42	0.42	0.42		0.11	0.45	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.14		0.06	0.22	0.19	0.18
s, saturation flow rate [veh/h]	1687	1782	1589		3095	5094	5094	1589
c, Capacity [veh/h]	707	747	666		354	2282	1362	425
d1, Uniform Delay [s]	10.83	10.83	11.81		25.26	11.82	19.99	19.72
k, delay calibration	0.50	0.50	0.50		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.43	0.41	1.34		1.39	0.17	0.71	1.86
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.15	0.33		0.56	0.50	0.71	0.67
d, Delay for Lane Group [s/veh]	11.27	11.24	13.15		26.65	11.99	20.70	21.58
Lane Group LOS	B	B	B		C	B	C	C
Critical Lane Group	No	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.83	0.87	1.99		1.26	2.81	3.56	3.24
50th-Percentile Queue Length [ft/ln]	20.80	21.85	49.84		31.45	70.19	88.97	80.91
95th-Percentile Queue Length [veh/ln]	1.50	1.57	3.59		2.26	5.05	6.41	5.83
95th-Percentile Queue Length [ft/ln]	37.45	39.33	89.71		56.62	126.34	160.14	145.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.25	11.24	13.15	0.00	0.00	0.00	26.65	11.99	0.00	0.00	20.70	21.58
Movement LOS	B	B	B				C	B			C	C
d_A, Approach Delay [s/veh]	12.22			0.00			14.17			20.90		
Approach LOS	B			A			B			C		
d_I, Intersection Delay [s/veh]	16.68											
Intersection LOS	B											
Intersection V/C	0.492											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.058	1.928	0.000	0.000
Crosswalk LOS	B	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	0	1233	667
d_b, Bicycle Delay [s]	16.88	30.00	4.41	13.33
I_b,int, Bicycle LOS Score for Intersection	2.274	4.132	2.294	2.250
Bicycle LOS	B	D	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Mariposa Rd (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.423

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	305.00	100.00	100.00	210.00	100.00	100.00	355.00	100.00	100.00	180.00	100.00	100.00
Speed [mph]	50.00			50.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	96	96	46	67	74	37	49	793	143	41	788	94
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	15	16	2	7	9	109	0	15	104	16
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	125	73	101	96	54	71	1116	182	67	1105	135
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]	32	33	19	27	25	14	19	294	48	18	291	36
Total Analysis Volume [veh/h]	128	132	77	106	101	57	75	1175	192	71	1163	142
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	21	0	12	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	21	21	6	20	20	5	17	17	5	17	17
g / C, Green / Cycle	0.10	0.32	0.32	0.09	0.31	0.31	0.08	0.27	0.27	0.08	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.04	0.04	0.05	0.03	0.03	0.03	0.02	0.22	0.11	0.02	0.22	0.08
s, saturation flow rate [veh/h]	3095	3560	1589	3095	3560	1589	3095	5094	1589	3095	5094	1589
c, Capacity [veh/h]	300	1139	508	284	1120	500	246	1354	423	239	1343	419
d1, Uniform Delay [s]	27.68	15.64	15.82	27.81	15.75	15.87	28.28	22.51	19.85	28.38	22.58	19.32
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	0.89	0.19	0.59	0.76	0.15	0.44	0.64	1.34	0.70	0.63	1.34	0.44
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.41	0.11	0.14	0.36	0.09	0.11	0.29	0.82	0.43	0.28	0.82	0.32
d, Delay for Lane Group [s/veh]	28.57	15.84	16.41	28.57	15.90	16.30	28.92	23.84	20.54	29.01	23.92	19.76
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.83	0.58	0.74	0.69	0.45	0.54	0.50	4.78	2.07	0.47	4.74	1.49
50th-Percentile Queue Length [ft/ln]	20.85	14.57	18.40	17.25	11.22	13.56	12.45	119.51	51.79	11.77	118.49	37.14
95th-Percentile Queue Length [veh/ln]	1.50	1.05	1.32	1.24	0.81	0.98	0.90	8.37	3.73	0.85	8.31	2.67
95th-Percentile Queue Length [ft/ln]	37.53	26.23	33.12	31.05	20.19	24.41	22.40	209.15	93.23	21.19	207.75	66.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.57	15.84	16.41	28.57	15.90	16.30	28.92	23.84	20.54	29.01	23.92	19.76
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	B
d_A, Approach Delay [s/veh]	20.82			21.09			23.67			23.75		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	23.22											
Intersection LOS	C											
Intersection V/C	0.423											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.730	2.711	3.336	3.253
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]	523	523	523	554
d_b, Bicycle Delay [s]	17.72	17.72	17.72	16.99
I_b,int, Bicycle LOS Score for Intersection	1.824	1.767	2.313	2.278
Bicycle LOS	A	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 7: Balsam Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.728

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TT			TTT			TTT		
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 Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	85.00	100.00	100.00	115.00	100.00	100.00	250.00	100.00	100.00
Speed [mph]	30.00			30.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	291	26	35	18	26	24	92	617	186	45	542	20
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	42	1	113	42	128	126	14	0	1	7	112
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	370	75	45	136	75	158	243	798	236	58	695	137
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]	97	20	12	36	20	42	64	210	62	15	183	36
Total Analysis Volume [veh/h]	389	79	47	143	79	166	256	840	248	61	732	144
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	21	0	13	21	0	15	25	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	L	C	R	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	22	7	20	11	20	20	5	14	14
g / C, Green / Cycle	0.13	0.32	0.10	0.29	0.16	0.28	0.28	0.07	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.12	0.07	0.08	0.14	0.14	0.22	0.15	0.03	0.16	0.16
s, saturation flow rate [veh/h]	3095	1754	1687	1670	1687	3560	1589	1687	3560	1718
c, Capacity [veh/h]	399	557	173	486	266	1008	450	117	694	335
d1, Uniform Delay [s]	30.26	17.56	30.78	20.53	29.12	23.25	21.19	31.50	26.99	27.06
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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]	11.37	0.89	8.18	3.41	14.35	1.46	0.95	3.27	2.30	5.05
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
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	0.93	0.22	0.79	0.48	0.91	0.79	0.52	0.50	0.81	0.82
d, Delay for Lane Group [s/veh]	41.63	18.45	38.96	23.94	43.47	24.71	22.14	34.78	29.29	32.10
Lane Group LOS	D	B	D	C	D	C	C	C	C	C
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.59	1.48	2.55	3.42	4.71	5.54	3.00	0.98	4.24	4.40
50th-Percentile Queue Length [ft/ln]	89.74	36.93	63.86	85.51	117.66	138.53	74.88	24.54	105.89	110.02
95th-Percentile Queue Length [veh/ln]	6.46	2.66	4.60	6.16	8.26	9.40	5.39	1.77	7.61	7.84
95th-Percentile Queue Length [ft/ln]	161.54	66.47	114.96	153.92	206.60	235.05	134.79	44.18	190.27	196.03

Movement, Approach, & Intersection Results

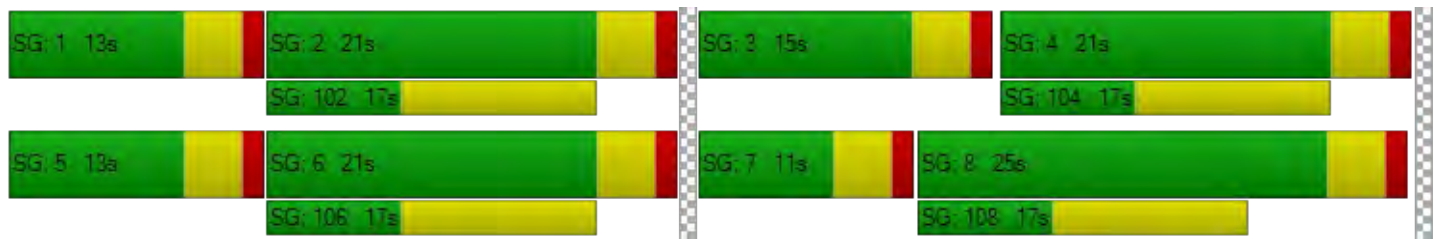
d_M, Delay for Movement [s/veh]	41.63	18.45	18.45	38.96	23.94	23.94	43.47	24.71	22.14	34.78	29.84	32.10
Movement LOS	D	B	B	D	C	C	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	35.95			29.47			27.80			30.51		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	30.12											
Intersection LOS	C											
Intersection V/C	0.728											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.327			2.194			3.169			2.895		
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]	486			486			600			486		
d_b, Bicycle Delay [s]	20.06			20.06			17.15			20.06		
I_b,int, Bicycle LOS Score for Intersection	2.368			2.168			2.613			2.049		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 9: 11th Ave (NS) at Winona St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	6	12	5	0	31	1	1	1	11	10	0	0
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	24	8	1	15	2	0	0	0	8	0	2
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	39	14	1	54	3	1	1	14	21	0	2
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]	2	10	4	0	14	1	0	0	4	6	0	1
Total Analysis Volume [veh/h]	8	41	15	1	57	3	1	1	15	22	0	2
Pedestrian Volume [ped/h]	0			0			0			0		

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	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	7.34	0.00	0.00	7.32	0.00	0.00	9.30	9.80	8.62	9.46	9.83	8.64
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.00	0.00	0.00	0.05	0.05	0.05	0.08	0.08	0.08
95th-Percentile Queue Length [ft/ln]	0.39	0.39	0.39	0.05	0.05	0.05	1.25	1.25	1.25	2.10	2.10	2.10
d_A, Approach Delay [s/veh]	0.96			0.13			8.74			9.39		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.67											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 10: 11th Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.405

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			T T T			T T T		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	120.00	100.00	100.00
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			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	63	1	8	12	4	39	15	597	40	5	502	8
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	0	2	0	21	28	86	14	0	85	4
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	94	1	10	17	5	71	47	844	65	6	723	14
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]	25	0	3	4	1	19	12	222	17	2	190	4
Total Analysis Volume [veh/h]	99	1	11	18	5	75	49	888	68	6	761	15
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	130	0	0	130	0	130	130	0	130	130	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	16	27	0	12	23	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
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	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	4	18	18	1	15	15
g / C, Green / Cycle	0.49	0.49	0.06	0.30	0.30	0.01	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.07	0.06	0.03	0.25	0.25	0.00	0.20	0.20
s, saturation flow rate [veh/h]	1405	1588	1687	1870	1823	1687	1870	1857
c, Capacity [veh/h]	800	848	110	559	545	21	460	457
d1, Uniform Delay [s]	8.34	8.32	27.04	19.61	19.61	29.45	21.30	21.31
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.34	0.26	2.63	3.20	3.28	7.42	3.41	3.43
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.11	0.43	0.82	0.82	0.29	0.80	0.80
d, Delay for Lane Group [s/veh]	8.68	8.58	29.67	22.81	22.89	36.87	24.71	24.74
Lane Group LOS	A	A	C	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.73	0.64	0.66	5.47	5.35	0.12	4.59	4.57
50th-Percentile Queue Length [ft/ln]	18.19	15.95	16.58	136.79	133.69	3.03	114.85	114.23
95th-Percentile Queue Length [veh/ln]	1.31	1.15	1.19	9.31	9.14	0.22	8.11	8.07
95th-Percentile Queue Length [ft/ln]	32.74	28.71	29.84	232.70	228.51	5.45	202.73	201.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.68	8.68	8.68	8.58	8.58	8.58	29.67	22.85	22.89	36.87	24.72	24.74
Movement LOS	A	A	A	A	A	A	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	8.68			8.58			23.19			24.82		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	22.31											
Intersection LOS	C											
Intersection V/C	0.405											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	20.01			20.01			20.01			0.00		
I_p,int, Pedestrian LOS Score for Intersection	1.766			1.755			3.014			0.000		
Crosswalk LOS	A			A			C			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	567			567			767			633		
d_b, Bicycle Delay [s]	15.41			15.41			11.41			14.01		
I_b,int, Bicycle LOS Score for Intersection	1.733			1.713			2.348			2.173		
Bicycle LOS	A			A			B			B		

Sequence

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



Balsam at Winona Apartments

Vistro File: C:\...\PME.vistro

Scenario 4 Future Year (2032) Without Project PM Peak
Hour

Report File: C:\...\PM32WO.pdf

12/15/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Amargosa Rd (NS) at La Mesa Rd (EW)	Signalized	HCM 6th Edition	NB Left	0.801	34.7	C
2	I-15 NB Ramps (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	EB Left	0.791	16.7	B
3	Mariposa Rd (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.731	28.4	C
7	Balsam Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.815	32.9	C
9	11th Ave (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	WB Left	0.033	9.9	A
10	11th Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.611	19.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Amargosa Rd (NS) at La Mesa Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	34.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.801

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	קוורר			קוורר			קוורר			קוורר		
Lane Configuration	קוורר			קוורר			קוורר			קוורר		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	285.00	100.00	100.00	385.00	100.00	100.00	135.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	45.00			45.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	104	276	327	577	506	319	86	678	99	337	1054	446
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	28	0	0	0	49	0	0	48	40
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	287	340	628	526	332	89	754	103	350	1144	504
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	73	0	161	135	85	23	193	26	90	293	129
Total Analysis Volume [veh/h]	111	294	0	643	538	340	91	772	105	358	1171	516
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	21	0	26	21	0	11	25	0	23	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	17	17	22	33	33	6	26	26	14	33	33
g / C, Green / Cycle	0.07	0.18	0.18	0.23	0.34	0.34	0.07	0.27	0.27	0.14	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.04	0.09	0.00	0.22	0.16	0.22	0.03	0.22	0.07	0.12	0.24	0.33
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	3373	1506	2912	4826	1506
c, Capacity [veh/h]	203	616	275	674	1162	519	195	923	412	420	1692	528
d1, Uniform Delay [s]	42.72	34.71	0.00	35.78	24.19	26.20	42.69	32.31	26.93	39.58	26.26	30.12
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	2.18	2.55	0.00	7.35	1.28	6.11	1.68	1.88	0.31	4.60	0.48	13.27
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.53	0.47	0.00	0.93	0.45	0.64	0.46	0.82	0.25	0.83	0.68	0.95
d, Delay for Lane Group [s/veh]	44.90	37.26	0.00	43.13	25.47	32.31	44.37	34.18	27.24	44.17	26.74	43.39
Lane Group LOS	D	D	A	D	C	C	D	C	C	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.24	3.05	0.00	7.38	4.49	6.74	1.01	7.81	1.76	4.05	6.85	12.21
50th-Percentile Queue Length [ft/ln]	30.97	76.14	0.00	184.54	112.30	168.45	25.31	195.24	43.99	101.34	171.25	305.36
95th-Percentile Queue Length [veh/ln]	2.23	5.48	0.00	11.84	7.97	11.00	1.82	12.39	3.17	7.30	11.14	17.95
95th-Percentile Queue Length [ft/ln]	55.75	137.06	0.00	295.93	199.19	274.88	45.56	309.82	79.18	182.42	278.56	448.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.90	37.26	0.00	43.13	25.47	32.31	44.37	34.18	27.24	44.17	26.74	43.39
Movement LOS	D	D	A	D	C	C	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	39.35			34.46			34.38			33.99		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	34.65											
Intersection LOS	C											
Intersection V/C	0.801											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	37.14	37.14
I_p,int, Pedestrian LOS Score for Intersection	2.883	3.090	3.190	3.401
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	358	358	442	695
d_b, Bicycle Delay [s]	32.02	32.02	28.82	20.23
I_b,int, Bicycle LOS Score for Intersection	1.885	2.786	2.340	2.659
Bicycle LOS	A	C	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 2: I-15 NB Ramps (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	16.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.791

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
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 Pocket	2	0	0	0	0	0	2	0	0	0	0	0
Pocket Length [ft]	410.00	100.00	100.00	100.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	317	2	293	0	0	0	220	1364	0	0	1525	381
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	25	0	0	0	0	77	0	0	88	20
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	330	2	330	0	0	0	229	1496	0	0	1674	416
Peak Hour Factor	0.9820	0.9820	0.9820	0.7800	0.7800	0.7800	0.9820	0.9820	0.7800	0.7800	0.9820	0.9820
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]	84	1	84	0	0	0	58	381	0	0	426	106
Total Analysis Volume [veh/h]	336	2	336	0	0	0	233	1523	0	0	1705	424
Presence of On-Street Parking	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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	0	0	12	43	0	0	31	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		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	R		L	C	C	R
C, Cycle Length [s]	65	65	65		65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	19		7	38	27	27
g / C, Green / Cycle	0.30	0.30	0.30		0.11	0.58	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.22		0.08	0.31	0.35	0.28
s, saturation flow rate [veh/h]	1593	1688	1506		2912	4826	4826	1506
c, Capacity [veh/h]	477	505	451		312	2788	1975	616
d1, Uniform Delay [s]	17.77	17.77	20.46		28.16	8.41	17.39	15.69
k, delay calibration	0.50	0.50	0.50		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.92	1.82	10.68		3.42	0.16	1.09	1.31
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.34	0.73		0.73	0.54	0.85	0.68
d, Delay for Lane Group [s/veh]	19.70	19.59	31.14		31.58	8.57	18.48	17.00
Lane Group LOS	B	B	C		C	A	B	B
Critical Lane Group	No	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.01	2.11	5.47		1.71	2.97	6.26	4.30
50th-Percentile Queue Length [ft/ln]	50.26	52.87	136.85		42.76	74.24	156.45	107.49
95th-Percentile Queue Length [veh/ln]	3.62	3.81	9.31		3.08	5.35	10.36	7.70
95th-Percentile Queue Length [ft/ln]	90.47	95.16	232.77		76.97	133.63	259.01	192.51

Movement, Approach, & Intersection Results

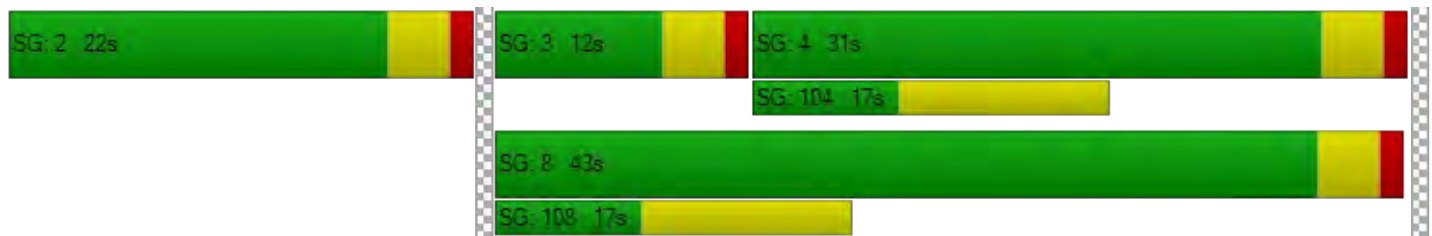
d_M, Delay for Movement [s/veh]	19.64	19.59	31.14	0.00	0.00	0.00	31.58	8.57	0.00	0.00	18.48	17.00
Movement LOS	B	B	C				C	A			B	B
d_A, Approach Delay [s/veh]	25.38			0.00			11.62			18.19		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	16.72											
Intersection LOS	B											
Intersection V/C	0.791											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.137	2.012	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	554	0	1200	831
d_b, Bicycle Delay [s]	16.99	32.50	5.20	11.11
I_b,int, Bicycle LOS Score for Intersection	2.652	4.132	2.508	2.709
Bicycle LOS	B	D	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Mariposa Rd (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.731

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	T			T			T			T		
Lane Configuration	T			T			T			T		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	305.00	100.00	100.00	210.00	100.00	100.00	355.00	100.00	100.00	180.00	100.00	100.00
Speed [mph]	50.00			50.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	393	264	103	137	217	102	120	1237	287	86	1395	143
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	13	14	3	10	11	91	0	13	98	15
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	409	278	120	156	229	116	136	1377	298	102	1549	164
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	106	72	31	41	60	30	35	358	77	27	403	43
Total Analysis Volume [veh/h]	425	289	125	162	238	121	141	1431	310	106	1610	170
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	21	0	17	21	0	11	21	0	21	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	23	23	7	17	17	7	28	28	6	27	27
g / C, Green / Cycle	0.16	0.29	0.29	0.08	0.21	0.21	0.08	0.34	0.34	0.08	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.14	0.08	0.08	0.05	0.07	0.08	0.05	0.29	0.20	0.04	0.32	0.11
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	4826	1506	2912	4826	1506
c, Capacity [veh/h]	473	989	441	248	728	325	243	1656	517	229	1633	510
d1, Uniform Delay [s]	32.68	21.79	21.73	35.41	26.40	26.66	35.27	24.16	21.53	35.21	25.80	19.66
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	5.18	0.71	1.52	2.66	1.13	3.06	2.03	1.15	1.02	1.36	4.18	0.36
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.87	0.28	0.27	0.63	0.31	0.36	0.56	0.83	0.58	0.44	0.95	0.32
d, Delay for Lane Group [s/veh]	37.86	22.51	23.25	38.07	27.53	29.72	37.30	25.31	22.55	36.57	29.98	20.02
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.87	1.91	1.74	1.46	1.79	1.99	1.27	7.25	4.24	0.94	9.08	2.10
50th-Percentile Queue Length [ft/ln]	96.72	47.67	43.59	36.39	44.81	49.83	31.69	181.20	105.93	23.43	227.12	52.42
95th-Percentile Queue Length [veh/ln]	6.96	3.43	3.14	2.62	3.23	3.59	2.28	11.66	7.61	1.69	14.03	3.77
95th-Percentile Queue Length [ft/ln]	174.09	85.80	78.45	65.50	80.66	89.69	57.04	291.58	190.33	42.18	350.69	94.36

Movement, Approach, & Intersection Results

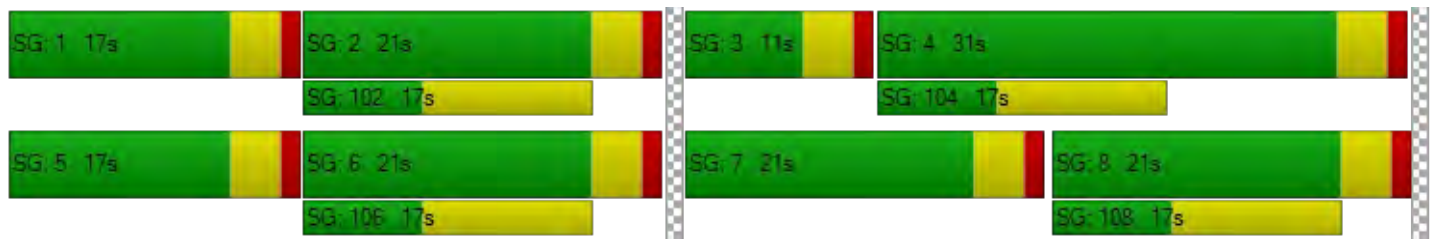
d_M, Delay for Movement [s/veh]	37.86	22.51	23.25	38.07	27.53	29.72	37.30	25.31	22.55	36.57	29.98	20.02
Movement LOS	D	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	30.40			31.32			25.76			29.45		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.44											
Intersection LOS	C											
Intersection V/C	0.731											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.76	29.76	29.76	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.921	2.838	3.528	3.406
Crosswalk LOS	C	C	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	425	425	425	675
d_b, Bicycle Delay [s]	24.81	24.81	24.81	17.56
I_b,int, Bicycle LOS Score for Intersection	2.225	1.973	2.556	2.558
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 7: Balsam Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	32.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.815

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TT			TTT			TTT		
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 Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	85.00	100.00	100.00	115.00	100.00	100.00	250.00	100.00	100.00
Speed [mph]	30.00			30.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	474	5	73	4	6	9	18	1037	339	98	1140	7
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	35	1	89	35	114	106	12	0	1	12	93
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	493	40	77	93	41	123	125	1090	353	103	1198	100
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	130	11	20	24	11	32	33	287	93	27	315	26
Total Analysis Volume [veh/h]	518	42	81	98	43	129	131	1146	371	108	1260	105
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	21	0	20	21	0	16	33	0	11	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	L	C	R	L	C	C
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	27	6	17	8	29	29	7	28	28
g / C, Green / Cycle	0.19	0.32	0.07	0.20	0.10	0.34	0.34	0.08	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.17	0.07	0.06	0.10	0.08	0.32	0.23	0.06	0.26	0.26
s, saturation flow rate [veh/h]	2912	1587	1593	1564	1593	3373	1506	1593	3373	1703
c, Capacity [veh/h]	548	506	117	319	154	1145	511	127	1089	550
d1, Uniform Delay [s]	33.73	21.30	38.76	30.09	37.67	27.41	24.23	38.49	26.19	26.19
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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]	6.11	1.07	12.30	5.90	10.68	6.24	1.69	12.53	1.35	2.67
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	0.90	0.23	0.79	0.51	0.81	0.95	0.69	0.81	0.79	0.79
d, Delay for Lane Group [s/veh]	39.84	22.37	51.06	35.99	48.36	33.65	25.92	51.02	27.55	28.87
Lane Group LOS	D	C	D	D	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.30	1.82	2.28	3.44	2.87	10.66	5.78	2.44	7.39	7.66
50th-Percentile Queue Length [ft/ln]	132.46	45.51	56.93	86.08	71.70	266.52	144.41	61.09	184.72	191.53
95th-Percentile Queue Length [veh/ln]	9.07	3.28	4.10	6.20	5.16	16.02	9.72	4.40	11.85	12.20
95th-Percentile Queue Length [ft/ln]	226.84	81.92	102.48	154.95	129.05	400.38	242.95	109.97	296.17	305.02

Movement, Approach, & Intersection Results

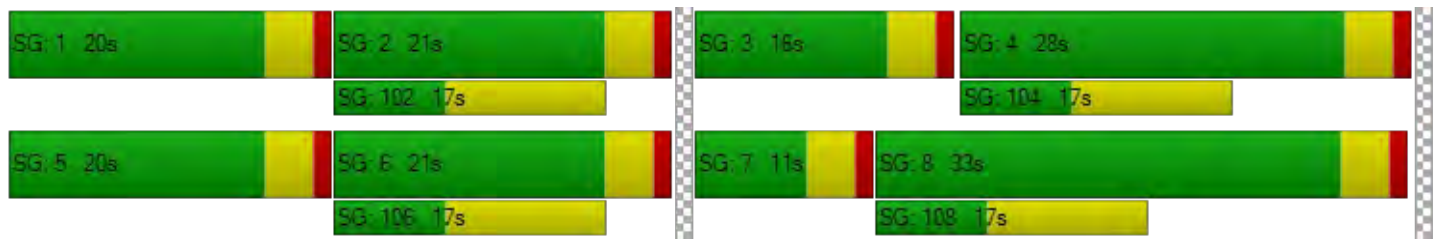
d_M, Delay for Movement [s/veh]	39.84	22.37	22.37	51.06	35.99	35.99	48.36	33.65	25.92	51.02	27.92	28.87
Movement LOS	D	C	C	D	D	D	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	36.49			41.44			33.08			29.68		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	32.94											
Intersection LOS	C											
Intersection V/C	0.815											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.21	32.21	32.21	32.21
I_p,int, Pedestrian LOS Score for Intersection	2.397	2.106	3.340	3.098
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]	400	400	682	565
d_b, Bicycle Delay [s]	27.20	27.20	18.45	21.89
I_b,int, Bicycle LOS Score for Intersection	2.566	1.984	2.853	2.330
Bicycle LOS	B	A	C	B

Sequence

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



Intersection Level Of Service Report
Intersection 9: 11th Ave (NS) at Winona St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.033

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	16	30	13	2	31	1	1	0	20	17	0	2
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	20	7	3	21	8	0	0	0	7	0	2
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]	17	51	21	5	53	9	1	0	21	25	0	4
Peak Hour Factor	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110
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]	5	16	6	2	16	3	0	0	6	8	0	1
Total Analysis Volume [veh/h]	21	63	26	6	65	11	1	0	26	31	0	5
Pedestrian Volume [ped/h]	0			0			0			0		

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	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	7.36	0.00	0.00	7.36	0.00	0.00	9.65	10.16	8.65	9.88	10.21	8.76
Movement LOS	A	A	A	A	A	A	A	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.01	0.01	0.01	0.07	0.07	0.07	0.11	0.11	0.11
95th-Percentile Queue Length [ft/ln]	0.84	0.84	0.84	0.25	0.25	0.25	1.69	1.69	1.69	2.86	2.86	2.86
d_A, Approach Delay [s/veh]	1.41			0.55			8.70			9.73		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.07											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 10: 11th Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.611

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			T T T			T T T		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	120.00	100.00	100.00
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			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	90	9	20	10	8	71	57	920	93	12	1066	18
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	0	0	5	0	23	24	67	11	0	71	3
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	106	9	21	15	8	97	83	1024	108	12	1180	22
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	28	2	5	4	2	25	22	266	28	3	307	6
Total Analysis Volume [veh/h]	110	9	22	16	8	101	86	1064	112	12	1227	23
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	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
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]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	130	0	0	130	0	130	130	0	130	130	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	27	0	12	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
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	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	5	27	27	1	23	23
g / C, Green / Cycle	0.33	0.33	0.09	0.45	0.45	0.02	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.05	0.32	0.33	0.01	0.34	0.34
s, saturation flow rate [veh/h]	1409	1528	1593	1772	1713	1593	1772	1760
c, Capacity [veh/h]	575	576	141	790	763	35	672	668
d1, Uniform Delay [s]	14.59	14.50	26.34	13.66	13.68	28.96	17.54	17.55
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.97	0.82	3.95	1.32	1.37	5.80	4.91	4.96
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.21	0.59	0.73	0.73	0.34	0.90	0.90
d, Delay for Lane Group [s/veh]	15.55	15.32	30.30	14.98	15.05	34.76	22.46	22.51
Lane Group LOS	B	B	C	B	B	C	C	C
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.41	1.23	1.17	5.12	4.97	0.21	7.11	7.08
50th-Percentile Queue Length [ft/ln]	35.30	30.85	29.36	127.90	124.31	5.26	177.75	176.93
95th-Percentile Queue Length [veh/ln]	2.54	2.22	2.11	8.83	8.63	0.38	11.48	11.44
95th-Percentile Queue Length [ft/ln]	63.54	55.54	52.85	220.63	215.74	9.47	287.08	286.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.55	15.55	15.55	15.32	15.32	15.32	30.30	15.01	15.05	34.76	22.48	22.51
Movement LOS	B	B	B	B	B	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	15.55			15.32			16.06			22.60		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	18.96											
Intersection LOS	B											
Intersection V/C	0.611											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.800	1.787	3.214	0.000
Crosswalk LOS	A	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	767	800
d_b, Bicycle Delay [s]	15.41	15.41	11.41	10.80
I_b,int, Bicycle LOS Score for Intersection	1.784	1.758	2.562	2.561
Bicycle LOS	A	A	B	B

Sequence

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



Future Year (2032) With Project

Balsam at Winona Apartments

Vistro File: C:\...\AME.vistro

Scenario 5 Future Year (2032) With Project AM Peak Hour

Report File: C:\...\AM32W.pdf

12/15/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Amargosa Rd (NS) at La Mesa Rd (EW)	Signalized	HCM 6th Edition	NB Left	0.734	30.0	C
2	I-15 NB Ramps (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	EB Left	0.497	16.6	B
3	Mariposa Rd (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.430	23.3	C
4	Balsam Ave (NS) at Project Dwy 1 (EW)	Two-way stop	HCM 6th Edition	WB Left	0.006	8.6	A
5	Balsam Ave (NS) at Project Dwy 2 (EW)	Two-way stop	HCM 6th Edition	WB Left	0.019	8.7	A
6	Balsam Ave (NS) at Project Dwy 3 (EW)	Two-way stop	HCM 6th Edition	WB Left	0.023	8.8	A
7	Balsam Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.754	30.4	C
8	Project Dwy 4 (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	NB Right	0.008	8.4	A
9	11th Ave (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.005	9.9	A
10	11th Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.408	22.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Amargosa Rd (NS) at La Mesa Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.734

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	285.00	100.00	100.00	385.00	100.00	100.00	135.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	45.00			45.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	13	86	70	301	124	74	126	594	43	83	334	445
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	37	0	0	0	59	0	0	61	48
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	109	89	419	157	94	160	813	55	105	485	613
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	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	29	0	110	41	25	42	214	14	28	128	161
Total Analysis Volume [veh/h]	18	115	0	441	165	99	168	856	58	111	511	645
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	18	28	0	11	32	0	19	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	17	17	14	29	29	7	36	36	6	36	36
g / C, Green / Cycle	0.03	0.19	0.19	0.15	0.32	0.32	0.08	0.40	0.40	0.07	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.01	0.03	0.00	0.14	0.04	0.06	0.05	0.23	0.03	0.03	0.10	0.39
s, saturation flow rate [veh/h]	3095	3560	1589	3095	3560	1589	3095	3560	1589	3095	5094	1589
c, Capacity [veh/h]	84	683	305	479	1139	508	236	1436	641	223	2033	634
d1, Uniform Delay [s]	42.84	30.31	0.00	37.18	21.79	22.13	40.49	20.77	16.60	40.10	17.96	26.46
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	1.19	0.50	0.00	5.52	0.25	0.80	3.43	0.35	0.06	1.54	0.06	14.27
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.20	0.16	0.00	0.87	0.14	0.18	0.68	0.57	0.09	0.47	0.24	0.97
d, Delay for Lane Group [s/veh]	44.03	30.81	0.00	42.70	22.04	22.94	43.91	21.12	16.66	41.64	18.02	40.73
Lane Group LOS	D	C	A	D	C	C	D	C	B	D	B	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.19	0.98	0.00	4.62	1.15	1.46	1.76	6.04	0.66	1.11	2.06	13.93
50th-Percentile Queue Length [ft/ln]	4.78	24.59	0.00	115.60	28.63	36.45	44.00	151.07	16.40	27.87	51.40	348.32
95th-Percentile Queue Length [veh/ln]	0.34	1.77	0.00	8.15	2.06	2.62	3.17	10.07	1.18	2.01	3.70	20.05
95th-Percentile Queue Length [ft/ln]	8.61	44.27	0.00	203.76	51.53	65.61	79.19	251.86	29.52	50.16	92.51	501.35

Movement, Approach, & Intersection Results

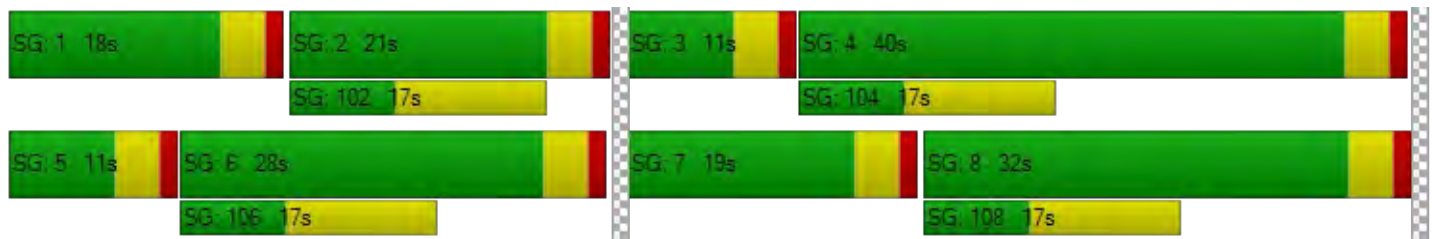
d_M, Delay for Movement [s/veh]	44.03	30.81	0.00	42.70	22.04	22.94	43.91	21.12	16.66	41.64	18.02	40.73
Movement LOS	D	C	A	D	C	C	D	C	B	D	B	D
d_A, Approach Delay [s/veh]	32.60			35.09			24.43			31.66		
Approach LOS	C			D			C			C		
d_I, Intersection Delay [s/veh]	30.00											
Intersection LOS	C											
Intersection V/C	0.734											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.686	2.918	3.022	3.244
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	378	533	622	800
d_b, Bicycle Delay [s]	29.61	24.20	21.36	16.20
I_b,int, Bicycle LOS Score for Intersection	1.664	2.112	2.408	2.221
Bicycle LOS	A	B	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 2: I-15 NB Ramps (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	16.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.497

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
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 Pocket	2	0	0	0	0	0	2	0	0	0	0	0
Pocket Length [ft]	410.00	100.00	100.00	100.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	166	1	153	0	0	0	156	824	0	0	689	212
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.27	1.27	1.27	1.00	1.00	1.00	1.27	1.27	1.00	1.00	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	30	0	0	0	0	96	0	0	109	24
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	1	224	0	0	0	198	1142	0	0	984	293
Peak Hour Factor	0.9500	0.9500	0.9500	0.7800	0.7800	0.7800	0.9500	0.9500	0.7800	0.7800	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]	56	0	59	0	0	0	52	301	0	0	259	77
Total Analysis Volume [veh/h]	222	1	236	0	0	0	208	1202	0	0	1036	308
Presence of On-Street Parking	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	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
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]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	18	0	0	0	0	20	42	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		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	R		L	C	C	R
C, Cycle Length [s]	60	60	60		60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	25		7	27	16	16
g / C, Green / Cycle	0.42	0.42	0.42		0.11	0.45	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.14		0.06	0.22	0.19	0.18
s, saturation flow rate [veh/h]	1687	1782	1589		3095	5094	5094	1589
c, Capacity [veh/h]	699	738	659		354	2307	1386	433
d1, Uniform Delay [s]	11.01	11.01	12.03		25.26	11.63	19.80	19.58
k, delay calibration	0.50	0.50	0.50		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	0.42	1.41		1.39	0.17	0.69	1.88
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.15	0.34		0.56	0.50	0.71	0.68
d, Delay for Lane Group [s/veh]	11.46	11.43	13.44		26.65	11.80	20.48	21.47
Lane Group LOS	B	B	B		C	B	C	C
Critical Lane Group	No	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.84	0.88	2.05		1.26	2.78	3.59	3.32
50th-Percentile Queue Length [ft/ln]	21.05	22.11	51.28		31.45	69.60	89.69	82.96
95th-Percentile Queue Length [veh/ln]	1.52	1.59	3.69		2.26	5.01	6.46	5.97
95th-Percentile Queue Length [ft/ln]	37.89	39.80	92.31		56.61	125.27	161.44	149.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.44	11.43	13.44	0.00	0.00	0.00	26.65	11.80	0.00	0.00	20.48	21.47
Movement LOS	B	B	B				C	B			C	C
d_A, Approach Delay [s/veh]	12.47			0.00			13.99			20.71		
Approach LOS	B			A			B			C		
d_I, Intersection Delay [s/veh]	16.58											
Intersection LOS	B											
Intersection V/C	0.497											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.059	1.932	0.000	0.000
Crosswalk LOS	B	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	467	0	1267	600
d_b, Bicycle Delay [s]	17.63	30.00	4.03	14.70
I_b,int, Bicycle LOS Score for Intersection	2.279	4.132	2.297	2.262
Bicycle LOS	B	D	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Mariposa Rd (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.430

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	305.00	100.00	100.00	210.00	100.00	100.00	355.00	100.00	100.00	180.00	100.00	100.00
Speed [mph]	50.00			50.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	96	96	46	67	74	37	49	793	143	41	788	94
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	16	18	2	7	9	117	0	18	126	22
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	125	74	103	96	54	71	1124	182	70	1127	141
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]	32	33	19	27	25	14	19	296	48	18	297	37
Total Analysis Volume [veh/h]	128	132	78	108	101	57	75	1183	192	74	1186	148
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	11	21	0	11	21	0	12	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	21	21	6	20	20	5	17	17	5	17	17
g / C, Green / Cycle	0.10	0.32	0.32	0.09	0.31	0.31	0.08	0.27	0.27	0.08	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.04	0.04	0.05	0.03	0.03	0.03	0.02	0.22	0.11	0.02	0.22	0.09
s, saturation flow rate [veh/h]	3095	3560	1589	3095	3560	1589	3095	5094	1589	3095	5094	1589
c, Capacity [veh/h]	300	1128	503	286	1111	496	246	1359	424	244	1356	423
d1, Uniform Delay [s]	27.68	15.78	15.97	27.80	15.87	15.98	28.28	22.50	19.80	28.31	22.55	19.27
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	0.89	0.20	0.62	0.77	0.15	0.44	0.64	1.37	0.69	0.64	1.41	0.46
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.41	0.11	0.15	0.36	0.09	0.11	0.29	0.83	0.43	0.29	0.83	0.33
d, Delay for Lane Group [s/veh]	28.57	15.98	16.59	28.56	16.02	16.42	28.92	23.87	20.49	28.95	23.96	19.73
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.83	0.59	0.75	0.70	0.45	0.55	0.50	4.82	2.07	0.49	4.84	1.55
50th-Percentile Queue Length [ft/ln]	20.85	14.67	18.80	17.59	11.28	13.64	12.45	120.47	51.70	12.28	121.10	38.78
95th-Percentile Queue Length [veh/ln]	1.50	1.06	1.35	1.27	0.81	0.98	0.90	8.42	3.72	0.88	8.45	2.79
95th-Percentile Queue Length [ft/ln]	37.53	26.41	33.84	31.66	20.30	24.55	22.40	210.47	93.06	22.10	211.34	69.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.57	15.98	16.59	28.56	16.02	16.42	28.92	23.87	20.49	28.95	23.96	19.73
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	B
d_A, Approach Delay [s/veh]	20.91			21.21			23.68			23.77		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	23.26											
Intersection LOS	C											
Intersection V/C	0.430											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.731	2.713	3.340	3.260
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]	523	523	523	554
d_b, Bicycle Delay [s]	17.72	17.72	17.72	16.99
I_b,int, Bicycle LOS Score for Intersection	1.824	1.768	2.317	2.296
Bicycle LOS	A	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 4: Balsam Ave (NS) at Project Dwy 1 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Northbound		Southbound		Westbound	
Approach						
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Westbound	
Base Volume Input [veh/h]	1	0	0	1	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	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	2	6	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]	1	2	0	3	6	0
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]	0	1	0	1	2	0
Total Analysis Volume [veh/h]	1	2	0	3	6	0
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	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.22	0.00	8.56	8.35
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.45	0.45
d_A, Approach Delay [s/veh]	0.00		0.00		8.56	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.28					
Intersection LOS	A					

**Intersection Level Of Service Report
Intersection 5: Balsam Ave (NS) at Project Dwy 2 (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Northbound		Southbound		Westbound	
Approach						
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Westbound	
Base Volume Input [veh/h]	1	0	0	1	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	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	7	0	8	19	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]	3	7	0	9	19	0
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]	1	2	0	2	5	0
Total Analysis Volume [veh/h]	3	7	0	9	20	0
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	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.24	0.00	8.66	8.41
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.06	0.06
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	1.45	1.45
d_A, Approach Delay [s/veh]	0.00		0.00		8.66	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.33					
Intersection LOS	A					

**Intersection Level Of Service Report
Intersection 6: Balsam Ave (NS) at Project Dwy 3 (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.023

Intersection Setup

Name	Northbound		Southbound		Westbound	
Approach						
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Westbound	
Base Volume Input [veh/h]	1	0	0	1	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	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	8	0	27	22	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]	10	8	0	28	22	0
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]	3	2	0	7	6	0
Total Analysis Volume [veh/h]	11	8	0	29	23	0
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	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.25	0.00	8.80	8.46
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	1.74	1.74
d_A, Approach Delay [s/veh]	0.00		0.00		8.80	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.85					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Balsam Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.754

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TT			TTT			TTT		
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 Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	85.00	100.00	100.00	115.00	100.00	100.00	250.00	100.00	100.00
Speed [mph]	30.00			30.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	291	26	35	18	26	24	92	617	186	45	542	20
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	1	121	50	159	137	14	0	1	7	115
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	370	78	45	144	83	189	254	798	236	58	695	140
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]	97	21	12	38	22	50	67	210	62	15	183	37
Total Analysis Volume [veh/h]	389	82	47	152	87	199	267	840	248	61	732	147
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	21	0	16	21	0	17	27	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	L	C	R	L	C	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	24	8	21	13	22	22	5	14	14
g / C, Green / Cycle	0.15	0.32	0.11	0.28	0.17	0.30	0.30	0.07	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.12	0.07	0.09	0.16	0.15	0.22	0.15	0.03	0.16	0.16
s, saturation flow rate [veh/h]	3095	1757	1687	1666	1687	3560	1589	1687	3560	1715
c, Capacity [veh/h]	454	553	182	460	293	1060	473	113	680	328
d1, Uniform Delay [s]	31.11	18.98	32.74	23.55	30.25	23.92	21.79	33.92	29.22	29.29
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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]	3.75	0.93	7.97	5.62	8.43	1.12	0.82	3.63	2.68	5.91
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	0.82	0.22	0.79	0.59	0.87	0.75	0.50	0.51	0.83	0.84
d, Delay for Lane Group [s/veh]	34.86	19.90	40.71	29.17	38.68	25.03	22.61	37.55	31.90	35.20
Lane Group LOS	C	B	D	C	D	C	C	D	C	D
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.37	1.65	2.88	4.69	4.78	5.86	3.18	1.07	4.68	4.87
50th-Percentile Queue Length [ft/ln]	84.37	41.26	72.06	117.20	119.45	146.45	79.40	26.75	117.09	121.79
95th-Percentile Queue Length [veh/ln]	6.07	2.97	5.19	8.24	8.36	9.83	5.72	1.93	8.23	8.49
95th-Percentile Queue Length [ft/ln]	151.87	74.27	129.72	205.97	209.07	245.68	142.92	48.14	205.83	212.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.86	19.90	19.90	40.71	29.17	29.17	38.68	25.03	22.61	37.55	32.53	35.20
Movement LOS	C	B	B	D	C	C	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	31.13			33.16			27.28			33.28		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	30.42											
Intersection LOS	C											
Intersection V/C	0.754											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	27.31			27.31			27.31			27.31		
I_p,int, Pedestrian LOS Score for Intersection	2.333			2.219			3.180			2.901		
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]	453			453			613			453		
d_b, Bicycle Delay [s]	22.43			22.43			18.03			22.43		
I_b,int, Bicycle LOS Score for Intersection	2.373			2.246			2.622			2.051		
Bicycle LOS	B			B			B			B		

Sequence

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



**Intersection Level Of Service Report
Intersection 8: Project Dwy 4 (NS) at Winona St (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	8.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Northbound		Eastbound		Westbound	
Approach						
Lane Configuration	↔		↗		↖	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Eastbound		Westbound	
Base Volume Input [veh/h]	0	0	1	0	0	1
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	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	0	0	3	2
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]	0	9	1	0	3	3
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]	0	2	0	0	1	1
Total Analysis Volume [veh/h]	0	9	1	0	3	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
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	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.60	8.35	0.00	0.00	7.22	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.63	0.63	0.00	0.00	0.14	0.14
d_A, Approach Delay [s/veh]	8.35		0.00		3.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.05					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 9: 11th Ave (NS) at Winona St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	6	12	5	0	31	1	1	1	11	10	0	0
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	24	8	1	15	2	0	3	6	8	1	2
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]	10	39	14	1	54	3	1	4	20	21	1	2
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]	3	10	4	0	14	1	0	1	5	6	0	1
Total Analysis Volume [veh/h]	11	41	15	1	57	3	1	4	21	22	1	2
Pedestrian Volume [ped/h]	0			0			0			0		

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	0.00	0.00	0.00	0.00	0.01	0.02	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	7.34	0.00	0.00	7.32	0.00	0.00	9.38	9.87	8.66	9.57	9.87	8.65
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.00	0.00	0.00	0.08	0.08	0.08	0.09	0.09	0.09
95th-Percentile Queue Length [ft/ln]	0.49	0.49	0.49	0.05	0.05	0.05	2.02	2.02	2.02	2.25	2.25	2.25
d_A, Approach Delay [s/veh]	1.17			0.13			8.88			9.50		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.12											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 10: 11th Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.408

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			T T T			T T T		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	120.00	100.00	100.00
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			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	63	1	8	12	4	39	15	597	40	5	502	8
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	0	8	0	21	28	94	14	0	88	6
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	94	1	10	23	5	71	47	852	65	6	726	16
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]	25	0	3	6	1	19	12	224	17	2	191	4
Total Analysis Volume [veh/h]	99	1	11	24	5	75	49	897	68	6	764	17
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	130	0	0	130	0	130	130	0	130	130	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	16	27	0	12	23	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
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	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	4	18	18	1	15	15
g / C, Green / Cycle	0.49	0.49	0.06	0.30	0.30	0.01	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.07	0.06	0.03	0.25	0.25	0.00	0.20	0.20
s, saturation flow rate [veh/h]	1407	1577	1687	1870	1824	1687	1870	1856
c, Capacity [veh/h]	799	843	110	562	548	21	463	460
d1, Uniform Delay [s]	8.39	8.40	27.04	19.58	19.58	29.45	21.26	21.26
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.34	0.28	2.63	3.25	3.33	7.42	3.40	3.44
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.12	0.43	0.83	0.83	0.29	0.80	0.80
d, Delay for Lane Group [s/veh]	8.73	8.68	29.67	22.83	22.91	36.87	24.66	24.70
Lane Group LOS	A	A	C	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.73	0.68	0.66	5.52	5.40	0.12	4.62	4.59
50th-Percentile Queue Length [ft/ln]	18.26	17.12	16.58	138.10	135.00	3.03	115.56	114.84
95th-Percentile Queue Length [veh/ln]	1.31	1.23	1.19	9.38	9.21	0.22	8.15	8.11
95th-Percentile Queue Length [ft/ln]	32.87	30.82	29.84	234.47	230.28	5.45	203.71	202.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.73	8.73	8.73	8.68	8.68	8.68	29.67	22.87	22.91	36.87	24.68	24.70
Movement LOS	A	A	A	A	A	A	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	8.73			8.68			23.20			24.78		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	22.27											
Intersection LOS	C											
Intersection V/C	0.408											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.766	1.759	3.016	0.000
Crosswalk LOS	A	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	767	633
d_b, Bicycle Delay [s]	15.41	15.41	11.41	14.01
I_b,int, Bicycle LOS Score for Intersection	1.733	1.723	2.355	2.177
Bicycle LOS	A	A	B	B

Sequence

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



Balsam at Winona Apartments

Vistro File: C:\...\PME.vistro

Scenario 5 Future Year (2032) With Project PM Peak Hour

Report File: C:\...\PM32W.pdf

12/15/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Amargosa Rd (NS) at La Mesa Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.811	35.2	D
2	I-15 NB Ramps (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	NB Right	0.800	17.2	B
3	Mariposa Rd (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.735	28.6	C
4	Balsam Ave (NS) at Project Dwy 1 (EW)	Two-way stop	HCM 6th Edition	WB Left	0.004	8.6	A
5	Balsam Ave (NS) at Project Dwy 2 (EW)	Two-way stop	HCM 6th Edition	WB Left	0.012	8.7	A
6	Balsam Ave (NS) at Project Dwy 3 (EW)	Two-way stop	HCM 6th Edition	WB Left	0.015	8.9	A
7	Balsam Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.835	34.4	C
8	Project Dwy 4 (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	NB Right	0.006	8.3	A
9	11th Ave (NS) at Winona St (EW)	Two-way stop	HCM 6th Edition	WB Thru	0.004	10.3	B
10	11th Ave (NS) at Nisqualli Rd (EW)	Signalized	HCM 6th Edition	WB Left	0.617	18.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Amargosa Rd (NS) at La Mesa Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	35.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.811

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTL			TTL			TTL			TTL		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	285.00	100.00	100.00	385.00	100.00	100.00	135.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	45.00			45.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	104	276	327	577	506	319	86	678	99	337	1054	446
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	40	0	0	0	52	0	0	50	47
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	287	340	640	526	332	89	757	103	350	1146	511
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	73	0	164	135	85	23	194	26	90	293	131
Total Analysis Volume [veh/h]	111	294	0	655	538	340	91	775	105	358	1173	523
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	26	36	0	11	24	0	24	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	17	17	22	32	32	6	26	26	14	34	34
g / C, Green / Cycle	0.07	0.18	0.18	0.23	0.34	0.34	0.07	0.28	0.28	0.14	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.04	0.09	0.00	0.22	0.16	0.22	0.03	0.22	0.07	0.12	0.24	0.34
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	3373	1506	2912	4826	1506
c, Capacity [veh/h]	202	608	272	674	1155	516	194	929	415	421	1703	531
d1, Uniform Delay [s]	42.72	34.89	0.00	35.96	24.34	26.35	42.69	32.18	26.79	39.53	26.09	30.11
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	2.19	2.63	0.00	9.68	1.30	6.25	1.69	1.84	0.31	4.52	0.47	15.04
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.53	0.47	0.00	0.95	0.46	0.64	0.46	0.82	0.25	0.83	0.67	0.96
d, Delay for Lane Group [s/veh]	44.91	37.52	0.00	45.64	25.64	32.60	44.37	34.02	27.10	44.05	26.56	45.16
Lane Group LOS	D	D	A	D	C	C	D	C	C	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.24	3.06	0.00	7.76	4.51	6.77	1.01	7.82	1.75	4.05	6.84	12.66
50th-Percentile Queue Length [ft/ln]	30.97	76.46	0.00	194.06	112.74	169.34	25.31	195.60	43.86	101.18	170.91	316.54
95th-Percentile Queue Length [veh/ln]	2.23	5.51	0.00	12.33	7.99	11.04	1.82	12.41	3.16	7.28	11.12	18.50
95th-Percentile Queue Length [ft/ln]	55.75	137.64	0.00	308.29	199.80	276.05	45.56	310.28	78.95	182.12	278.10	462.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.91	37.52	0.00	45.64	25.64	32.60	44.37	34.02	27.10	44.05	26.56	45.16
Movement LOS	D	D	A	D	C	C	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	39.54			35.73			34.24			34.35		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	35.18											
Intersection LOS	D											
Intersection V/C	0.811											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	37.14			37.14			37.14			37.14		
I_p,int, Pedestrian LOS Score for Intersection	2.883			3.094			3.191			3.405		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	358			674			421			695		
d_b, Bicycle Delay [s]	32.02			20.89			29.61			20.23		
I_b,int, Bicycle LOS Score for Intersection	1.885			2.795			2.343			2.663		
Bicycle LOS	A			C			B			B		

Sequence





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



Intersection Level Of Service Report
Intersection 2: I-15 NB Ramps (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	17.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.800

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
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 Pocket	2	0	0	0	0	0	2	0	0	0	0	0
Pocket Length [ft]	410.00	100.00	100.00	100.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	317	2	293	0	0	0	220	1364	0	0	1525	381
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	34	0	0	0	0	92	0	0	97	25
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	330	2	339	0	0	0	229	1511	0	0	1683	421
Peak Hour Factor	0.9820	0.9820	0.9820	0.7800	0.7800	0.7800	0.9820	0.9820	0.7800	0.7800	0.9820	0.9820
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]	84	1	86	0	0	0	58	385	0	0	428	107
Total Analysis Volume [veh/h]	336	2	345	0	0	0	233	1539	0	0	1714	429
Presence of On-Street Parking	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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	23	0	0	0	0	20	42	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		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	R		L	C	C	R
C, Cycle Length [s]	65	65	65		65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	20		7	37	26	26
g / C, Green / Cycle	0.31	0.31	0.31		0.11	0.57	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.23		0.08	0.31	0.35	0.28
s, saturation flow rate [veh/h]	1593	1688	1506		2912	4826	4826	1506
c, Capacity [veh/h]	489	518	462		326	2752	1916	598
d1, Uniform Delay [s]	17.40	17.40	20.18		27.86	8.74	18.16	16.42
k, delay calibration	0.50	0.50	0.50		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.81	1.71	10.52		2.81	0.17	1.46	1.54
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.33	0.33	0.73		0.70	0.55	0.88	0.70
d, Delay for Lane Group [s/veh]	19.21	19.11	30.71		30.67	8.92	19.62	17.96
Lane Group LOS	B	B	C		C	A	B	B
Critical Lane Group	No	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.98	2.08	5.58		1.68	3.11	6.55	4.52
50th-Percentile Queue Length [ft/ln]	49.48	52.05	139.45		41.97	77.63	163.67	113.06
95th-Percentile Queue Length [veh/ln]	3.56	3.75	9.45		3.02	5.59	10.74	8.01
95th-Percentile Queue Length [ft/ln]	89.06	93.69	236.28		75.55	139.74	268.58	200.25

Movement, Approach, & Intersection Results

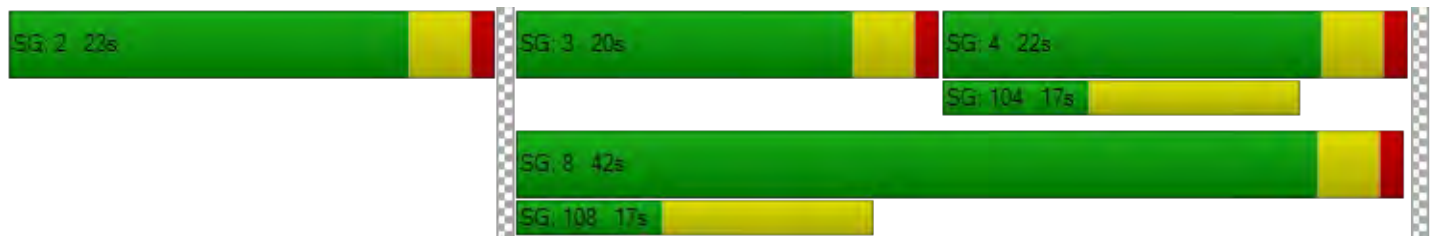
d_M, Delay for Movement [s/veh]	19.16	19.11	30.71	0.00	0.00	0.00	30.67	8.92	0.00	0.00	19.62	17.96
Movement LOS	B	B	C				C	A			B	B
d_A, Approach Delay [s/veh]	24.99			0.00			11.78			19.29		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	17.24											
Intersection LOS	B											
Intersection V/C	0.800											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.140	2.015	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	585	0	1169	554
d_b, Bicycle Delay [s]	16.28	32.50	5.61	16.99
I_b,int, Bicycle LOS Score for Intersection	2.667	4.132	2.517	2.717
Bicycle LOS	B	D	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Mariposa Rd (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.735

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
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 Pocket	2	0	0	2	0	0	2	0	0	2	0	0
Pocket Length [ft]	305.00	100.00	100.00	210.00	100.00	100.00	355.00	100.00	100.00	180.00	100.00	100.00
Speed [mph]	50.00			50.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	393	264	103	137	217	102	120	1237	287	86	1395	143
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	16	20	3	10	11	115	0	15	112	19
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	409	278	123	162	229	116	136	1401	298	104	1563	168
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	106	72	32	42	60	30	35	364	77	27	406	44
Total Analysis Volume [veh/h]	425	289	128	168	238	121	141	1456	310	108	1625	175
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	21	0	17	21	0	11	21	0	21	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	23	23	7	17	17	7	28	28	6	27	27
g / C, Green / Cycle	0.16	0.29	0.29	0.09	0.21	0.21	0.08	0.35	0.35	0.08	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.14	0.08	0.08	0.06	0.07	0.08	0.05	0.29	0.20	0.04	0.32	0.11
s, saturation flow rate [veh/h]	2912	3373	1506	2912	3373	1506	2912	4826	1506	2912	4826	1506
c, Capacity [veh/h]	472	983	439	248	723	323	243	1662	519	230	1641	512
d1, Uniform Delay [s]	32.68	21.90	21.88	35.46	26.49	26.75	35.27	24.23	21.44	35.20	25.77	19.61
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	5.21	0.72	1.60	2.93	1.15	3.12	2.04	1.25	1.01	1.39	4.50	0.37
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.87	0.28	0.28	0.65	0.32	0.36	0.56	0.84	0.57	0.45	0.95	0.33
d, Delay for Lane Group [s/veh]	37.89	22.62	23.48	38.38	27.64	29.87	37.30	25.48	22.45	36.59	30.27	19.98
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C	B
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.87	1.91	1.80	1.52	1.80	2.00	1.27	7.42	4.23	0.96	9.23	2.15
50th-Percentile Queue Length [ft/ln]	96.76	47.80	44.95	37.99	44.91	49.97	31.69	185.57	105.70	23.91	230.64	53.73
95th-Percentile Queue Length [veh/ln]	6.97	3.44	3.24	2.74	3.23	3.60	2.28	11.89	7.60	1.72	14.21	3.87
95th-Percentile Queue Length [ft/ln]	174.16	86.04	80.91	68.38	80.83	89.95	57.05	297.27	190.00	43.03	355.18	96.71

Movement, Approach, & Intersection Results

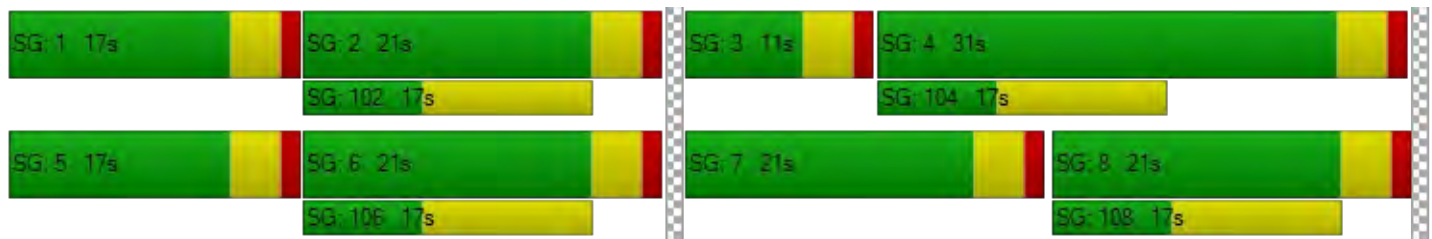
d_M, Delay for Movement [s/veh]	37.89	22.62	23.48	38.38	27.64	29.87	37.30	25.48	22.45	36.59	30.27	19.98
Movement LOS	D	C	C	D	C	C	D	C	C	D	C	B
d_A, Approach Delay [s/veh]	30.46			31.58			25.86			29.68		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.60											
Intersection LOS	C											
Intersection V/C	0.735											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.76	29.76	29.76	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.922	2.840	3.534	3.415
Crosswalk LOS	C	C	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	425	425	425	675
d_b, Bicycle Delay [s]	24.81	24.81	24.81	17.56
I_b,int, Bicycle LOS Score for Intersection	2.228	1.978	2.569	2.569
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 4: Balsam Ave (NS) at Project Dwy 1 (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Northbound		Southbound		Westbound	
Approach						
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Westbound	
Base Volume Input [veh/h]	1	0	0	1	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	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	8	4	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]	1	6	0	9	4	0
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]	0	2	0	2	1	0
Total Analysis Volume [veh/h]	1	6	0	9	4	0
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	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.23	0.00	8.59	8.35
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.30	0.30
d_A, Approach Delay [s/veh]	0.00		0.00		8.59	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.72					
Intersection LOS	A					

**Intersection Level Of Service Report
Intersection 5: Balsam Ave (NS) at Project Dwy 2 (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Northbound		Southbound		Westbound	
Approach						
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Westbound	
Base Volume Input [veh/h]	1	0	0	1	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	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	20	0	12	12	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]	7	20	0	13	12	0
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]	2	5	0	3	3	0
Total Analysis Volume [veh/h]	7	21	0	14	13	0
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	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.27	0.00	8.70	8.44
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.93	0.93
d_A, Approach Delay [s/veh]	0.00		0.00		8.70	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.01					
Intersection LOS	A					

**Intersection Level Of Service Report
Intersection 6: Balsam Ave (NS) at Project Dwy 3 (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Northbound		Southbound		Westbound	
Approach						
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Westbound	
Base Volume Input [veh/h]	1	0	0	1	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	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	24	0	24	14	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]	27	24	0	25	14	0
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]	7	6	0	7	4	0
Total Analysis Volume [veh/h]	28	25	0	26	15	0
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	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.31	0.00	8.88	8.54
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.05	0.05
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	1.13	1.13
d_A, Approach Delay [s/veh]	0.00		0.00		8.88	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.38					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Balsam Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	34.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.835

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TT			TTT			TTT		
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 Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	85.00	100.00	100.00	115.00	100.00	100.00	250.00	100.00	100.00
Speed [mph]	30.00			30.00			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	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	474	5	73	4	6	9	18	1037	339	98	1140	7
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	44	1	94	40	134	139	12	0	1	12	101
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	493	49	77	98	46	143	158	1090	353	103	1198	108
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	130	13	20	26	12	38	42	287	93	27	315	28
Total Analysis Volume [veh/h]	518	52	81	103	48	150	166	1146	371	108	1260	114
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	21	0	19	21	0	18	33	0	12	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
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	L	C	R	L	C	C
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	26	7	18	10	29	29	7	26	26
g / C, Green / Cycle	0.18	0.31	0.08	0.21	0.12	0.35	0.35	0.08	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.17	0.08	0.06	0.12	0.10	0.32	0.23	0.06	0.26	0.26
s, saturation flow rate [veh/h]	2912	1599	1593	1563	1593	3373	1506	1593	3373	1698
c, Capacity [veh/h]	514	494	123	328	190	1165	520	127	1033	520
d1, Uniform Delay [s]	34.71	22.03	38.59	30.20	36.62	26.92	23.80	38.48	27.57	27.57
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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]	14.73	1.24	11.99	7.39	9.75	4.64	1.57	12.39	1.98	3.91
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	0.96	0.25	0.80	0.58	0.83	0.94	0.68	0.81	0.84	0.84
d, Delay for Lane Group [s/veh]	49.44	23.28	50.58	37.59	46.37	31.56	25.37	50.87	29.55	31.48
Lane Group LOS	D	C	D	D	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.97	2.01	2.39	4.07	3.54	10.31	5.70	2.44	7.77	8.10
50th-Percentile Queue Length [ft/ln]	149.18	50.23	59.63	101.72	88.48	257.83	142.57	60.99	194.37	202.62
95th-Percentile Queue Length [veh/ln]	9.97	3.62	4.29	7.32	6.37	15.58	9.62	4.39	12.35	12.77
95th-Percentile Queue Length [ft/ln]	249.33	90.42	107.33	183.09	159.26	389.49	240.49	109.77	308.69	319.34

Movement, Approach, & Intersection Results

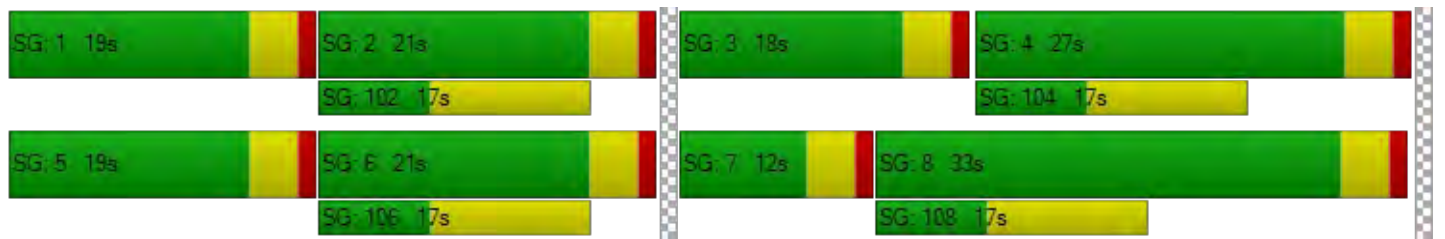
d_M, Delay for Movement [s/veh]	49.44	23.28	23.28	50.58	37.59	37.59	46.37	31.56	25.37	50.87	30.08	31.48
Movement LOS	D	C	C	D	D	D	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	44.12			42.03			31.65			31.71		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	34.40											
Intersection LOS	C											
Intersection V/C	0.835											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.21	32.21	32.21	32.21
I_p,int, Pedestrian LOS Score for Intersection	2.401	2.132	3.350	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]	400	400	682	541
d_b, Bicycle Delay [s]	27.20	27.20	18.45	22.61
I_b,int, Bicycle LOS Score for Intersection	2.581	2.033	2.880	2.335
Bicycle LOS	B	B	C	B

Sequence

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



**Intersection Level Of Service Report
Intersection 8: Project Dwy 4 (NS) at Winona St (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	8.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Northbound		Eastbound		Westbound	
Approach						
Lane Configuration	↔		↗		↖	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Eastbound		Westbound	
Base Volume Input [veh/h]	0	0	1	0	0	1
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	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	0	9	8
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]	0	6	1	0	9	9
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]	0	2	0	0	2	2
Total Analysis Volume [veh/h]	0	6	1	0	9	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
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	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	8.69	8.34	0.00	0.00	7.23	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.42	0.42	0.00	0.00	0.42	0.42
d_A, Approach Delay [s/veh]	8.34		0.00		3.62	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.61					
Intersection LOS	A					

**Intersection Level Of Service Report
Intersection 9: 11th Ave (NS) at Winona St (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	16	30	13	2	31	1	1	0	20	17	0	2
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	20	7	3	21	8	0	2	4	7	3	2
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]	23	51	21	5	53	9	1	2	25	25	3	4
Peak Hour Factor	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110	0.8110
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	16	6	2	16	3	0	1	8	8	1	1
Total Analysis Volume [veh/h]	28	63	26	6	65	11	1	2	31	31	4	5
Pedestrian Volume [ped/h]	0			0			0			0		

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	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	7.37	0.00	0.00	7.36	0.00	0.00	9.81	10.29	8.68	10.07	10.34	8.79
Movement LOS	A	A	A	A	A	A	A	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.01	0.01	0.01	0.09	0.09	0.09	0.13	0.13	0.13
95th-Percentile Queue Length [ft/ln]	1.14	1.14	1.14	0.25	0.25	0.25	2.24	2.24	2.24	3.29	3.29	3.29
d_A, Approach Delay [s/veh]	1.78			0.55			8.84			9.94		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.48											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 10: 11th Ave (NS) at Nisqualli Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.617

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			T T T			T T T		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	120.00	100.00	100.00
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			No		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	90	9	20	10	8	71	57	920	93	12	1066	18
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	0	0	9	0	23	24	72	11	0	80	9
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	106	9	21	19	8	97	83	1029	108	12	1189	28
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	28	2	5	5	2	25	22	267	28	3	309	7
Total Analysis Volume [veh/h]	110	9	22	20	8	101	86	1070	112	12	1236	29
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			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			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	130	0	0	130	0	130	130	0	130	130	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	27	0	12	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
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	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	5	27	27	1	23	23
g / C, Green / Cycle	0.33	0.33	0.09	0.45	0.45	0.02	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.05	0.33	0.33	0.01	0.34	0.34
s, saturation flow rate [veh/h]	1406	1525	1593	1772	1713	1593	1772	1757
c, Capacity [veh/h]	569	571	141	796	770	35	679	673
d1, Uniform Delay [s]	14.76	14.70	26.34	13.51	13.53	28.96	17.45	17.46
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.99	0.87	3.95	1.29	1.34	5.80	5.03	5.10
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.22	0.59	0.73	0.73	0.34	0.90	0.90
d, Delay for Lane Group [s/veh]	15.75	15.57	30.30	14.80	14.87	34.76	22.48	22.56
Lane Group LOS	B	B	C	B	B	C	C	C
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.42	1.29	1.17	5.09	4.95	0.21	7.21	7.17
50th-Percentile Queue Length [ft/ln]	35.62	32.23	29.36	127.22	123.69	5.26	180.19	179.18
95th-Percentile Queue Length [veh/ln]	2.56	2.32	2.11	8.79	8.60	0.38	11.61	11.56
95th-Percentile Queue Length [ft/ln]	64.11	58.01	52.85	219.71	214.89	9.47	290.27	288.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.75	15.75	15.75	15.57	15.57	15.57	30.30	14.83	14.87	34.76	22.52	22.56
Movement LOS	B	B	B	B	B	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	15.75			15.57			15.88			22.64		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	18.93											
Intersection LOS	B											
Intersection V/C	0.617											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.800	1.791	3.218	0.000
Crosswalk LOS	A	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	767	800
d_b, Bicycle Delay [s]	15.41	15.41	11.41	10.80
I_b,int, Bicycle LOS Score for Intersection	1.784	1.764	2.566	2.574
Bicycle LOS	A	A	B	B

Sequence

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





GANDDINI GROUP, INC.

550 Parkcenter Drive, Suite 202, Santa Ana, CA 92705
714.795.3100 | www.ganddini.com