

Appendix

Appendix I Transportation Analysis

Appendix

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Azusa Canyon Road Warehouse

**TRANSPORTATION ANALYSIS
CITY OF IRWINDALE, CALIFORNIA**

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13837-04 TA Report

TABLE OF CONTENTS

TABLE OF CONTENTS.....	III
APPENDICES.....	V
LIST OF EXHIBITS.....	VI
LIST OF TABLES	VII
LIST OF ABBREVIATED TERMS	VIII
ES EXECUTIVE SUMMARY	IX
1 INTRODUCTION.....	1
1.1 Project Overview.....	1
1.2 Analysis Scenarios	1
1.3 Study Area.....	5
1.4 Analysis Findings	5
1.5 Recommendations	6
2 METHODOLOGIES	11
2.1 Level of Service	11
2.3 Traffic Signal Warrant Analysis Methodology.....	14
2.4 LOS Criteria	14
2.5 Los Angeles County Congestion Management Program (CMP) Consistency Requirements.....	15
3 AREA CONDITIONS	17
3.1 Existing Circulation Network.....	17
3.2 City of Irwindale, California Circulation Network	17
3.3 Transit Service	17
3.4 Truck Route	20
3.5 Bicycle & Pedestrian Facilities.....	20
3.6 Existing Traffic Counts	20
3.6 Existing Conditions Intersection Operations Analysis.....	24
3.7 Existing Traffic Signal Warrants Analysis.....	24
4 PROJECTED FUTURE TRAFFIC.....	27
4.1 Project Trip Generation.....	27
4.2 Project Trip Distribution.....	33
4.3 Modal Split	33
4.4 Project Trip Assignment	33
4.5 Background Traffic	33
4.6 Cumulative Development Traffic	33
5 EXISTING (HYPOTHETICAL “NON-COVID” 2021) TRAFFIC CONDITIONS.....	39
5.1 Roadway Improvements	39
5.2 Traffic Volume Forecasts.....	39
5.3 Intersection Operations Analysis	39
6 interim Year Cumulative Plus Site Baseline Land Use (2022) Traffic Conditions	43
6.1 Roadway Improvements	43
6.2 Traffic Volume Forecasts.....	43
6.3 Intersection Operations Analysis	43
7 2040 PLUS SITE BASELINE LAND USE TRAFFIC CONDITIONS	47
7.1 Roadway Improvements	47

7.2	Traffic Volume Forecasts.....	47
7.3	Intersection Operations Analysis	47
8	VEHICLE MILES TRAVELED SCREENING ASSESSMENT	51
9	IMPROVEMENTS, SAFETY, & PROJECT FAIR SHARE	53
9.1	Off-Site Recommended Improvements	53
9.2	Safety	53
9.3	2040 With Project Fair Share Percentage	54
10	SUMMARY OF FINDINGS	57
10.1	Project Access	57
10.2	Traffic Analysis Results	57
11	REFERENCES	59

APPENDICES

APPENDIX 1.1: APPROVED SCOPING AGREEMENT

APPENDIX 3.1: TRAFFIC COUNTS

**APPENDIX 3.2: EXISTING (HYPOTHETICAL “NON-COVID” 2021) CONDITIONS
INTERSECTION OPERATIONS ANALYSIS**

**APPENDIX 3.3: EXISTING (HYPOTHETICAL “NON-COVID” 2021)
TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS**

**APPENDIX 5.1: EXISTING (HYPOTHETICAL “NON-COVID” 2021)
PLUS SITE BASELINE LAND USE CONDITIONS INTERSECTION OPERATIONS ANALYSIS**

**APPENDIX 5.2: EXISTING (HYPOTHETICAL “NON-COVID” 2021)
PLUS SITE BASELINE LAND USE WITH PROJECT CONDITIONS
INTERSECTION OPERATIONS ANALYSIS**

**APPENDIX 6.1: INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE CONDITIONS
INTERSECTION OPERATIONS ANALYSIS**

**APPENDIX 6.2: INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE
WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS**

**APPENDIX 7.1: 2040 PLUS SITE BASELINE LAND USE CONDITIONS
INTERSECTION OPERATIONS ANALYSIS**

**APPENDIX 7.2: 2040 PLUS SITE BASELINE LAND USE WITH PROJECT CONDITIONS
INTERSECTION OPERATIONS ANALYSIS**

LIST OF EXHIBITS

EXHIBIT ES-1: VICINITY MAP	X
EXHIBIT ES-2: INTERSECTION ANALYSIS LOCATIONS	XI
EXHIBIT 1-1: STUDY AREA	2
EXHIBIT 1-2: PRELIMINARY SITE PLAN	3
EXHIBIT 1-3: SITE ACCESS RECOMMENDATIONS	8
EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS	18
EXHIBIT 3-2: CITY OF IRWINDALE ROADWAY CLASSIFICATION SYSTEM	19
EXHIBIT 3-3: CITY OF IRWINDALE TRUCK ROUTE.....	21
EXHIBIT 3-4: EXISTING PEDESTRIAN AND BICYCLE FACILITIES	25
EXHIBIT 3-5: CITY OF IRWINDALE TRUCK ROUTES	25
EXHIBIT 3-6: EXISTING (HYPOTHETICAL “NON-COVID” 2021) TRAFFIC VOLUMES	25
EXHIBIT 4-1: PROJECT TRIP DISTRIBUTION.....	34
EXHIBIT 4-2: PROJECT ONLY TRAFFIC VOLUMES	35
EXHIBIT 4-3: CUMULATIVE DEVELOPMENT LOCATION MAP	36
EXHIBIT 4-4: CUMULATIVE ONLY TRAFFIC VOLUMES	37
EXHIBIT 5-1: EXISTING (HYPOTHETICAL “NON-COVID” 2021) PLUS SITE BASELINE LAND USE TRAFFIC VOLUMES	41
EXHIBIT 5-2: EXISTING (HYPOTHETICAL “NON-COVID” 2021) PLUS SITE BASELINE LAND USE WITH PROJECT TRAFFIC VOLUMES	42
EXHIBIT 6-1: INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE (2022) TRAFFIC VOLUMES	45
EXHIBIT 6-2: INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE (2022) WITH PROJECT TRAFFIC VOLUMES	46
EXHIBIT 7-1: 2040 PLUS SITE BASELINE LAND USE TRAFFIC VOLUMES.....	49
EXHIBIT 7-2: 2040 PLUS SITE BASELINE LAND USE WITH PROJECT TRAFFIC VOLUMES.....	50

LIST OF TABLES

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS	5
TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS.....	12
TABLE 2-2: UNSIGNALIZED INTERSECTION HCM LOS THRESHOLDS	13
TABLE 3-1: INTERSECTION ANALYSIS FOR EXISTING (2021) CONDITIONS	26
TABLE 4-1: PROJECT TRIP GENERATION.....	28
TABLE 4-2: PROJECT TRIP GENERATION PASSENGER CAR EQUIVALENT (PCE)	29
TABLE 4-3: EXISTING BASELINE LAND USES TRIP GENERATION	30
TABLE 4-4: EXISTING BASELINE LAND USES TRIP GENERATION PASSENGER CAR EQUIVALENT (PCE).....	31
TABLE 4-5: PROJECT TRIP GENERATION CHANGE.....	32
TABLE 4-6: CUMULATIVE DEVELOPMENT LAND USE SUMMARY	38
TABLE 5-1: INTERSECTION ANALYSIS EXISTING (HYPOTHETICAL “NON-COVID” 2021) PLUS SITE BASELINE LAND USE CONDITIONS.....	40
TABLE 6-1: INTERSECTION ANALYSIS FOR INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE (2022) CONDITIONS	44
TABLE 7-1: INTERSECTION ANALYSIS FOR 2040 PLUS SITE BASELINE LAND USE CONDITIONS.....	48
TABLE 9-1: PROJECT FAIR SHARE PERCENTAGE CALCULATIONS	55

LIST OF ABBREVIATED TERMS

[1]	Reference
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
FHWA	Federal Highway Administration
HCM	Highway Capacity Manual
ICU	Intersection Capacity Utilization
ITE	Institute of Transportation Engineers
LOS	Level of Service
PHF	Peak Hour Factor
Project	Azusa Canyon Road Warehouse
TA	Transportation Analysis
V/C	Volume to Capacity

ES EXECUTIVE SUMMARY

The purpose of this traffic impact analysis is to evaluate the proposed Azusa Canyon Road Warehouse Project from a traffic circulation standpoint. The proposed project is located north of Los Angeles Street and east of Azusa Canyon Road, in the City of Irwindale. Exhibit ES-1 illustrates the general vicinity of the project site.

The Proposed Project plans the demolition of the existing on-site buildings and structures for the construction of a stand-alone speculative concrete tilt-up warehouse building (approximately 125,475 square feet).

Exhibit ES-2 illustrates the intersection analysis locations which include the proposed site access driveways, adjacent roadways, and intersections around the site. The intersection analysis locations have been selected based on locations where the project is anticipated to contribute 50 (or more) peak hour trips. The intersection analysis locations have also been refined based on the traffic study scoping and discussions with City staff.

The intersection analysis locations identified on Exhibit ES-2 include five intersections and one driveway along Azusa Canyon Road (Cypress Street, Los Angeles Street, San Bernardino Road, Arrow Highway, Olive Street, and Driveway 1) and two driveways along Los Angeles Street (Driveway 2 and Driveway 3).

For all analysis scenarios, study area intersections meet the minimum guidelines recommended by the City's Traffic Study Guidelines with the exception of #2 Azusa Canyon Road/ Los Angeles and #4 Azusa Canyon Road / Arrow Highway.

The following recommendations are based on the improvements needed to provide acceptable level of service.

Azusa Canyon Road / Los Angeles Street (#2) – The following improvements are necessary to address existing deficient operations:

- The Project will be fully responsible in installing a traffic signal control.
- The Project will be fully responsible in modifying lane striping for the eastbound and westbound approach to provide the following :
 - Eastbound approach: 1 left turn lane, 1 shared left/through lane, and maintain existing right turn lane.
 - Westbound approach: 1 left turn lane, 1 shared through/right lane.

Azusa Canyon Road / Arrow Highway (#4) – The project will be partially responsible through contribution on a fair share basis for the following intersection improvements to address existing deficient operations:

- Project to contribute to 3rd westbound through lane.
- Project to contribute to addition of northbound right turn overlap signal phase to existing northbound right turn lane.

EXHIBIT ES-A: Vicinity Map

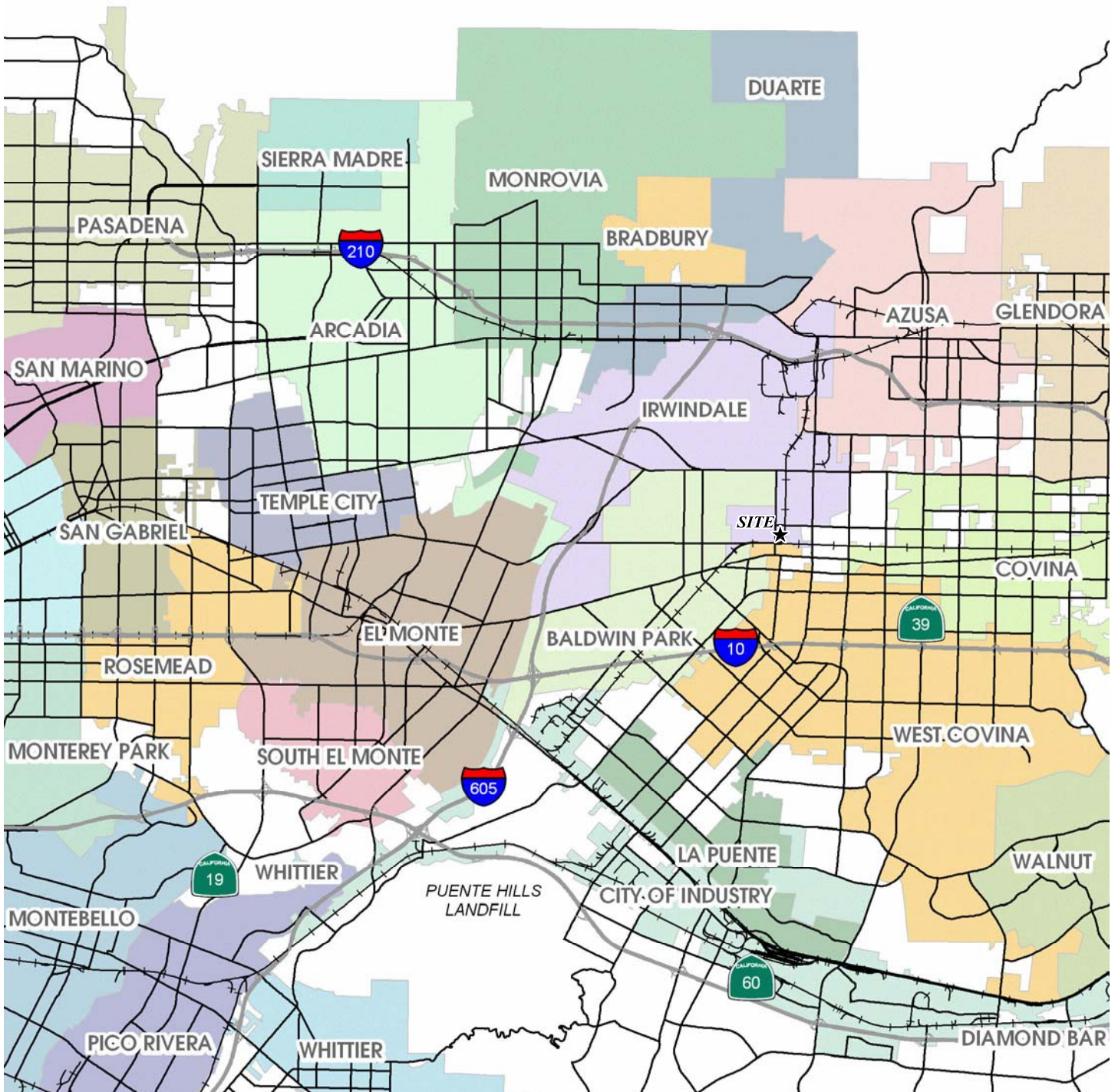
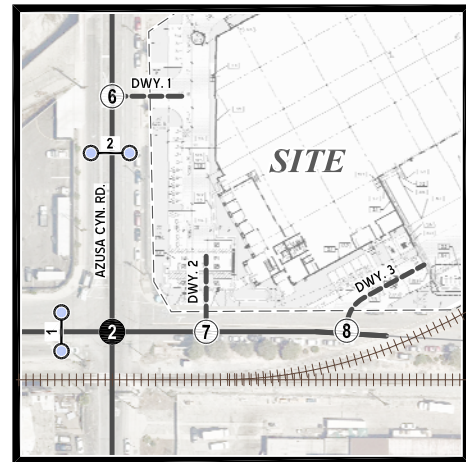


EXHIBIT ES-B: STUDY AREA



INSET



LEGEND:

- ⑤ ■ EXISTING ANALYSIS LOCATION
- ③ ■ FUTURE ANALYSIS LOCATION
- ③ ■ DAILY COUNT LOCATION
- ■ FUTURE PROJECT DRIVEWAY

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1 INTRODUCTION

This report presents the results of the transportation analysis (TA) for the proposed Azusa Canyon Road Warehouse development (“Project”), which is located north of Los Angeles Street and east of Azusa Canyon Road (4416 Azusa Canyon Road) in the City of Irwindale, California as shown on Exhibit 1-1.

The purpose of this TA is to evaluate the potential deficiencies to traffic and circulation associated with the development of the proposed Project, and to recommend improvements in order to meet the City’s applicable thresholds. The study follows the City of Irwindale, California’s Policy Guidelines for Traffic Impact Reports (dated December 30, 2014, “City’s Traffic Study Guidelines”). [1]

1.1 PROJECT OVERVIEW

The proposed Project involves the demolition of the existing on-site buildings and structures for the construction of a stand-alone speculative concrete tilt-up warehouse building (approximately 125,475 square feet) (see Exhibit 1-2). The Project is anticipated to be developed within a single phase with an anticipated opening year of 2022. The Project is proposed to have two driveways at Los Angeles Street and one driveway at Azusa Canyon Road.

Trips generated by the Project’s proposed land uses have been estimated based on trip generation rates published by the Institute of Transportation Engineers (ITE) as provided in their Trip Generation Manual, 10th Edition, 2017. [2] The Project is anticipated to generate a total of 262 two-way trips per day on a typical weekday, with 29 AM peak hour trips and 35 PM peak hour trips with a mixture of passenger car and truck trips. Existing baseline site land uses generate an estimated 110 trip-ends per day with 10 AM peak hour trips and 11 PM peak hour trips, with the mixture of passenger car and truck trips. The proposed Project is anticipated to generate an increase of 222 PCE trip-ends per day with 27 additional AM PCE peak hour trips and 30 additional PM PCE peak hour trips, in comparison to existing baseline site land uses. The assumptions and methods used to estimate the Project’s trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

1.2 ANALYSIS SCENARIOS

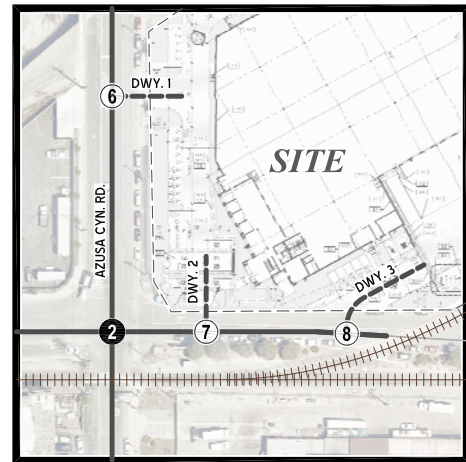
For the purposes of this traffic study, potential deficiencies to traffic and circulation have been assessed for each of the following scenarios:

- Existing (hypothetical “non-COVID” 2021)
- Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use
- Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use Plus Proposed Project
- Interim Year Cumulative Plus Site Baseline Land Use Without Proposed Project (2022)
- Interim Year Cumulative Plus Site Baseline Land Use With Proposed Project (2022)
- 2040 Plus Site Baseline Land Use Without Proposed Project
- 2040 Plus Site Baseline Land Use With Proposed Project

EXHIBIT 1-1: LOCATION MAP



INSET



LEGEND:

- ⑤ = EXISTING ANALYSIS LOCATION
- ③ = PROJECT DRIVEWAY ANALYSIS LOCATION
- = FUTURE PROJECT DRIVEWAY

I-15
3



1.2.1 EXISTING (HYPOTHETICAL “NON-COVID” 2021) CONDITIONS

Information for Existing conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared. In light of the currently ongoing COVID-19 pandemic, traffic counts need to be modified to present hypothetical conditions without reductions in traffic associated with closures of schools and local businesses. Pursuant to the approved scoping agreement, historic traffic counts from other studies within the area were utilized and adjusted.

Peak hour 2014 traffic volumes in PCE (passenger car equivalent) have been derived from the Olive Pit Mining and Reclamation Project Traffic Impact Analysis Report, July 2014, prepared by Urban Crossroads, for the intersections of Azusa Canyon Road/Cypress Street (#1), Azusa Canyon Road/Los Angeles Street (#2), Azusa Canyon Road/Arrow Highway (#4), and Azusa Canyon Road/Olive Street (#5). Daily counts (in PCE) were also derived from the Olive Pit 2014 study on Azusa Canyon Road, north of Los Angeles Street and Los Angeles Street, west of Azusa Canyon Road.

These 2014 counts have been adjusted by adding 7 years of background (ambient) growth at the rate of 2% per year, total of 14.9% compounded over a 7-year period in order to estimate hypothetical “non-COVID” 2021 conditions.

New classified traffic counts have also been collected in June 2021 during the following timeframes: 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM for the 5 existing intersection analysis locations (Azusa Canyon Road at / Cypress Street, Azusa Canyon Road / Los Angeles Street, Azusa Canyon Road / Olive Street, and Azusa Canyon Road / Arrow Highway, and Azusa Canyon Road / San Bernardino Road). Classified daily vehicle counts have also been collected in June 2021 at Los Angeles Street west of Azusa Canyon Road, Azusa Canyon Road north of Los Angeles Street, and Azusa Canyon Road north of San Bernardino Street.

At the four intersection locations where 2014 counts are available, the June 2021 counts are compared to the hypothetical “non-COVID” volume estimates (estimated using growth assumptions).

1.2.2 EXISTING (HYPOTHETICAL “NON-COVID” 2021) PLUS SITE BASELINE LAND USE CONDITIONS

Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use conditions represents conditions without COVID travel changes, but with the baseline site uses. A comparison of the Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use (2021) With Project and Without Project traffic conditions analyses determine the effect of the potential Project on Existing Baseline conditions.

1.2.3 INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE (2022) CONDITIONS

A comparison of the Interim Year Cumulative Plus Site Baseline Land Use (2022) With Project and Without Project traffic conditions analyses determine the potential near-term cumulative circulation system deficiencies. The Interim Year volumes include the existing site baseline land uses. To account for background traffic growth, an ambient growth factor of 1.02% (2 percent

per year for 1 year). Conservatively, the TA estimates the area ambient traffic growth for 2022 conditions and then adds traffic generated by other known or probable related projects in conjunction with Project traffic. These related projects are at least in part already accounted for in the assumed 2% of ambient growth; and some of these related projects would likely not be implemented and operational within the 2022 Interim Year time frame assumed for the Project.

1.2.4 2040 PLUS SITE BASELINE LAND USE CONDITIONS

A comparison of the 2040Plus Site Baseline Land Use With Project and Without Project traffic conditions analyses determine the potential long range cumulative circulation system deficiencies. The 2040 volumes include the existing site baseline land uses.

1.3 STUDY AREA

The study area was defined in conformance with the requirements of the City of Irwindale, California Traffic Study Guidelines. A traffic study scoping agreement summarizing the study area, trip generation, trip distribution and analysis methodology was provided to the City of Irwindale, California for review. The agreement approved by the City of Irwindale, California is included in Appendix 1.1.

The eight study area intersection locations shown on Exhibit 1-1 and listed in Table 1-1 were selected for this TA based on an approved scoping agreement with the City of Irwindale, California.

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

ID	Intersection Location
1	Azusa Canyon Road / Cypress Street
2	Azusa Canyon Road / Los Angeles Street
3	Azusa Canyon Road / San Bernardino Road
4	Azusa Canyon Road / Arrow Highway
5	Azusa Canyon Road / Olive Street
6	Azusa Canyon Road / Driveway 1
7	Los Angeles Street / Driveway 2
8	Los Angeles Street / Driveway 3

1.4 ANALYSIS FINDINGS

This section provides a summary of the analysis results for Existing, Interim Year Cumulative, and 2040 traffic conditions. For all study area intersections, analysis results are provided using the Highway Capacity Manual (HCM) [4] methodology for signalized and unsignalized intersections and Intersection Capacity Utilization (ICU) is also utilized evaluate signalized intersections.

Existing (2021) Conditions

For Existing (hypothetical “non-COVID” 2021), Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use, and Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use Plus Proposed Project conditions, the study area intersections meet the minimum guidelines recommended by the City’s Traffic Study Guidelines with the exception of #2 Azusa Canyon Road/ Los Angeles and #4 Azusa Canyon Road / Arrow Highway.

Interim Year Cumulative Plus Site Baseline Land Use (2022) With Project Conditions

For Interim Year Cumulative Plus Site Baseline Land Use and for Interim Year Cumulative Plus Site Baseline Land Use Plus Proposed Project conditions, the study area intersections meet the minimum guidelines recommended by the City’s Traffic Study Guidelines with the exception of #2 Azusa Canyon Road/ Los Angeles and #4 Azusa Canyon Road / Arrow Highway.

2040 Plus Site Baseline Land Use With Project Conditions

For 2040 Plus Site Baseline Land Use and for 2040 Plus Site Baseline Land Use Plus Proposed Project conditions, the study area intersections meet the minimum guidelines recommended by the City’s Traffic Study Guidelines with the exception of #2 Azusa Canyon Road/ Los Angeles and #4 Azusa Canyon Road / Arrow Highway.

1.5 RECOMMENDATIONS

1.5.1 SITE ADJACENT AND SITE ACCESS RECOMMENDATIONS

The following recommendations are based on the improvements needed to provide acceptable level of service. Exhibit 1-3 shows the site access recommendations.

Azusa Canyon Road / Los Angeles Street (#2) – The following improvements are necessary to address existing deficient operations:

- Project will be fully responsible in installing a traffic signal control.
- Project will be fully responsible in modifying the existing striping for the eastbound and westbound approach to provide the following lane configuration:
 - Eastbound: 1 left turn, 1 shared left/through lane, and maintain existing right turn lane
 - Westbound: 1 left turn and 1 shared through/right lane.

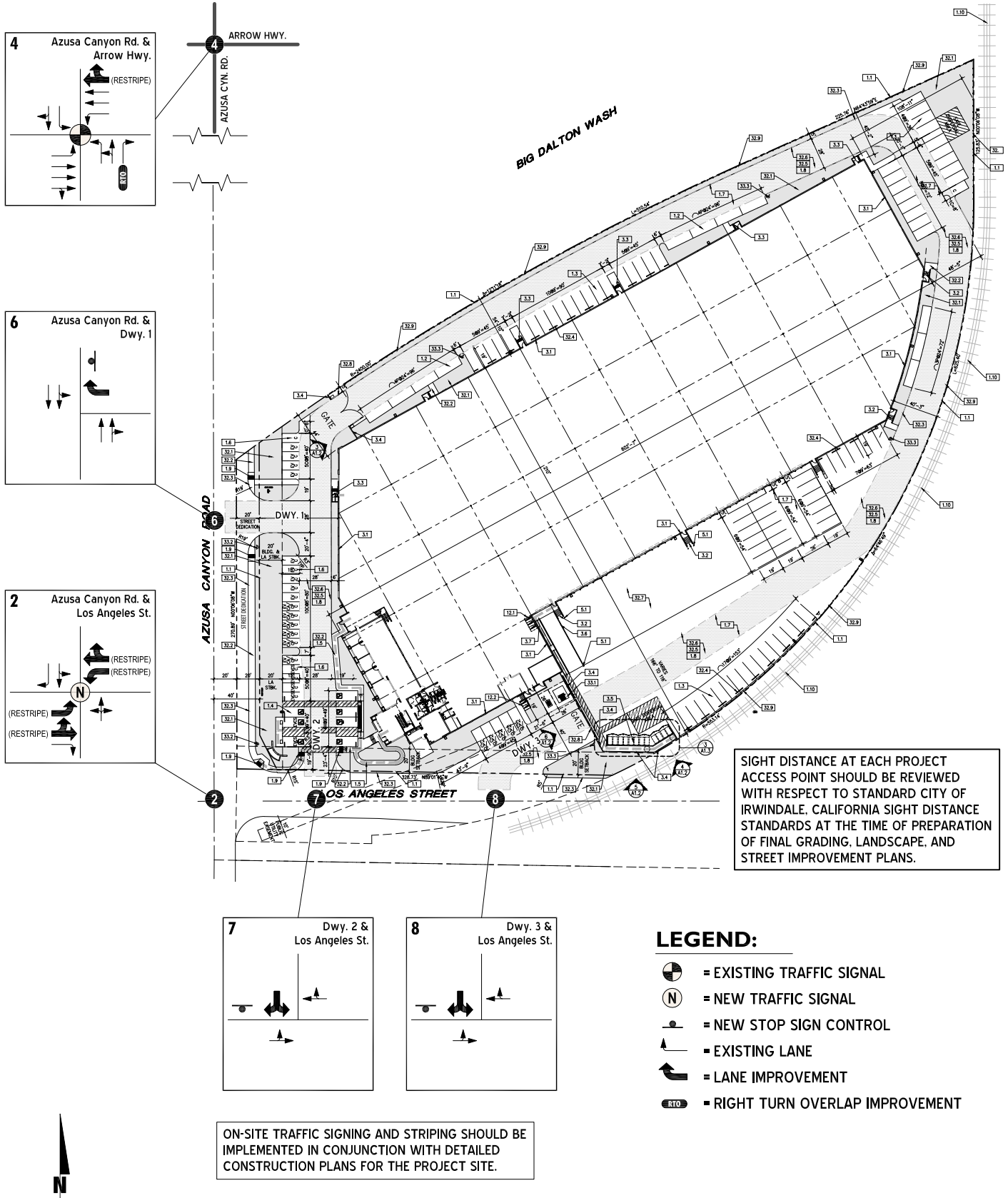
Azusa Canyon Road / Arrow Highway (#4) – The following improvements are necessary to address existing deficient operations:

- Project will be partially responsible and contribute to 3rd westbound through lane.
- Project will be partially responsible and contribute to the addition of a northbound right turn overlap signal phase to an existing northbound right turn lane.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the Project site.

Sight distance at each project access point should be reviewed with respect to standard City of Irwindale, California sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

EXHIBIT 1-3: SITE ACCESS RECOMMENDATIONS



1.5.2 PROJECT FAIR SHARE CALCULATIONS

Per City of Irwindale Guidelines, the project shall pay its fair share of improvements to eliminate any of the significant impacts. Based on the intersection analysis results (see Table 9-1), the project is anticipated to contribute additional traffic causing significant impacts up to 2040 conditions, fair share calculation is therefore based on 2040 conditions to address all significant impacts caused by the project.

The Project fair share calculation (see Table 9-1) indicates that the project contributes approximately 9% of the new traffic at the intersection of Azusa Canyon Road / Los Angeles Street (#2) and 2% of the new traffic at the intersection of Azusa Canyon Road / Arrow Highway (#4).

It should be noted however that due the Project's proximity to the intersection of Azusa Canyon Road/Los Angeles Street (#2), the Project will be fully responsible for the installation of traffic signal and lane striping modification improvements at this intersection. For the intersection improvements at Azusa Canyon Road/Arrow Highway (#4), the Project will be partially responsible and contribute on a fair share basis.

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2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with the City of Irwindale, California traffic study requirements. [1]

Pursuant to City of Irwindale, California Traffic Impact Analysis Policy Guidelines, the current Highway Capacity Manual (HCM) methodology is used to evaluate study area intersections. The Highway Capacity Manual (HCM) (6th Edition) [4] utilizes a saturation flow rate of 1,900 vehicles per hour of green (vphg) per lane in each scenario for intersection delay calculation purposes. In addition, all signalized study area intersections are analyzed using the Intersection Capacity Utilization (ICU) technique. To calculate an ICU, the volume of traffic using the intersection is compared with the capacity of the intersection. ICU is usually expressed as a volume to capacity (V/C) ratio. The V/C represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity. ICU analysis is performed using the Synchro 11 software.

2.1 LEVEL OF SERVICE

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. LOS analysis was conducted to determine existing traffic conditions.

2.2.1 SIGNALIZED INTERSECTIONS

Signalized intersection operations have been evaluated based on the methodology described in the HCM.[4] Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections LOS is directly related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 2-1.

The traffic modeling and signal timing optimization software package Synchro (Version 11) has been utilized to analyze signalized intersections within the City of Irwindale, California. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and

capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A	F
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B	F
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C	F
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D	F
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E	F
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F	F

Source: HCM, 6th Edition

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Common practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., $PHF = [Hourly Volume] / [4 \times Peak\ 15\text{-minute Flow Rate}]$). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. [4]

For all study area signalized intersections, ICU analysis will also be performed using the Synchro 11 software. It should be noted that the Synchro v/c output results are discussed in the City of Irwindale Policy Guidelines for Traffic Impact Reports under Section B (page insert) and indicated that the v/c ratio results in the Synchro are based on ICU and should be presented in addition to delay information. Therefore, consistent with the City's guidelines, both the Synchro v/c ratio (ICU) and delay results will be presented in the report.

Level of Service	Critical Volume-to-Capacity Ratio
A	0.00 - 0.60
B	0.61 - 0.70
C	0.71 - 0.80
D	0.81 - 0.90
E	0.91 - 1.00
F	>1.00

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Irwindale, California requires the operations of unsignalized intersections be evaluated using the methodology described in the HCM (6th Edition). [4] The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2).

TABLE 2-2: UNSIGNALIZED INTERSECTION HCM LOS THRESHOLDS

Description	Average Control Delay Per Vehicle (Seconds)	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Little or no delays.	0 to 10.00	A	F
Short traffic delays.	10.01 to 15.00	B	F
Average traffic delays.	15.01 to 25.00	C	F
Long traffic delays.	25.01 to 35.00	D	F
Very long traffic delays.	35.01 to 50.00	E	F
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F	F

Source: HCM (6th Edition)

At two-way or side-street stop-controlled intersections, the LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole, but rather the delay/associated LOS is reported for the minor street turning movement with the highest delay. For all-way stop controlled intersections, LOS is based solely on control delay for assessment of LOS at the approach and intersection levels. For side-street stop-controlled intersections, the highest delay and associated LOS is reported (typically the left turn movement on the minor street).

The traffic modeling software package Synchro (Version 10) has been utilized to analyze unsignalized intersections within the study area. Synchro is a macroscopic traffic software program that is based on the unsignalized intersection capacity analysis as specified in the HCM (6th Edition). [4] Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length.

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by the Caltrans and other public agencies to quantitatively justify or ascertain the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TA uses the signal warrant criteria presented in the latest edition of the California Department of Transportation (Caltrans) CA MUTCD for all study area intersections. [5]

The signal warrant criteria for Existing conditions are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The Caltrans CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. [5] Specifically, this TA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing study area intersections for all analysis scenarios. Warrant 3 is appropriate to use for this TA because it provides specialized warrant criteria for intersections with rural characteristics (e.g., located in communities with populations of less than 10,000 persons or with adjacent major streets operating above 40 miles per hour). For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection.

Traffic signal warrant analysis was performed for the unsignalized intersection of Azusa Canyon Road at Los Angeles Street. The traffic signal warrant analysis is presented in the subsequent Section 3 *Area Conditions* of this report..

It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified.

2.4 LOS CRITERIA

City of Irwindale requires that LOS will not exceed LOS "D" at all intersections (excluding State Highway facilities) on arterial and collector streets.

In addition, a significant impact occurs in one of the following cases:

- When a signalized intersection operates at mid-range LOS "D" (45.0 seconds) or better under existing or future baseline conditions, and the addition of project trips degrades the intersection operations to LOS "E" or "F". The project mitigation should bring the facility to operate at mid-range LOS "D" at minimum.
- When a signalized intersection operates at mid-range LOS "E" (67.5 seconds) for State Highways or better under existing or future baseline conditions, and the addition of project trips degrades the intersection operations to 67.6 seconds (LOS "E") or worse (LOS "F"). The project mitigation should bring the facility to operate at mid-range LOS "E" at minimum.
- When a signalized intersection operates at LOS "E" for non-state or LOS "F" (for State) under existing or future baseline conditions, and the addition of more than 50 peak hour project trips

contributes to the continuing operational failure at the intersection. The project mitigation should bring the facility to pre-project conditions.

- At an unsignalized intersection, when the minor stop-controlled approach operates at LOS “F” and does not have acceptable operation in terms of total control delay, and the addition of project trips increases the total control delay to more than 4.0 vehicle hours for a single lane approach or 5.0 vehicle hours for a multi-lane approach. The project mitigation should bring the facility to operate at LOS “E” (at a minimum) or bring the total control delay to less than 4.0 vehicle-hours for a single lane approach or 5.0 vehicle-hours for a multi-lane approach (at a minimum).
- At an unsignalized intersection, when the minor stop controlled approach operates at LOS “F” and does not have an acceptable operation in terms of total control delay, and the addition of more than 50 peak hour project trips contributes to the continuing operational failure at the minor approach. The project mitigation should bring the facility to pre-project conditions

2.5 LOS ANGELES COUNTY CONGESTION MANAGEMENT PROGRAM (CMP) CONSISTENCY REQUIREMENTS

The proposed project is located within the jurisdiction of the City of Irwindale in Los Angeles County. Therefore, this traffic study is required to address all CMP requirements of the Los Angeles County Congestion Management Program. The purpose of the Los Angeles County Congestion Management Program (CMP) is to address the impact of local growth on the regional transportation system. The goals of the CMP are summarized below:

- To link local land use decisions with their impacts on regional transportation, and air quality;
- To develop a partnership among transportation decision makers on devising appropriate transportation solutions that include all modes of travel; and
- To provide transportation projects which are eligible to compete for state gas tax funds.

The CMP offers the following mechanisms to meet these goals:

- Tracking and analysis to determine how the regional highway and transit systems are performing;
- Analysis of the impacts of local land use decisions on regional transportation;
- Local implementation of Transportation Demand Management design guidelines that ensure new development includes improvements supportive of transit and TDM;
- Tracking new building activity throughout Los Angeles County; and Implementation of local strategies which benefit the regional transportation system and offset the impact of new development.

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3 AREA CONDITIONS

This section provides a summary of the existing circulation network, City's Circulation Element Network, and a review of existing peak hour intersection operations analyses.

3.1 EXISTING CIRCULATION NETWORK

The study area includes a total of eight existing and future intersections as shown previously on Exhibit 1-1. Exhibit 3-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 CITY OF IRWINDALE, CALIFORNIA CIRCULATION NETWORK

As previously noted, the Project site is located within the City of Irwindale, California. Exhibit 3-2 shows street classification network, as identified in the City's Circulation Element. [6]

Major Highways are the most highly traveled routes which require more than 4 lanes of travel, channelized medians, and access control/limitations on intersecting streets. The typical right-of-way width for these highways is 100 feet. Alternative major highway sections may be established by the County to accommodate features such as raised medians, bicycle facilities, and wider parkways with varying right-of-way widths. The following study area roadway is designated as a major highway:

- Arrow Highway

Secondary Highways are less heavily traveled than major arterials and act as oversized collector roads that are intended to remove heavier traffic from local streets. Although not required, access control is also desirable along these roadways. Secondary highways generally have four lanes of vehicular traffic on 80 feet of right-of-way. However, configuration and width may vary with traffic demand and existing conditions. In a few cases, routes that carry major highway levels of traffic are classified as secondary highways because it is impractical to widen them to major highway standards. Alternative secondary highway sections may be established by the County to accommodate features such as raised medians, bicycle facilities, and wider parkways with varying right-of-way widths. The following study area roadways are designated as a Secondary Highway:

- Azusa Canyon Road
- Cypress Street
- Los Angeles Street

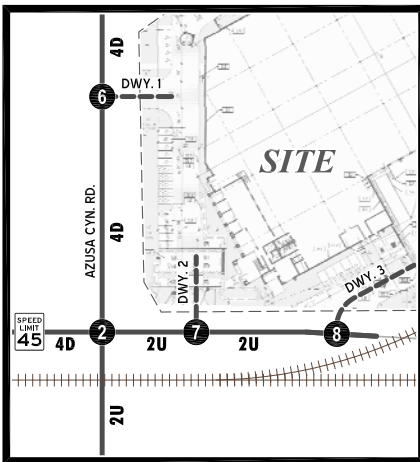
3.3 TRANSIT SERVICE

The study area is currently served by the Foothill Transit Agency with bus service along Arrow Highway via Route 492. San Bernardino Road, within the study area, is served by Metro via route 190/194.

EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS

1 Azusa Canyon Rd. & Cypress St.	2 Azusa Canyon Rd. & Los Angeles St.	3 Azusa Canyon Rd. & San Bernardino Rd.
4 Azusa Canyon Rd. & Arrow Hwy.	5 Azusa Canyon Rd. & Olive St.	6 Azusa Canyon Rd. & Dwy. 1
7 Dwy. 2 & Los Angeles St.	8 Dwy. 3 & Los Angeles St.	FUTURE INTERSECTION

INSET



LEGEND:

- ⑧ = INTERSECTION ID
- ⦿ = TRAFFIC SIGNAL
- Ⓢ = ALL WAY STOP
- ⏹ = STOP SIGN
- 4 = NUMBER OF LANES
- D = DIVIDED
- U = UNDIVIDED
- DEF = DEFACTO RIGHT TURN LANE

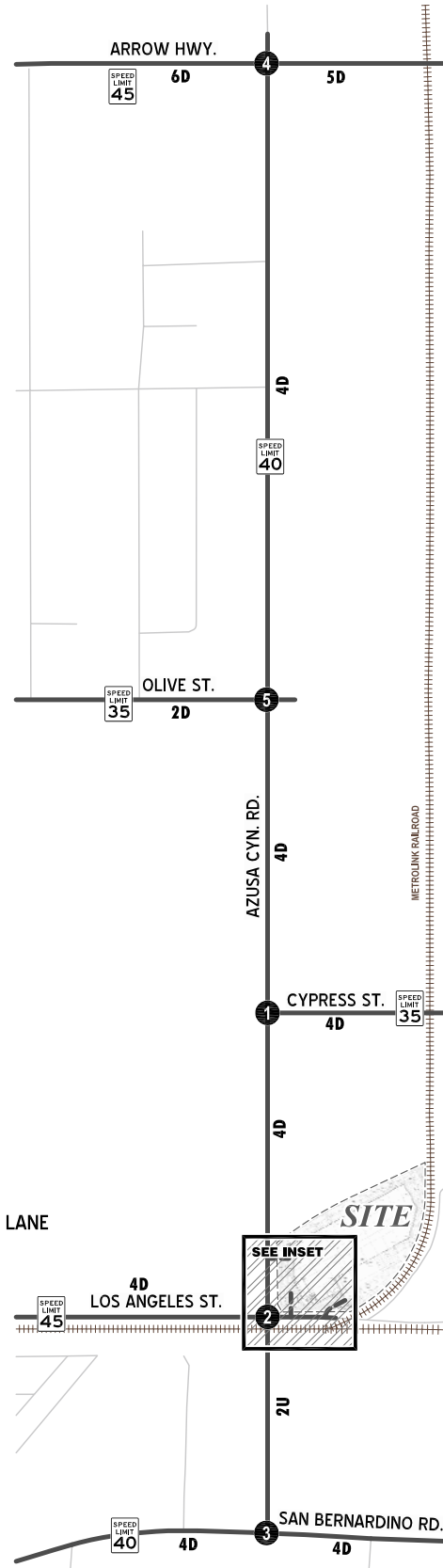
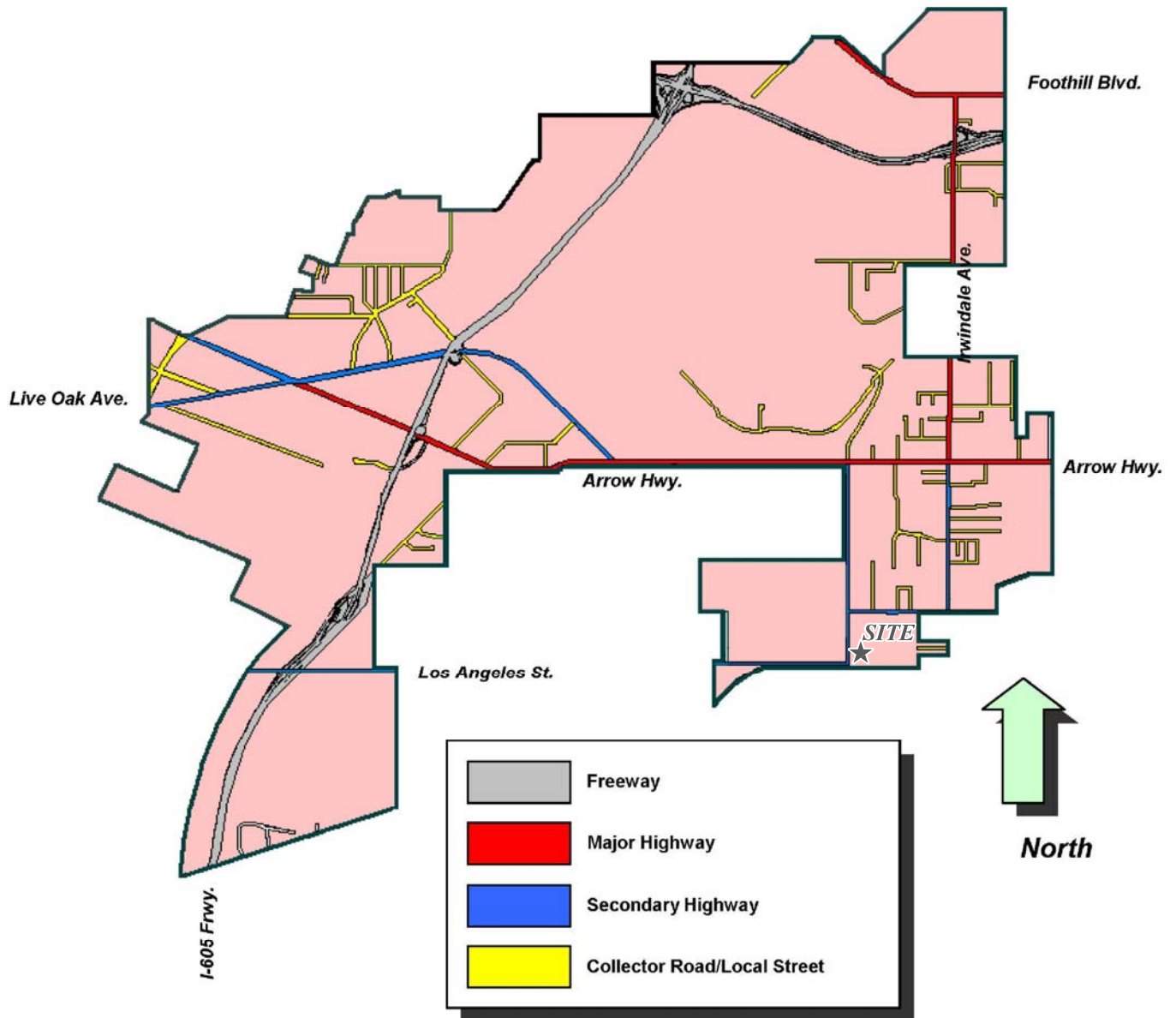


EXHIBIT 3-2: CITY OF IRWINDALE GENERAL PLAN CIRCULATION ELEMENT



3.4 TRUCK ROUTE

Exhibit 3-3 shows the City of Irwindale truck routes, as identified in the City's General Plan. [6]. As shown in Exhibit 3-3, Arrow Highway is a designated truck route within the study area.

3.5 BICYCLE & PEDESTRIAN FACILITIES

Existing pedestrian and bicycle facilities (e.g., crosswalks, sidewalks, bike lanes, etc.) within the study area are shown on Exhibit 3-4. As shown in Exhibit 3-4, the only existing bike path within the study area is located on the riverbed.

3.6 EXISTING TRAFFIC COUNTS

Information for Existing conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared. In light of the currently ongoing COVID-19 pandemic, traffic counts need to be modified to present hypothetical conditions without reductions in traffic associated with closures of schools and local businesses. Pursuant to the approved scoping agreement, historic traffic counts from other studies within the area were utilized and adjusted.

Peak hour 2014 traffic volumes in PCE (passenger car equivalent) have been derived from the Olive Pit Mining and Reclamation Project Traffic Impact Analysis Report, July 2014, prepared by Urban Crossroads, for the intersections of Azusa Canyon Road/Cypress Street (#1), Azusa Canyon Road/Los Angeles Street (#2), Azusa Canyon Road/Arrow Highway (#4), and Azusa Canyon Road/Olive Street (#5). Daily counts (in PCE) were also derived from the Olive Pit 2014 study on Azusa Canyon Road, north of Los Angeles Street and Los Angeles Street, west of Azusa Canyon Road.

These 2014 counts have been adjusted by adding 7 years of background (ambient) growth at the rate of 2% per year, total of 14.9% compounded over a 7-year period in order to estimate hypothetical "non-COVID" 2021 conditions.

New traffic counts have also been collected in June 2021 during the following timeframes: 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM for the 5 existing intersection analysis locations (Azusa Canyon Road at / Cypress Street, Azusa Canyon Road / Los Angeles Street, Azusa Canyon Road / Olive Street, and Azusa Canyon Road / Arrow Highway, and Azusa Canyon Road / San Bernardino Road). These counts include vehicle classification (passenger cars, buses/recreational vehicles, 3 axle trucks, and 4 or more axle trucks) and have been converted to PCE. To represent the impact large trucks, buses and recreational vehicles have on traffic flow; trucks are converted into passenger car equivalents (PCEs). By their size alone, these vehicles occupy the same space as two or more passenger cars. In addition, the time it takes for them to accelerate and decelerate is also much longer than for passenger cars, and varies depending on the type of vehicle and number of axles. For the purpose of this analysis, a PCE factor of 1.5 will be applied to 2-axle trucks, 2.0 for 3-axle trucks and 3.0 for 4+-axle trucks to estimate each turning movement.

EXHIBIT 3-3: CITY OF IRWINDALE TRUCK ROUTES

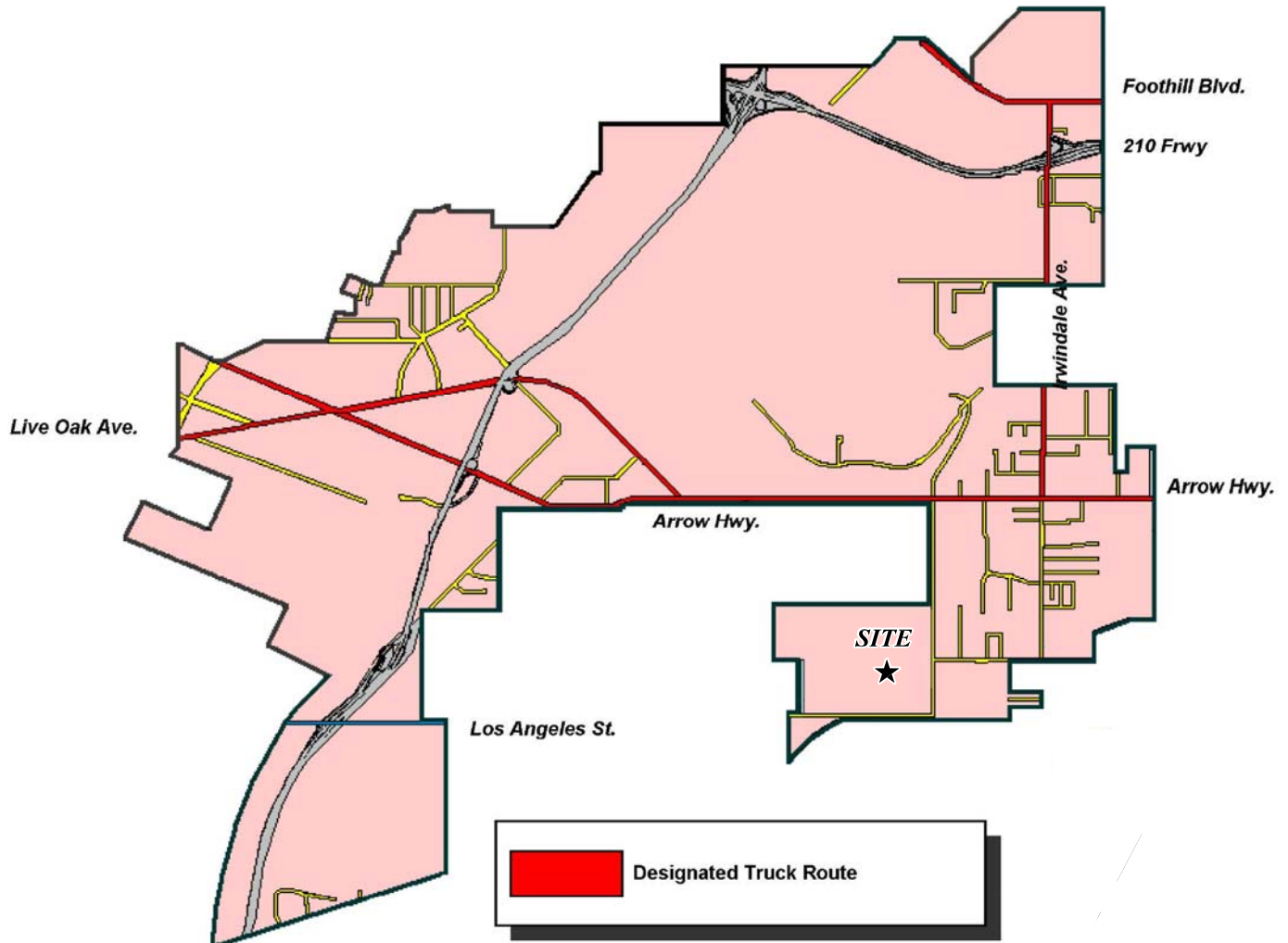
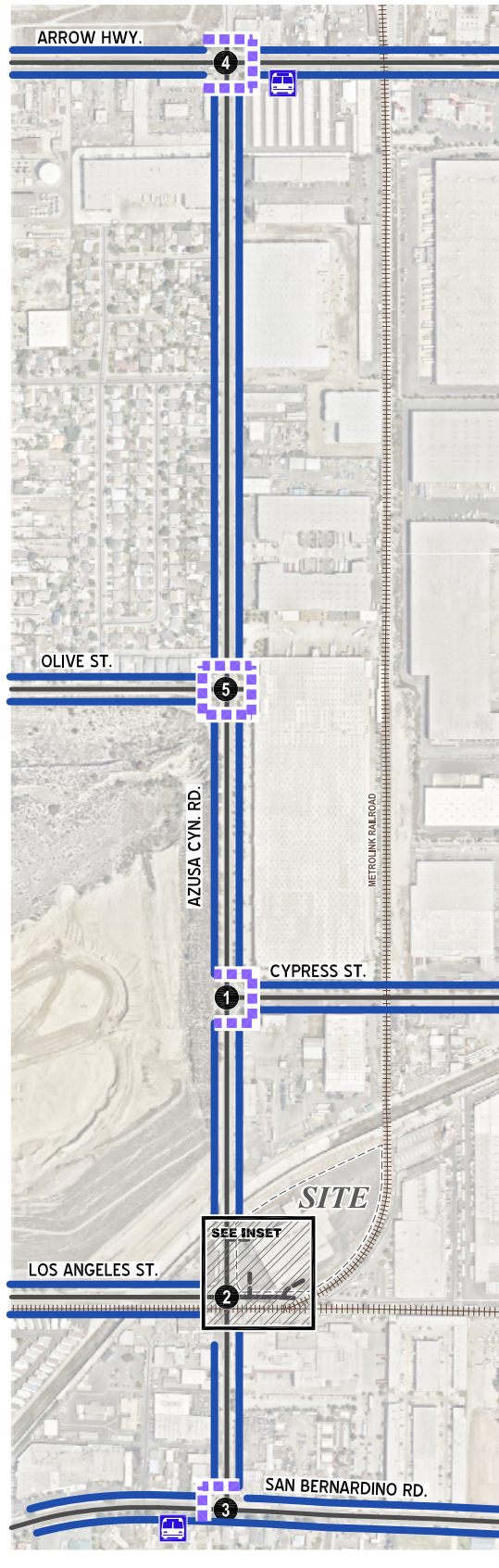
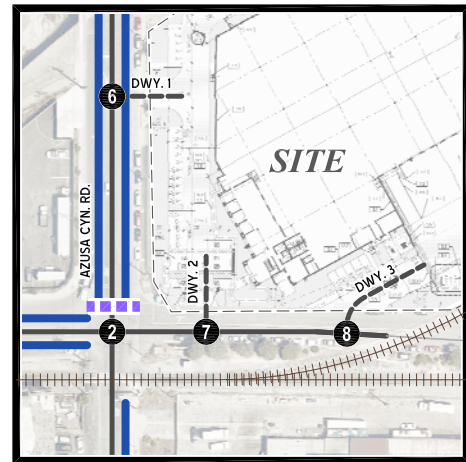


EXHIBIT 3-4: EXISTING PEDESTRIAN AND BICYCLE FACILITIES



INSET



LEGEND:

- ⑧ = INTERSECTION ID
- = BUS STOP
- = SIDEWALK/PATH
- = CROSSWALK

Classified daily vehicle counts have also been collected in June 2021 at Los Angeles Street west of Azusa Canyon Road, Azusa Canyon Road north of Los Angeles Street, and Azusa Canyon Road north of San Bernardino Street.

At the four intersection locations where 2014 counts are available, the June 2021 counts are compared to the hypothetical “non-COVID” volume estimates (estimated using growth assumptions).

Average morning and evening peak hour volume comparison at the four locations where 2014 data is available, indicate that the hypothetical 2021 (“non-COVID”) are approximately 54.13% higher than the June 2021 counts (see table below).

**ESTIMATED "NON-COVID" 2021 COUNTS AND NEW 2021 (COVID) PEAK HOUR COUNTS
VOLUMES COMPARISON SUMMARY**

ID	Intersection	Existing 2021 (Estimated) ¹ (Non-COVID)			Existing 2021 Counts (COVID)		
		AM	PM	TOTAL	AM	PM	TOTAL
1	Azusa Canyon Rd. / Cypress St.	2,047	2,137	4,184	934	1,356	2,290
2	Azusa Canyon Rd. / Los Angeles St.	1,507	1,928	3,435	875	1,369	2,244
4	Azusa Canyon Rd. / Arrow Hwy.	4,180	3,858	8,038	2,716	3,167	5,883
5	Azusa Canyon Rd. / Olive St.	1,607	1,534	3,141	749	1,030	1,779
TOTAL		9,341	9,457	18,798	5,274	6,922	12,196
AVERAGE AM/PM HISTORICAL COUNT % FACTOR (to be applied to the 2021 COVID counts)							54.13%

¹ 2014 counts from Olive Pit Mining and Reclamation Project Traffic Impact Analysis (June 2014) + 14.9% compounded over 7-year period (2% per year).

These adjustments have been applied to the new 2021 intersection counts. Existing weekday AM and weekday PM peak hour intersection volumes are also shown on Exhibit 3-5. The 2021 raw manual peak hour turning movement traffic count data sheets are included in Appendix “3.1”.

Average daily traffic volume comparison at the two locations where 2014 data is available, indicate that the hypothetical 2021 (“non-COVID”) are approximately 20.51% higher than the June 2021 counts (see table below).

**ESTIMATED "NON-COVID" 2021 COUNTS AND NEW 2021 (COVID) DAILY COUNTS
VOLUMES COMPARISON SUMMARY**

ID	Roadway Segment	EXISTING ADT COUNTS	
		Existing 2021 (Estimated) ¹ (Non-COVID)	Existing 2021 Counts (COVID)
		ADT	ADT
1	Azusa Cyn., north of Los Angeles St.	13,957	11,699
2	Los Angeles St., west of Azusa Cyn. Rd.	12,366	10,144
TOTAL		26,323	21,843
GROWTH			20.51%

¹ 2014 counts from Olive Pit Mining and Reclamation Project Traffic Impact Analysis (June 2014) + 14.9% compounded over 7-year period (2% per year).

The estimated Existing 2021 “non-COVID-19” weekday ADT volumes on arterial highways throughout the study area are also shown on Exhibit 3-5. Where counts are unavailable, the following formula for each intersection leg has been utilized:

$$\text{Weekday PM Peak Hour (Approach Volume + Exit Volume)} \times 11.628 = \text{Leg Volume}$$

For the roadway segments along Azusa Canyon Road, north and south of Los Angeles Street, and Los Angeles Street, west of Azusa Canyon Road has 24-hour tube count data available in close proximity to the study area, a comparison between the estimated PM peak hour and daily traffic count volumes indicated that a PM peak-to-daily relationship of approximately 8.6 percent would sufficiently estimate average daily traffic (ADT) volumes for planning-level analyses. As such, the above equation utilizing a factor of 11.628 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 8.60 percent (i.e., $1/0.0860 = 11.628$).

3.6 EXISTING CONDITIONS INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized in Table 3-1. The intersection operations analysis worksheets are included in Appendix 3.2 of this TA. As shown in Table 3-1, the following intersections are currently operating at an unacceptable level of service (LOS “E” or worse):

- #2 – Azusa Canyon Road / Los Angeles Street
- #4 - Azusa Canyon Road / Arrow Highway

3.7 EXISTING TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. The unsignalized study area intersection of Azusa Canyon Road / Los Angeles Street currently warrants a traffic signal for Existing (2021) traffic conditions. Existing conditions traffic signal warrant analysis worksheets are provided in Appendix 3.3. It should be noted that the unsignalized Project Driveway intersections are not anticipated to meet warrants for future conditions.

EXHIBIT 3-5: EXISTING (HYPOTHETICAL "NON-COVID" 2021) TRAFFIC VOLUMES (PCE)

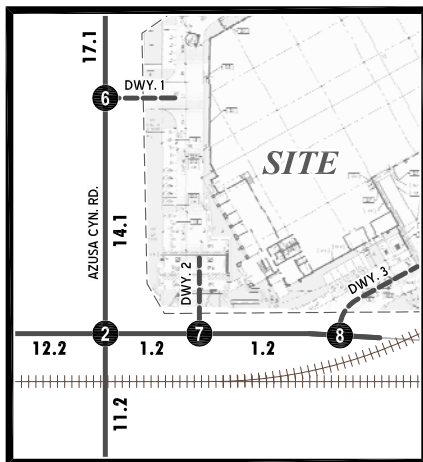
AM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 DATA NOT AVAILABLE	7 Dwy. 2 & Los Angeles St. DATA NOT AVAILABLE	8 Dwy. 3 & Los Angeles St. DATA NOT AVAILABLE

PM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 DATA NOT AVAILABLE	7 Dwy. 2 & Los Angeles St. DATA NOT AVAILABLE	8 Dwy. 3 & Los Angeles St. DATA NOT AVAILABLE

INSET



LEGEND:

- # = INTERSECTION ID
- = FUTURE PROJECT DRIVEWAY
- 10.0 = VEHICLES PER DAY (1000'S)

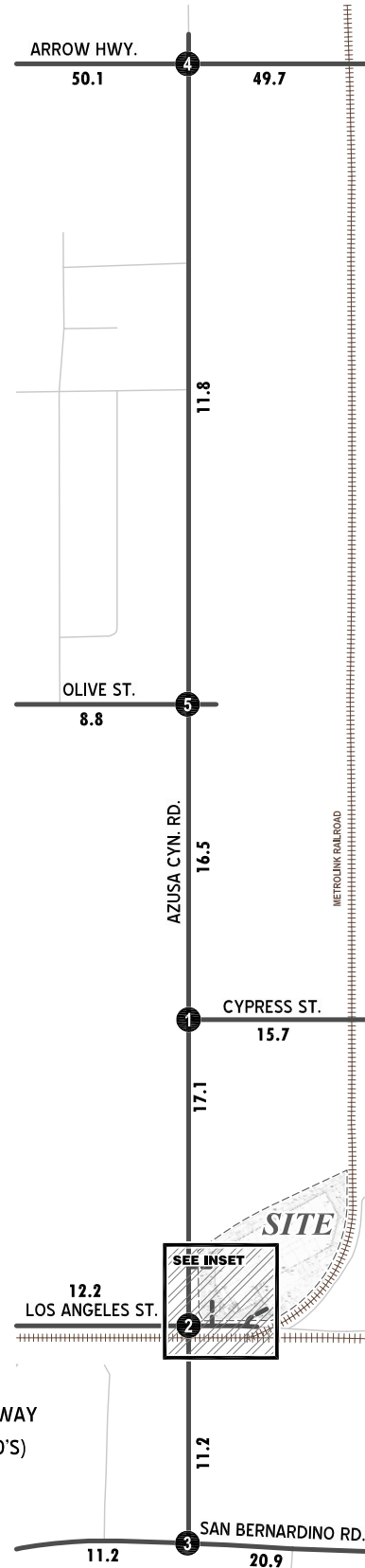


TABLE 3-1: INTERSECTION ANALYSIS FOR EXISTING (HYPOTHETICAL "NON-COVID" 2021) CONDITIONS

#	Intersection	Traffic Control ³	Intersection Approach Lanes ¹												HCM				ICU			
															Delay ² (Secs)		Level of Service ²		ICU ⁴ (v/c)		Level of Service ⁴	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM	AM	PM	AM	PM
			L	T	R	L	T	R	L	T	R	L	T	R								
1	Azusa Canyon Rd. / Cypress St.	TS	0	2	0	1	2	0	0	0	0	1	1!	1	20.6	31.5	C	C	0.30	0.59	A	A
2	Azusa Canyon Rd. / Los Angeles St.	AWS	0	1!	0	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	31.8	94.7	D	F	-	-	-	-
3	Azusa Canyon Rd. / San Bernardino Rd.	TS	0	0	0	1	0	d	1	2	0	0	2	0	20.6	30.4	C	C	0.39	0.76	A	C
4	Azusa Canyon Rd. / Arrow Hwy.	TS	1.5	0.5	1	1	1	0	1	3	0	1	2	d	51.2	59.8	D	E	0.93	0.82	E	D
5	Azusa Canyon Rd. / Olive St.	TS	1	2	0	1	2	d	1	1	d	1	1	d	15.1	27.0	B	C	0.32	0.43	A	A

¹ When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto Right Turn Lane; 0.5 = Shared Lane

² Per the Highway Capacity Manual 6th Edition (HCM6), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

" - " value is shown for unsignalized ICU values. Delay and level of service is calculated using Synchro 11 analysis software.

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

³ TS = Traffic Signal; CSS = Cross-street Stop; AWS = All-Way Stop

⁴ The Synchro v/c output results are discussed in the City of Irwindale Policy Guidelines for Traffic Impact Reports under Section B (page insert) and indicated that the v/c ratio results in the Synchro are based on ICU and should be presented in addition to delay information.

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4 PROJECTED FUTURE TRAFFIC

This section presents the traffic volumes estimated to be generated by the Project, as well as the Project's trip assignment onto the study area roadway network.

The Project is anticipated to be developed within a single phase with an anticipated opening year of 2022. The Project is proposed to have two full access driveways at Los Angeles Street and one right-out/left-in only driveway at Azusa Canyon Road.

4.1 PROJECT TRIP GENERATION

Trip generation represents the amount of traffic which is produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development. The ITE Trip Generation Manual (10th Edition, 2017) is a nationally recognized source for estimating site-specific trip generation. [2]

In order to estimate the traffic characteristics of the Project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) *Trip Generation* (10th Edition, 2017) manual for ITE Land Use Code 150 (Warehousing) and 140 (Manufacturing) are utilized.

For purposes of this TA, the Project consists of 112,830 square feet of warehouse and 17,000 square feet of manufacturing. The site was previously occupied by Pepsi, which is the existing baseline site use.

Trip generation rates and resulting calculations for the proposed Project are shown on Table 4-1. The Project is anticipated to generate 262 trip-ends per day with 29 AM peak hour trips and 35 PM peak hour trips, with the mixture of passenger car and truck trips as shown in Table 4-1.

Table 4-2 presents the anticipated Passenger Car Equivalent (PCE) trip-ends for the proposed Project, resulting in 362 daily PCE trips with 45 AM PCE peak hour trips and 46 PM PCE peak hour trips.

Vehicle trip generation rates and resulting values for the existing baseline land uses at the Project site are shown in Table 4-3. Existing baseline site land uses generate an estimated 110 trip-ends per day with 10 AM peak hour trips and 11 PM peak hour trips, with the mixture of passenger car and truck trips as shown in Table 4-3. Table 4-4 presents the anticipated PCE trip-ends for the existing baseline site land uses, resulting in 140 PCE trip-ends per day with 18 AM PCE peak hour trips and 16 PM PCE peak hour trips.

As shown in Table 4-5, the proposed Project is anticipated to generate an increase of 222 PCE trip-ends per day with 27 additional AM PCE peak hour trips and 30 additional PM PCE peak hour trips, in comparison to existing baseline site land uses.

TABLE 4-1: PROPOSED PROJECT TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Trip Generation Rates ¹									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing ³	150	112.830 TSF	0.130	0.040	0.170	0.050	0.140	0.190	1.740
		79.57% Passenger Cars	0.103	0.032	0.135	0.040	0.112	0.152	1.385
		3.46% 2-Axle Trucks	0.004	0.001	0.005	0.002	0.005	0.007	0.060
		4.64% 3-Axle Trucks	0.006	0.002	0.008	0.002	0.006	0.008	0.081
		12.33% 4-Axle+ Trucks	0.016	0.005	0.021	0.006	0.017	0.023	0.215
Manufacturing ³	140	17.000 TSF	0.480	0.140	0.620	0.210	0.460	0.670	3.930
		61.20% Passenger Cars	0.294	0.086	0.380	0.129	0.282	0.411	2.405
		6.10% 2-Axle Trucks	0.029	0.009	0.038	0.013	0.028	0.041	0.240
		12.70% 3-Axle Trucks	0.061	0.018	0.079	0.027	0.058	0.085	0.499
		19.90% 4-Axle+ Trucks	0.096	0.028	0.124	0.042	0.092	0.134	0.782

Proposed Project Trip Generation Results									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing	150	112.830 TSF							
- Passenger Cars			12	4	16	5	13	18	156
- Truck Trips									
		2-axle:	0	0	0	0	1	1	7
		3-axle:	1	0	1	0	1	1	9
		4+-axle:	2	1	3	1	2	3	24
- Net Truck Trips (Actual Vehicles)			3	1	4	1	4	5	40
Warehousing Subtotal (Actual Vehicles)			15	5	20	6	17	23	196
Manufacturing	140	17.0 TSF							
- Passenger Cars			5	1	6	2	5	7	41
- Truck Trips									
		2-axle:	0	0	0	0	0	0	4
		3-axle:	1	0	1	1	1	2	8
		4+-axle:	2	0	2	1	2	3	13
- Net Truck Trips (Actual Vehicles)			3	0	3	2	3	5	25
Manufacturing Subtotal (Actual Vehicles)			8	1	9	4	8	12	66
PROPOSED PROJECT TRIPS (ACTUAL VEHICLES)⁴			23	6	29	10	25	35	262

¹ Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017) and 10th Edition Supplement (2020).

² TSF = Thousand Square Feet

³ Vehicle Mix Source: [City of Fontana Truck Trip Generation Study](#) (August 2003) for ITE LU Code 150 - Heavy Warehouse Vehicle Mix and ITE LU Code 140 - Heavy Industrial Vehicle Mix

⁴ Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

F:\UXRjobs\13600-14000\13800\13837\Excel\13837 - Report.xlsx\4-1 Proposed (Actual)

TABLE 4-2: PROPOSED PROJECT TRIP GENERATION SUMMARY (PCE)

Trip Generation Rates ¹									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing ³	150	112,830 TSF	0.169	0.053	0.222	0.065	0.182	0.247	2.282
		79.57% Passenger Cars	0.103	0.032	0.135	0.040	0.111	0.151	1.385
		3.46% 2-Axle Trucks; (PCE = 1.5)	0.006	0.002	0.008	0.003	0.008	0.011	0.090
		4.64% 3-Axle Trucks; (PCE = 2.0)	0.012	0.004	0.016	0.004	0.012	0.016	0.162
		12.33% 4-Axle+ Trucks; (PCE = 3.0)	0.048	0.015	0.063	0.018	0.051	0.069	0.645
Manufacturing ³	140	17,000 TSF	0.748	0.220	0.968	0.329	0.716	1.045	6.109
		61.20% Passenger Cars	0.294	0.086	0.380	0.129	0.282	0.411	2.405
		6.10% 2-Axle Trucks	0.044	0.014	0.058	0.020	0.042	0.062	0.360
		12.70% 3-Axle Trucks	0.122	0.036	0.158	0.054	0.116	0.170	0.998
		19.90% 4-Axle+ Trucks	0.288	0.084	0.372	0.126	0.276	0.402	2.346

Proposed Project Trip Generation Results									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing	150	112,830 TSF							
- Passenger Cars			12	4	16	5	13	18	156
- Truck Trips									
		2-axle (PCE = 1.5):	1	0	1	0	1	1	11
		3-axle (PCE = 2.0):	2	1	3	0	1	1	18
		4+axle (PCE = 3.0):	6	3	9	2	6	8	73
- Net Truck Trips (PCE)			9	4	13	2	8	10	102
Warehousing Subtotal (PCE)			21	8	29	7	21	28	258
Manufacturing	140	17.0 TSF							
- Passenger Cars			5	1	6	2	5	7	41
- Truck Trips									
		2-axle (PCE = 1.5):	1	0	1	0	1	1	6
		3-axle (PCE = 2.0):	2	1	3	1	2	3	17
		4+axle (PCE = 3.0):	5	1	6	2	5	7	40
- Net Truck Trips (PCE)			8	2	10	3	8	11	63
Manufacturing Subtotal (PCE)			13	3	16	5	13	18	104
PROPOSED PROJECT TRIPS (PCE) ⁴			34	11	45	12	34	46	362

¹ Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017).

² TSF = Thousand Square Feet; PCE = Passenger Car Equivalent

³ Vehicle Mix Source: [City of Fontana Truck Trip Generation Study](#) (August 2003) for ITE LU Code 150 - Heavy Warehouse Vehicle Mix and ITE LU Code 140 - Heavy Industrial Vehicle Mix

⁴ Total Trips (PCE) = Passenger Cars + Net Truck Trips (PCE)

TABLE 4-3: EXISTING SITE BASELINE LAND USE TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Trip Generation Rates ¹									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing ³	150	62.713 TSF	0.130	0.040	0.170	0.050	0.140	0.190	1.740
		80.3% Passenger Cars	0.104	0.032	0.136	0.040	0.113	0.153	1.398
		5.2% 2-Axle Trucks	0.007	0.002	0.009	0.003	0.007	0.010	0.090
		4.5% 3-Axle Trucks	0.006	0.002	0.008	0.002	0.006	0.008	0.078
		10.0% 4-Axle+ Trucks	0.013	0.004	0.017	0.005	0.014	0.019	0.174

Existing Site Baseline Land Use Trip Generation Results									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing	150	62.713 TSF							
- Passenger Cars			7	2	9	3	7	10	88
- Truck Trips									
		2-axle:	0	0	0	0	0	0	6
		3-axle:	0	0	0	0	0	0	5
		4+-axle:	1	0	1	0	1	1	11
- Net Truck Trips (Actual Vehicles)			1	0	1	0	1	1	22
Existing Site Baseline Land Use Trip Generation Subtotal (Actual Vehicles) ⁴			8	2	10	3	8	11	110

¹ Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017) and 10th Edition Supplement (2020).

² TSF = Thousand Square Feet

³ Vehicle Mix Source: City of Fontana Truck Trip Generation Study(August 2003) for ITE LU Code 150 - Light Warehouse use with 100 tsf gross floor area or less.

⁴ Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

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TABLE 4-4: EXISTING SITE BASELINE LAND USE TRIP GENERATION SUMMARY (PCE)

Trip Generation Rates ¹									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing ^{3,4}	150	62.713 TSF	0.166	0.051	0.217	0.064	0.178	0.242	2.211
		80.3% Passenger Cars	0.104	0.032	0.136	0.040	0.113	0.153	1.398
		5.2% 2-Axle Trucks; (PCE = 1.5)	0.011	0.003	0.014	0.005	0.011	0.016	0.135
		4.5% 3-Axle Trucks; (PCE = 2.0)	0.012	0.004	0.016	0.004	0.012	0.016	0.156
		10.0% 4-Axle+ Trucks; (PCE = 3.0)	0.039	0.012	0.051	0.015	0.042	0.057	0.522

Existing Site Baseline Land Use Trip Generation Results									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing	150	62.713 TSF							
- Passenger Cars			7	2	9	3	7	10	88
- Truck Trips									
		2-axle (PCE = 1.5):	1	0	1	0	1	1	9
		3-axle (PCE = 2.0):	2	1	3	0	1	1	10
		4+axle (PCE = 3.0):	3	2	5	1	3	4	33
- Net Truck Trips (PCE)			6	3	9	1	5	6	52
Existing Site Baseline Land Use Trip Generation Subtotal (PCE) ⁵			13	5	18	4	12	16	140

¹ Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017).

² TSF = Thousand Square Feet; PCE = Passenger Car Equivalent

³ Vehicle Mix Source: City of Fontana Truck Trip Generation Study(August 2003) for ITE LU Code 150 - Light Warehouse use with 100 tsf gross floor area or less.

⁴ Total Trips (PCE) = Passenger Cars + Net Truck Trips (PCE)

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TABLE 4-5: LAND USE AND TRIP GENERATION COMPARISON SUMMARY

COMPARISON SUMMARY								
Land Use ²	Quantity ¹	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Existing Site Baseline Land Use (PCE)	62.713 TSF	13	5	18	4	12	16	140
Proposed Project (PCE)	129.83 TSF	34	11	45	12	34	46	362
DELTA <i>(Proposed - Existing)</i>		21	6	27	8	22	30	222

¹ TSF = Thousand Square Feet

² PCE = Passenger Car Equivalent

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4.2 PROJECT TRIP DISTRIBUTION

Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land use and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. The Project trip distribution was developed based on anticipated travel patterns to and from the Project site. The existing roadway network and location of regional destinations have been reviewed to develop the Project trip distribution pattern. Exhibit 4-1 illustrates the Project trip distribution patterns for the Project.

4.3 MODAL SPLIT

The traffic reducing potential of public transit, walking, or bicycling have not been considered in this TA. Essentially, the traffic projections are "conservative" in that these alternative travel modes might be able to reduce the forecasted traffic volumes.

4.4 PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, Project AM and PM peak hour traffic volumes are shown on Exhibit 4-2.

4.5 BACKGROUND TRAFFIC

The Interim Year Cumulative (2022) With Project traffic conditions analyses determine the Project's contribution to near-term traffic deficiencies. To account for background traffic growth, traffic associated with other known cumulative development projects in conjunction with an ambient growth from Existing (2021) conditions of 1.02% (2% per year) is included for Interim Year Cumulative (2022) traffic conditions, as well as traffic generated by cumulative development projects that could affect the study intersections.

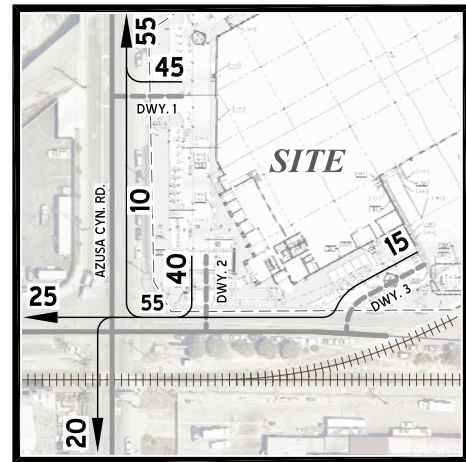
4.6 CUMULATIVE DEVELOPMENT TRAFFIC

Exhibit 4-3 illustrates the cumulative development location map. A summary of cumulative development projects and their proposed land uses are shown in Table 4-6. The list of cumulative projects has been developed based on information provided by the Planning Department for the City of Irwindale, California. Cumulative development volumes are shown on Exhibit 4-4.

EXHIBIT 4-1: PROJECT TRIP DISTRIBUTION



INSET



LEGEND:

- 10 ■ PERCENT FROM/TO PROJECT
- FUTURE PROJECT DRIVEWAY

EXHIBIT 4-2: PROPOSED PROJECT ADDED TRAFFIC VOLUMES (PCE)

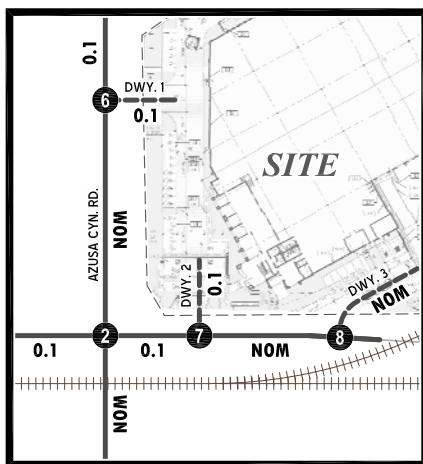
AM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

PM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

INSET



LEGEND:

- # = INTERSECTION ID
- = FUTURE PROJECT DRIVEWAY
- 10.0 = VEHICLES PER DAY (1000'S)
- NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

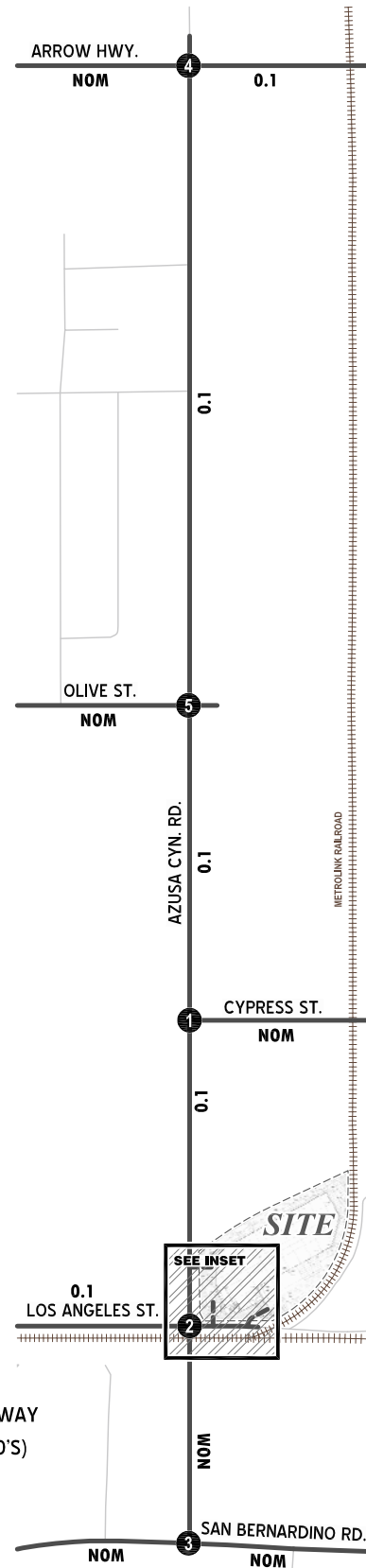
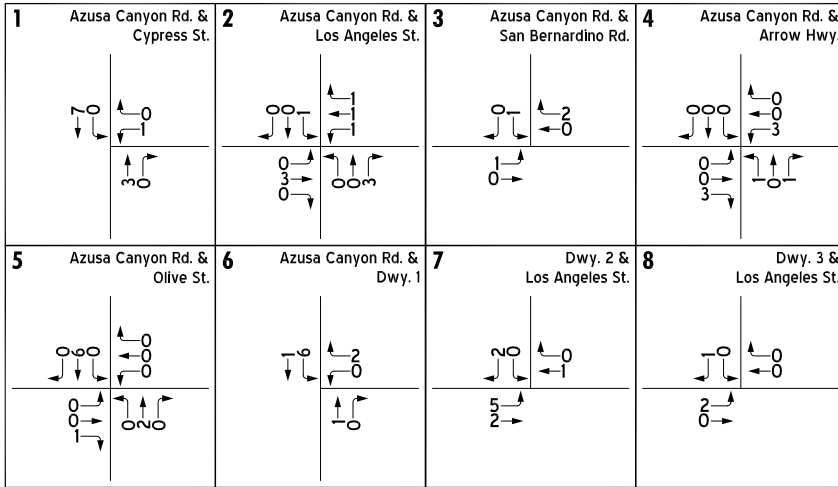
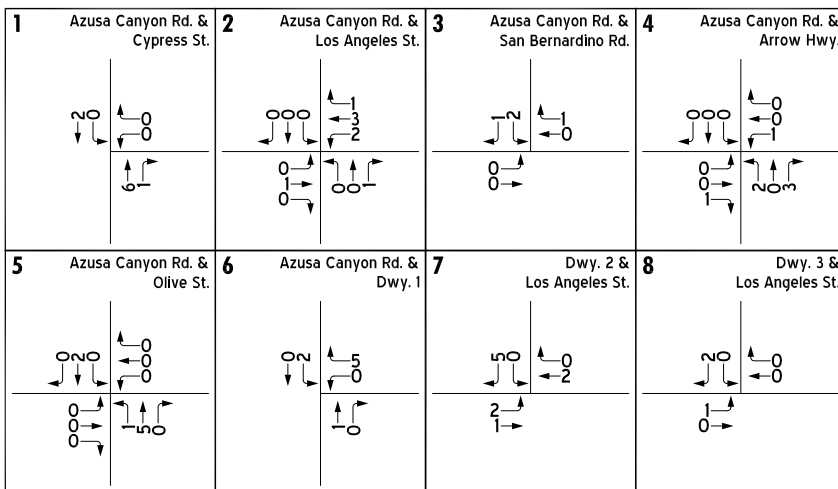


EXHIBIT 4-3: SITE EXISTING BASELINE TRAFFIC VOLUMES (PCE)

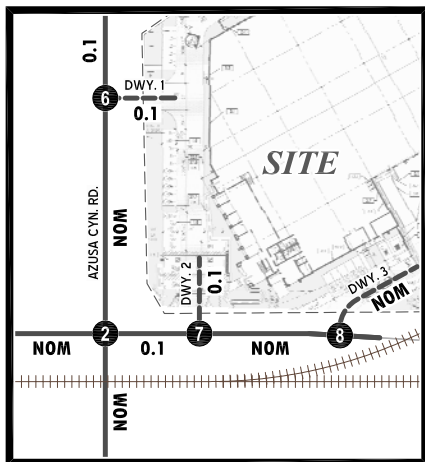
AM PEAK HOUR



PM PEAK HOUR



INSET



LEGEND:

- # = INTERSECTION ID
- = FUTURE PROJECT DRIVEWAY
- 10.0 = VEHICLES PER DAY (1000'S)
- NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

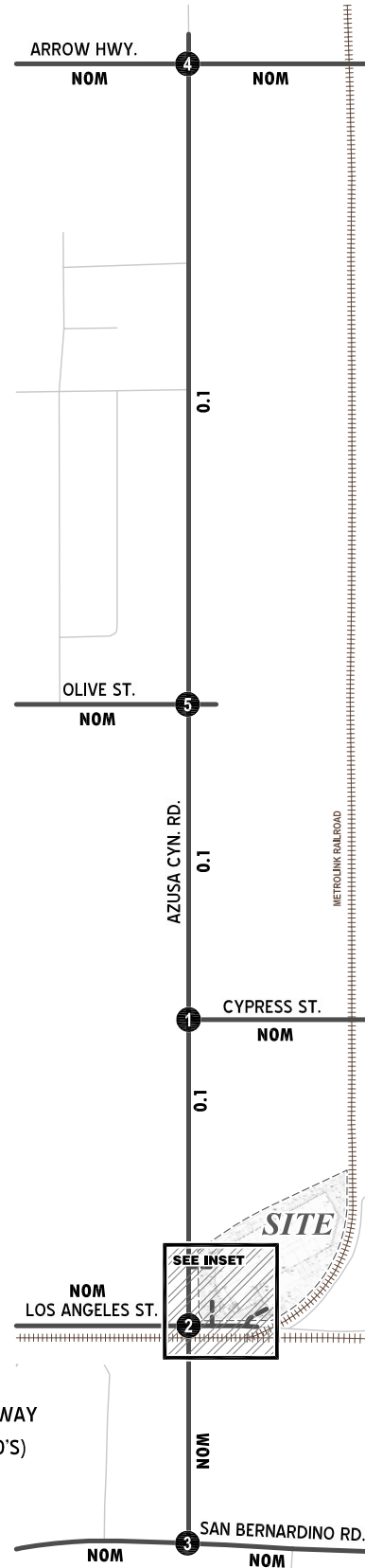
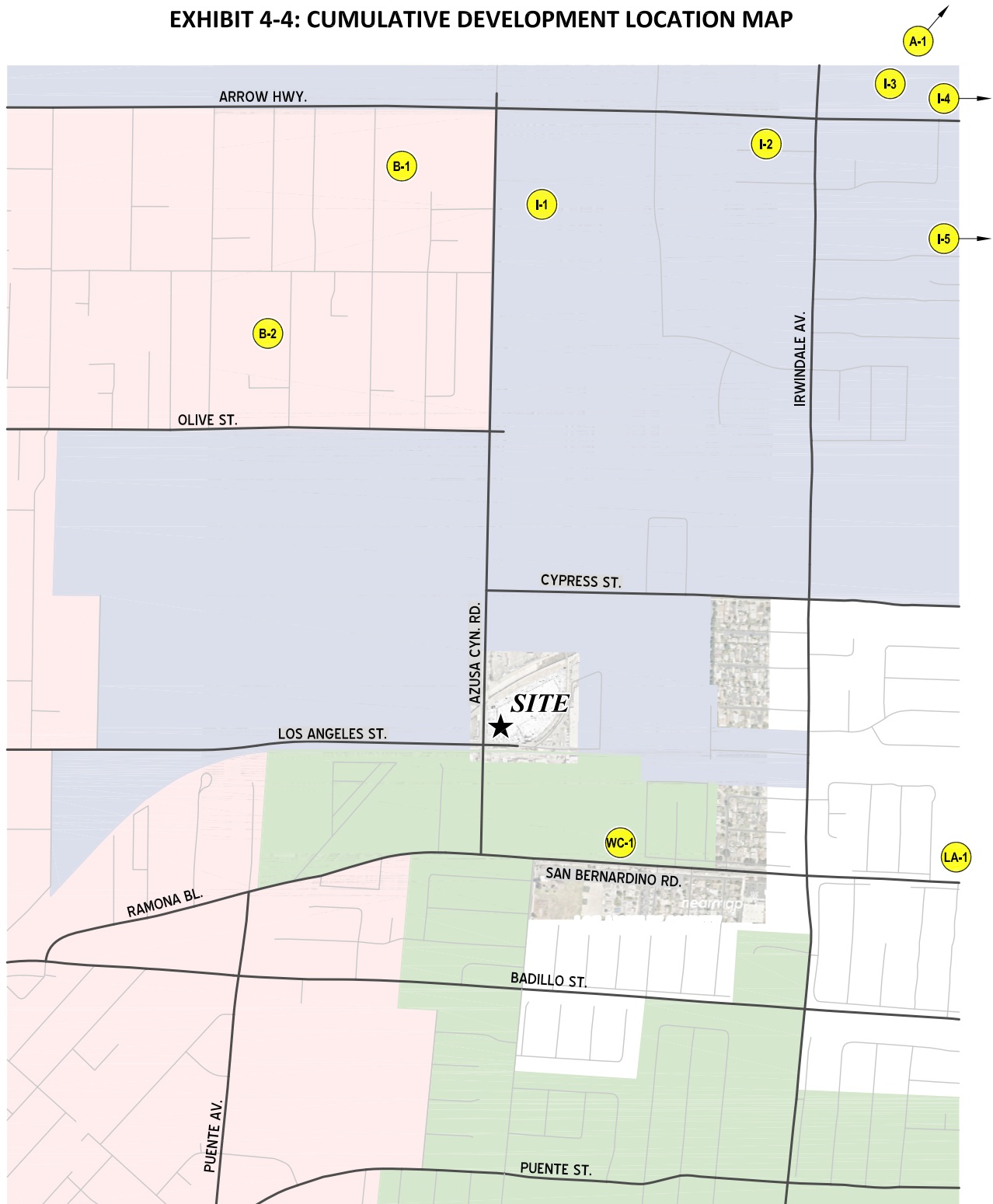


EXHIBIT 4-4: CUMULATIVE DEVELOPMENT LOCATION MAP



LEGEND:

- # CUMULATIVE DEVELOPMENT PROJECTS (TRAFFIC ANALYSIS ZONE ID)



TABLE 4-6: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

ID	Project Name	Land Use ¹	Quantity	Units ²
CITY OF IRVINDALE				
I-1	5010 Azusa Cyn. Rd.	General Light Industrial	233.987	TSF
I-2	Wendy's	Fast-Food Restaurant	2.300	TSF
I-3	Panattoni Industrial - 1200 Arrow Hwy	Industrial Park	130.366	TSF
I-4	Arrow Highway Business Park	Warehousing	138.410	TSF
I-5	Vincent Avenue Industrial Building	Industrial Park	545.735	TSF
CITY OF BALDWIN PARK				
B-1	5115 Azusa Canyon Road Warehouse	Industrial Park	90.00	TSF
B-2	4923 Fortin Street	SFDR	15	DU
CITY OF WEST COVINA				
WC-1	1611 & 1623 San Bernardino Rd.	Condominium	24	DU
CITY OF AZUSA				
A-1	Crow Holdings Industrial	Industrial Park	146.0	TSF
COUNTY OF LOS ANGELES				
LA-1	Griswold Residential - 16209 San Bernardino Rd.	SFDR	68	DU

¹ SFDR = Single Family Detached Residential

² DU = Dwelling Units; TSF = Thousand Square Feet

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5 EXISTING (HYPOTHETICAL “NON-COVID” 2021) TRAFFIC CONDITIONS

This section discusses the traffic forecasts for Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use Without Project and With Project conditions and the resulting intersection operations analyses.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Existing (hypothetical “non-COVID” 2021) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following for With Project conditions:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Interim Year Cumulative (2021) Plus Site Baseline Land Use With Project conditions only (e.g., intersection and roadway improvements at the Project’s frontage and driveways).

5.2 TRAFFIC VOLUME FORECASTS

This scenario includes adjusted Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use traffic volumes in the study area for Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use traffic conditions in conjunction with traffic associated with the proposed Project. The weekday AM and PM peak hour volumes which can be expected for Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use traffic conditions are shown on Exhibit 5-1. The weekday AM and PM peak hour volumes which can be expected for Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use With Project traffic conditions are shown on Exhibit 5-2.

5.3 INTERSECTION OPERATIONS ANALYSIS

Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TIA. The intersection analysis results are summarized in Table 5-1. The intersection operations analysis worksheets for the weekday AM and PM peak hour volumes which can be expected for Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use traffic conditions are included in Appendix 5.1 of this TA. The intersection operations analysis worksheets for the weekday AM and PM peak hour volumes which can be expected for Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use With Project traffic conditions are included in Appendix 5.2 of this TA.

As shown on Table 5-1, there are no new intersections anticipated to operate at an unacceptable level of service (LOS “E” or worse), in addition to the two existing deficient intersections.

TABLE 5-1: INTERSECTION ANALYSIS FOR EXISTING (HYPTOTHETICAL "NON-COVID" 2021) PLUS SITE BASELINE LAND USE CONDITIONS

#	Intersection	Traffic Control ³	Intersection Approach Lanes ¹												WITHOUT PROJECT								WITH PROJECT							
			Intersection Approach Lanes ¹												HCM				ICU				HCM				ICU			
			Intersection Approach Lanes ¹												Delay ² (Secs)		Level of Service ²		ICU ⁴ (v/c)		Level of Service ⁴		Delay ² (Secs)		Level of Service ²		ICU ⁴ (v/c)		Level of Service ⁴	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Azusa Canyon Rd. / Cypress St.	TS	0	2	0	1	2	0	0	0	0	1	1!	1	20.6	31.6	C	C	0.30	0.59	A	A	20.6	31.7	C	C	0.30	0.60	A	A
2	Azusa Canyon Rd. / Los Angeles St.	AWS	0	1!	0	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	32.9	96.4	D	F	-	-	-	-	34.6	100.2	D	F	-	-	-	-
	- With Improvements	TS	0	1!	0	0.5	0.5	1	1.5	0.5	1	1	1	0	19.2	23.5	B	C	0.48	0.70	A	B	19.3	23.8	B	C	0.49	0.71	A	C
3	Azusa Canyon Rd. / San Bernardino Rd.	TS	0	0	0	1	0	d	1	2	0	0	2	0	20.6	30.4	C	C	0.39	0.77	A	C	20.7	30.6	C	C	0.39	0.77	A	C
4	Azusa Canyon Rd. / Arrow Hwy.	TS	1.5	0.5	1	1	1	0	1	3	0	1	2	d	51.3	60.3	D	E	0.94	0.82	E	D	51.4	61.4	D	E	0.94	0.83	E	D
	- With Improvements	TS	1.5	0.5	1>	1	1	0	1	3	0	1	3	0	29.4	32.7	C	C	0.70	0.82	B	D	29.6	33.4	C	C	0.70	0.82	B	D
5	Azusa Canyon Rd. / Olive St.	TS	1	2	0	1	2	d	1	1	d	1	1	d	15.1	27.2	B	C	0.32	0.43	A	A	15.1	27.4	B	C	0.32	0.43	A	A
6	Azusa Canyon Rd. / Dwy. 1	CSS	0.5	1.5	0	0	2	0	0	0	0	0	0	1	9.8	11.4	A	B	-	-	-	-	9.8	11.6	A	B	-	-	-	-
7	Dwy. 2 / Los Angeles St.	CSS	0	0	0	0	1!	0	0.5	0.5	0	0	1	0	8.4	8.7	A	A	-	-	-	-	8.5	8.7	A	A	-	-	-	-
8	Dwy. 3 / Los Angeles St.	CSS	0	0	0	0	1!	0	0.5	0.5	0	0	1	0	8.4	8.7	A	A	-	-	-	-	8.4	8.7	A	A	-	-	-	-

¹ When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto Right Turn Lane; 0.5 = Shared Lane; > = Right Turn Overlap Phase; **1** = Improvement

² Per the Highway Capacity Manual 6th Edition (HCM6), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control.

For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

" - " value is shown for unsignalized ICU values. Delay and level of service is calculated using Synchro 11 analysis software.

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

³ TS = Traffic Signal; CSS = Cross-street Stop; AWS = All-Way Stop

⁴ The Synchro v/c output results are discussed in the City of Irwindale Policy Guidelines for Traffic Impact Reports under Section B (page insert) and indicated that the v/c ratio results in the Synchro are based on ICU and should be presented in addition to delay information.

EXHIBIT 5-1: EXISTING (HYPOTHETICAL "NON-COVID" 2021) PLUS SITE BASELINE LAND USE TRAFFIC VOLUMES

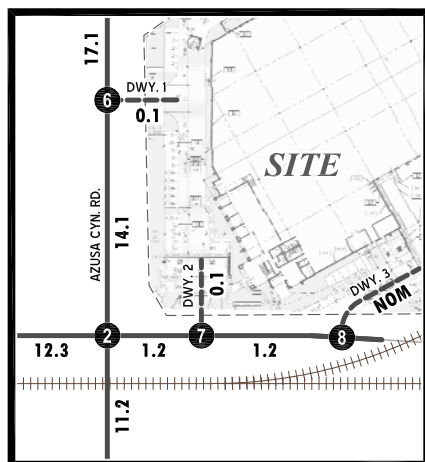
AM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St.	2 Azusa Canyon Rd. & Los Angeles St.	3 Azusa Canyon Rd. & San Bernardino Rd.	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St.	6 Azusa Canyon Rd. & Dwy. 1	7 Dwy. 2 & Los Angeles St.	8 Dwy. 3 & Los Angeles St.

PM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St.	2 Azusa Canyon Rd. & Los Angeles St.	3 Azusa Canyon Rd. & San Bernardino Rd.	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St.	6 Azusa Canyon Rd. & Dwy. 1	7 Dwy. 2 & Los Angeles St.	8 Dwy. 3 & Los Angeles St.

INSET



LEGEND:

- #** = INTERSECTION ID
- = FUTURE PROJECT DRIVEWAY
- 10.0** = VEHICLES PER DAY (1000'S)
- NOM** = NOMINAL, LESS THAN 50 VEHICLES PER DAY

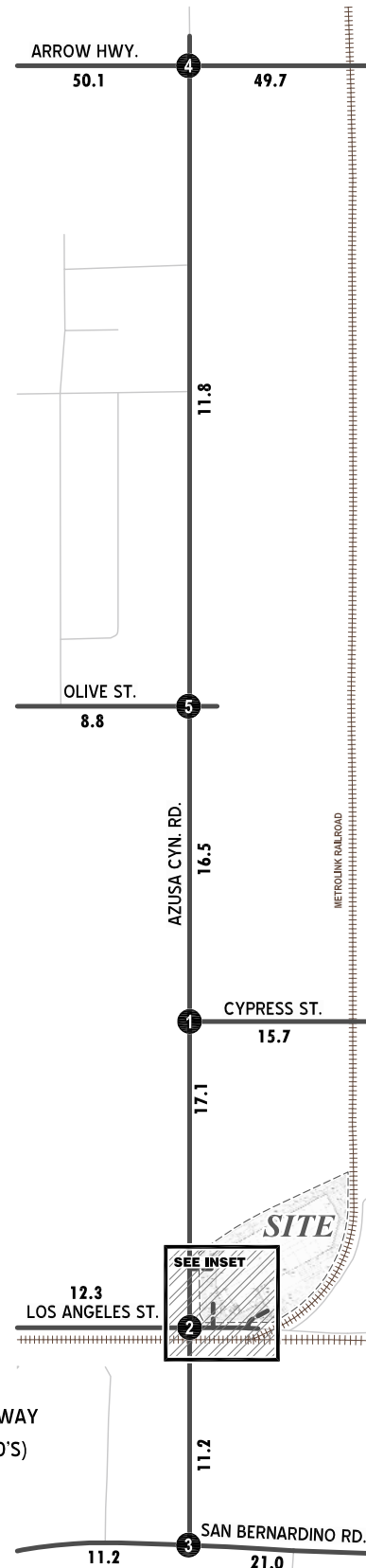


EXHIBIT 5-2: EXISTING (HYPOTHETICAL "NON-COVID" 2021) PLUS SITE BASELINE LAND USE PLUS PROPOSED PROJECT TRAFFIC VOLUMES

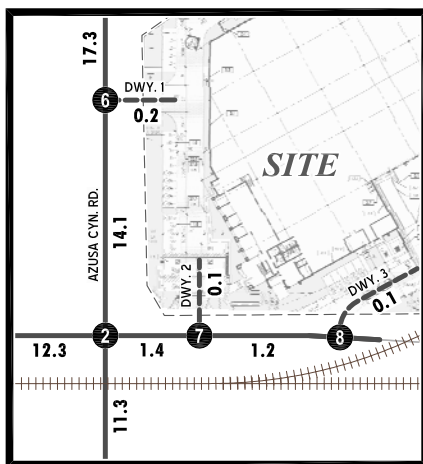
AM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

PM PEAK HOUR

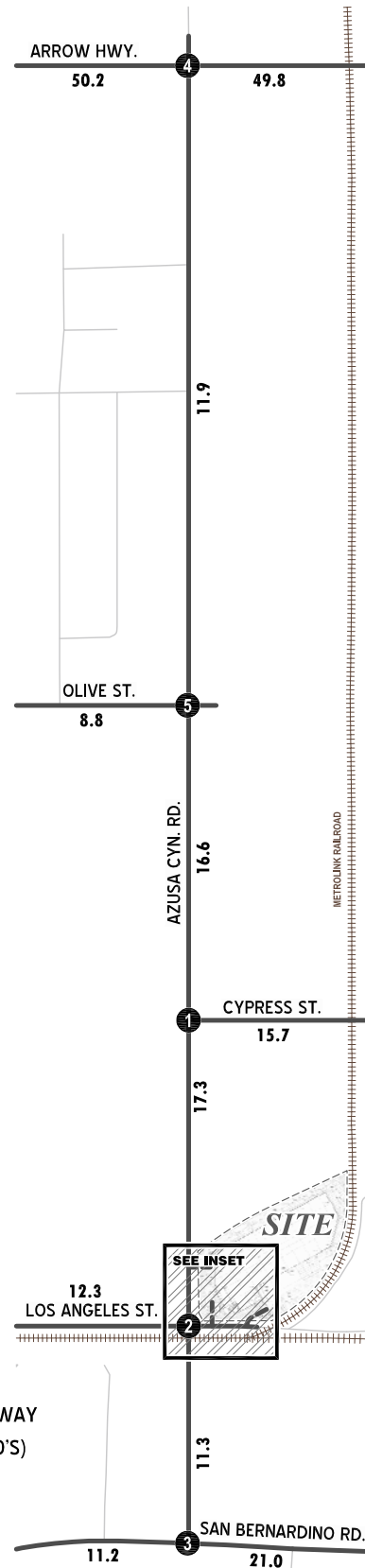
1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

INSET



LEGEND:

- #** = INTERSECTION ID
- = FUTURE PROJECT DRIVEWAY
- 10.0** = VEHICLES PER DAY (1000'S)
- NOM** = NOMINAL, LESS THAN 50 VEHICLES PER DAY



6 INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE (2022) TRAFFIC CONDITIONS

This section discusses the traffic forecasts for Interim Year Cumulative Plus Site Baseline Land Use (2022) conditions and the resulting intersection operations analyses.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Interim Year Cumulative Plus Site Baseline Land Use (2022) With Project conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Interim Year Cumulative Plus Site Baseline Land Use (2022) With Project conditions only (e.g., intersection and roadway improvements at the Project's frontage and driveways).

6.2 TRAFFIC VOLUME FORECASTS

This scenario includes adjusted Interim Year Cumulative Plus Site Baseline Land Use traffic volumes plus an ambient growth factor of 1.02% and other known cumulative development projects in the study area for Interim Year Cumulative Plus Site Baseline Land Use (2022) traffic conditions in conjunction with traffic associated with the proposed Project. The weekday AM and PM peak hour volumes which can be expected for Interim Year Cumulative Plus Site Baseline Land Use (2022) traffic conditions are shown on Exhibit 6-1. The weekday AM and PM peak hour volumes which can be expected for Interim Year Cumulative Plus Site Baseline Land Use (2022) With Project traffic conditions are shown on Exhibit 6-2.

6.3 INTERSECTION OPERATIONS ANALYSIS

Interim Year Cumulative Plus Site Baseline Land Use (2022) With Project peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TIA. The intersection analysis results are summarized in Table 6-1. The intersection operations analysis worksheets for Interim Year Cumulative Plus Site Baseline Land Use (2022) traffic conditions are included in Appendix 6.1 of this TA. The intersection operations analysis worksheets for Interim Year Cumulative Plus Site Baseline Land Use (2022) With Project traffic conditions are included in Appendix 6.2 of this TA.

As shown on Table 6-1, there are no new intersections anticipated to operate at an unacceptable level of service (LOS "E" or worse), in addition to the two existing deficient intersections.

TABLE 6-1: INTERSECTION ANALYSIS FOR INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE (2022) CONDITIONS

#	Intersection	Traffic Control ³	Intersection Approach Lanes ¹												WITHOUT PROJECT								WITH PROJECT							
			Intersection Approach Lanes ¹												HCM				ICU				HCM				ICU			
			Intersection Approach Lanes ¹												Delay ² (Secs)		Level of Service ²		ICU ⁴ (v/c)		Level of Service ⁴		Delay ² (Secs)		Level of Service ²		ICU ⁴ (v/c)		Level of Service ⁴	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Azusa Canyon Rd. / Cypress St.	TS	0	2	0	1	2	0	0	0	0	1	1!	1	25.7	35.8	C	D	0.33	0.61	A	B	26.1	36.0	C	D	0.33	0.61	A	B
2	Azusa Canyon Rd. / Los Angeles St.	AWS	0	1!	0	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	43.4	109.8	E	F	-	-	-	-	45.3	113.6	E	F	-	-	-	-
	- With Improvements	<u>TS</u>	0	1!	0	0.5	0.5	1	<u>1.5</u>	0.5	<u>1</u>	<u>1</u>	<u>1</u>	0	19.5	24.1	B	C	0.52	0.76	A	C	21.6	25.3	C	C	0.53	0.76	A	C
3	Azusa Canyon Rd. / San Bernardino Rd.	TS	0	0	0	1	0	d	1	2	0	0	2	0	20.7	32.2	C	C	0.41	0.82	A	D	20.8	32.4	C	C	0.42	0.82	A	D
4	Azusa Canyon Rd. / Arrow Hwy.	TS	1.5	0.5	1	1	1	0	1	3	0	1	2	d	61.4	74.8	E	E	0.98	0.89	E	D	61.6	78.5	E	E	0.98	0.89	E	D
	- With Improvements	TS	1.5	0.5	<u>1></u>	1	1	0	1	3	0	1	<u>3</u>	0	32.4	33.5	C	C	0.74	0.89	C	D	32.7	33.6	C	C	0.74	0.89	C	D
5	Azusa Canyon Rd. / Olive St.	TS	1	2	0	1	2	d	1	1	d	1	1	d	15.1	28.2	B	C	0.35	0.46	A	A	15.5	28.5	B	C	0.35	0.46	A	A
6	Azusa Canyon Rd. / Dwy. 1	<u>CSS</u>	0.5	1.5	0	0	2	0	0	0	0	0	0	<u>1</u>	10.0	11.6	A	B	-	-	-	-	10.0	11.7	A	B	-	-	-	-
7	Dwy. 2 / Los Angeles St.	<u>CSS</u>	0	0	0	0	<u>1!</u>	0	0.5	0.5	0	0	1	0	8.4	8.7	A	A	-	-	-	-	8.5	8.7	A	A	-	-	-	-
8	Dwy. 3 / Los Angeles St.	<u>CSS</u>	0	0	0	0	<u>1!</u>	0	0.5	0.5	0	0	1	0	8.4	8.7	A	A	-	-	-	-	8.4	8.7	A	A	-	-	-	-

¹ When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto Right Turn Lane; 0.5 = Shared Lane; > = Right Turn Overlap Phase; 1 = Improvement

² Per the Highway Capacity Manual 6th Edition (HCM6), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control.

For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

" - " value is shown for unsignalized ICU values. Delay and level of service is calculated using Synchro 11 analysis software.

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

³ TS = Traffic Signal; CSS = Cross-street Stop; AWS = All-Way Stop

⁴ The Synchro v/c output results are discussed in the City of Irwindale Policy Guidelines for Traffic Impact Reports under Section B (page insert) and indicated that the v/c ratio results in the Synchro are based on ICU and should be presented in addition to delay information.

EXHIBIT 6-1: INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE (2022) TRAFFIC VOLUMES

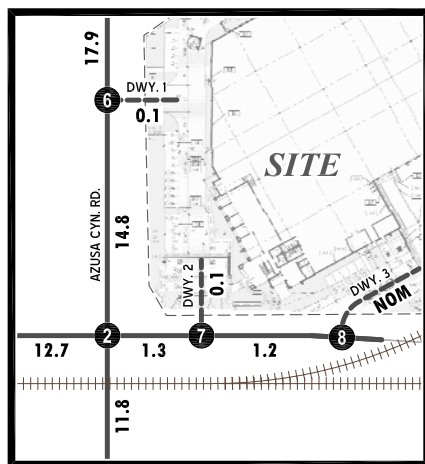
AM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

PM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

INSET



LEGEND:

- # = INTERSECTION ID
- = FUTURE PROJECT DRIVEWAY
- 10.0 = VEHICLES PER DAY (1000'S)
- NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

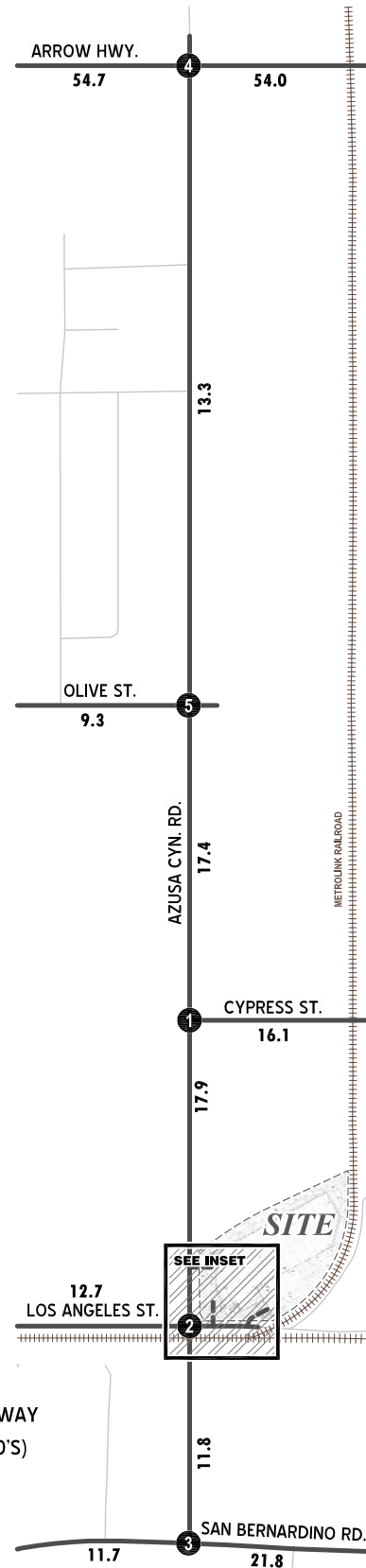


EXHIBIT 6-2: INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE (2022) WITH PROJECT TRAFFIC VOLUMES

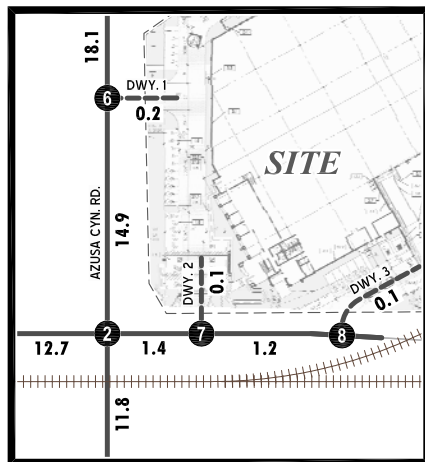
AM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

PM PEAK HOUR

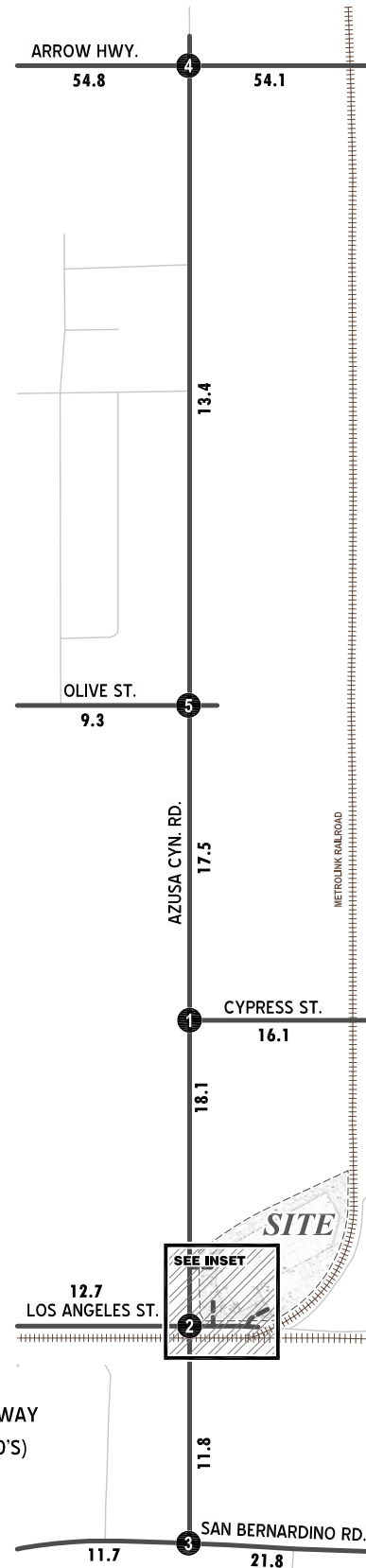
1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
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INSET



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7 2040 PLUS SITE BASELINE LAND USE TRAFFIC CONDITIONS

This section discusses the traffic forecasts for 2040 Plus Site Baseline Land Use conditions and the resulting intersection operations analyses.

7.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for 2040 Plus Site Baseline Land Use With Project conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for 2040 Plus Site Baseline Land Use With Project conditions only (e.g., intersection and roadway improvements at the Project's frontage and driveways).

7.2 TRAFFIC VOLUME FORECASTS

Horizon Year Without Project traffic conditions will include an ambient traffic growth factor of 10.6% based on the growth factors provided in LA County Congestion Management Program (CMP) for Regional Statistical Area (RSA) 26. The CMP indicates that 1.106 is an appropriate factor for volume increases between 2010 and 2035 (25 years). The proposed forecast year of 2040 is 19 years away, so implementing the 10.6% growth factor is a reasonable representation of potential future growth.

The weekday AM and PM peak hour volumes which can be expected for 2040 Plus Site Baseline Land Use traffic conditions are shown on Exhibit 7-1. The weekday AM and PM peak hour volumes which can be expected for 2040 Plus Site Baseline Land Use With Project traffic conditions are shown on Exhibit 7-2.

7.3 INTERSECTION OPERATIONS ANALYSIS

2040 Plus Site Baseline Land Use With Project peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TIA. The intersection analysis results are summarized in Table 7-1. The intersection operations analysis worksheets for 2040 Plus Site Baseline Land Use traffic conditions are included in Appendix 7.1 of this TA. The intersection operations analysis worksheets for 2040 Plus Site Baseline Land Use With Project traffic conditions are included in Appendix 7.2 of this TA.

As shown on Table 7-1, there are no new intersections anticipated to operate at an unacceptable level of service (LOS "E" or worse), in addition to the two existing deficient intersections.

TABLE 7-1: INTERSECTION ANALYSIS FOR 2040 PLUS SITE BASELINE LAND USE CONDITIONS

#	Intersection	Traffic Control ³	Intersection Approach Lanes ¹												WITHOUT PROJECT								WITH PROJECT							
			Intersection Approach Lanes ¹												HCM				ICU				HCM				ICU			
			Intersection Approach Lanes ¹												Delay ² (Secs)		Level of Service ²		ICU ⁴ (v/c)		Level of Service ⁴		Delay ² (Secs)		Level of Service ²		ICU ⁴ (v/c)		Level of Service ⁴	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Azusa Canyon Rd. / Cypress St.	TS	0	2	0	1	2	0	0	0	0	1	1!	1	26.2	44.8	C	D	0.35	0.67	A	B	26.4	45.9	C	D	0.35	0.67	A	B
2	Azusa Canyon Rd. / Los Angeles St.	AWS	0	1!	0	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	52.0	135.3	F	F	-	-	-	-	54.3	139.4	F	F	-	-	-	-
	- With Improvements	<u>TS</u>	0	1!	0	0.5	0.5	1	<u>1.5</u>	0.5	<u>1</u>	<u>1</u>	<u>1</u>	0	23.1	27.8	C	C	0.55	0.85	A	D	23.4	28.1	C	C	0.56	0.86	A	D
3	Azusa Canyon Rd. / San Bernardino Rd.	TS	0	0	0	1	0	d	1	2	0	0	2	0	21.2	36.3	C	D	0.44	0.90	A	D	21.2	36.5	C	D	0.44	0.90	A	D
4	Azusa Canyon Rd. / Arrow Hwy.	TS	1.5	0.5	1	1	1	0	1	3	0	1	2	d	76.8	92.4	E	F	1.03	0.94	F	E	77.0	93.6	E	F	1.03	0.95	F	E
	- With Improvements	TS	1.5	0.5	<u>1></u>	1	1	0	1	3	0	1	<u>3</u>	0	34.4	34.6	C	C	0.77	0.89	C	D	34.6	48.1	C	D	0.77	0.89	C	D
5	Azusa Canyon Rd. / Olive St.	TS	1	2	0	1	2	d	1	1	d	1	1	d	15.6	28.9	B	C	0.35	0.48	A	A	15.6	31.6	B	C	0.35	0.48	A	A
6	Azusa Canyon Rd. / Dwy. 1	<u>CSS</u>	0.5	1.5	0	0	2	0	0	0	0	0	0	<u>1</u>	10.0	11.9	A	B	-	-	-	-	10.0	12.1	A	B	-	-	-	-
7	Dwy. 2 / Los Angeles St.	<u>CSS</u>	0	0	0	0	<u>1!</u>	0	0.5	0.5	0	0	1	0	8.5	8.7	A	A	-	-	-	-	8.5	8.8	A	A	-	-	-	-
8	Dwy. 3 / Los Angeles St.	<u>CSS</u>	0	0	0	0	<u>1!</u>	0	0.5	0.5	0	0	1	0	8.5	8.7	A	A	-	-	-	-	8.5	8.7	A	A	-	-	-	-

¹ When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto Right Turn Lane; 0.5 = Shared Lane; > = Right Turn Overlap Phase; 1 = Improvement

² Per the Highway Capacity Manual 6th Edition (HCM6), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control.

For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

" - " value is shown for unsignalized ICU values. Delay and level of service is calculated using Synchro 11 analysis software.

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

³ TS = Traffic Signal; CSS = Cross-street Stop; AWS = All-Way Stop

⁴ The Synchro v/c output results are discussed in the City of Irwindale Policy Guidelines for Traffic Impact Reports under Section B (page insert) and indicated that the v/c ratio results in the Synchro are based on ICU and should be presented in addition to delay information.

EXHIBIT 7-1: 2040 PLUS SITE BASELINE LAND USE TRAFFIC VOLUMES

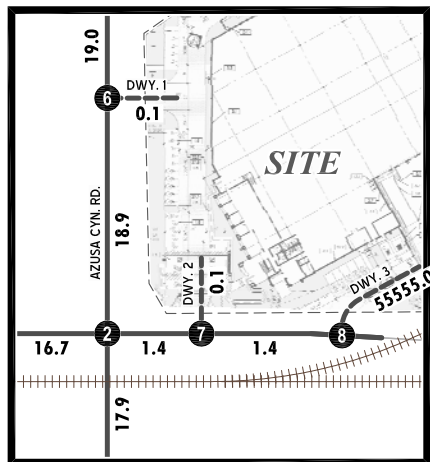
AM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

PM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

INSET



LEGEND:

- #** = INTERSECTION ID
- = FUTURE PROJECT DRIVEWAY
- 10.0** = VEHICLES PER DAY (1000'S)
- NOM** = NOMINAL, LESS THAN 50 VEHICLES PER DAY

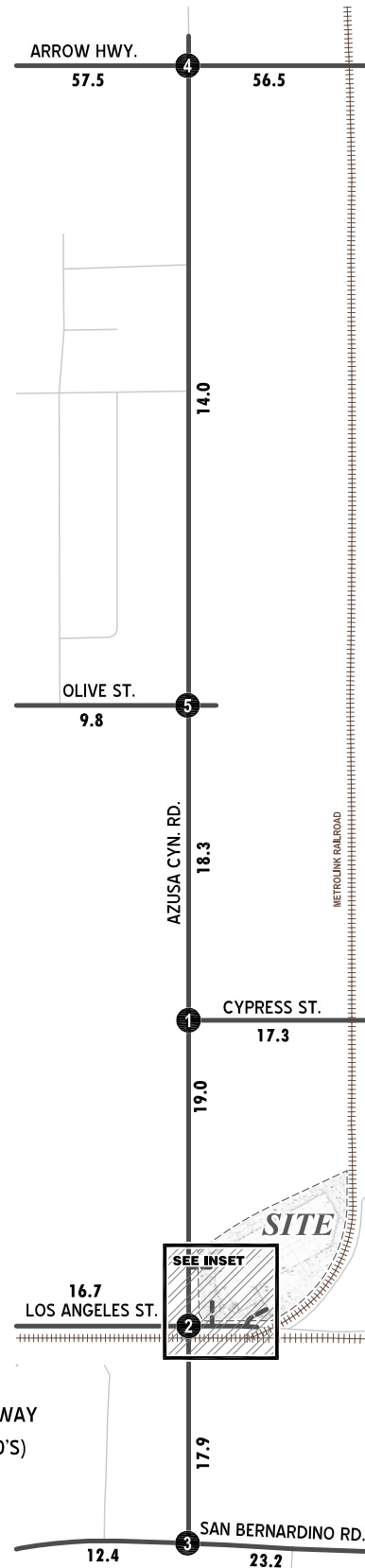


EXHIBIT 7-2: 2040 PLUS SITE BASELINE LAND USE WITH PROJECT TRAFFIC VOLUMES

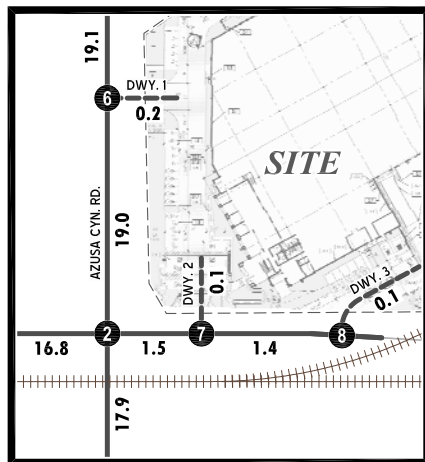
AM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

PM PEAK HOUR

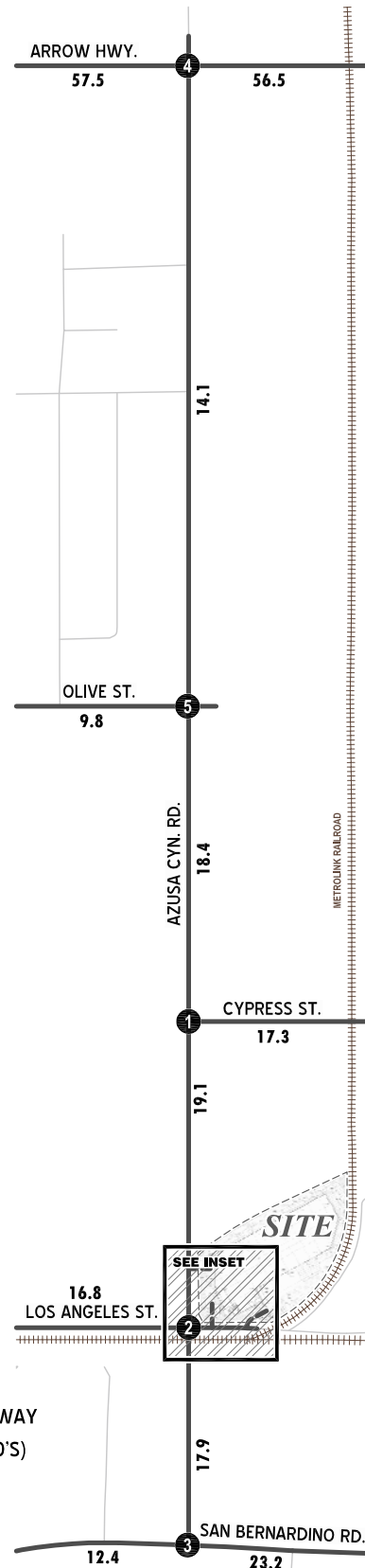
1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

INSET



LEGEND:

- # = INTERSECTION ID
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- 10.0 = VEHICLES PER DAY (1000'S)
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8 VEHICLE MILES TRAVELED SCREENING ASSESSMENT

The County of Los Angeles Guidelines require VMT analysis for development projects that are estimated to generate a net increase of 110 or more daily vehicle trips. Daily vehicle trips are specifically related to on-road passenger vehicles (cars and light trucks). Heavy trucks are not included in a VMT traffic impact analysis.

The passenger car trip generation for the proposed Project is 197 daily trips (see Table 4-1), but the existing baseline site land use passenger car estimated trip generation is 88 daily trips (see Table 4-3). The net proposed Project passenger car trip generation is therefore 109 vehicles per day, which is less than the 110 vehicles per day that would require further VMT analysis.

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9 IMPROVEMENTS, SAFETY, & PROJECT FAIR SHARE

This section of the report summarizes the off-site improvements and fair share percentages required to meet level of service requirements at each of the analysis locations where improvements are required. Improvements which will eliminate all anticipated roadway operational deficiencies throughout the study area have been identified for 2040 With Project Buildout traffic conditions. The improvements were determined through the operations analysis sections of this traffic study. Per City of Irwindale guidelines, the project shall pay its fair share of improvements to eliminate any of the significant impacts identified in the analysis chapters of this report.

A qualitative review of on-site traffic circulation has been performed. Emergency vehicle access has been reviewed. This section includes a review of the Project site plan to address any potential increase in potential hazards due to design features such as sharp curves or dangerous intersections. The potential for the Project to adversely affect pedestrian safety and the adequacy of nearby pedestrian facilities is also reviewed.

9.1 OFF-SITE RECOMMENDED IMPROVEMENTS

To provide acceptable level of service and address existing deficient operations, the following off-site improvements are recommended:

Azusa Canyon Road / Los Angeles Street (#2) – The Project will be fully responsible to the following off-site improvements:

- Install traffic signal control
- Modify eastbound striping to provide 1 separate left turn lane, 1 shared left/through lane, and maintain existing right turn lane.
- Modify westbound approach to provide a separate left turn lane, shared through/right lane.

Azusa Canyon Road / Arrow Highway (#4) – The Project should contribute on a fair share basis to the following off-site improvements:

- Modify striping to provide a 3rd westbound through lane.
- Project to contribute to addition of northbound right turn overlap signal phase to existing northbound right turn lane.

9.2 SAFETY

The site currently exists with two driveways at Azusa Canyon Road and two driveways at Los Angeles Street. Each of the existing driveways connects to the arterial system at an angle other than 90 degrees. The Project proposes reconfiguring the existing driveways such that Driveway 1 connects perpendicular (approximately 90 degrees) at Azusa Canyon Road, Driveway 2 connects perpendicular (approximately 90 degrees) at Los Angeles Street, and Driveway 3 connects at a similar angle to the current easterly driveway at Los Angeles Street.

The Project site plan indicates pedestrian and accessible accommodations, including a concrete walkway along Azusa Canyon Road, and updated intersection features on the northeast corner of Azusa Canyon Road at Los Angeles Street (such as truncated dome curb access). In addition, an accessible path of travel is shown between the building, ADA parking spaces, and curb access at the intersection.

In conjunction with traffic signal implementation, the following improvements are recommended at the intersection of Azusa Canyon Road / Los Angeles Street (#2) to address potential safety concerns for pedestrians crossing the intersection as shown on Exhibit 9-1:

- Provide a new crosswalk on the east leg of the intersection.
- Provide a new crosswalk on the west leg of the intersection.
- Restrict on-street parking on the south side of Los Angeles Street, east of Azusa Canyon Road, within 150 feet of the intersection.
- Restrict on-street parking on the east side of Azusa Canyon Road, north of Los Angeles Street, within 150 feet of the intersection.

Sight distance and other safety considerations are recommended to be reviewed prior to finalization of the Project driveways. Therefore, the Site plan will not increase potential hazards on-site.

9.3 2040 WITH PROJECT FAIR SHARE PERCENTAGE

Per City of Irwindale Guidelines, the project shall pay its fair share of improvements to eliminate any of the significant impacts. Based on the intersection analysis results, the project is anticipated to contribute additional traffic causing significant impacts up to 2040 conditions, fair share calculation is therefore based on 2040 conditions to address all significant impacts caused by the project.

The project fair share percentages (%) towards the required improvements have also been calculated. Table 9-1 summarizes the 2040 With Project fair share percentages for the proposed project. As shown on Table 9-1, the project contributes approximately 9% of the new traffic at the intersection of Azusa Canyon Road / Los Angeles Street (#2) and 2% of the new traffic at the intersection of Azusa Canyon Road / Arrow Highway (#4). It should be noted however that due the Project's proximity to the intersection of Azusa Canyon Road/Los Angeles Street (#2), the Project will be fully responsible for the intersection improvements at this location.

TABLE 9-1: PROJECT FAIR SHARE PERCENTAGE CALCULATIONS

ID	Intersection	Existing (Hypothetical "Non-COVID" 2021) Plus Site Baseline Land Use Traffic ³	2040 w/ Project Traffic ⁴	Project (Net) Traffic	Total New Traffic ¹	Project Fair Share (%) ²
2	Azusa Canyon Rd. / Los Angeles St. ⁴					
	• AM Peak Hour	1,357	1,530	15	173	9%
	• PM Peak Hour	2,119	2,363	17	244	7%
4	Azusa Canyon Rd. / Arrow Hwy.					
	• AM Peak Hour	4,195	4,931	12	736	2%
	• PM Peak Hour	4,888	5,616	14	728	2%

¹ Total New Traffic = (2040 With Project Traffic - Existing 2021 Traffic)

² Project Fair Share % = (Project Only Traffic / Total New Traffic)

³ Existing volume include estimated traffic volume for the existing site land use (Pepsi Warehouse).

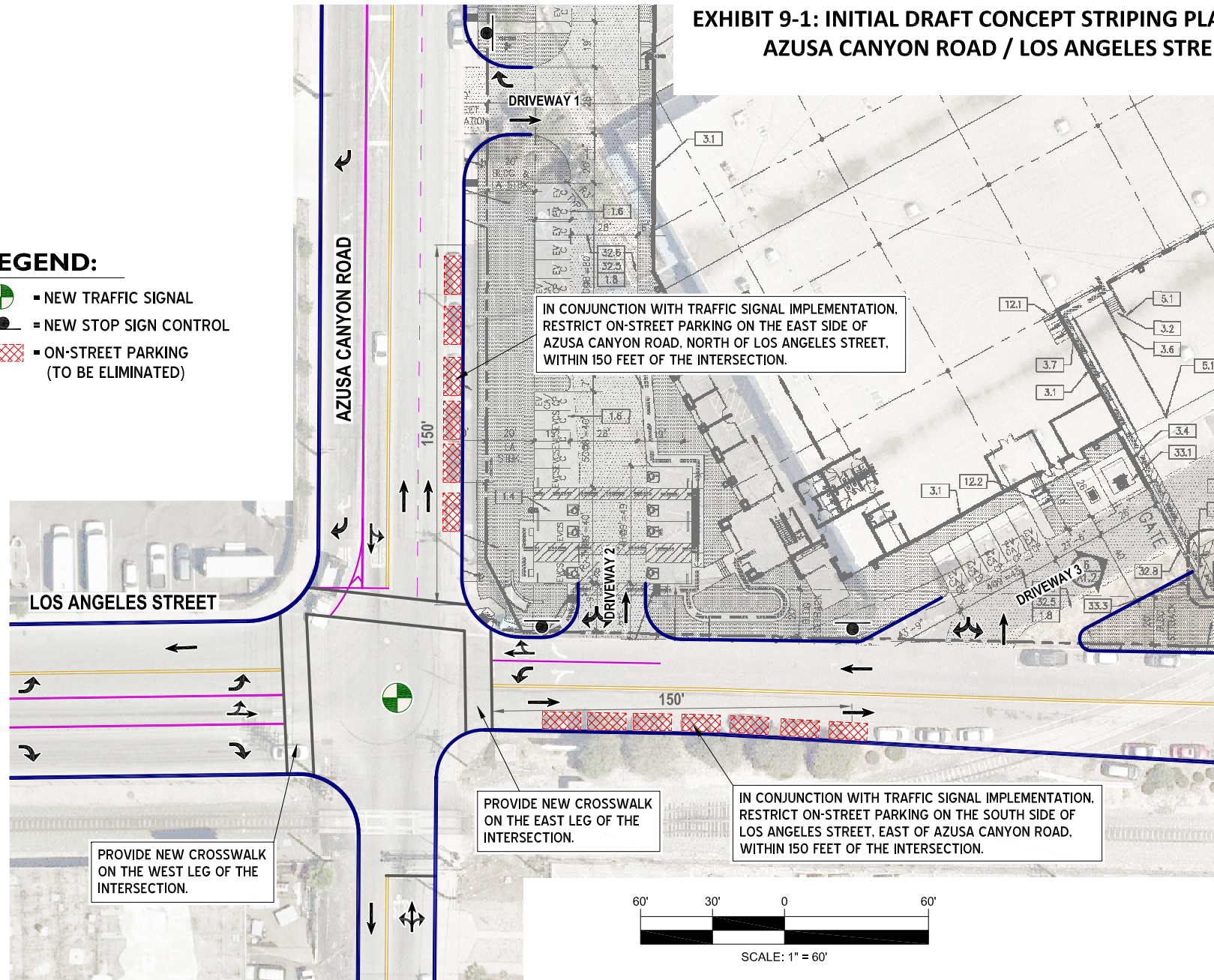
⁴ The Project will be fully responsible (100%) for the intersection improvement at Azusa Canyon Road/Los Angeles Street (#2).

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EXHIBIT 9-1: INITIAL DRAFT CONCEPT STRIPING PLAN AZUSA CANYON ROAD / LOS ANGELES STREET

LEGEND:

-  ■ NEW TRAFFIC SIGNAL
-  ■ NEW STOP SIGN CONTROL
-  ■ ON-STREET PARKING (TO BE ELIMINATED)



10 SUMMARY OF FINDINGS

10.1 PROJECT ACCESS

The Project is proposing to construct the following improvements as design features in conjunction with development of the site.

- The Project should construct curb, gutter, sidewalk, and landscaping improvements along Azusa Canyon Road and Los Angeles Street as needed to facilitate site access along the Project's frontage, consistent with the City's standards.
- Driveway 1 on Azusa Canyon Road should be restricted to right-out/left-in only access.
- Driveway 2 on Los Angeles Street should be constructed with full access.
- Driveway 3 on Los Angeles Street should be constructed with full access.

10.2 TRAFFIC ANALYSIS RESULTS

The intersections of Azusa Canyon Road/Los Angeles Street (#2) and Azusa Canyon Road/Arrow Highway are anticipated to operate at an unacceptable LOS during the peak hours for Existing, Existing Plus Site Baseline Land Use without and with Project, Interim Year (2022) without and with Project, General Plan Buildout (2040) Without and With Project Conditions, with existing geometry. Providing the following improvements are anticipated to improve the intersections to operate at an acceptable LOS (LOS "D" or better) for future conditions:

Azusa Canyon Road / Los Angeles Street (#2) – The following improvements are necessary to address existing deficient operations:

- Project will be fully responsible in installing a traffic signal control.
- Project will be fully responsible in modifying the existing striping for the eastbound and westbound approach to provide the following lane configuration:
 - Eastbound: 1 left turn, 1 shared left/through lane, and maintain existing right turn lane
 - Westbound: 1 left turn and 1 shared through/right lane.

Azusa Canyon Road / Arrow Highway (#4) – The following improvements are necessary to address existing deficient operations:

- Project will be partially responsible and contribute to 3rd westbound through lane.
- Project will be partially responsible and contribute to the addition of a northbound right turn overlap signal phase to an existing northbound right turn lane.

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11 REFERENCES

- [1] City of Irwindale, "Policy Guidelines for Taffic Impact Reports," Irwindale, December 30, 2014.
- [2] Institute of Transportation Engineers, Trip Generation Manual, 10th Edition ed., 2017.
- [3] Transportation Research Board, Highway Capacity Manual (HCM), 6th Edition ed., Washington, D.C.: National Academy of Sciences, 2016.
- [4] Transportation Research Board, Highway Capacity Manual (HCM), 6th Edition ed., National Academy of Sciences, 2016.
- [5] Caltrans, "California Manual on Uniform Traffic Control Devices (MUTCD)," in *California Manual on Uniform Traffic Control Devices (CAMUTCD)*, 2017.
- [6] Los Angeles County, "Los Angeles County General Plan," Los Angeles County, Adopted October 6, 2015.
- [7] Federal highway ADministration, "Field Guide for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations," FHWA, Washington, DC.

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APPENDIX 1.1:

APPROVED SCOPING AGREEMENT

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June 15, 2021

Mr. Daniel Co
City of Irwindale
5050 N. Irwindale Ave.
Irwindale, CA 91706

SUBJECT: AZUSA CANYON ROAD WAREHOUSE TRAFFIC ANALYSIS SCOPING AGREEMENT

Dear Mr. Daniel Co:

Urban Crossroads, Inc. is pleased to submit this traffic analysis scope regarding the proposed Azusa Canyon Road Warehouse ("Project"), which is located north of Los Angeles Street and east of Azusa Canyon (4416 Azusa Canyon Road) in the City of Irwindale. It is our understanding that the Project involves the demolition of the existing on-site buildings and structures for the construction of a stand-alone speculative concrete tilt-up warehouse building (approximately 125,475 square feet). This letter describes the draft proposed project trip generation and analysis procedures. It is acknowledged that that if the actual land use mix is not consistent with what is studied, a subsequent traffic study would be required by the City.

The site plan for the proposed Project is shown on Exhibit 1. Exhibit 2 depicts the proposed intersection analysis locations for this analysis. The Project is proposed to have two driveways at Los Angeles Street and one driveway at Azusa Canyon Road.

TRIP GENERATION

In order to estimate the traffic characteristics of the Project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) *Trip Generation* (10th Edition, 2017) manual for ITE Land Use Code 150 (Warehousing) and 140 (Manufacturing) are utilized. Trip generation rates and resulting calculations for the proposed Project are shown on Table 1. The Project is anticipated to generate 262 trip-ends per day with 29 AM peak hour trips and 35 PM peak hour trips, with the mixture of passenger car and truck trips as shown in Table 1. Table 2 presents the anticipated Passenger Car Equivalent (PCE) trip-ends for the proposed Project, resulting in 362 daily PCE trips with 45 AM PCE peak hour trips and 46 PM PCE peak hour trips.

Vehicle trip generation rates and resulting values for the existing baseline land uses at the Project site are shown in Table 3. Existing baseline site land uses generate an estimated 110 trip-ends per day with 10 AM peak hour trips and 11 PM peak hour trips, with the mixture of passenger car and truck trips as shown in Table 3. Table 4 presents the anticipated PCE trip-ends for the existing baseline site land uses, resulting in 140 PCE trip-ends per day with 18 AM PCE peak hour trips and 16 PM PCE peak hour trips.

EXHIBIT 1: SITE PLAN

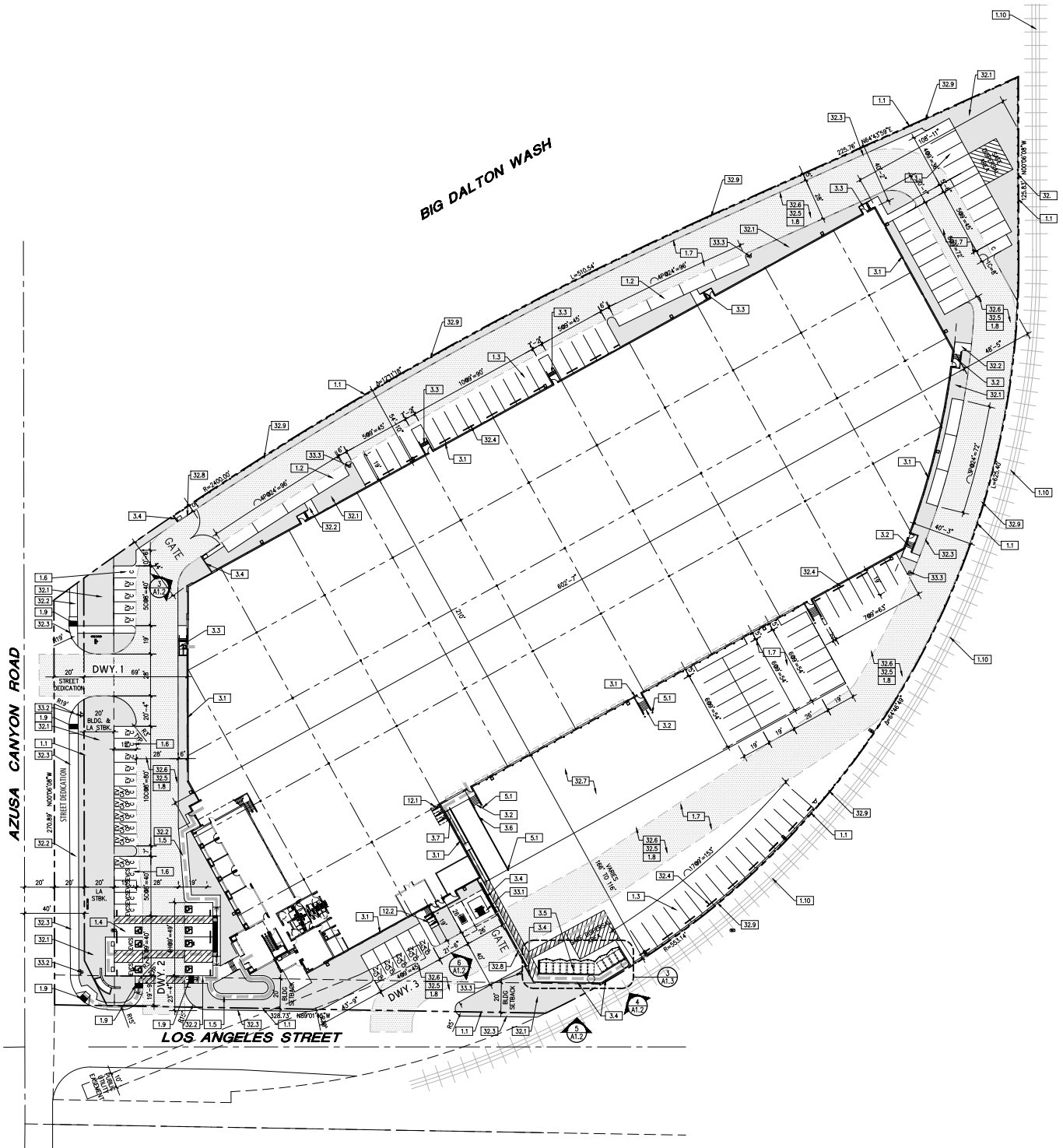
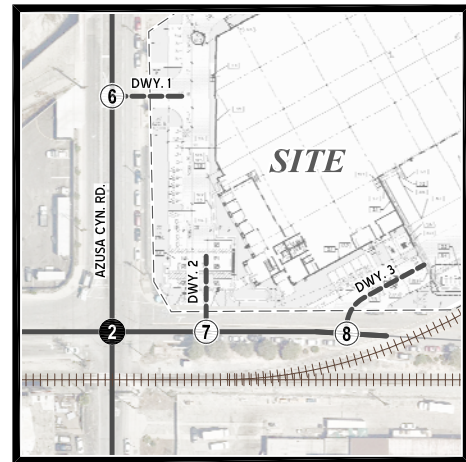


EXHIBIT 2: STUDY AREA



INSET



LEGEND:

- ⑤ = EXISTING ANALYSIS LOCATION
- ③ = FUTURE ANALYSIS LOCATION
- = FUTURE PROJECT DRIVEWAY



TABLE 1: PROPOSED PROJECT TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Trip Generation Rates ¹									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing ³	150	112.830 TSF	0.130	0.040	0.170	0.050	0.140	0.190	1.740
		79.57% Passenger Cars	0.103	0.032	0.135	0.040	0.112	0.152	1.385
		3.46% 2-Axle Trucks	0.004	0.001	0.005	0.002	0.005	0.007	0.060
		4.64% 3-Axle Trucks	0.006	0.002	0.008	0.002	0.006	0.008	0.081
		12.33% 4-Axle+ Trucks	0.016	0.005	0.021	0.006	0.017	0.023	0.215
Manufacturing ³	140	17.000 TSF	0.480	0.140	0.620	0.210	0.460	0.670	3.930
		61.20% Passenger Cars	0.294	0.086	0.380	0.129	0.282	0.411	2.405
		6.10% 2-Axle Trucks	0.029	0.009	0.038	0.013	0.028	0.041	0.240
		12.70% 3-Axle Trucks	0.061	0.018	0.079	0.027	0.058	0.085	0.499
		19.90% 4-Axle+ Trucks	0.096	0.028	0.124	0.042	0.092	0.134	0.782

Proposed Project Trip Generation Results									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing	150	112.830 TSF							
- Passenger Cars			12	4	16	5	13	18	156
- Truck Trips									
		2-axle:	0	0	0	0	1	1	7
		3-axle:	1	0	1	0	1	1	9
		4+-axle:	2	1	3	1	2	3	24
- Net Truck Trips (Actual Vehicles)			3	1	4	1	4	5	40
Warehousing Subtotal (Actual Vehicles)			15	5	20	6	17	23	196
Manufacturing	140	17.0 TSF							
- Passenger Cars			5	1	6	2	5	7	41
- Truck Trips									
		2-axle:	0	0	0	0	0	0	4
		3-axle:	1	0	1	1	1	2	8
		4+-axle:	2	0	2	1	2	3	13
- Net Truck Trips (Actual Vehicles)			3	0	3	2	3	5	25
Manufacturing Subtotal (Actual Vehicles)			8	1	9	4	8	12	66
PROPOSED PROJECT TRIPS (ACTUAL VEHICLES) ⁴			23	6	29	10	25	35	262

¹ Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017) and 10th Edition Supplement (2020).

² TSF = Thousand Square Feet

³ Vehicle Mix Source: City of Fontana Truck Trip Generation Study (August 2003) for ITE LU Code 150 - Heavy Warehouse Vehicle Mix and ITE LU Code 140 - Heavy Industrial Vehicle Mix

⁴ Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

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TABLE 2: PROPOSED PROJECT TRIP GENERATION SUMMARY (PCE)

Trip Generation Rates ¹									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing ³	150	112,830 TSF	0.169	0.053	0.222	0.065	0.182	0.247	2.282
		79.57% Passenger Cars	0.103	0.032	0.135	0.040	0.111	0.151	1.385
		3.46% 2-Axle Trucks; (PCE = 1.5)	0.006	0.002	0.008	0.003	0.008	0.011	0.090
		4.64% 3-Axle Trucks; (PCE = 2.0)	0.012	0.004	0.016	0.004	0.012	0.016	0.162
		12.33% 4-Axle+ Trucks; (PCE = 3.0)	0.048	0.015	0.063	0.018	0.051	0.069	0.645
Manufacturing ³	140	17,000 TSF	0.748	0.220	0.968	0.329	0.716	1.045	6.109
		61.20% Passenger Cars	0.294	0.086	0.380	0.129	0.282	0.411	2.405
		6.10% 2-Axle Trucks	0.044	0.014	0.058	0.020	0.042	0.062	0.360
		12.70% 3-Axle Trucks	0.122	0.036	0.158	0.054	0.116	0.170	0.998
		19.90% 4-Axle+ Trucks	0.288	0.084	0.372	0.126	0.276	0.402	2.346

Proposed Project Trip Generation Results									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing	150	112,830 TSF							
- Passenger Cars			12	4	16	5	13	18	156
- Truck Trips									
		2-axle (PCE = 1.5):	1	0	1	0	1	1	11
		3-axle (PCE = 2.0):	2	1	3	0	1	1	18
		4+axle (PCE = 3.0):	6	3	9	2	6	8	73
- Net Truck Trips (PCE)			9	4	13	2	8	10	102
Warehousing Subtotal (PCE)			21	8	29	7	21	28	258
Manufacturing	140	17.0 TSF							
- Passenger Cars			5	1	6	2	5	7	41
- Truck Trips									
		2-axle (PCE = 1.5):	1	0	1	0	1	1	6
		3-axle (PCE = 2.0):	2	1	3	1	2	3	17
		4+axle (PCE = 3.0):	5	1	6	2	5	7	40
- Net Truck Trips (PCE)			8	2	10	3	8	11	63
Manufacturing Subtotal (PCE)			13	3	16	5	13	18	104
PROPOSED PROJECT TRIPS (PCE) ⁴			34	11	45	12	34	46	362

¹ Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017).² TSF = Thousand Square Feet; PCE = Passenger Car Equivalent³ Vehicle Mix Source: [City of Fontana Truck Trip Generation Study](#) (August 2003) for ITE LU Code 150 - Heavy Warehouse Vehicle Mix and ITE LU Code 140 - Heavy Industrial Vehicle Mix⁴ Total Trips (PCE) = Passenger Cars + Net Truck Trips (PCE)

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TABLE 3: EXISTING SITE BASELINE LAND USE TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Trip Generation Rates ¹									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing ³	150	62.713 TSF	0.130	0.040	0.170	0.050	0.140	0.190	1.740
		80.3% Passenger Cars	0.104	0.032	0.136	0.040	0.113	0.153	1.398
		5.2% 2-Axle Trucks	0.007	0.002	0.009	0.003	0.007	0.010	0.090
		4.5% 3-Axle Trucks	0.006	0.002	0.008	0.002	0.006	0.008	0.078
		10.0% 4-Axle+ Trucks	0.013	0.004	0.017	0.005	0.014	0.019	0.174

Existing Site Baseline Land Use Trip Generation Results									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing	150	62.713 TSF							
- Passenger Cars			7	2	9	3	7	10	88
- Truck Trips									
		2-axle:	0	0	0	0	0	0	6
		3-axle:	0	0	0	0	0	0	5
		4+ axle:	1	0	1	0	1	1	11
- Net Truck Trips (Actual Vehicles)			1	0	1	0	1	1	22
Existing Site Baseline Land Use Trip Generation Subtotal (Actual Vehicles) ⁴			8	2	10	3	8	11	110

¹ Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017) and 10th Edition Supplement (2020).

² TSF = Thousand Square Feet

³ Vehicle Mix Source: City of Fontana Truck Trip Generation Study (August 2003) for ITE LU Code 150 - Light Warehouse use with 100 tsf gross floor area or less.

⁴ Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

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TABLE 4: EXISTING SITE BASELINE LAND USE TRIP GENERATION SUMMARY (PCE)

Trip Generation Rates ¹									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing ^{3,4}	150	62.713 TSF	0.166	0.051	0.217	0.064	0.178	0.242	2.211
		80.3% Passenger Cars	0.104	0.032	0.136	0.040	0.113	0.153	1.398
		5.2% 2-Axle Trucks; (PCE = 1.5)	0.011	0.003	0.014	0.005	0.011	0.016	0.135
		4.5% 3-Axle Trucks; (PCE = 2.0)	0.012	0.004	0.016	0.004	0.012	0.016	0.156
		10.0% 4-Axle+ Trucks; (PCE = 3.0)	0.039	0.012	0.051	0.015	0.042	0.057	0.522

Existing Site Baseline Land Use Trip Generation Results									
Land Use	ITE LU Code	Quantity ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehousing	150	62.713 TSF							
- Passenger Cars			7	2	9	3	7	10	88
- Truck Trips									
		2-axle (PCE = 1.5):	1	0	1	0	1	1	9
		3-axle (PCE = 2.0):	2	1	3	0	1	1	10
		4+axle (PCE = 3.0):	3	2	5	1	3	4	33
- Net Truck Trips (PCE)			6	3	9	1	5	6	52
Existing Site Baseline Land Use Trip Generation Subtotal (PCE) ⁵			13	5	18	4	12	16	140

¹ Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017).

² TSF = Thousand Square Feet; PCE = Passenger Car Equivalent

³ Vehicle Mix Source: City of Fontana Truck Trip Generation Study (August 2003) for ITE LU Code 150 - Light Warehouse use with 100 tsf gross floor area or less.

⁴ Total Trips (PCE) = Passenger Cars + Net Truck Trips (PCE)

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As shown in Table 5, the proposed Project is anticipated to generate an increase of 222 PCE trip-ends per day with 27 additional AM PCE peak hour trips and 30 additional PM PCE peak hour trips, in comparison to existing baseline site land uses.

The net new project trip generation in the critical peak hour is estimated to be more than 25 but less than 50 vehicle trips, so a focused site traffic review is required by the City of Irwindale Policy Guidelines for Traffic Impact Reports.

EXISTING BASELINE SITE VOLUMES

Daily and peak hour PCE traffic volumes have been estimated for the existing baseline site land uses. These existing baseline site volumes (shown on Exhibit 3) will be added to the existing hypothetical “non-COVID” 2021 count data sets (discussed below).

TRIP DISTRIBUTION AND ASSIGNMENT

The Project trip distribution pattern is heavily influenced by the geographical location of the site, the location of surrounding uses, and the access to adjacent roadways. Exhibit 4 presents the trip distribution for the proposed Project. The resulting daily and peak hour traffic volumes associated with the proposed Project are shown on Exhibit 5.

ANALYSIS SCENARIOS

The analysis of peak hour operations at study area intersections will be provided for the following analysis scenarios:

- Existing (hypothetical “non-COVID” 2021)
- Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use
- Existing (hypothetical “non-COVID” 2021) Plus Site Baseline Land Use Plus Proposed Project
- Interim Year Cumulative Plus Site Baseline Land Use Without Proposed Project (2022)
- Interim Year Cumulative Plus Site Baseline Land Use With Proposed Project (2022)
- 2040 Plus Site Baseline Land Use Without Proposed Project
- 2040 Plus Site Baseline Land Use With Proposed Project

The City of Irwindale General Plan Circulation Element is depicted on Exhibit 6. Truck routes in the City of Irwindale are shown on Exhibit 7. The City of Baldwin Park General Plan Circulation Element is depicted on Exhibit 8. Truck routes in the City of Baldwin Park are shown on Exhibit 9.

For the purposes of this focused traffic analysis, the following intersections will be evaluated as shown previously on Exhibit 2.

TABLE 5: LAND USE AND TRIP GENERATION COMPARISON SUMMARY

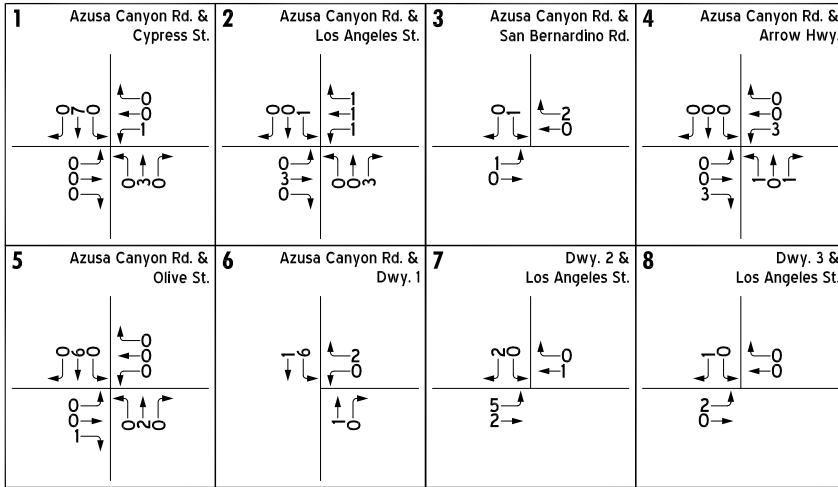
COMPARISON SUMMARY								
Land Use ²	Quantity ¹	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Existing Site Baseline Land Use (PCE)	62.713 TSF	13	5	18	4	12	16	140
Proposed Project (PCE)	129.83 TSF	34	11	45	12	34	46	362
DELTA <i>(Proposed - Existing)</i>		21	6	27	8	22	30	222

¹ TSF = Thousand Square Feet² PCE = Passenger Car Equivalent

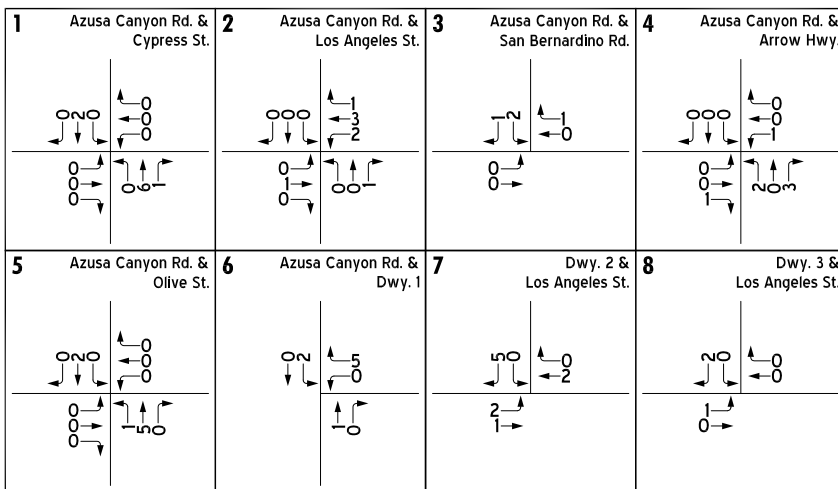
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EXHIBIT 3: SITE EXISTING BASELINE TRAFFIC VOLUMES (PCE)

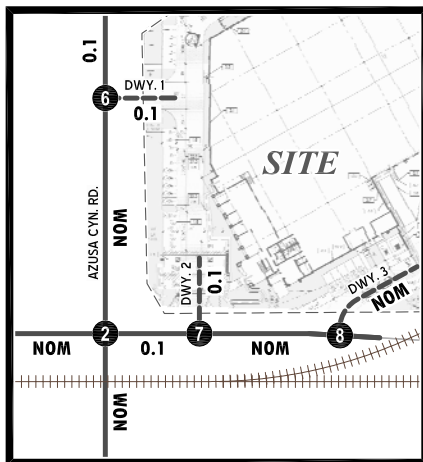
AM PEAK HOUR



PM PEAK HOUR



INSET



LEGEND:

- # = INTERSECTION ID
- - - = FUTURE PROJECT DRIVEWAY
- 10.0 = VEHICLES PER DAY (1000'S)
- NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

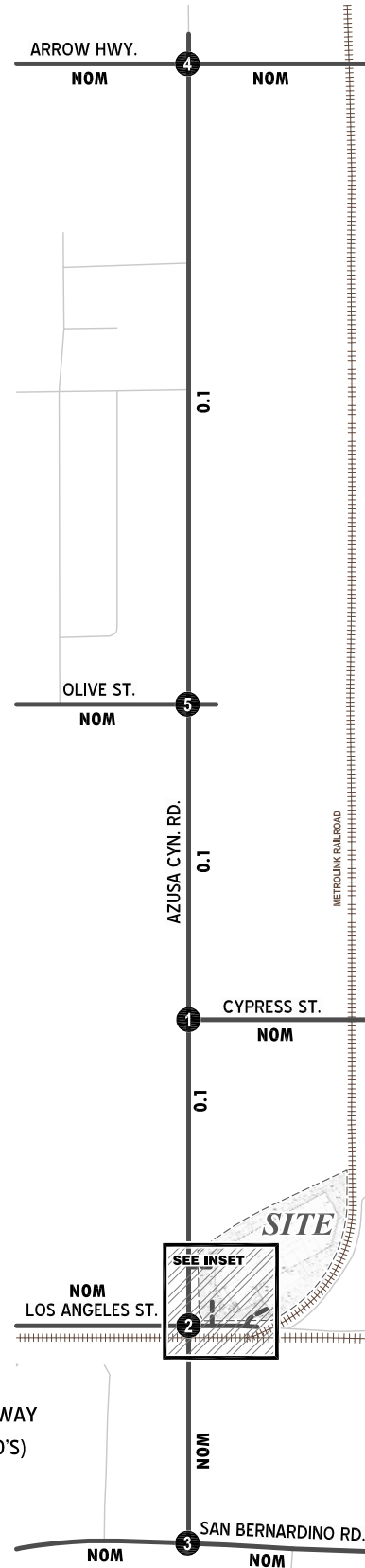
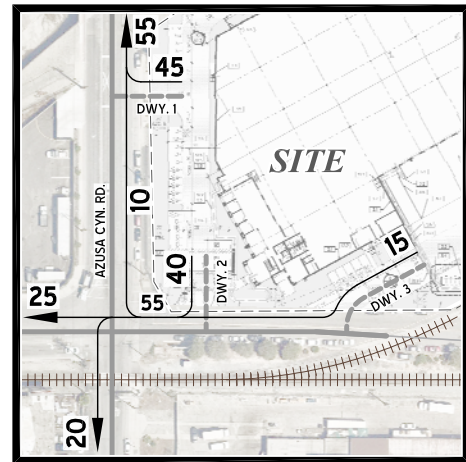


EXHIBIT 4: PROJECT TRIP DISTRIBUTION



INSET



LEGEND:

- 10 ■ PERCENT FROM/TO PROJECT
- FUTURE PROJECT DRIVEWAY

EXHIBIT 5: PROPOSED PROJECT ADDED TRAFFIC VOLUMES (PCE)

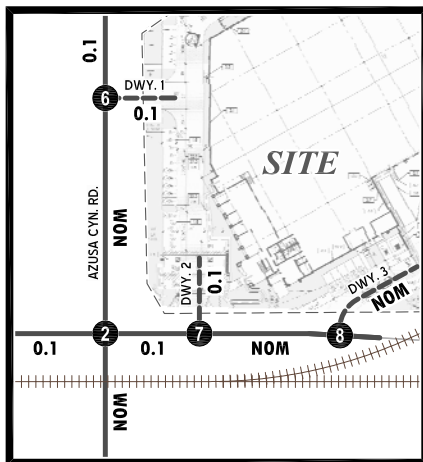
AM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

PM PEAK HOUR

1 Azusa Canyon Rd. & Cypress St. 	2 Azusa Canyon Rd. & Los Angeles St. 	3 Azusa Canyon Rd. & San Bernardino Rd. 	4 Azusa Canyon Rd. & Arrow Hwy.
5 Azusa Canyon Rd. & Olive St. 	6 Azusa Canyon Rd. & Dwy. 1 	7 Dwy. 2 & Los Angeles St. 	8 Dwy. 3 & Los Angeles St.

INSET



LEGEND:

- # = INTERSECTION ID
- = FUTURE PROJECT DRIVEWAY
- 10.0 = VEHICLES PER DAY (1000'S)
- NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

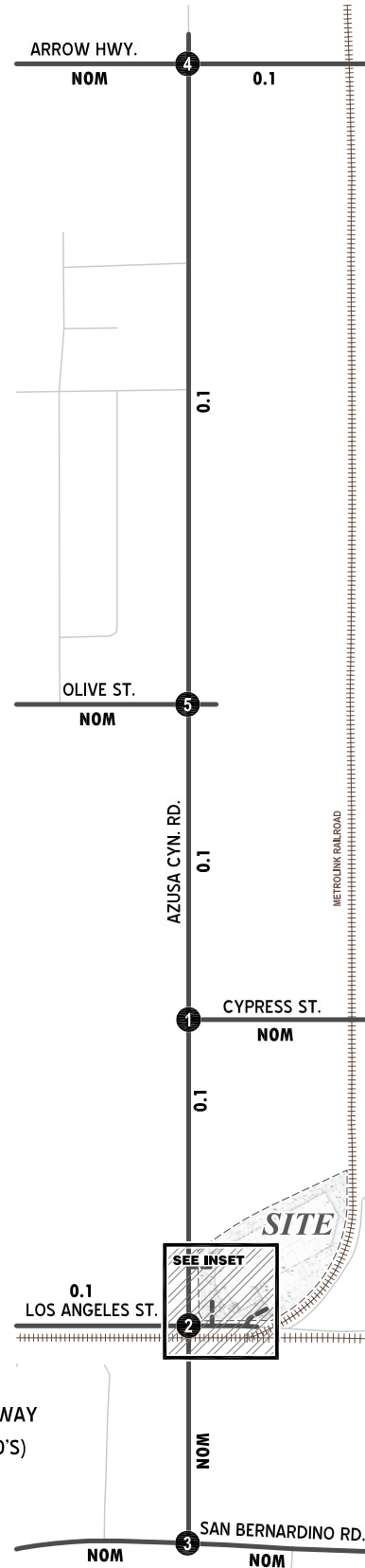


EXHIBIT 6: CITY OF IRWINDALE GENERAL PLAN CIRCULATION ELEMENT

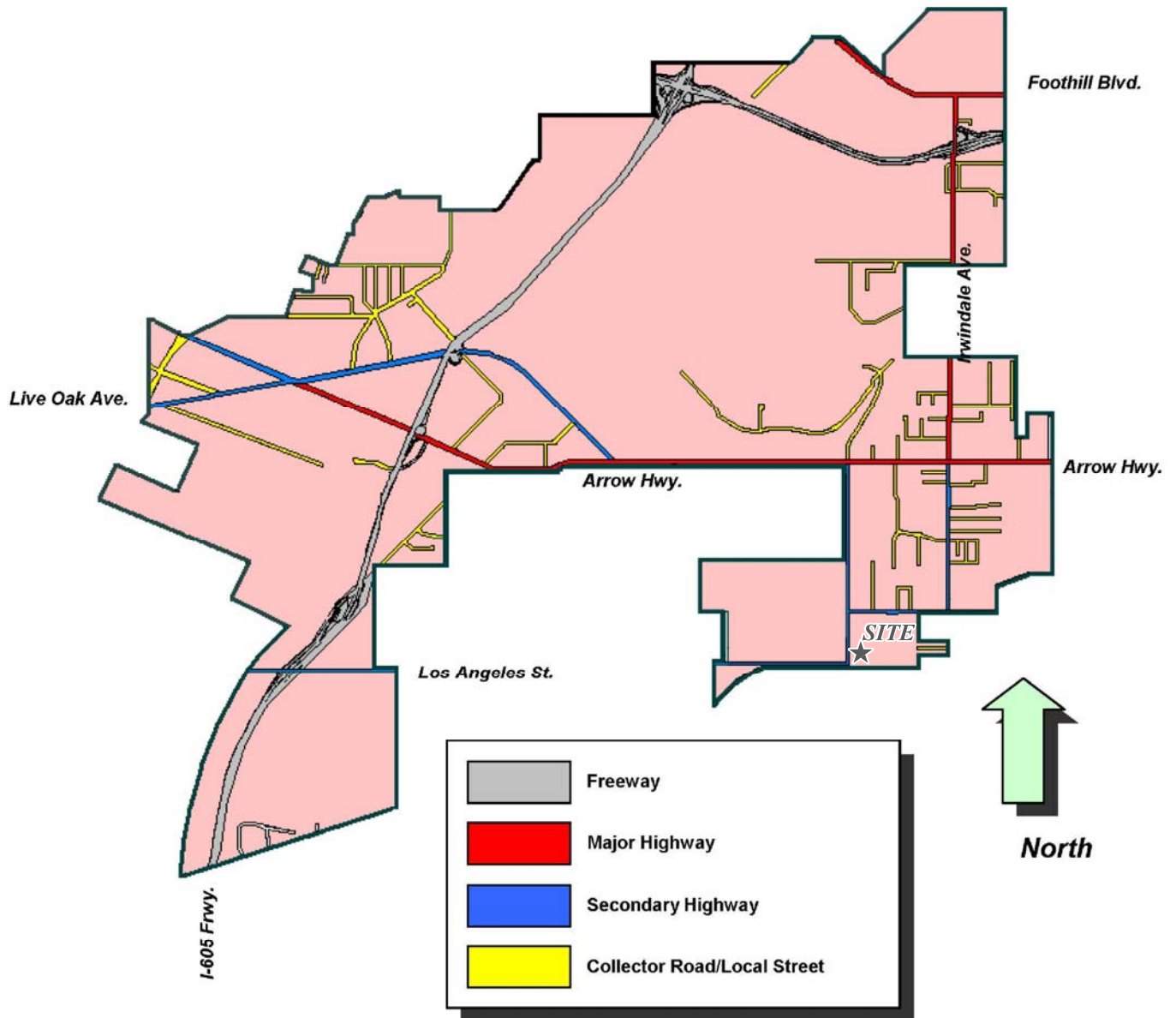


EXHIBIT 7: CITY OF IRWINDALE TRUCK ROUTES

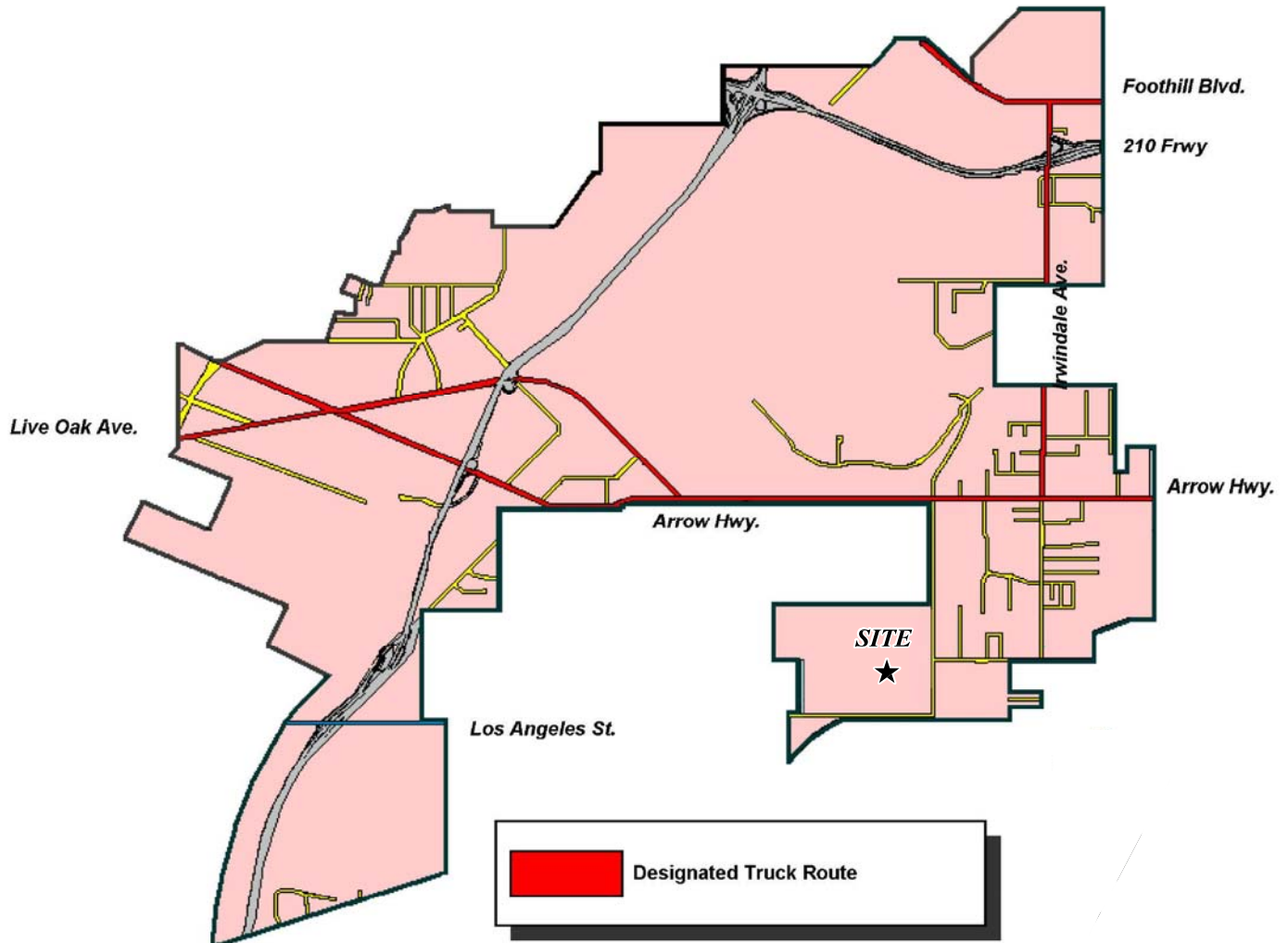


EXHIBIT 8: CITY OF BALDWIN PARK GENERAL PLAN CIRCULATION ELEMENT

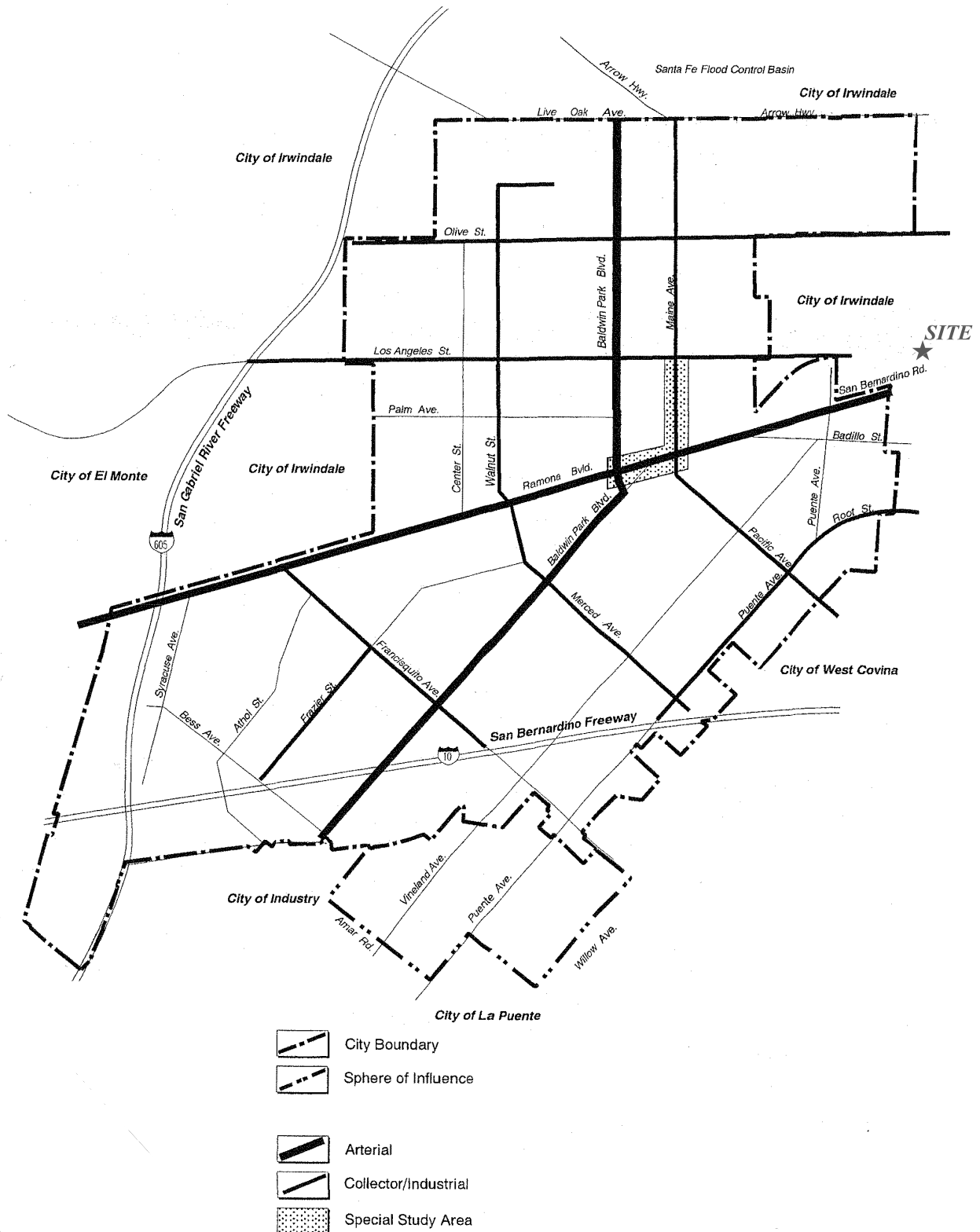
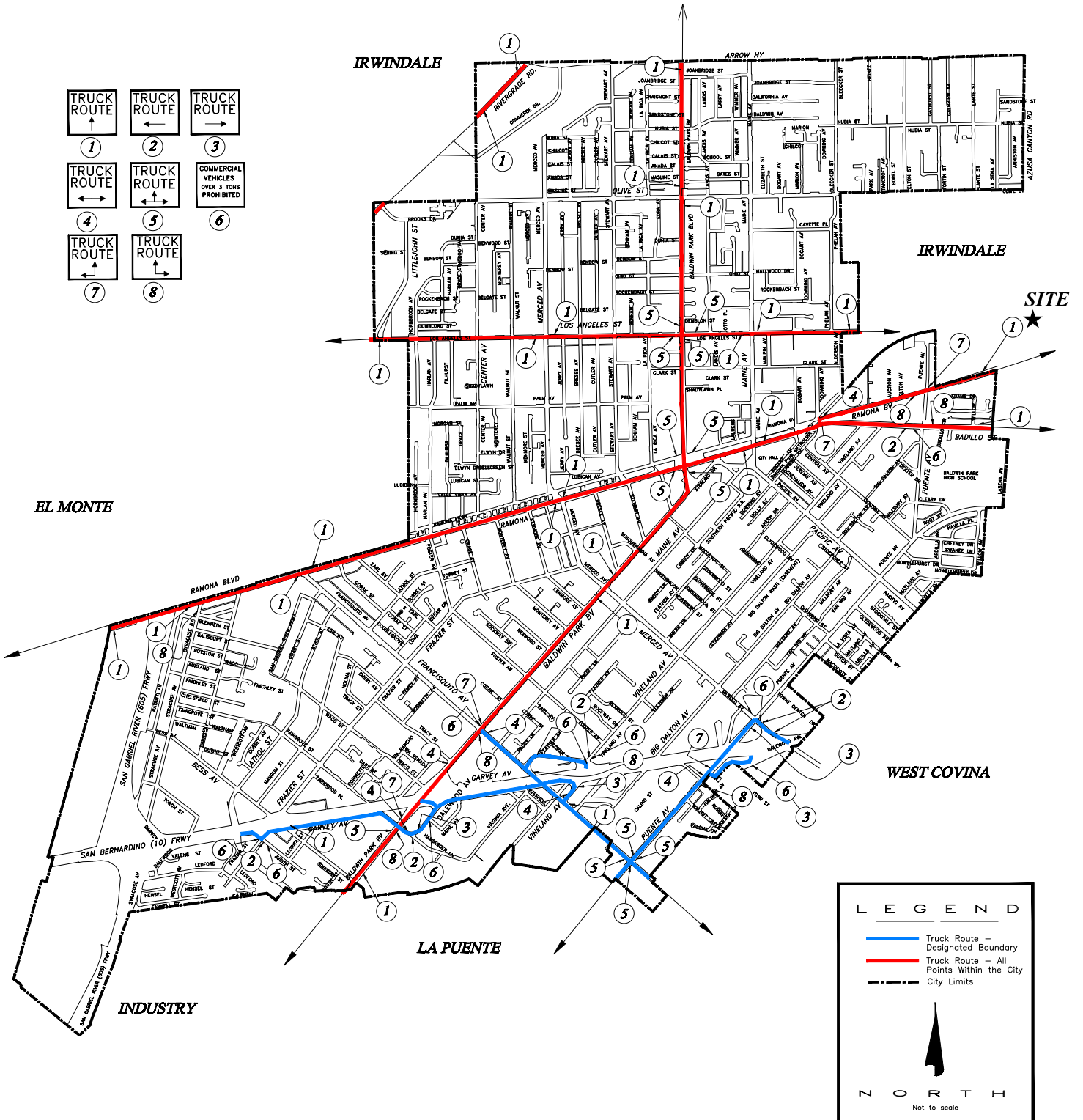


EXHIBIT 9: CITY OF BALDWIN PARK TRUCK ROUTES



ID	Intersection Location
1	Azusa Canyon Road / Cypress Street
2	Azusa Canyon Road / Los Angeles Street
3	Azusa Canyon Road / San Bernardino Road
4	Azusa Canyon Road / Arrow Highway
5	Azusa Canyon Road / Olive Street
6	Azusa Canyon Road / Driveway 1
7	Los Angeles Street / Driveway 2
8	Los Angeles Street / Driveway 3

CUMULATIVE DEVELOPMENT TRAFFIC

We request that City staff review the list of cumulative development projects (shown on Exhibit 10 and listed on Table 6) for inclusion in the traffic study. An ambient growth rate of 2% per year will be utilized as a minimum if necessary.

LEVEL OF SERVICE (LOS) CRITERIA

Per the City of Irwindale's General Plan, LOS D as the threshold for acceptable traffic conditions on the circulation network.

ANALYSIS METHODOLOGY

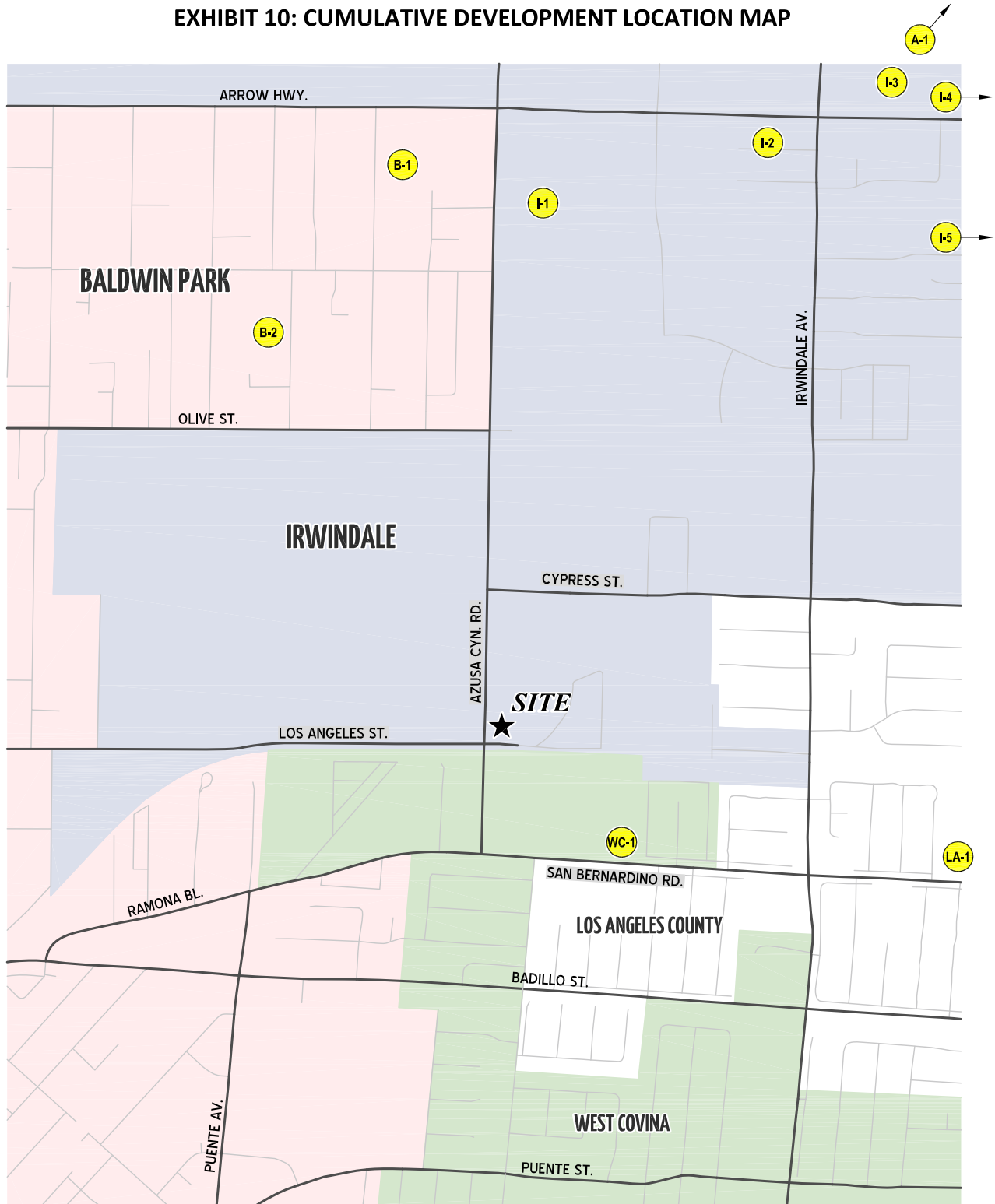
Analysis of signalized intersections will be based on the Intersection Capacity Utilization (ICU) methodology. The ICU methodology compares the traffic volumes using the intersection to the capacity of the intersection. The resulting ICU value represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic volumes if all approaches operate at capacity. ICU values are equated to level of service (LOS) in order to qualitatively describe the performance of a roadway facility, ranging from LOS A (free-flow conditions) to LOS F (extreme congestion).

For all study area signalized intersections, ICU analysis will be performed using the Synchro 11 software. It should be noted that the Synchro v/c output results are discussed in the City of Irwindale Policy Guidelines for Traffic Impact Reports under Section B (page insert) and indicated that the v/c ratio results in the Synchro are based on ICU and should be presented in addition to delay information. Therefore, consistent with the City's guidelines, both the Synchro v/c ratio (ICU) and delay results will be presented in the report.

The ICU analysis uses the following parameters: 1,600 vehicles per hour per lane for through and turn lanes, 2,880 vehicles per hour for dual left-turn lanes, and a total yellow clearance allocation of 10 percent.

The intersection delay methodology used to assess the performance of unsignalized intersections is based on the procedures contained in the Highway Capacity Manual (Transportation Research Board,

EXHIBIT 10: CUMULATIVE DEVELOPMENT LOCATION MAP



LEGEND:

- # CUMULATIVE DEVELOPMENT PROJECTS (TRAFFIC ANALYSIS ZONE ID)



TABLE 6: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

ID	Project Name	Land Use ¹	Quantity	Units ²
CITY OF IRWINDALE				
I-1	5010 Azusa Cyn. Rd.	General Light Industrial	233.987	TSF
I-2	Wendy's	Fast-Food Restaurant	2.300	TSF
I-3	Panattoni Industrial - 1200 Arrow Hwy	Industrial Park	130.366	TSF
I-4	Arrow Highway Business Park	Warehousing	138.410	TSF
I-5	Vincent Avenue Industrial Building	Industrial Park	545.735	TSF
CITY OF BALDWIN PARK				
B-1	5115 Azusa Canyon Road Warehouse	Industrial Park	90.00	TSF
B-2	4923 Fortin Street	SFDR	15	DU
CITY OF WEST COVINA				
WC-1	1611 & 1623 San Bernardino Rd.	Condominium	24	DU
CITY OF AZUSA				
A-1	Crow Holdings Industrial	Industrial Park	146.0	TSF
COUNTY OF LOS ANGELES				
LA-1	Griswold Residential - 16209 San Bernardino Rd.	SFDR	68	DU

¹ SFDR = Single Family Detached Residential² DU = Dwelling Units; TSF = Thousand Square Feet

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6th Edition). The delay methodology considers the traffic volume and distribution of movements, traffic composition, and geometric characteristics 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 stop sign) and includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay.

HYPOTHETICAL “NON-COVID” 2021 VOLUME ESTIMATES

Peak period turning movement counts were conducted in May 2014 at the Azusa Canyon Road / Cypress Street (#1), Azusa Canyon Road / Los Angeles Street (#2), Azusa Canyon Road / Arrow Highway (#4), and Azusa Canyon Road / Olive Street (#5) intersections. Daily counts were also conducted in May 2014 on Azusa Canyon Road, north of Los Angeles Street and Los Angeles Street, west of Azusa Canyon Road.

These 2014 counts will be adjusted by adding 7 years of background (ambient) growth at the rate of 2% per year, total of 14.9% compounded over a 7-year period in order to estimate hypothetical “non-COVID” 2021 conditions.

New traffic counts will also be collected in June 2021 during the following timeframes: 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM for the 5 existing intersection analysis locations (Azusa Canyon Road / Cypress Street, Azusa Canyon Road / Los Angeles Street, Azusa Canyon Road / Olive Street, and Azusa Canyon Road / Arrow Highway, and Azusa Canyon Road / San Bernardino Road). Due to the COVID-19 pandemic, these new 2021 peak hour counts may be lower than hypothetical non-COVID conditions.

Classified daily vehicle counts will be collected in June 2021 at Los Angeles Street west of Azusa Canyon Road, Azusa Canyon Road north of Los Angeles Street, and Azusa Canyon Road north of San Bernardino Street.

At the four intersection locations where 2014 counts are available, the June 2021 counts will be compared to the hypothetical “non-COVID” volume estimates (estimated using growth assumptions). If the hypothetical “non-COVID” volume estimates are higher than the June 2021 counts, then an adjustment factor will be determined. This adjustment factor will then be applied to the June 2021 intersection counts at all three of the analysis locations. A similar process will be applied to the daily traffic counts.

Traffic signal warrants will be evaluated at the intersection of Azusa Canyon Road/Los Angeles Street (#2) for all analysis scenarios.

HORIZON YEAR (2040) TRAFFIC PROJECTIONS

Horizon Year Without Project traffic conditions will include an ambient traffic growth factor of 10.6% based on the growth factors provided in LA County Congestion Management Program (CMP) for Regional Statistical Area (RSA) 26. The CMP indicates that 1.106 is an appropriate factor for volume increases between 2010 and 2035 (25 years). The proposed forecast year of 2040 is 19 years away, so implementing the 10.6% growth factor is a reasonable representation of potential future growth.

Mr. Daniel Co
City of Irwindale
June 15, 2021

Cumulative project data is requested for nearby developments that could affect the study intersections, to be added on top of the ambient growth.

VEHICLE MILES TRAVELED (VMT)

A VMT screening assessment will be prepared under separate cover in accordance with SB743 and consistent with the methodology and thresholds outlined in the County of Los Angeles July 2020 VMT methodology guidelines.

The County of Los Angeles Guidelines require VMT analysis for development projects that are estimated to generate a net increase of 110 or more daily vehicle trips. Daily vehicle trips are specifically related to on-road passenger vehicles (cars and light trucks). Heavy trucks are not included in a VMT traffic impact analysis.

The passenger car trip generation for the proposed Project is 197 daily trips (see Table 1), but the existing baseline site land use passenger car estimated trip generation is 88 daily trips (see Table 3). The net proposed Project passenger car trip generation is therefore 109 vehicles per day, which is less than the 110 vehicles per day that would require further VMT analysis.

SAFETY ASSESSMENT

Review of site safe design will be performed for traffic-specific issues identified in this scoping section. A qualitative review of on-site traffic circulation will be performed. Emergency vehicle access will be reviewed. The Project site plan will be reviewed for an increase in (1) potential hazards due to design features such as sharp curves or dangerous intersections or (2) incompatible uses such as farm equipment. The potential for the Project to adversely affect pedestrian safety and the adequacy of nearby pedestrian facilities will be reviewed.

Please review this scoping agreement and let us know if it is acceptable, or if the City requests any changes to this proposed scope of work. If you have any questions, please contact John Kain at (949) 375-2435 or Marlie Whiteman at (714) 585-0574.

Respectfully submitted,

URBAN CROSSROADS, INC.



John Kain, AICP
Principal



Marlie Whiteman, PE
Senior Associate

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APPENDIX 3.1:

TRAFFIC COUNTS

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City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

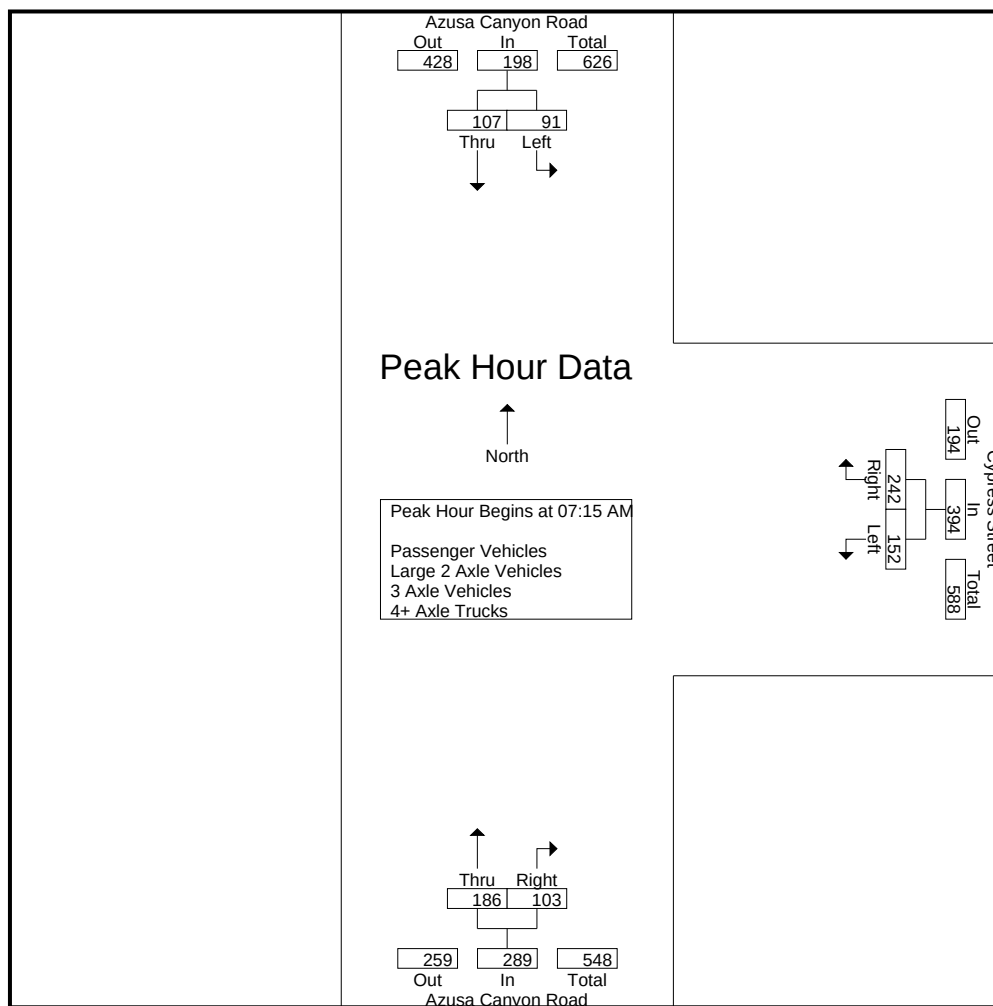
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	13	22	35	33	66	99	38	17	55	189
07:15 AM	20	28	48	39	58	97	58	18	76	221
07:30 AM	33	21	54	47	50	97	40	32	72	223
07:45 AM	21	32	53	40	80	120	46	27	73	246
Total	87	103	190	159	254	413	182	94	276	879
08:00 AM	17	26	43	26	54	80	42	26	68	191
08:15 AM	18	33	51	34	47	81	49	26	75	207
08:30 AM	16	34	50	28	33	61	40	20	60	171
08:45 AM	27	37	64	26	22	48	46	30	76	188
Total	78	130	208	114	156	270	177	102	279	757
Grand Total	165	233	398	273	410	683	359	196	555	1636
Apprch %	41.5	58.5		40	60		64.7	35.3		
Total %	10.1	14.2	24.3	16.7	25.1	41.7	21.9	12	33.9	
Passenger Vehicles	158	192	350	267	401	668	340	183	523	1541
% Passenger Vehicles	95.8	82.4	87.9	97.8	97.8	97.8	94.7	93.4	94.2	94.2
Large 2 Axle Vehicles	3	12	15	6	7	13	9	11	20	48
% Large 2 Axle Vehicles	1.8	5.2	3.8	2.2	1.7	1.9	2.5	5.6	3.6	2.9
3 Axle Vehicles	1	2	3	0	0	0	6	0	6	9
% 3 Axle Vehicles	0.6	0.9	0.8	0	0	0	1.7	0	1.1	0.6
4+ Axle Trucks	3	27	30	0	2	2	4	2	6	38
% 4+ Axle Trucks	1.8	11.6	7.5	0	0.5	0.3	1.1	1	1.1	2.3

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. 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	20	28	48	39	58	97	58	18	76	221
07:30 AM	33	21	54	47	50	97	40	32	72	223
07:45 AM	21	32	53	40	80	120	46	27	73	246
08:00 AM	17	26	43	26	54	80	42	26	68	191
Total Volume	91	107	198	152	242	394	186	103	289	881
% App. Total	46	54		38.6	61.4		64.4	35.6		
PHF	.689	.836	.917	.809	.756	.821	.802	.805	.951	.895

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 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			07:00 AM			07:15 AM		
+0 mins.	17	26	43	33	66	99	58	18	76
+15 mins.	18	33	51	39	58	97	40	32	72
+30 mins.	16	34	50	47	50	97	46	27	73
+45 mins.	27	37	64	40	80	120	42	26	68
Total Volume	78	130	208	159	254	413	186	103	289
% App. Total	37.5	62.5		38.5	61.5		64.4	35.6	
PHF	.722	.878	.813	.846	.794	.860	.802	.805	.951

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

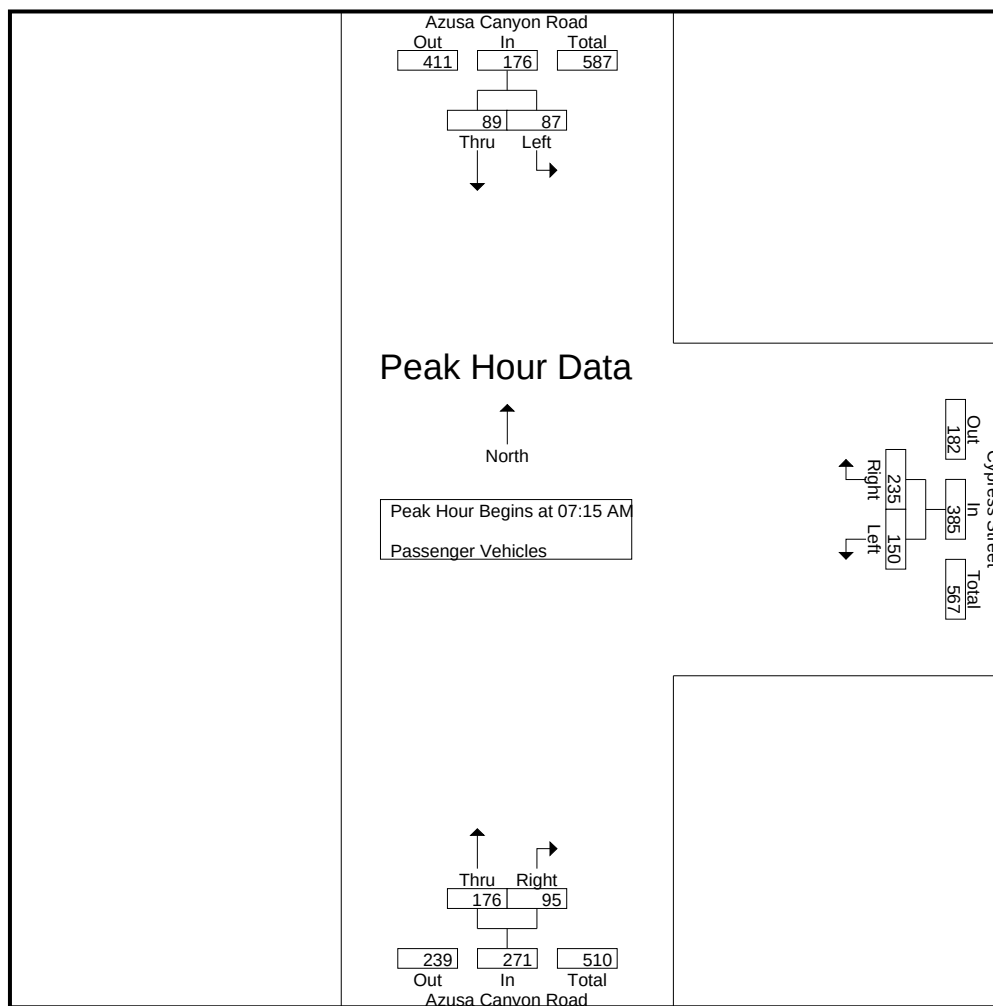
Groups Printed- Passenger Vehicles

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	12	19	31	31	64	95	38	16	54	180
07:15 AM	20	27	47	38	57	95	53	17	70	212
07:30 AM	32	17	49	47	48	95	38	30	68	212
07:45 AM	20	23	43	40	78	118	45	25	70	231
Total	84	86	170	156	247	403	174	88	262	835
08:00 AM	15	22	37	25	52	77	40	23	63	177
08:15 AM	18	22	40	32	47	79	44	23	67	186
08:30 AM	15	29	44	28	33	61	38	20	58	163
08:45 AM	26	33	59	26	22	48	44	29	73	180
Total	74	106	180	111	154	265	166	95	261	706
Grand Total	158	192	350	267	401	668	340	183	523	1541
Apprch %	45.1	54.9		40	60		65	35		
Total %	10.3	12.5	22.7	17.3	26	43.3	22.1	11.9	33.9	

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	20	27	47	38	57	95	53	17	70	212
07:30 AM	32	17	49	47	48	95	38	30	68	212
07:45 AM	20	23	43	40	78	118	45	25	70	231
08:00 AM	15	22	37	25	52	77	40	23	63	177
Total Volume	87	89	176	150	235	385	176	95	271	832
% App. Total	49.4	50.6		39	61		64.9	35.1		
PHF	.680	.824	.898	.798	.753	.816	.830	.792	.968	.900

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	20	27	47	38	57	95	53	17	70
+15 mins.	32	17	49	47	48	95	38	30	68
+30 mins.	20	23	43	40	78	118	45	25	70
+45 mins.	15	22	37	25	52	77	40	23	63
Total Volume	87	89	176	150	235	385	176	95	271
% App. Total	49.4	50.6		39	61		64.9	35.1	
PHF	.680	.824	.898	.798	.753	.816	.830	.792	.968

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

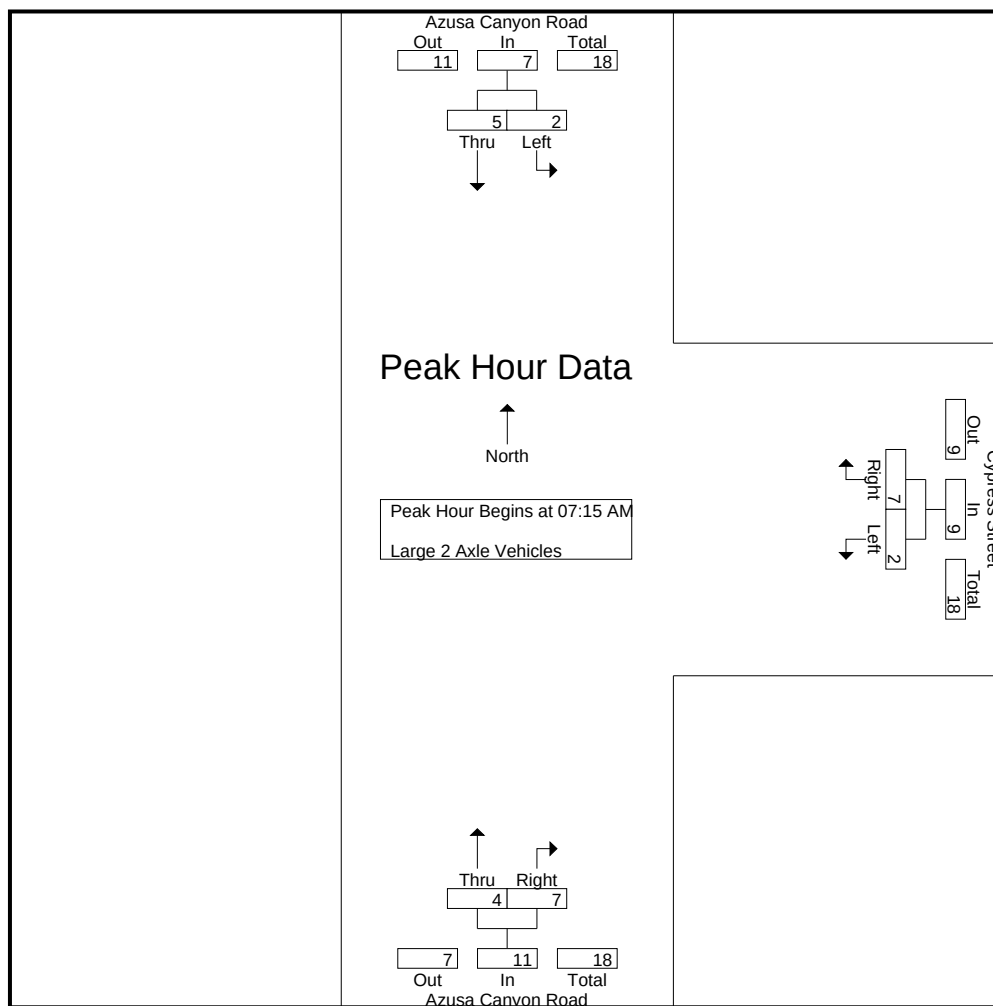
Groups Printed- Large 2 Axle Vehicles

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	1	2	0	2	0	1	1	4
07:15 AM	0	0	0	1	1	2	2	1	3	5
07:30 AM	1	2	3	0	2	2	1	2	3	8
07:45 AM	1	2	3	0	2	2	0	2	2	7
Total	2	5	7	3	5	8	3	6	9	24
08:00 AM	0	1	1	1	2	3	1	2	3	7
08:15 AM	0	0	0	2	0	2	3	2	5	7
08:30 AM	1	3	4	0	0	0	1	0	1	5
08:45 AM	0	3	3	0	0	0	1	1	2	5
Total	1	7	8	3	2	5	6	5	11	24
Grand Total	3	12	15	6	7	13	9	11	20	48
Apprch %	20	80		46.2	53.8		45	55		
Total %	6.2	25	31.2	12.5	14.6	27.1	18.8	22.9	41.7	

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	1	1	2	2	1	3	5
07:30 AM	1	2	3	0	2	2	1	2	3	8
07:45 AM	1	2	3	0	2	2	0	2	2	7
08:00 AM	0	1	1	1	2	3	1	2	3	7
Total Volume	2	5	7	2	7	9	4	7	11	27
% App. Total	28.6	71.4		22.2	77.8		36.4	63.6		
PHF	.500	.625	.583	.500	.875	.750	.500	.875	.917	.844

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	0	0	0	1	1	2	2	1	3
+15 mins.	1	2	3	0	2	2	1	2	3
+30 mins.	1	2	3	0	2	2	0	2	2
+45 mins.	0	1	1	1	2	3	1	2	3
Total Volume	2	5	7	2	7	9	4	7	11
% App. Total	28.6	71.4		22.2	77.8		36.4	63.6	
PHF	.500	.625	.583	.500	.875	.750	.500	.875	.917

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

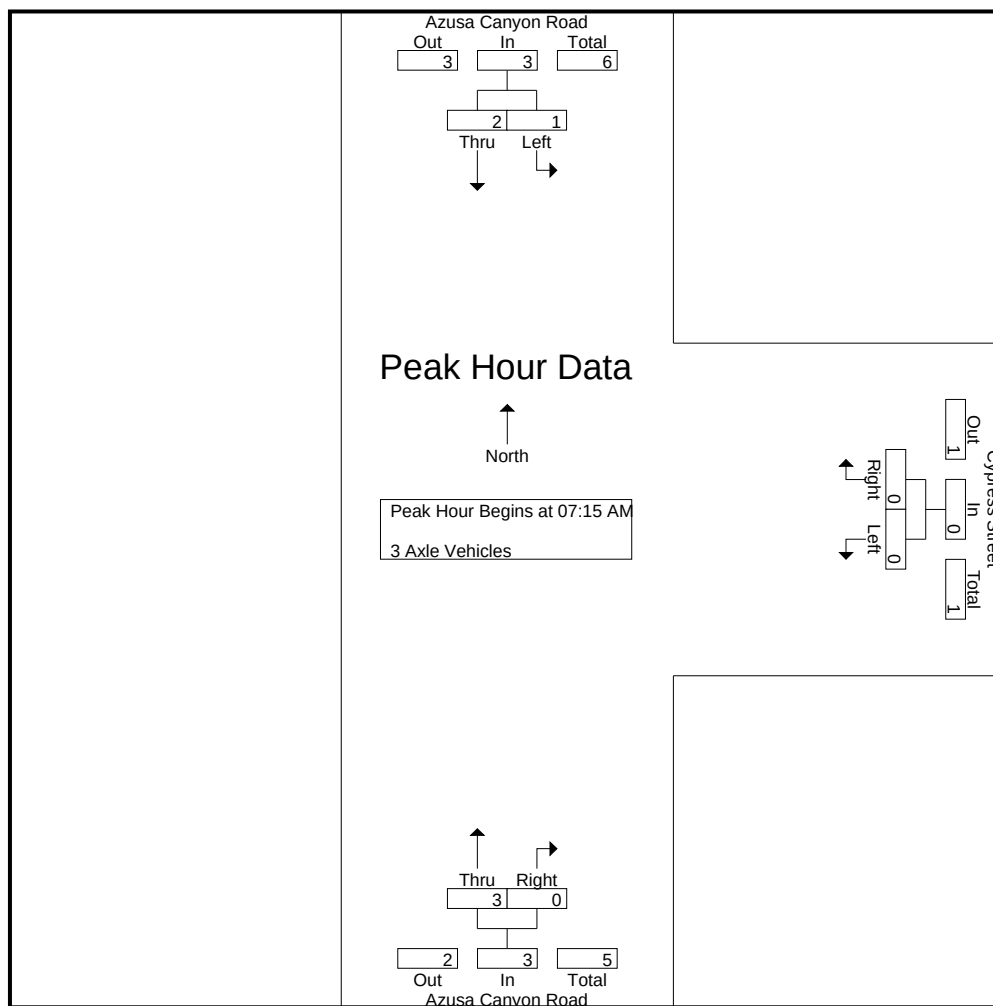
Groups Printed- 3 Axle Vehicles

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	1	0	1	2
07:30 AM	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	1	1	0	0	0	0	0	0	1
Total	0	2	2	0	0	0	2	0	2	4
08:00 AM	1	0	1	0	0	0	1	0	1	2
08:15 AM	0	0	0	0	0	0	2	0	2	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	1	0	1	1
Total	1	0	1	0	0	0	4	0	4	5
Grand Total	1	2	3	0	0	0	6	0	6	9
Apprch %	33.3	66.7		0	0		100	0		
Total %	11.1	22.2	33.3	0	0	0	66.7	0	66.7	

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	1	1	0	0	0	1	0	1	2
07:30 AM	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	1	1	0	0	0	0	0	0	1
08:00 AM	1	0	1	0	0	0	1	0	1	2
Total Volume	1	2	3	0	0	0	3	0	3	6
% App. Total	33.3	66.7		0	0		100	0		
PHF	.250	.500	.750	.000	.000	.000	.750	.000	.750	.750

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	0	1	1	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	1	0	1
+30 mins.	0	1	1	0	0	0	0	0	0
+45 mins.	1	0	1	0	0	0	1	0	1
Total Volume	1	2	3	0	0	0	3	0	3
% App. Total	33.3	66.7		0	0		100	0	
PHF	.250	.500	.750	.000	.000	.000	.750	.000	.750

City of Irwindale
N/S: Azusa Canyon Road
E/W: Cypress Street
Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

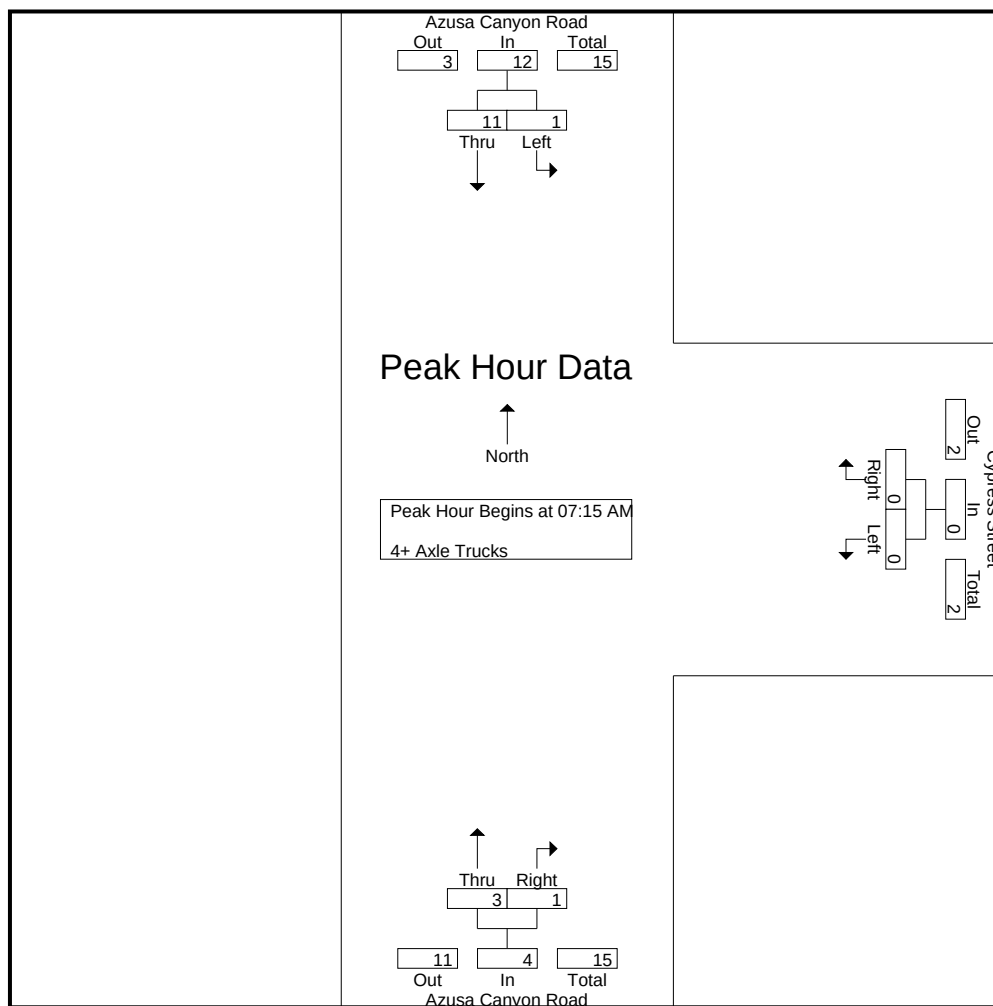
Groups Printed- 4+ Axle Trucks

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	1	2	3	0	2	2	0	0	0	5
07:15 AM	0	0	0	0	0	0	2	0	2	2
07:30 AM	0	2	2	0	0	0	0	0	0	2
07:45 AM	0	6	6	0	0	0	1	0	1	7
Total	1	10	11	0	2	2	3	0	3	16
08:00 AM	1	3	4	0	0	0	0	1	1	5
08:15 AM	0	11	11	0	0	0	0	1	1	12
08:30 AM	0	2	2	0	0	0	1	0	1	3
08:45 AM	1	1	2	0	0	0	0	0	0	2
Total	2	17	19	0	0	0	1	2	3	22
Grand Total	3	27	30	0	2	2	4	2	6	38
Apprch %	10	90		0	100		66.7	33.3		
Total %	7.9	71.1	78.9	0	5.3	5.3	10.5	5.3	15.8	

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	0	0	0	2	0	2	2
07:30 AM	0	2	2	0	0	0	0	0	0	2
07:45 AM	0	6	6	0	0	0	1	0	1	7
08:00 AM	1	3	4	0	0	0	0	1	1	5
Total Volume	1	11	12	0	0	0	3	1	4	16
% App. Total	8.3	91.7		0	0		75	25		
PHF	.250	.458	.500	.000	.000	.000	.375	.250	.500	.571

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	0	0	0	0	0	0	2	0	2
+15 mins.	0	2	2	0	0	0	0	0	0
+30 mins.	0	6	6	0	0	0	1	0	1
+45 mins.	1	3	4	0	0	0	0	1	1
Total Volume	1	11	12	0	0	0	3	1	4
% App. Total	8.3	91.7		0	0		75	25	
PHF	.250	.458	.500	.000	.000	.000	.375	.250	.500

City of Irwindale
N/S: Azusa Canyon Road
E/W: Cypress Street
Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

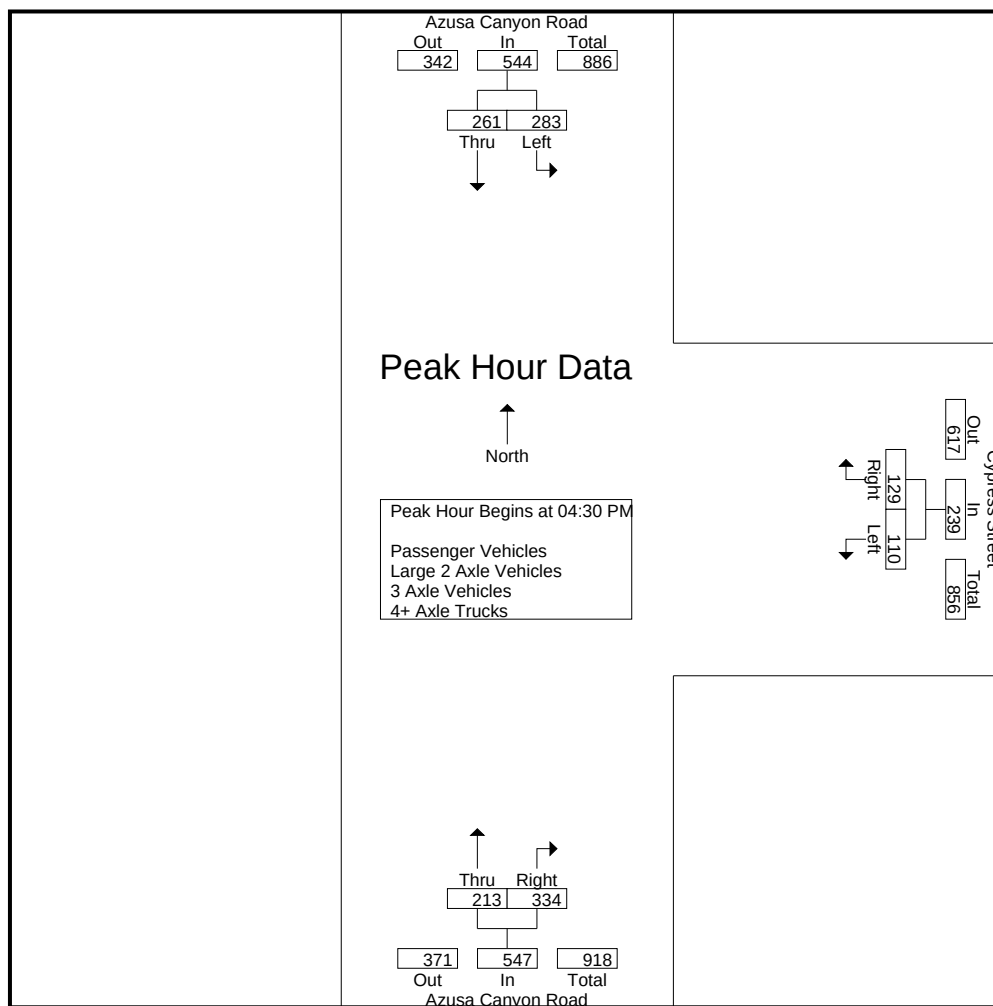
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	65	66	131	20	19	39	44	69	113	283
04:15 PM	61	68	129	28	32	60	54	87	141	330
04:30 PM	72	55	127	26	29	55	55	95	150	332
04:45 PM	66	69	135	26	27	53	53	81	134	322
Total	264	258	522	100	107	207	206	332	538	1267
05:00 PM	72	75	147	24	32	56	46	78	124	327
05:15 PM	73	62	135	34	41	75	59	80	139	349
05:30 PM	76	71	147	22	40	62	49	70	119	328
05:45 PM	49	55	104	29	25	54	37	77	114	272
Total	270	263	533	109	138	247	191	305	496	1276
Grand Total	534	521	1055	209	245	454	397	637	1034	2543
Apprch %	50.6	49.4		46	54		38.4	61.6		
Total %	21	20.5	41.5	8.2	9.6	17.9	15.6	25	40.7	
Passenger Vehicles	526	509	1035	197	240	437	389	624	1013	2485
% Passenger Vehicles	98.5	97.7	98.1	94.3	98	96.3	98	98	98	97.7
Large 2 Axle Vehicles	4	10	14	9	5	14	5	10	15	43
% Large 2 Axle Vehicles	0.7	1.9	1.3	4.3	2	3.1	1.3	1.6	1.5	1.7
3 Axle Vehicles	2	2	4	1	0	1	2	3	5	10
% 3 Axle Vehicles	0.4	0.4	0.4	0.5	0	0.2	0.5	0.5	0.5	0.4
4+ Axle Trucks	2	0	2	2	0	2	1	0	1	5
% 4+ Axle Trucks	0.4	0	0.2	1	0	0.4	0.3	0	0.1	0.2

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. 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	72	55	127	26	29	55	55	95	150	332
04:45 PM	66	69	135	26	27	53	53	81	134	322
05:00 PM	72	75	147	24	32	56	46	78	124	327
05:15 PM	73	62	135	34	41	75	59	80	139	349
Total Volume	283	261	544	110	129	239	213	334	547	1330
% App. Total	52	48		46	54		38.9	61.1		
PHF	.969	.870	.925	.809	.787	.797	.903	.879	.912	.953

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 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			05:00 PM			04:15 PM		
+0 mins.	66	69	135	24	32	56	54	87	141
+15 mins.	72	75	147	34	41	75	55	95	150
+30 mins.	73	62	135	22	40	62	53	81	134
+45 mins.	76	71	147	29	25	54	46	78	124
Total Volume	287	277	564	109	138	247	208	341	549
% App. Total	50.9	49.1		44.1	55.9		37.9	62.1	
PHF	.944	.923	.959	.801	.841	.823	.945	.897	.915

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

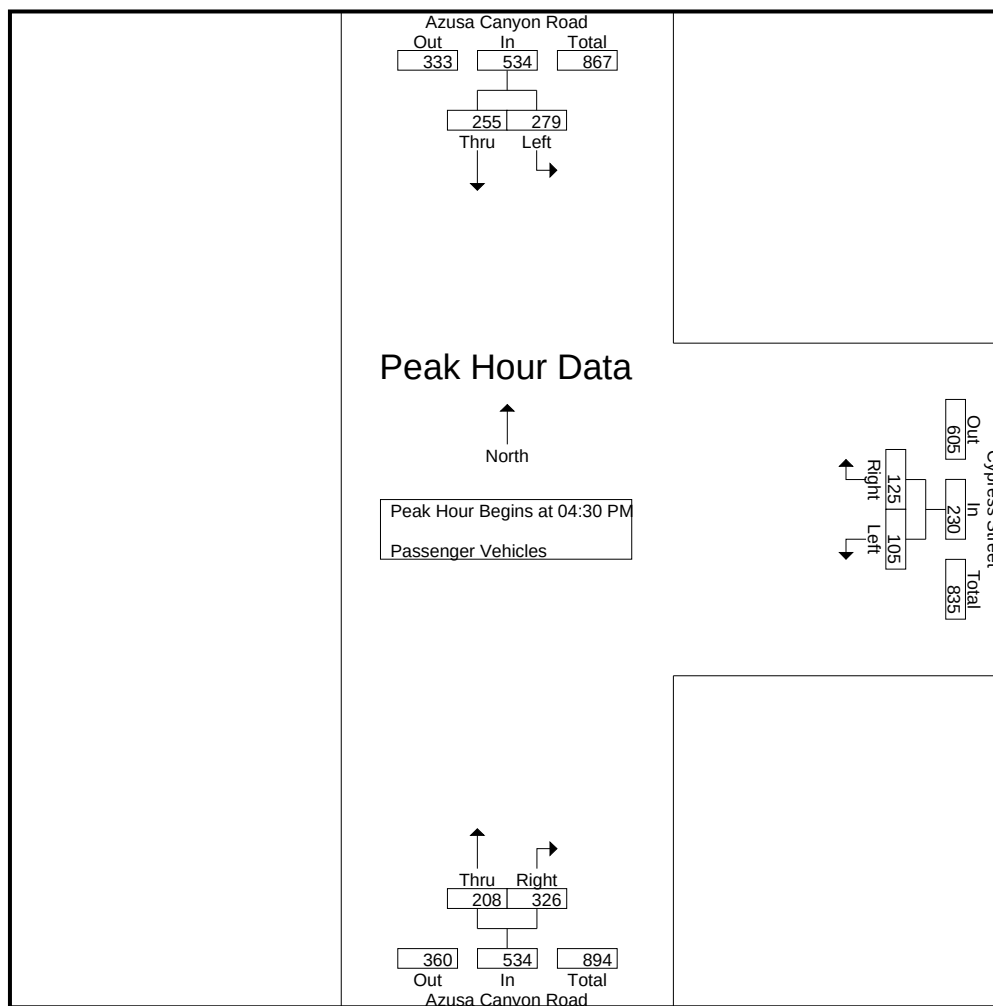
Groups Printed- Passenger Vehicles

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	64	63	127	18	19	37	43	69	112	276
04:15 PM	60	67	127	24	32	56	53	85	138	321
04:30 PM	71	54	125	25	28	53	53	94	147	325
04:45 PM	63	69	132	25	25	50	53	78	131	313
Total	258	253	511	92	104	196	202	326	528	1235
05:00 PM	72	74	146	24	32	56	45	77	122	324
05:15 PM	73	58	131	31	40	71	57	77	134	336
05:30 PM	76	70	146	21	39	60	49	67	116	322
05:45 PM	47	54	101	29	25	54	36	77	113	268
Total	268	256	524	105	136	241	187	298	485	1250
Grand Total	526	509	1035	197	240	437	389	624	1013	2485
Apprch %	50.8	49.2		45.1	54.9		38.4	61.6		
Total %	21.2	20.5	41.6	7.9	9.7	17.6	15.7	25.1	40.8	

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	71	54	125	25	28	53	53	94	147	325
04:45 PM	63	69	132	25	25	50	53	78	131	313
05:00 PM	72	74	146	24	32	56	45	77	122	324
05:15 PM	73	58	131	31	40	71	57	77	134	336
Total Volume	279	255	534	105	125	230	208	326	534	1298
% App. Total	52.2	47.8		45.7	54.3		39	61		
PHF	.955	.861	.914	.847	.781	.810	.912	.867	.908	.966

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	71	54	125	25	28	53	53	94	147
+15 mins.	63	69	132	25	25	50	53	78	131
+30 mins.	72	74	146	24	32	56	45	77	122
+45 mins.	73	58	131	31	40	71	57	77	134
Total Volume	279	255	534	105	125	230	208	326	534
% App. Total	52.2	47.8		45.7	54.3		39	61	
PHF	.955	.861	.914	.847	.781	.810	.912	.867	.908

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

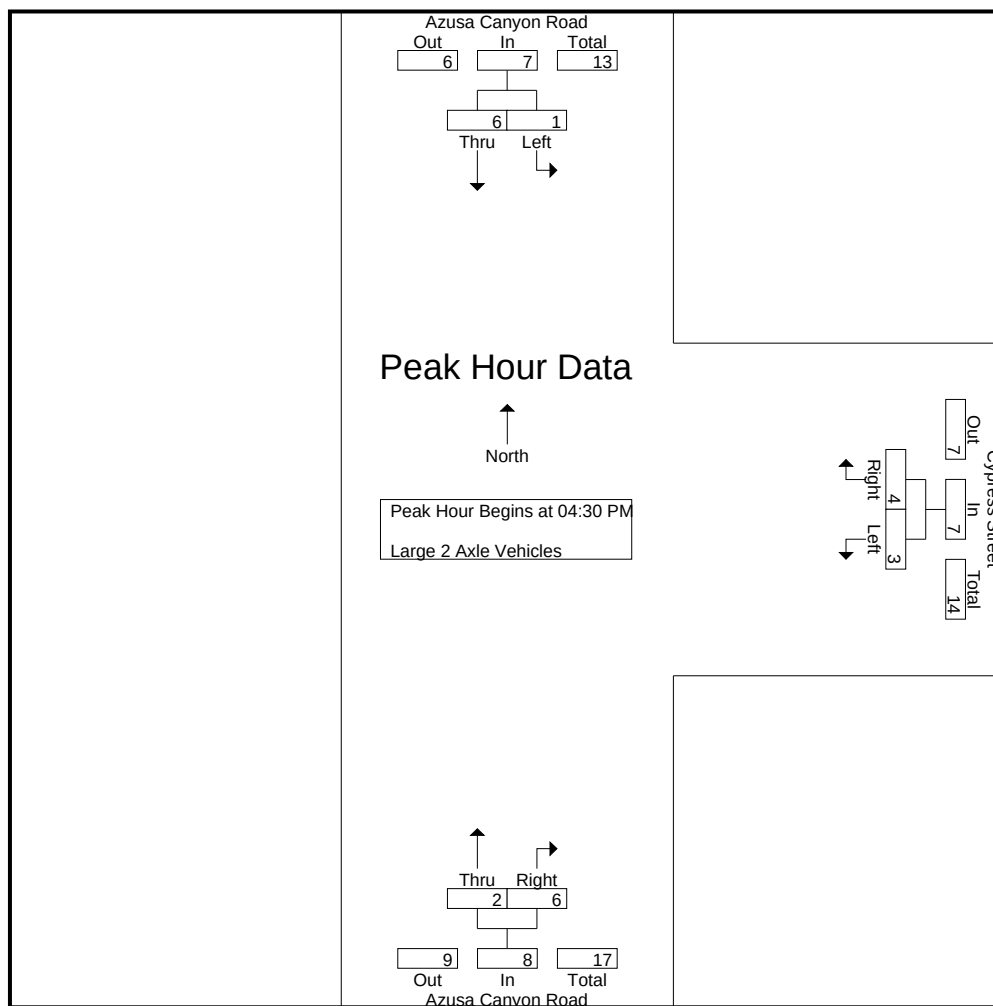
Groups Printed- Large 2 Axle Vehicles

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	1	3	4	2	0	2	1	0	1	7
04:15 PM	0	1	1	3	0	3	1	2	3	7
04:30 PM	0	1	1	1	1	2	1	1	2	5
04:45 PM	1	0	1	0	2	2	0	2	2	5
Total	2	5	7	6	3	9	3	5	8	24
05:00 PM	0	1	1	0	0	0	1	1	2	3
05:15 PM	0	4	4	2	1	3	0	2	2	9
05:30 PM	0	0	0	1	1	2	0	2	2	4
05:45 PM	2	0	2	0	0	0	1	0	1	3
Total	2	5	7	3	2	5	2	5	7	19
Grand Total	4	10	14	9	5	14	5	10	15	43
Apprch %	28.6	71.4		64.3	35.7		33.3	66.7		
Total %	9.3	23.3	32.6	20.9	11.6	32.6	11.6	23.3	34.9	

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	0	1	1	1	1	2	1	1	2	5
04:45 PM	1	0	1	0	2	2	0	2	2	5
05:00 PM	0	1	1	0	0	0	1	1	2	3
05:15 PM	0	4	4	2	1	3	0	2	2	9
Total Volume	1	6	7	3	4	7	2	6	8	22
% App. Total	14.3	85.7		42.9	57.1		25	75		
PHF	.250	.375	.438	.375	.500	.583	.500	.750	1.00	.611

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	0	1	1	1	1	2	1	1	2
+15 mins.	1	0	1	0	2	2	0	2	2
+30 mins.	0	1	1	0	0	0	1	1	2
+45 mins.	0	4	4	2	1	3	0	2	2
Total Volume	1	6	7	3	4	7	2	6	8
% App. Total	14.3	85.7		42.9	57.1		25	75	
PHF	.250	.375	.438	.375	.500	.583	.500	.750	1.000

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

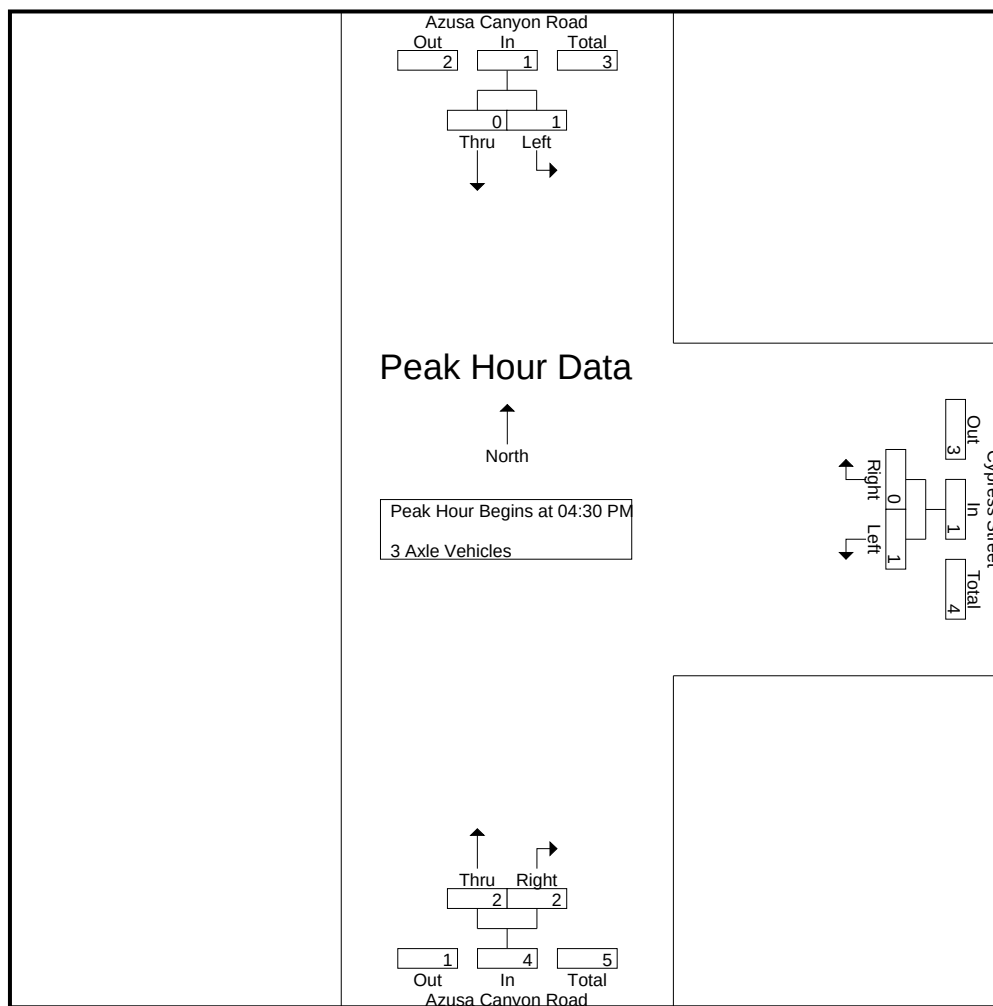
Groups Printed- 3 Axle Vehicles

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	1	0	1	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	1	0	1	1	0	1	0	1	1	3
Total	2	0	2	1	0	1	0	1	1	4
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	2	1	3	3
05:30 PM	0	1	1	0	0	0	0	1	1	2
05:45 PM	0	1	1	0	0	0	0	0	0	1
Total	0	2	2	0	0	0	2	2	4	6
Grand Total	2	2	4	1	0	1	2	3	5	10
Apprch %	50	50		100	0		40	60		
Total %	20	20	40	10	0	10	20	30	50	

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	1	0	1	1	0	1	0	1	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	2	1	3	3
Total Volume	1	0	1	1	0	1	2	2	4	6
% App. Total	100	0		100	0		50	50		
PHF	.250	.000	.250	.250	.000	.250	.250	.500	.333	.500

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	1	0	1	1	0	1	0	1	1
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	2	1	3
Total Volume	1	0	1	1	0	1	2	2	4
% App. Total	100	0		100	0		50	50	
PHF	.250	.000	.250	.250	.000	.250	.250	.500	.333

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

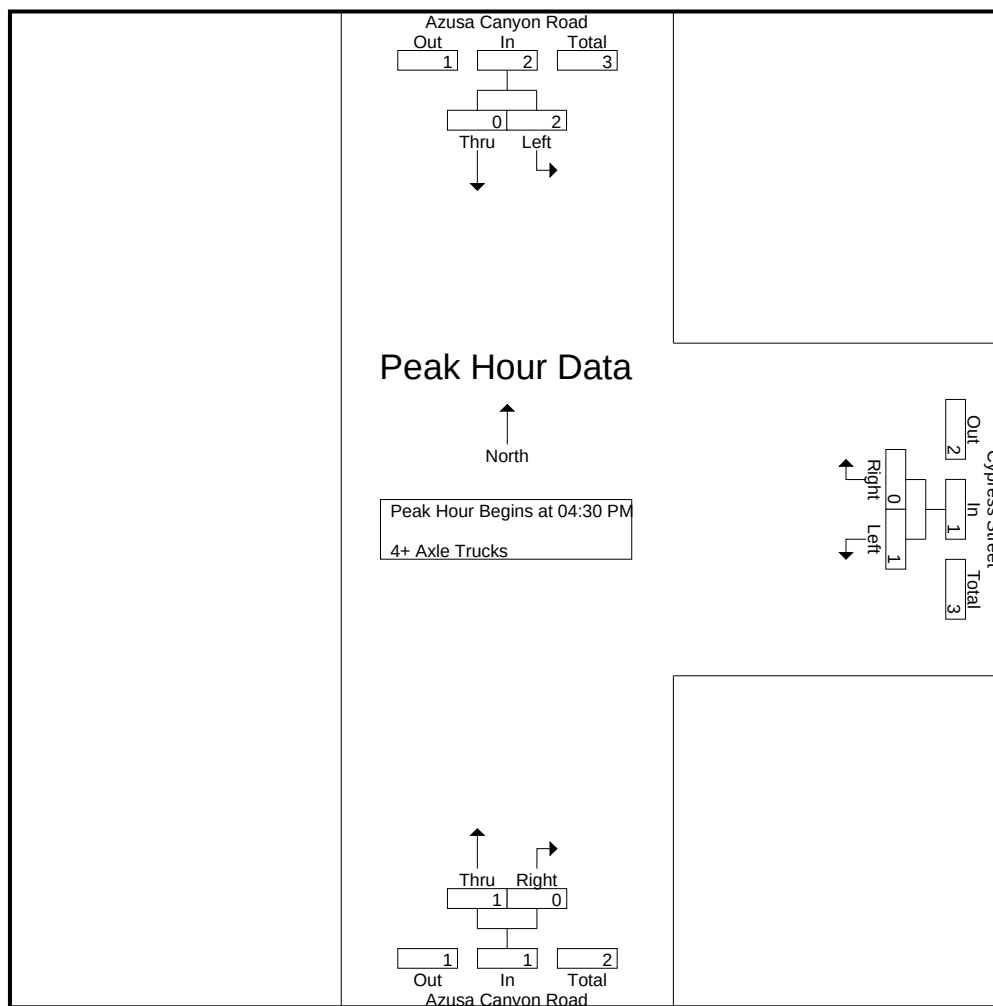
Groups Printed- 4+ Axle Trucks

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	1	0	1	0	0	0	1
04:30 PM	1	0	1	0	0	0	1	0	1	2
04:45 PM	1	0	1	0	0	0	0	0	0	1
Total	2	0	2	1	0	1	1	0	1	4
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	1	0	1	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	1	0	0	0	1
Grand Total	2	0	2	2	0	2	1	0	1	5
Apprch %	100	0		100	0		100	0		
Total %	40	0	40	40	0	40	20	0	20	

	Azusa Canyon Road Southbound			Cypress Street Westbound			Azusa Canyon Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	1	0	1	0	0	0	1	0	1	2
04:45 PM	1	0	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	1	0	1	0	0	0	1
Total Volume	2	0	2	1	0	1	1	0	1	4
% App. Total	100	0		100	0		100	0		
PHF	.500	.000	.500	.250	.000	.250	.250	.000	.250	.500

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Cypress Street
 Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	1	0	1	0	0	0	1	0	1
+15 mins.	1	0	1	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	1	0	1	0	0	0
Total Volume	2	0	2	1	0	1	1	0	1
% App. Total	100	0		100	0		100	0	
PHF	.500	.000	.500	.250	.000	.250	.250	.000	.250

City of Irwindale
N/S: Azusa Canyon Road
E/W: Los Angeles Street
Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

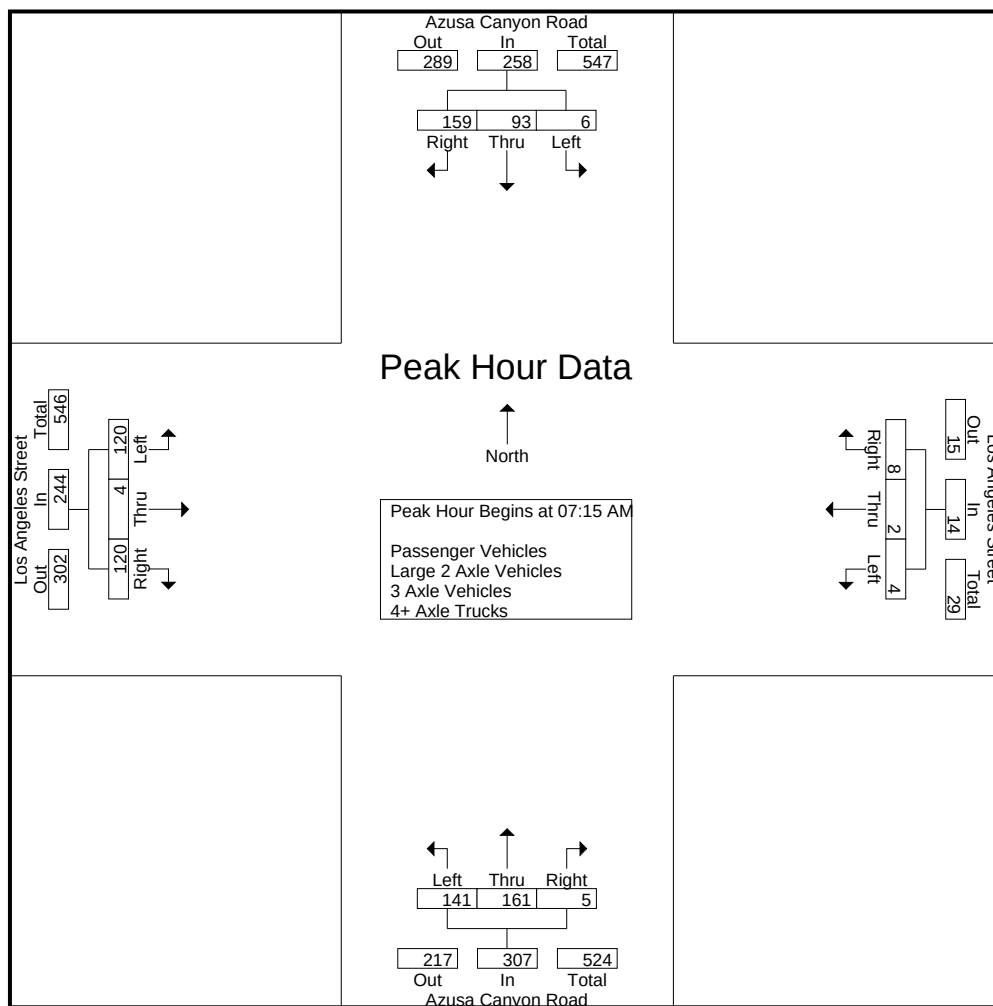
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	19	32	54	0	0	1	1	26	32	1	59	19	0	16	35	149
07:15 AM	1	26	39	66	0	0	2	2	37	43	0	80	29	2	26	57	205
07:30 AM	1	19	48	68	1	0	1	2	30	39	3	72	36	1	33	70	212
07:45 AM	3	28	37	68	1	2	2	5	39	43	1	83	27	1	35	63	219
Total	8	92	156	256	2	2	6	10	132	157	5	294	111	4	110	225	785
08:00 AM	1	20	35	56	2	0	3	5	35	36	1	72	28	0	26	54	187
08:15 AM	1	25	38	64	0	0	2	2	30	49	2	81	25	0	27	52	199
08:30 AM	1	32	29	62	1	0	3	4	22	32	1	55	25	0	25	50	171
08:45 AM	1	33	27	61	0	0	0	0	35	39	1	75	36	0	29	65	201
Total	4	110	129	243	3	0	8	11	122	156	5	283	114	0	107	221	758
Grand Total	12	202	285	499	5	2	14	21	254	313	10	577	225	4	217	446	1543
Apprch %	2.4	40.5	57.1		23.8	9.5	66.7		44	54.2	1.7		50.4	0.9	48.7		
Total %	0.8	13.1	18.5	32.3	0.3	0.1	0.9	1.4	16.5	20.3	0.6	37.4	14.6	0.3	14.1	28.9	
Passenger Vehicles	8	190	258	456	5	0	7	12	247	300	10	557	211	3	212	426	1451
% Passenger Vehicles	66.7	94.1	90.5	91.4	100	0	50	57.1	97.2	95.8	100	96.5	93.8	75	97.7	95.5	94
Large 2 Axle Vehicles	3	7	3	13	0	2	4	6	5	8	0	13	11	0	5	16	48
% Large 2 Axle Vehicles	25	3.5	1.1	2.6	0	100	28.6	28.6	2	2.6	0	2.3	4.9	0	2.3	3.6	3.1
3 Axle Vehicles	0	2	1	3	0	0	0	0	1	4	0	5	2	0	0	2	10
% 3 Axle Vehicles	0	1	0.4	0.6	0	0	0	0	0.4	1.3	0	0.9	0.9	0	0	0.4	0.6
4+ Axle Trucks	1	3	23	27	0	0	3	3	1	1	0	2	1	1	0	2	34
% 4+ Axle Trucks	8.3	1.5	8.1	5.4	0	0	21.4	14.3	0.4	0.3	0	0.3	0.4	25	0	0.4	2.2

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	26	39	66	0	0	2	2	37	43	0	80	29	2	26	57	205
07:30 AM	1	19	48	68	1	0	1	2	30	39	3	72	36	1	33	70	212
07:45 AM	3	28	37	68	1	2	2	5	39	43	1	83	27	1	35	63	219
08:00 AM	1	20	35	56	2	0	3	5	35	36	1	72	28	0	26	54	187
Total Volume	6	93	159	258	4	2	8	14	141	161	5	307	120	4	120	244	823
% App. Total	2.3	36	61.6		28.6	14.3	57.1		45.9	52.4	1.6		49.2	1.6	49.2		
PHF	.500	.830	.828	.949	.500	.250	.667	.700	.904	.936	.417	.925	.833	.500	.857	.871	.939

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 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:

	07:15 AM				07:45 AM				07:30 AM				07:15 AM			
+0 mins.	1	26	39	66	1	2	2	5	30	39	3	72	29	2	26	57
+15 mins.	1	19	48	68	2	0	3	5	39	43	1	83	36	1	33	70
+30 mins.	3	28	37	68	0	0	2	2	35	36	1	72	27	1	35	63
+45 mins.	1	20	35	56	1	0	3	4	30	49	2	81	28	0	26	54
Total Volume	6	93	159	258	4	2	10	16	134	167	7	308	120	4	120	244
% App. Total	2.3	36	61.6		25	12.5	62.5		43.5	54.2	2.3		49.2	1.6	49.2	
PHF	.500	.830	.828	.949	.500	.250	.833	.800	.859	.852	.583	.928	.833	.500	.857	.871

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

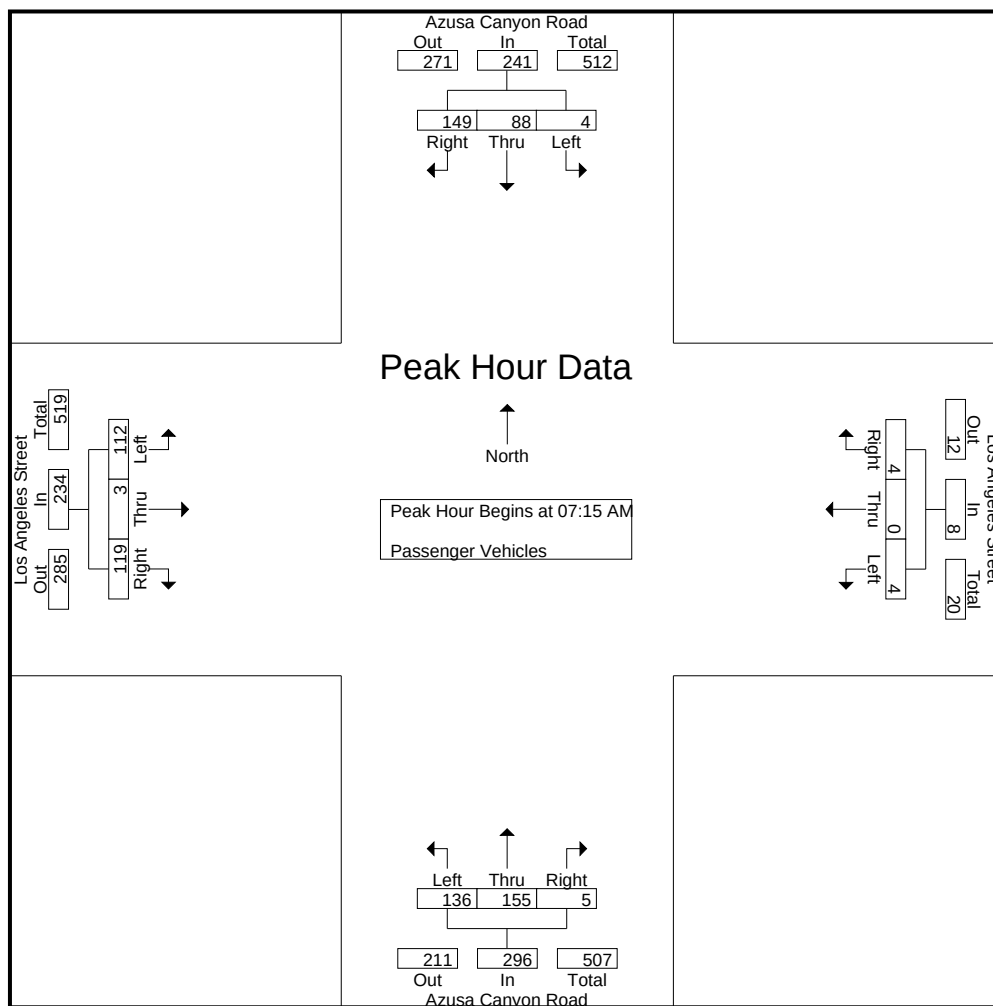
Groups Printed- Passenger Vehicles

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	18	30	49	0	0	1	1	26	32	1	59	18	0	15	33	142
07:15 AM	1	25	39	65	0	0	1	1	35	41	0	76	26	2	26	54	196
07:30 AM	1	17	46	64	1	0	0	1	30	37	3	70	35	1	33	69	204
07:45 AM	2	27	33	62	1	0	1	2	38	43	1	82	26	0	34	60	206
Total	5	87	148	240	2	0	3	5	129	153	5	287	105	3	108	216	748
08:00 AM	0	19	31	50	2	0	2	4	33	34	1	68	25	0	26	51	173
08:15 AM	1	23	27	51	0	0	1	1	29	45	2	76	22	0	25	47	175
08:30 AM	1	30	26	57	1	0	1	2	21	31	1	53	25	0	25	50	162
08:45 AM	1	31	26	58	0	0	0	0	35	37	1	73	34	0	28	62	193
Total	3	103	110	216	3	0	4	7	118	147	5	270	106	0	104	210	703
Grand Total	8	190	258	456	5	0	7	12	247	300	10	557	211	3	212	426	1451
Apprch %	1.8	41.7	56.6		41.7	0	58.3		44.3	53.9	1.8		49.5	0.7	49.8		
Total %	0.6	13.1	17.8	31.4	0.3	0	0.5	0.8	17	20.7	0.7	38.4	14.5	0.2	14.6	29.4	

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	25	39	65	0	0	1	1	35	41	0	76	26	2	26	54	196
07:30 AM	1	17	46	64	1	0	0	1	30	37	3	70	35	1	33	69	204
07:45 AM	2	27	33	62	1	0	1	2	38	43	1	82	26	0	34	60	206
08:00 AM	0	19	31	50	2	0	2	4	33	34	1	68	25	0	26	51	173
Total Volume	4	88	149	241	4	0	4	8	136	155	5	296	112	3	119	234	779
% App. Total	1.7	36.5	61.8		50	0	50		45.9	52.4	1.7		47.9	1.3	50.9		
PHF	.500	.815	.810	.927	.500	.000	.500	.500	.895	.901	.417	.902	.800	.375	.875	.848	.945

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	1	25	39	65	0	0	1	1	35	41	0	76	26	2	26	54
+15 mins.	1	17	46	64	1	0	0	1	30	37	3	70	35	1	33	69
+30 mins.	2	27	33	62	1	0	1	2	38	43	1	82	26	0	34	60
+45 mins.	0	19	31	50	2	0	2	4	33	34	1	68	25	0	26	51
Total Volume	4	88	149	241	4	0	4	8	136	155	5	296	112	3	119	234
% App. Total	1.7	36.5	61.8		50	0	50		45.9	52.4	1.7		47.9	1.3	50.9	
PHF	.500	.815	.810	.927	.500	.000	.500	.500	.895	.901	.417	.902	.800	.375	.875	.848

City of Irwindale
N/S: Azusa Canyon Road
E/W: Los Angeles Street
Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

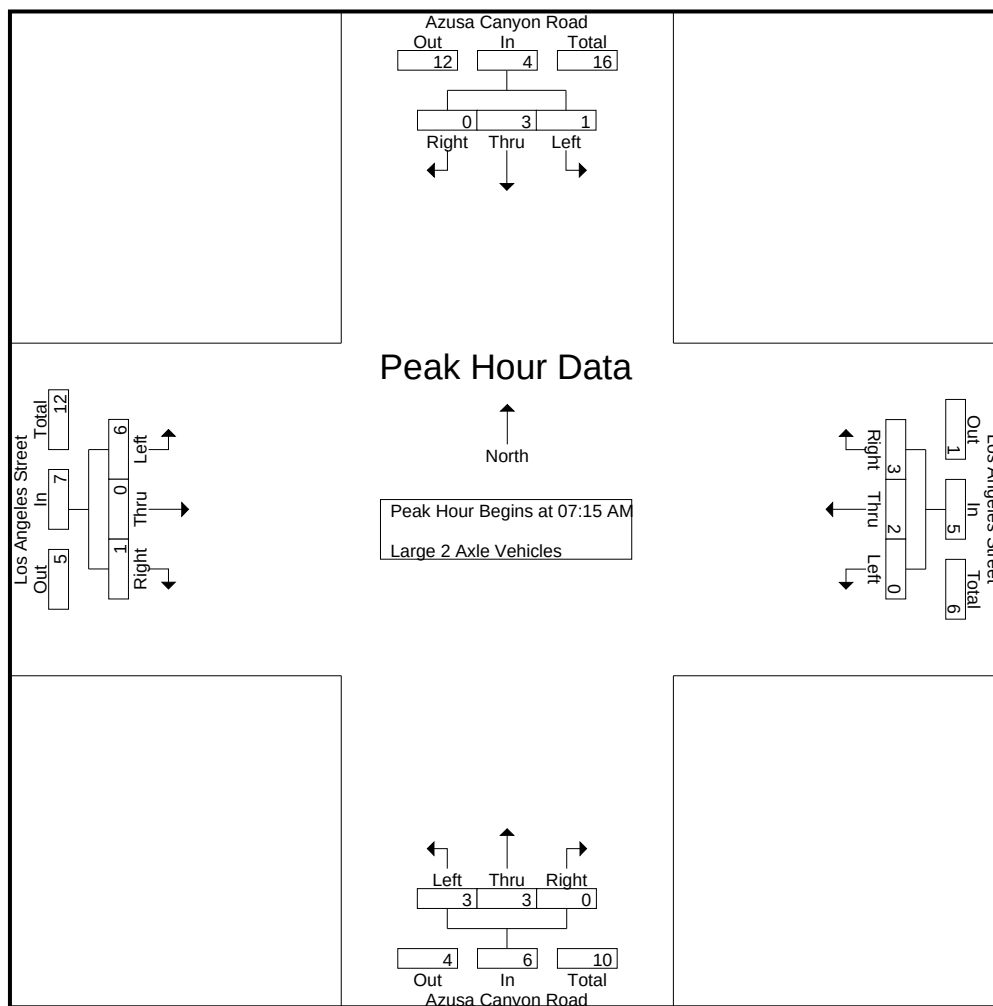
Groups Printed- Large 2 Axle Vehicles

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	0	0	2	0	0	0	0	0	0	0	0	1	0	1	2	4
07:15 AM	0	0	0	0	0	0	1	1	0	1	0	1	1	0	0	1	3
07:30 AM	0	2	0	2	0	0	1	1	0	1	0	1	1	0	0	1	5
07:45 AM	0	0	0	0	0	2	1	3	1	0	0	1	1	0	1	2	6
Total	2	2	0	4	0	2	3	5	1	2	0	3	4	0	2	6	18
08:00 AM	1	1	0	2	0	0	0	0	2	1	0	3	3	0	0	3	8
08:15 AM	0	0	2	2	0	0	0	0	1	3	0	4	2	0	2	4	10
08:30 AM	0	2	1	3	0	0	1	1	1	1	0	2	0	0	0	0	6
08:45 AM	0	2	0	2	0	0	0	0	0	1	0	1	2	0	1	3	6
Total	1	5	3	9	0	0	1	1	4	6	0	10	7	0	3	10	30
Grand Total	3	7	3	13	0	2	4	6	5	8	0	13	11	0	5	16	48
Apprch %	23.1	53.8	23.1		0	33.3	66.7		38.5	61.5	0		68.8	0	31.2		
Total %	6.2	14.6	6.2	27.1	0	4.2	8.3	12.5	10.4	16.7	0	27.1	22.9	0	10.4	33.3	

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	1	1	0	1	0	1	1	0	0	1	3
07:30 AM	0	2	0	2	0	0	1	1	0	1	0	1	1	0	0	1	5
07:45 AM	0	0	0	0	0	2	1	3	1	0	0	1	1	0	1	2	6
08:00 AM	1	1	0	2	0	0	0	0	2	1	0	3	3	0	0	3	8
Total Volume	1	3	0	4	0	2	3	5	3	3	0	6	6	0	1	7	22
% App. Total	25	75	0		0	40	60		50	50	0		85.7	0	14.3		
PHF	.250	.375	.000	.500	.000	.250	.750	.417	.375	.750	.000	.500	.500	.000	.250	.583	.688

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	1	1	0	1	0	1	1	0	0	1
+15 mins.	0	2	0	2	0	0	1	1	0	1	0	1	1	0	0	1
+30 mins.	0	0	0	0	0	2	1	3	1	0	0	1	1	0	1	2
+45 mins.	1	1	0	2	0	0	0	0	2	1	0	3	3	0	0	3
Total Volume	1	3	0	4	0	2	3	5	3	3	0	6	6	0	1	7
% App. Total	25	75	0		0	40	60		50	50	0		85.7	0	14.3	
PHF	.250	.375	.000	.500	.000	.250	.750	.417	.375	.750	.000	.500	.500	.000	.250	.583

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

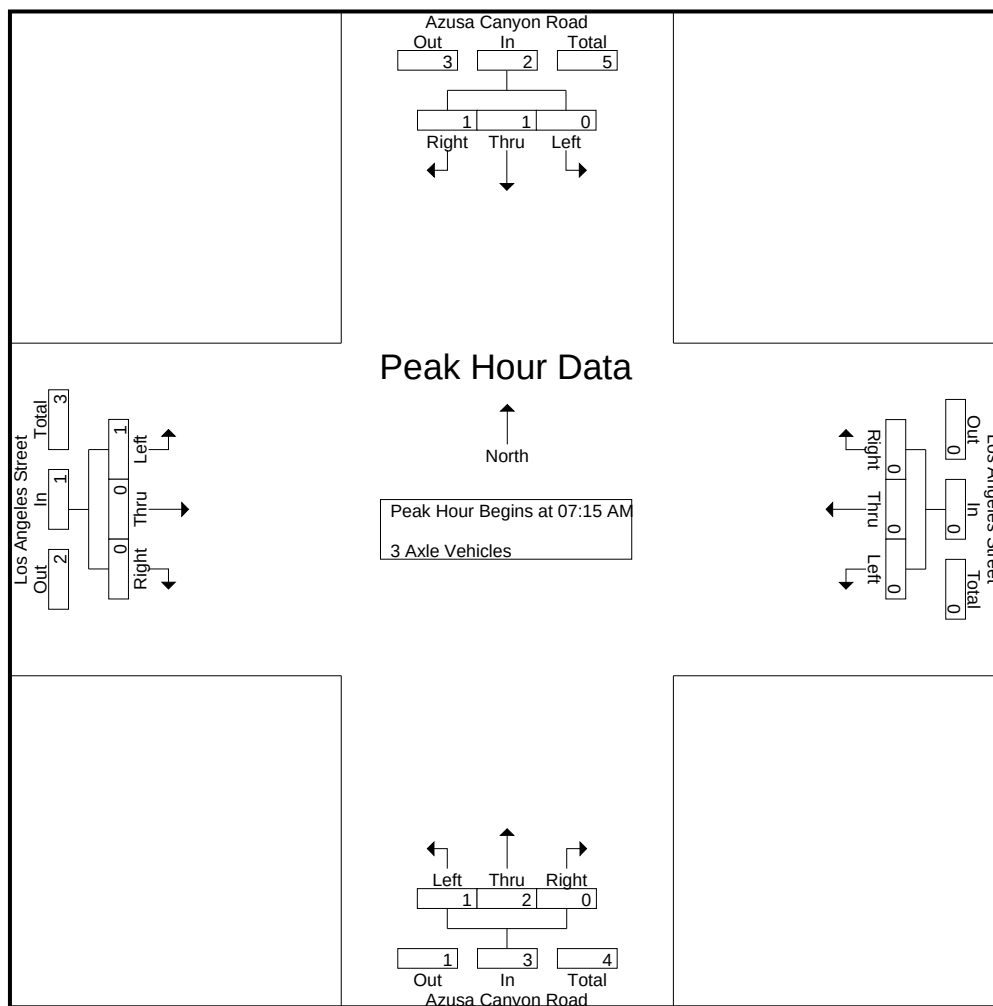
Groups Printed- 3 Axle Vehicles

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	1	0	1	0	0	0	0	1	0	0	1	1	0	0	1	3
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	1	3	0	0	0	0	1	1	0	2	1	0	0	1	6
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	3	0	3	1	0	0	1	4
Grand Total	0	2	1	3	0	0	0	0	1	4	0	5	2	0	0	2	10
Apprch %	0	66.7	33.3		0	0	0		20	80	0		100	0	0		
Total %	0	20	10	30	0	0	0	0	10	40	0	50	20	0	0	20	

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	1	0	1	0	0	0	0	1	0	0	1	1	0	0	1	3
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	1	1	2	0	0	0	0	1	2	0	3	1	0	0	1	6
% App. Total	0	50	50		0	0	0		33.3	66.7	0		100	0	0		
PHF	.000	.250	.250	.500	.000	.000	.000	.000	.250	.500	.000	.750	.250	.000	.000	.250	.500

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	1	0	1	0	0	0	0	1	0	0	1	1	0	0	1
+15 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	1	1	2	0	0	0	0	1	2	0	3	1	0	0	1
% App. Total	0	50	50		0	0	0		33.3	66.7	0		100	0	0	
PHF	.000	.250	.250	.500	.000	.000	.000	.000	.250	.500	.000	.750	.250	.000	.000	.250

City of Irwindale
N/S: Azusa Canyon Road
E/W: Los Angeles Street
Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

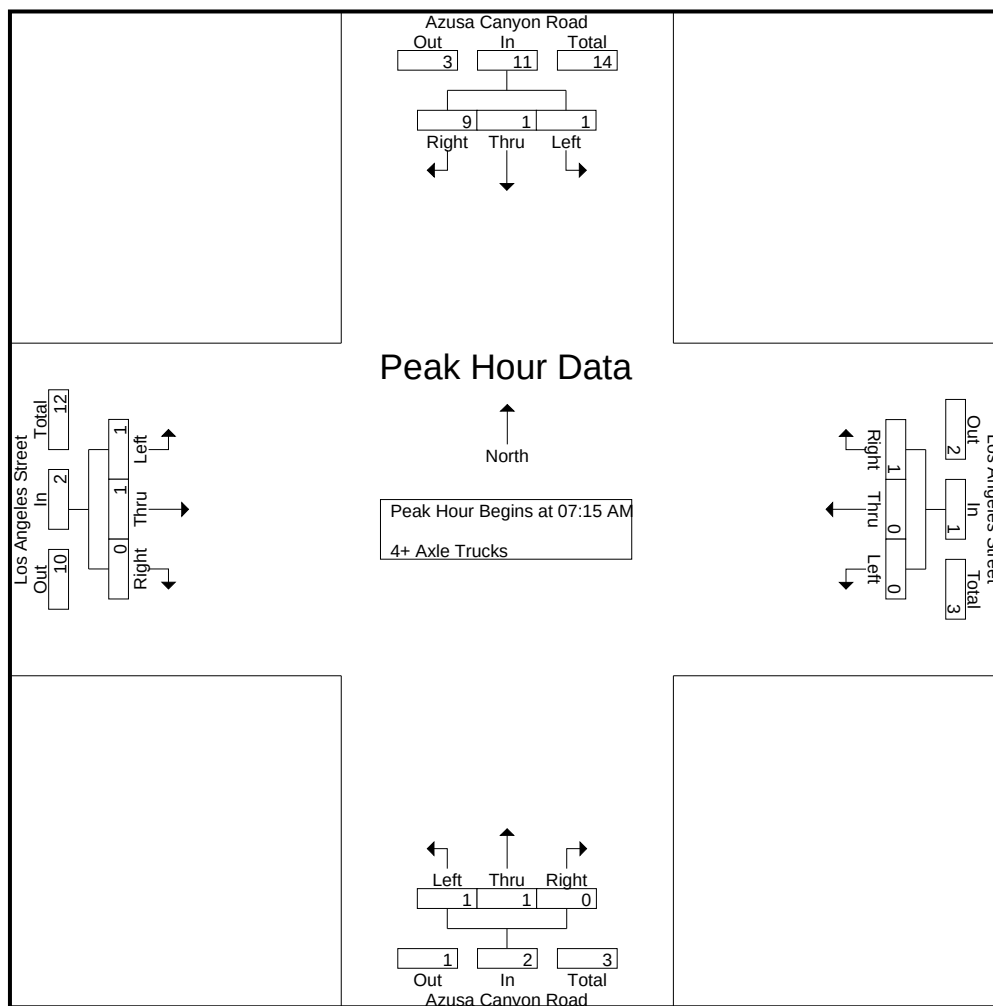
Groups Printed- 4+ Axle Trucks

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	1	3
07:30 AM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	1	1	3	5	0	0	0	0	0	0	0	0	0	1	0	1	6
Total	1	1	7	9	0	0	0	0	1	1	0	2	1	1	0	2	13
08:00 AM	0	0	4	4	0	0	1	1	0	0	0	0	0	0	0	0	5
08:15 AM	0	2	9	11	0	0	1	1	0	0	0	0	0	0	0	0	12
08:30 AM	0	0	2	2	0	0	1	1	0	0	0	0	0	0	0	0	3
08:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	16	18	0	0	3	3	0	0	0	0	0	0	0	0	21
Grand Total	1	3	23	27	0	0	3	3	1	1	0	2	1	1	0	2	34
Apprch %	3.7	11.1	85.2		0	0	100		50	50	0		50	50	0		
Total %	2.9	8.8	67.6	79.4	0	0	8.8	8.8	2.9	2.9	0	5.9	2.9	2.9	0	5.9	

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	1	3
07:30 AM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	1	1	3	5	0	0	0	0	0	0	0	0	0	1	0	1	6
08:00 AM	0	0	4	4	0	0	1	1	0	0	0	0	0	0	0	0	5
Total Volume	1	1	9	11	0	0	1	1	1	1	0	2	1	1	0	2	16
% App. Total	9.1	9.1	81.8		0	0	100		50	50	0		50	50	0		
PHF	.250	.250	.563	.550	.000	.000	.250	.250	.250	.250	.000	.250	.250	.250	.000	.500	.667

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	1
+15 mins.	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	1	1	3	5	0	0	0	0	0	0	0	0	0	1	0	1
+45 mins.	0	0	4	4	0	0	1	1	0	0	0	0	0	0	0	0
Total Volume	1	1	9	11	0	0	1	1	1	1	0	2	1	1	0	2
% App. Total	9.1	9.1	81.8		0	0	100		50	50	0		50	50	0	
PHF	.250	.250	.563	.550	.000	.000	.250	.250	.250	.250	.000	.250	.250	.250	.000	.500

City of Irwindale
N/S: Azusa Canyon Road
E/W: Los Angeles Street
Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

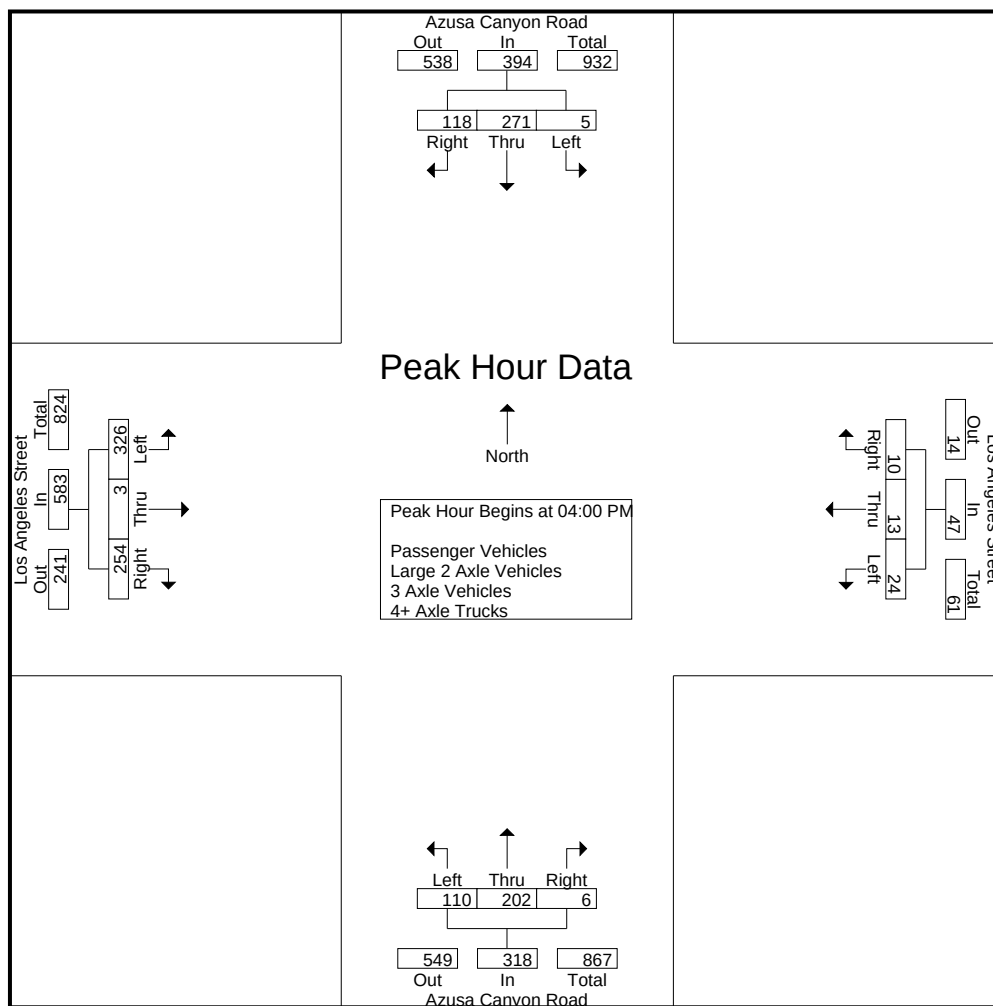
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	65	27	93	11	3	3	17	28	46	2	76	65	3	74	142	328
04:15 PM	2	64	31	97	7	6	2	15	29	53	0	82	87	0	65	152	346
04:30 PM	1	67	26	94	4	2	5	11	28	56	3	87	86	0	49	135	327
04:45 PM	1	75	34	110	2	2	0	4	25	47	1	73	88	0	66	154	341
Total	5	271	118	394	24	13	10	47	110	202	6	318	326	3	254	583	1342
05:00 PM	1	59	30	90	1	0	0	1	31	50	1	82	75	0	59	134	307
05:15 PM	3	67	34	104	2	2	2	6	23	43	2	68	92	0	64	156	334
05:30 PM	0	76	21	97	8	8	9	25	26	45	1	72	63	1	52	116	310
05:45 PM	0	54	30	84	1	2	1	4	26	41	0	67	74	1	52	127	282
Total	4	256	115	375	12	12	12	36	106	179	4	289	304	2	227	533	1233
Grand Total	9	527	233	769	36	25	22	83	216	381	10	607	630	5	481	1116	2575
Apprch %	1.2	68.5	30.3		43.4	30.1	26.5		35.6	62.8	1.6		56.5	0.4	43.1		
Total %	0.3	20.5	9	29.9	1.4	1	0.9	3.2	8.4	14.8	0.4	23.6	24.5	0.2	18.7	43.3	
Passenger Vehicles	6	516	221	743	36	24	21	81	212	371	9	592	614	3	477	1094	2510
% Passenger Vehicles	66.7	97.9	94.8	96.6	100	96	95.5	97.6	98.1	97.4	90	97.5	97.5	60	99.2	98	97.5
Large 2 Axle Vehicles	3	7	11	21	0	1	1	2	3	9	1	13	11	1	1	13	49
% Large 2 Axle Vehicles	33.3	1.3	4.7	2.7	0	4	4.5	2.4	1.4	2.4	10	2.1	1.7	20	0.2	1.2	1.9
3 Axle Vehicles	0	4	0	4	0	0	0	0	1	1	0	2	4	0	1	5	11
% 3 Axle Vehicles	0	0.8	0	0.5	0	0	0	0	0.5	0.3	0	0.3	0.6	0	0.2	0.4	0.4
4+ Axle Trucks	0	0	1	1	0	0	0	0	0	0	0	0	1	1	2	4	5
% 4+ Axle Trucks	0	0	0.4	0.1	0	0	0	0	0	0	0	0	0.2	20	0.4	0.4	0.2

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	1	65	27	93	11	3	3	17	28	46	2	76	65	3	74	142	328
04:15 PM	2	64	31	97	7	6	2	15	29	53	0	82	87	0	65	152	346
04:30 PM	1	67	26	94	4	2	5	11	28	56	3	87	86	0	49	135	327
04:45 PM	1	75	34	110	2	2	0	4	25	47	1	73	88	0	66	154	341
Total Volume	5	271	118	394	24	13	10	47	110	202	6	318	326	3	254	583	1342
% App. Total	1.3	68.8	29.9		51.1	27.7	21.3		34.6	63.5	1.9		55.9	0.5	43.6		
PHF	.625	.903	.868	.895	.545	.542	.500	.691	.948	.902	.500	.914	.926	.250	.858	.946	.970

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 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				04:00 PM				04:15 PM				04:00 PM			
+0 mins.	1	75	34	110	11	3	3	17	29	53	0	82	65	3	74	142
+15 mins.	1	59	30	90	7	6	2	15	28	56	3	87	87	0	65	152
+30 mins.	3	67	34	104	4	2	5	11	25	47	1	73	86	0	49	135
+45 mins.	0	76	21	97	2	2	0	4	31	50	1	82	88	0	66	154
Total Volume	5	277	119	401	24	13	10	47	113	206	5	324	326	3	254	583
% App. Total	1.2	69.1	29.7		51.1	27.7	21.3		34.9	63.6	1.5		55.9	0.5	43.6	
PHF	.417	.911	.875	.911	.545	.542	.500	.691	.911	.920	.417	.931	.926	.250	.858	.946

City of Irwindale
N/S: Azusa Canyon Road
E/W: Los Angeles Street
Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

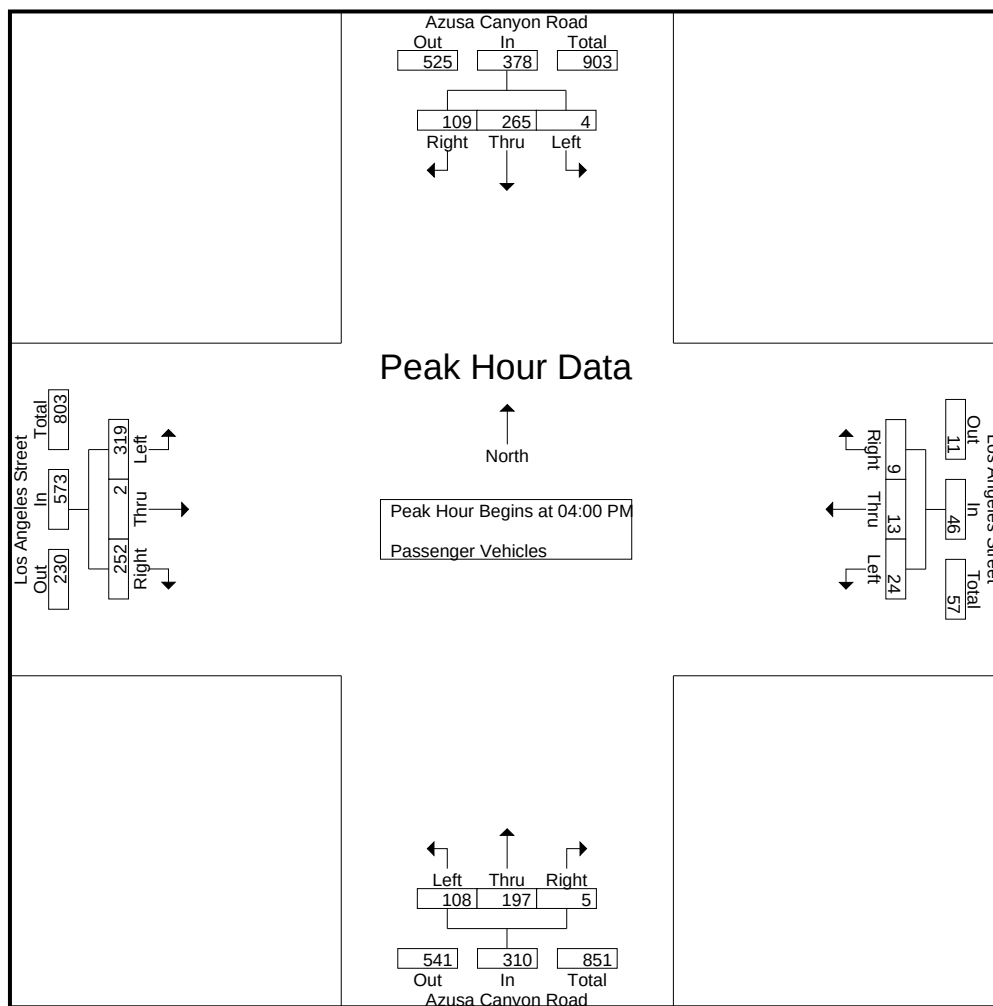
Groups Printed- Passenger Vehicles

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	63	25	89	11	3	3	17	27	46	2	75	63	2	73	138	319
04:15 PM	1	63	28	92	7	6	2	15	29	51	0	80	85	0	64	149	336
04:30 PM	1	65	24	90	4	2	4	10	28	55	2	85	85	0	49	134	319
04:45 PM	1	74	32	107	2	2	0	4	24	45	1	70	86	0	66	152	333
Total	4	265	109	378	24	13	9	46	108	197	5	310	319	2	252	573	1307
05:00 PM	0	59	30	89	1	0	0	1	31	49	1	81	73	0	58	131	302
05:15 PM	2	64	32	98	2	1	2	5	21	41	2	64	88	0	64	152	319
05:30 PM	0	75	20	95	8	8	9	25	26	44	1	71	61	0	51	112	303
05:45 PM	0	53	30	83	1	2	1	4	26	40	0	66	73	1	52	126	279
Total	2	251	112	365	12	11	12	35	104	174	4	282	295	1	225	521	1203
Grand Total	6	516	221	743	36	24	21	81	212	371	9	592	614	3	477	1094	2510
Apprch %	0.8	69.4	29.7		44.4	29.6	25.9		35.8	62.7	1.5		56.1	0.3	43.6		
Total %	0.2	20.6	8.8	29.6	1.4	1	0.8	3.2	8.4	14.8	0.4	23.6	24.5	0.1	19	43.6	

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	1	63	25	89	11	3	3	17	27	46	2	75	63	2	73	138	319
04:15 PM	1	63	28	92	7	6	2	15	29	51	0	80	85	0	64	149	336
04:30 PM	1	65	24	90	4	2	4	10	28	55	2	85	85	0	49	134	319
04:45 PM	1	74	32	107	2	2	0	4	24	45	1	70	86	0	66	152	333
Total Volume	4	265	109	378	24	13	9	46	108	197	5	310	319	2	252	573	1307
% App. Total	1.1	70.1	28.8		52.2	28.3	19.6		34.8	63.5	1.6		55.7	0.3	44		
PHF	1.00	.895	.852	.883	.545	.542	.563	.676	.931	.895	.625	.912	.927	.250	.863	.942	.972

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	1	63	25	89	11	3	3	17	27	46	2	75	63	2	73	138
+15 mins.	1	63	28	92	7	6	2	15	29	51	0	80	85	0	64	149
+30 mins.	1	65	24	90	4	2	4	10	28	55	2	85	85	0	49	134
+45 mins.	1	74	32	107	2	2	0	4	24	45	1	70	86	0	66	152
Total Volume	4	265	109	378	24	13	9	46	108	197	5	310	319	2	252	573
% App. Total	1.1	70.1	28.8		52.2	28.3	19.6		34.8	63.5	1.6		55.7	0.3	44	
PHF	1.000	.895	.852	.883	.545	.542	.563	.676	.931	.895	.625	.912	.927	.250	.863	.942

City of Irwindale
N/S: Azusa Canyon Road
E/W: Los Angeles Street
Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

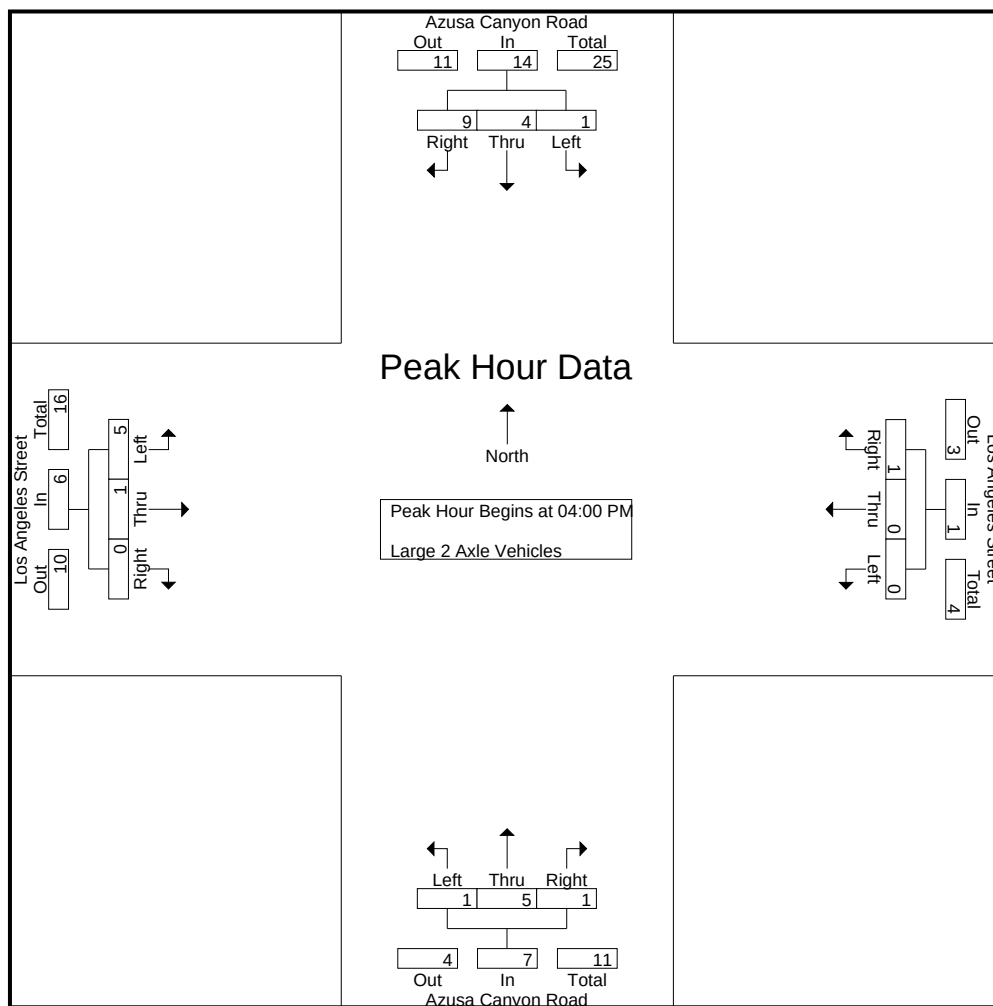
Groups Printed- Large 2 Axle Vehicles

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	2	3	0	0	0	0	1	0	0	1	2	1	0	3	7
04:15 PM	1	1	3	5	0	0	0	0	0	2	0	2	1	0	0	1	8
04:30 PM	0	1	2	3	0	0	1	1	0	1	1	2	1	0	0	1	7
04:45 PM	0	1	2	3	0	0	0	0	0	2	0	2	1	0	0	1	6
Total	1	4	9	14	0	0	1	1	1	5	1	7	5	1	0	6	28
05:00 PM	1	0	0	1	0	0	0	0	0	1	0	1	2	0	0	2	4
05:15 PM	1	3	1	5	0	1	0	1	2	1	0	3	2	0	0	2	11
05:30 PM	0	0	1	1	0	0	0	0	0	1	0	1	1	0	1	2	4
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2
Total	2	3	2	7	0	1	0	1	2	4	0	6	6	0	1	7	21
Grand Total	3	7	11	21	0	1	1	2	3	9	1	13	11	1	1	13	49
Apprch %	14.3	33.3	52.4		0	50	50		23.1	69.2	7.7		84.6	7.7	7.7		
Total %	6.1	14.3	22.4	42.9	0	2	2	4.1	6.1	18.4	2	26.5	22.4	2	2	26.5	

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	1	2	3	0	0	0	0	1	0	0	1	2	1	0	3	7
04:15 PM	1	1	3	5	0	0	0	0	0	2	0	2	1	0	0	1	8
04:30 PM	0	1	2	3	0	0	1	1	0	1	1	2	1	0	0	1	7
04:45 PM	0	1	2	3	0	0	0	0	0	2	0	2	1	0	0	1	6
Total Volume	1	4	9	14	0	0	1	1	1	5	1	7	5	1	0	6	28
% App. Total	7.1	28.6	64.3		0	0	100		14.3	71.4	14.3		83.3	16.7	0		
PHF	.250	1.00	.750	.700	.000	.000	.250	.250	.250	.625	.250	.875	.625	.250	.000	.500	.875

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	1	2	3	0	0	0	0	1	0	0	1	2	1	0	3
+15 mins.	1	1	3	5	0	0	0	0	0	2	0	2	1	0	0	1
+30 mins.	0	1	2	3	0	0	1	1	0	1	1	2	1	0	0	1
+45 mins.	0	1	2	3	0	0	0	0	0	2	0	2	1	0	0	1
Total Volume	1	4	9	14	0	0	1	1	1	5	1	7	5	1	0	6
% App. Total	7.1	28.6	64.3		0	0	100		14.3	71.4	14.3		83.3	16.7	0	
PHF	.250	1.000	.750	.700	.000	.000	.250	.250	.250	.625	.250	.875	.625	.250	.000	.500

City of Irwindale
N/S: Azusa Canyon Road
E/W: Los Angeles Street
Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

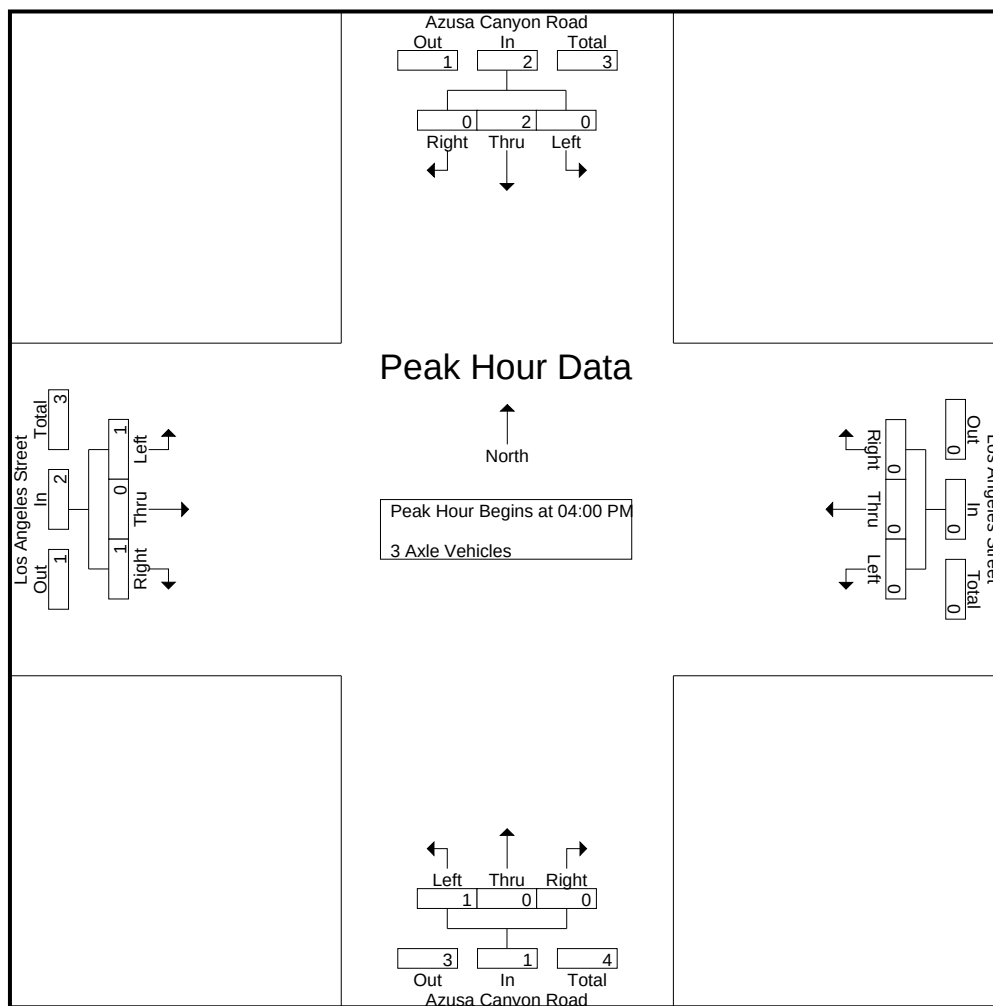
Groups Printed- 3 Axle Vehicles

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	2
Total	0	2	0	2	0	0	0	0	1	0	0	1	1	0	1	2	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	2	3
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
05:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	0	1	0	1	3	0	0	3	6
Grand Total	0	4	0	4	0	0	0	0	1	1	0	2	4	0	1	5	11
Apprch %	0	100	0		0	0	0		50	50	0		80	0	20		
Total %	0	36.4	0	36.4	0	0	0	0	9.1	9.1	0	18.2	36.4	0	9.1	45.5	

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	2
Total Volume	0	2	0	2	0	0	0	0	1	0	0	1	1	0	1	2	5
% App. Total	0	100	0		0	0	0		100	0	0		50	0	50		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.250	.000	.000	.250	.250	.000	.250	.500	.625

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1
Total Volume	0	2	0	2	0	0	0	0	1	0	0	1	1	0	1	2
% App. Total	0	100	0	0	0	0	0	0	100	0	0	50	50	0	50	50
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.250	.000	.000	.250	.250	.000	.250	.500

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

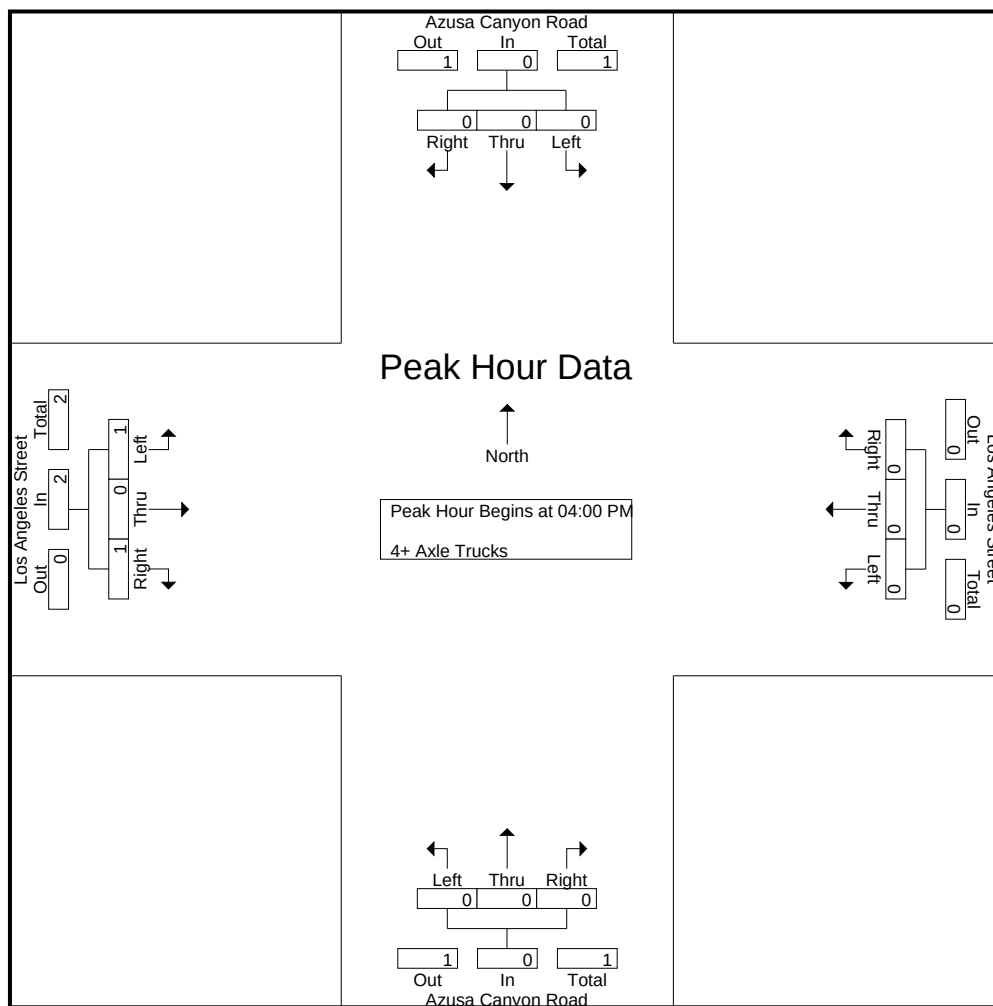
Groups Printed- 4+ Axle Trucks

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
05:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	2	3
Grand Total	0	0	1	1	0	0	0	0	0	0	0	0	1	1	2	4	5
Apprch %	0	0	100		0	0	0		0	0	0		25	25	50		
Total %	0	0	20	20	0	0	0	0	0	0	0	0	20	20	40	80	

	Azusa Canyon Road Southbound				Los Angeles Street Westbound				Azusa Canyon Road Northbound				Los Angeles Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
% App. Total	0	0	0		0	0	0		0	0	0		50	0	50		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250	.250

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Los Angeles Street
 Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	50	0	50	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

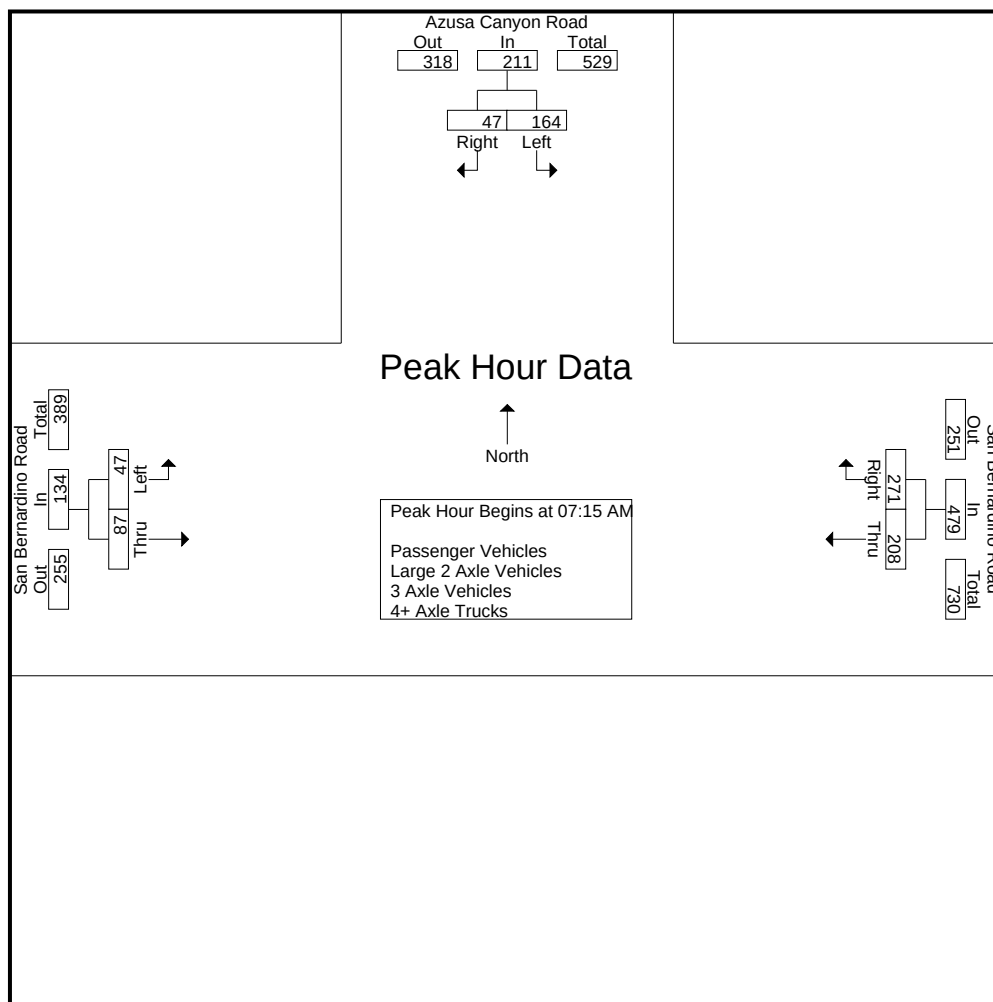
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	27	12	39	47	52	99	5	22	27	165
07:15 AM	34	16	50	42	72	114	14	21	35	199
07:30 AM	43	9	52	53	62	115	14	18	32	199
07:45 AM	51	12	63	66	74	140	9	19	28	231
Total	155	49	204	208	260	468	42	80	122	794
08:00 AM	36	10	46	47	63	110	10	29	39	195
08:15 AM	37	15	52	40	56	96	19	29	48	196
08:30 AM	38	20	58	53	53	106	4	28	32	196
08:45 AM	46	14	60	52	54	106	11	33	44	210
Total	157	59	216	192	226	418	44	119	163	797
Grand Total	312	108	420	400	486	886	86	199	285	1591
Apprch %	74.3	25.7		45.1	54.9		30.2	69.8		
Total %	19.6	6.8	26.4	25.1	30.5	55.7	5.4	12.5	17.9	
Passenger Vehicles	302	99	401	372	473	845	78	175	253	1499
% Passenger Vehicles	96.8	91.7	95.5	93	97.3	95.4	90.7	87.9	88.8	94.2
Large 2 Axle Vehicles	8	4	12	18	8	26	7	15	22	60
% Large 2 Axle Vehicles	2.6	3.7	2.9	4.5	1.6	2.9	8.1	7.5	7.7	3.8
3 Axle Vehicles	1	3	4	5	4	9	1	6	7	20
% 3 Axle Vehicles	0.3	2.8	1	1.2	0.8	1	1.2	3	2.5	1.3
4+ Axle Trucks	1	2	3	5	1	6	0	3	3	12
% 4+ Axle Trucks	0.3	1.9	0.7	1.2	0.2	0.7	0	1.5	1.1	0.8

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. 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	34	16	50	42	72	114	14	21	35	199
07:30 AM	43	9	52	53	62	115	14	18	32	199
07:45 AM	51	12	63	66	74	140	9	19	28	231
08:00 AM	36	10	46	47	63	110	10	29	39	195
Total Volume	164	47	211	208	271	479	47	87	134	824
% App. Total	77.7	22.3		43.4	56.6		35.1	64.9		
PHF	.804	.734	.837	.788	.916	.855	.839	.750	.859	.892

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 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:

	07:45 AM			07:15 AM			08:00 AM		
+0 mins.	51	12	63	42	72	114	10	29	39
+15 mins.	36	10	46	53	62	115	19	29	48
+30 mins.	37	15	52	66	74	140	4	28	32
+45 mins.	38	20	58	47	63	110	11	33	44
Total Volume	162	57	219	208	271	479	44	119	163
% App. Total	74	26		43.4	56.6		27	73	
PHF	.794	.713	.869	.788	.916	.855	.579	.902	.849

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

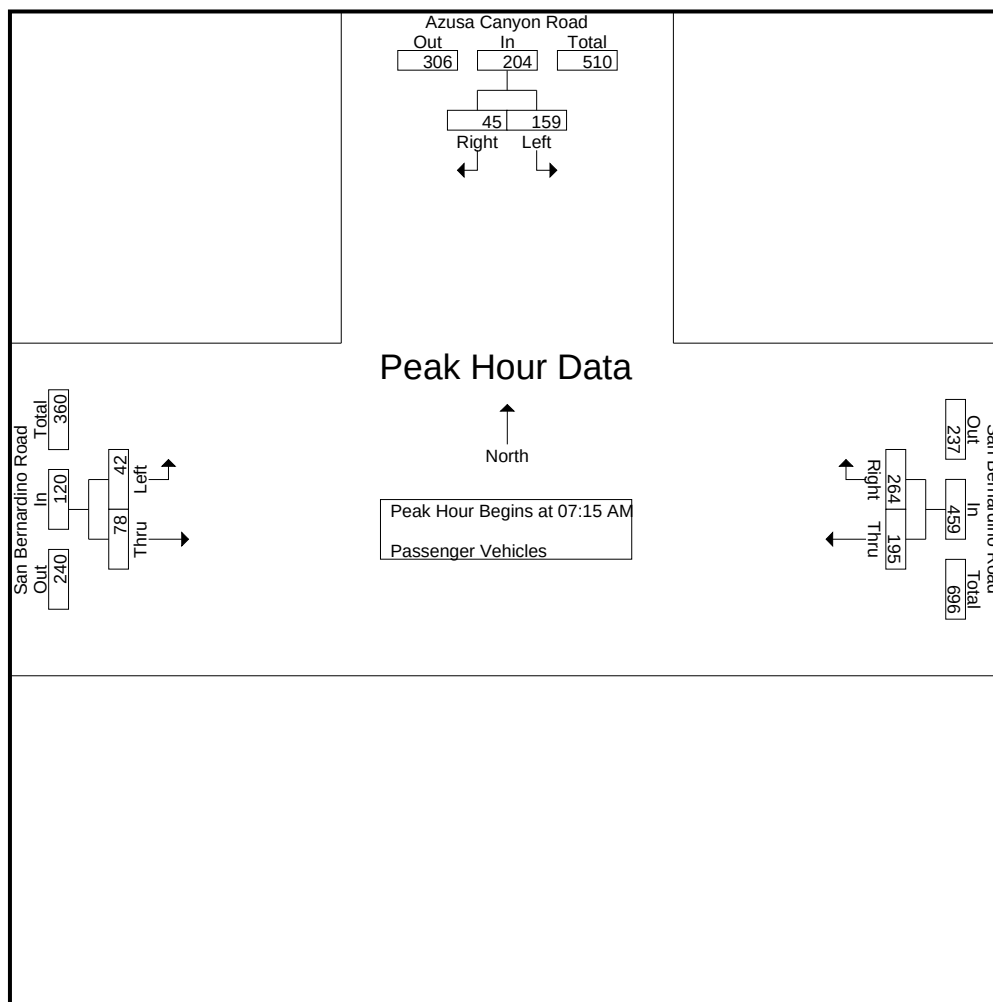
Groups Printed- Passenger Vehicles

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	25	12	37	40	52	92	5	18	23	152
07:15 AM	33	15	48	41	70	111	13	19	32	191
07:30 AM	42	8	50	50	62	112	13	16	29	191
07:45 AM	49	12	61	61	72	133	7	17	24	218
Total	149	47	196	192	256	448	38	70	108	752
08:00 AM	35	10	45	43	60	103	9	26	35	183
08:15 AM	36	13	49	37	54	91	17	26	43	183
08:30 AM	38	17	55	53	52	105	3	22	25	185
08:45 AM	44	12	56	47	51	98	11	31	42	196
Total	153	52	205	180	217	397	40	105	145	747
Grand Total	302	99	401	372	473	845	78	175	253	1499
Apprch %	75.3	24.7		44	56		30.8	69.2		
Total %	20.1	6.6	26.8	24.8	31.6	56.4	5.2	11.7	16.9	

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	33	15	48	41	70	111	13	19	32	191
07:30 AM	42	8	50	50	62	112	13	16	29	191
07:45 AM	49	12	61	61	72	133	7	17	24	218
08:00 AM	35	10	45	43	60	103	9	26	35	183
Total Volume	159	45	204	195	264	459	42	78	120	783
% App. Total	77.9	22.1		42.5	57.5		35	65		
PHF	.811	.750	.836	.799	.917	.863	.808	.750	.857	.898

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	33	15	48	41	70	111	13	19	32
+15 mins.	42	8	50	50	62	112	13	16	29
+30 mins.	49	12	61	61	72	133	7	17	24
+45 mins.	35	10	45	43	60	103	9	26	35
Total Volume	159	45	204	195	264	459	42	78	120
% App. Total	77.9	22.1		42.5	57.5		35	65	
PHF	.811	.750	.836	.799	.917	.863	.808	.750	.857

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

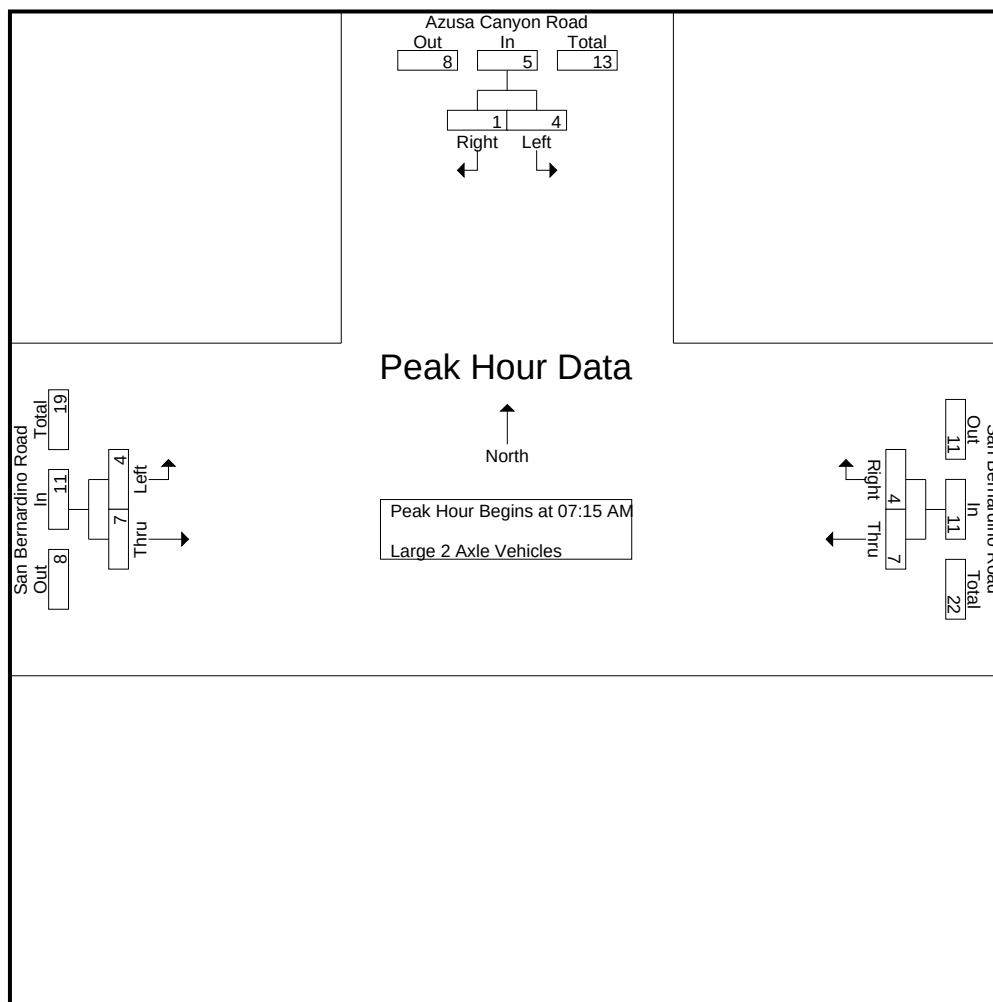
Groups Printed- Large 2 Axle Vehicles

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	1	0	1	5	0	5	0	1	1	7
07:15 AM	1	0	1	0	0	0	1	2	3	4
07:30 AM	1	1	2	3	0	3	1	1	2	7
07:45 AM	1	0	1	1	1	2	2	2	4	7
Total	4	1	5	9	1	10	4	6	10	25
08:00 AM	1	0	1	3	3	6	0	2	2	9
08:15 AM	1	0	1	2	1	3	2	2	4	8
08:30 AM	0	2	2	0	1	1	1	3	4	7
08:45 AM	2	1	3	4	2	6	0	2	2	11
Total	4	3	7	9	7	16	3	9	12	35
Grand Total	8	4	12	18	8	26	7	15	22	60
Apprch %	66.7	33.3		69.2	30.8		31.8	68.2		
Total %	13.3	6.7	20	30	13.3	43.3	11.7	25	36.7	

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	1	0	1	0	0	0	1	2	3	4
07:30 AM	1	1	2	3	0	3	1	1	2	7
07:45 AM	1	0	1	1	1	2	2	2	4	7
08:00 AM	1	0	1	3	3	6	0	2	2	9
Total Volume	4	1	5	7	4	11	4	7	11	27
% App. Total	80	20		63.6	36.4		36.4	63.6		
PHF	1.00	.250	.625	.583	.333	.458	.500	.875	.688	.750

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	1	0	1	0	0	0	1	2	3
+15 mins.	1	1	2	3	0	3	1	1	2
+30 mins.	1	0	1	1	1	2	2	2	4
+45 mins.	1	0	1	3	3	6	0	2	2
Total Volume	4	1	5	7	4	11	4	7	11
% App. Total	80	20		63.6	36.4		36.4	63.6	
PHF	1.000	.250	.625	.583	.333	.458	.500	.875	.688

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

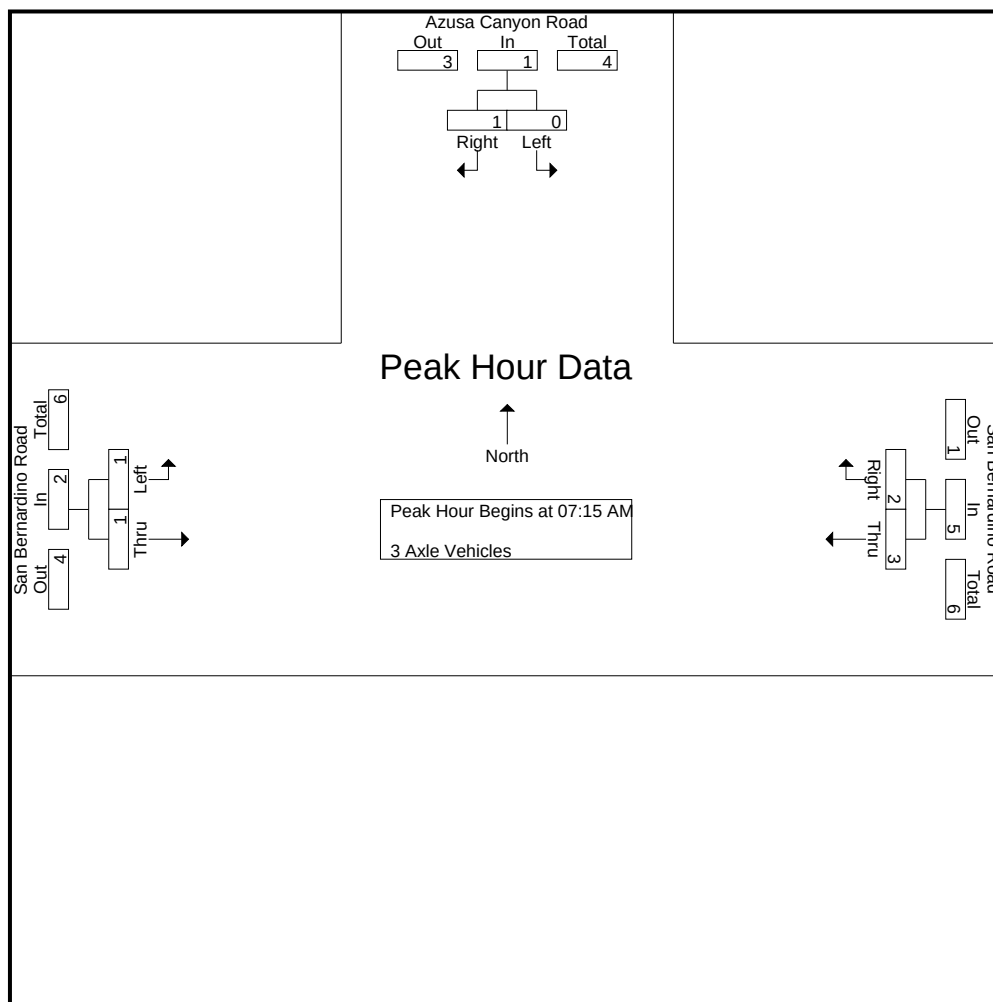
Groups Printed- 3 Axle Vehicles

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	1	0	1	2	0	2	0	2	2	5
07:15 AM	0	1	1	1	1	2	0	0	0	3
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	1	1	2	0	0	0	2
Total	1	1	2	4	2	6	0	2	2	10
08:00 AM	0	0	0	1	0	1	1	1	2	3
08:15 AM	0	0	0	0	1	1	0	1	1	2
08:30 AM	0	1	1	0	0	0	0	2	2	3
08:45 AM	0	1	1	0	1	1	0	0	0	2
Total	0	2	2	1	2	3	1	4	5	10
Grand Total	1	3	4	5	4	9	1	6	7	20
Apprch %	25	75		55.6	44.4		14.3	85.7		
Total %	5	15	20	25	20	45	5	30	35	

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	1	1	1	1	2	0	0	0	3
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	1	1	2	0	0	0	2
08:00 AM	0	0	0	1	0	1	1	1	2	3
Total Volume	0	1	1	3	2	5	1	1	2	8
% App. Total	0	100		60	40		50	50		
PHF	.000	.250	.250	.750	.500	.625	.250	.250	.250	.667

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	0	1	1	1	1	2	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	1	1	2	0	0	0
+45 mins.	0	0	0	1	0	1	1	1	2
Total Volume	0	1	1	3	2	5	1	1	2
% App. Total	0	100		60	40		50	50	
PHF	.000	.250	.250	.750	.500	.625	.250	.250	.250

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

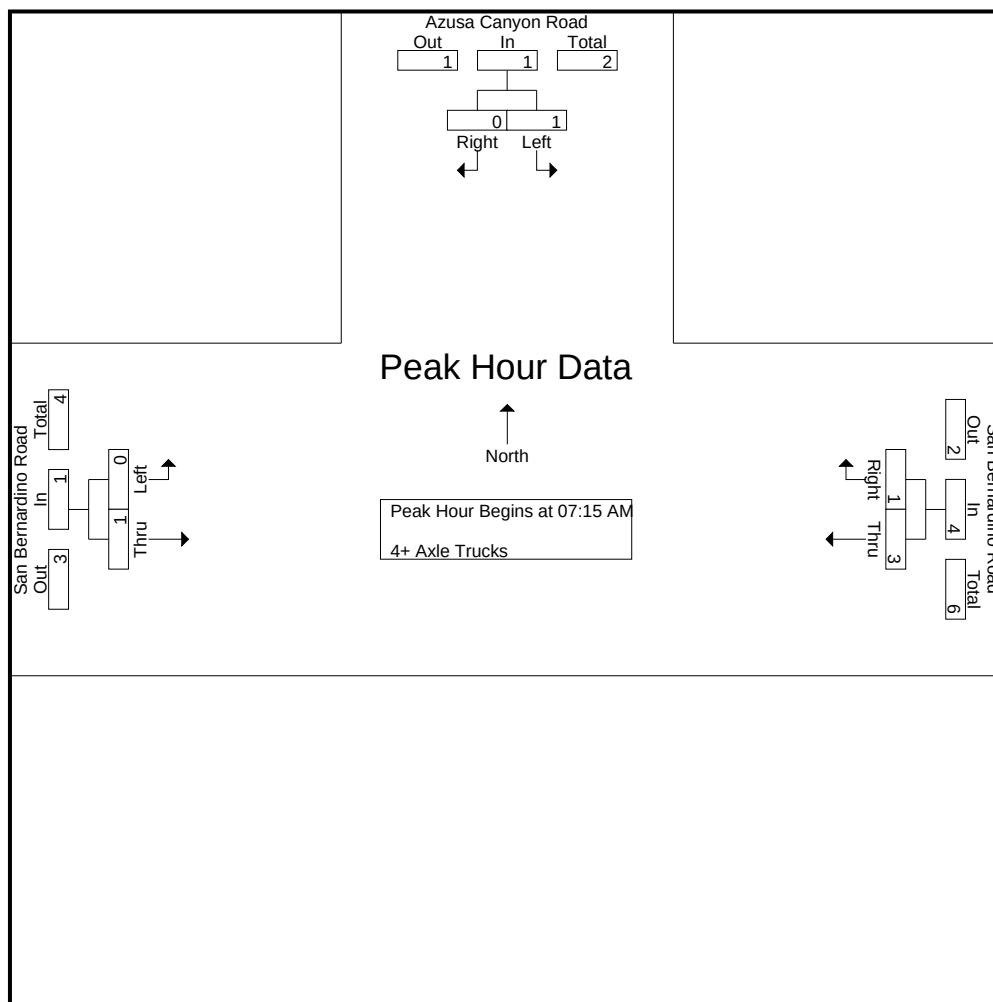
Groups Printed- 4+ Axle Trucks

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	1	1	1
07:15 AM	0	0	0	0	1	1	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	1	1	1
07:45 AM	1	0	1	3	0	3	0	0	0	4
Total	1	0	1	3	1	4	0	2	2	7
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	2	2	1	0	1	0	0	0	3
08:30 AM	0	0	0	0	0	0	0	1	1	1
08:45 AM	0	0	0	1	0	1	0	0	0	1
Total	0	2	2	2	0	2	0	1	1	5
Grand Total	1	2	3	5	1	6	0	3	3	12
Apprch %	33.3	66.7		83.3	16.7		0	100		
Total %	8.3	16.7	25	41.7	8.3	50	0	25	25	

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	0	1	1	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	1	1	1
07:45 AM	1	0	1	3	0	3	0	0	0	4
08:00 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	3	1	4	0	1	1	6
% App. Total	100	0		75	25		0	100		
PHF	.250	.000	.250	.250	.250	.333	.000	.250	.250	.375

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	0	0	0	0	1	1	0	0	0
+15 mins.	0	0	0	0	0	0	0	1	1
+30 mins.	1	0	1	3	0	3	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	3	1	4	0	1	1
% App. Total	100	0		75	25		0	100	
PHF	.250	.000	.250	.250	.250	.333	.000	.250	.250

City of Irwindale
N/S: Azusa Canyon Road
E/W: San Bernardino Road
Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	125	30	155	52	53	105	20	54	74	334
04:15 PM	119	18	137	47	67	114	21	72	93	344
04:30 PM	109	25	134	57	54	111	25	42	67	312
04:45 PM	125	24	149	55	59	114	15	44	59	322
Total	478	97	575	211	233	444	81	212	293	1312
05:00 PM	102	21	123	55	61	116	22	51	73	312
05:15 PM	120	23	143	70	46	116	18	54	72	331
05:30 PM	110	28	138	52	54	106	17	49	66	310
05:45 PM	88	20	108	44	49	93	18	57	75	276
Total	420	92	512	221	210	431	75	211	286	1229
Grand Total	898	189	1087	432	443	875	156	423	579	2541
Apprch %	82.6	17.4		49.4	50.6		26.9	73.1		
Total %	35.3	7.4	42.8	17	17.4	34.4	6.1	16.6	22.8	
Passenger Vehicles	885	183	1068	412	431	843	152	405	557	2468
% Passenger Vehicles	98.6	96.8	98.3	95.4	97.3	96.3	97.4	95.7	96.2	97.1
Large 2 Axle Vehicles	8	5	13	9	10	19	4	13	17	49
% Large 2 Axle Vehicles	0.9	2.6	1.2	2.1	2.3	2.2	2.6	3.1	2.9	1.9
3 Axle Vehicles	3	1	4	8	2	10	0	3	3	17
% 3 Axle Vehicles	0.3	0.5	0.4	1.9	0.5	1.1	0	0.7	0.5	0.7
4+ Axle Trucks	2	0	2	3	0	3	0	2	2	7
% 4+ Axle Trucks	0.2	0	0.2	0.7	0	0.3	0	0.5	0.3	0.3

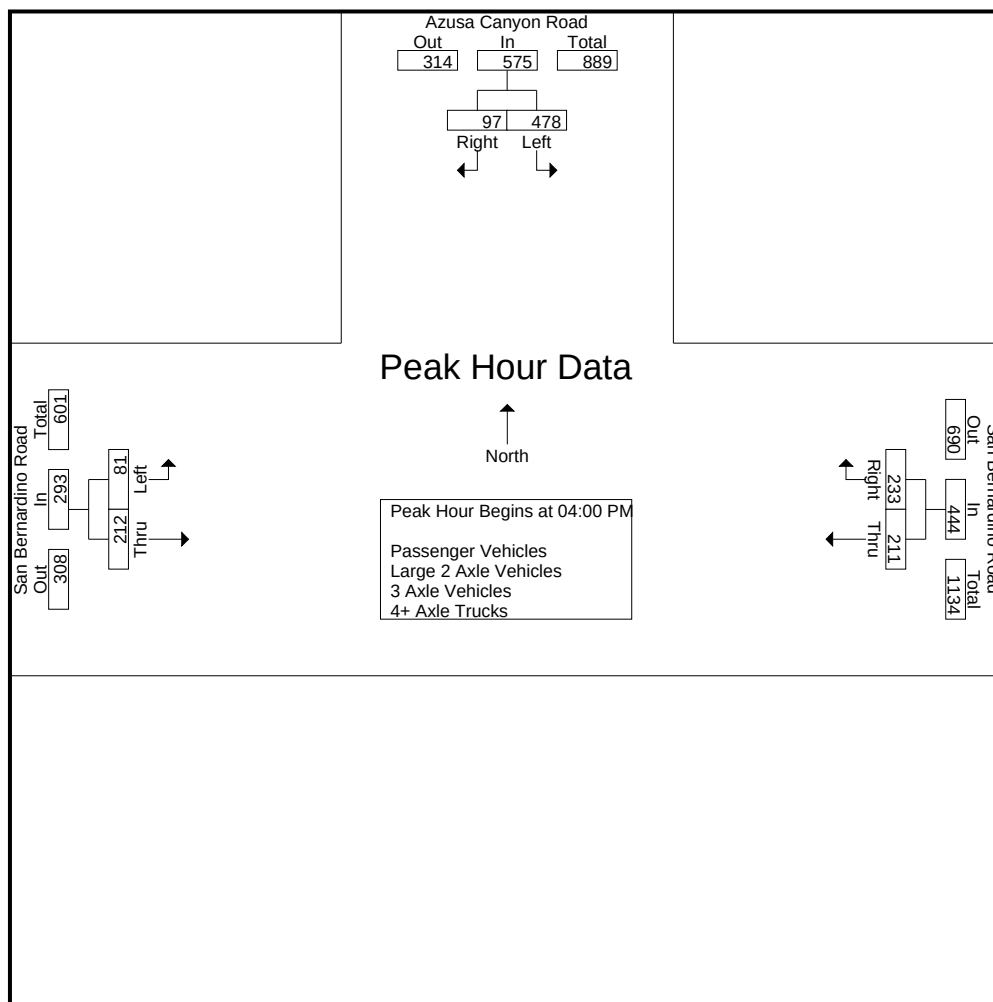
	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	125	30	155	52	53	105	20	54	74	334
04:15 PM	119	18	137	47	67	114	21	72	93	344
04:30 PM	109	25	134	57	54	111	25	42	67	312
04:45 PM	125	24	149	55	59	114	15	44	59	322
Total Volume	478	97	575	211	233	444	81	212	293	1312
% App. Total	83.1	16.9		47.5	52.5		27.6	72.4		
PHF	.956	.808	.927	.925	.869	.974	.810	.736	.788	.953

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 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			04:00 PM		
+0 mins.	125	30	155	57	54	111	20	54	74
+15 mins.	119	18	137	55	59	114	21	72	93
+30 mins.	109	25	134	55	61	116	25	42	67
+45 mins.	125	24	149	70	46	116	15	44	59
Total Volume	478	97	575	237	220	457	81	212	293
% App. Total	83.1	16.9		51.9	48.1		27.6	72.4	
PHF	.956	.808	.927	.846	.902	.985	.810	.736	.788

City of Irwindale
N/S: Azusa Canyon Road
E/W: San Bernardino Road
Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

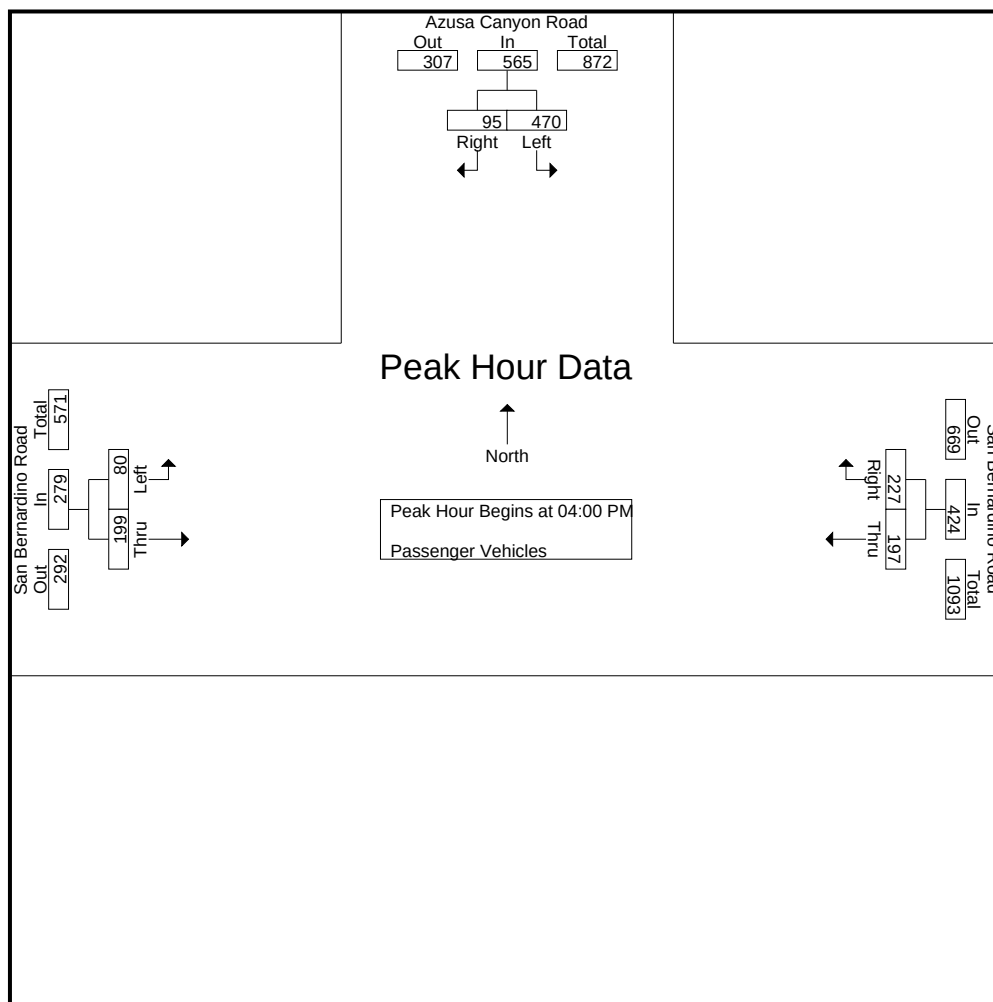
Groups Printed- Passenger Vehicles

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	121	30	151	50	51	101	20	50	70	322
04:15 PM	117	17	134	42	65	107	21	70	91	332
04:30 PM	107	25	132	54	53	107	24	37	61	300
04:45 PM	125	23	148	51	58	109	15	42	57	314
Total	470	95	565	197	227	424	80	199	279	1268
05:00 PM	101	21	122	52	60	112	22	51	73	307
05:15 PM	120	20	140	69	43	112	17	51	68	320
05:30 PM	108	27	135	51	52	103	17	49	66	304
05:45 PM	86	20	106	43	49	92	16	55	71	269
Total	415	88	503	215	204	419	72	206	278	1200
Grand Total	885	183	1068	412	431	843	152	405	557	2468
Apprch %	82.9	17.1		48.9	51.1		27.3	72.7		
Total %	35.9	7.4	43.3	16.7	17.5	34.2	6.2	16.4	22.6	

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	121	30	151	50	51	101	20	50	70	322
04:15 PM	117	17	134	42	65	107	21	70	91	332
04:30 PM	107	25	132	54	53	107	24	37	61	300
04:45 PM	125	23	148	51	58	109	15	42	57	314
Total Volume	470	95	565	197	227	424	80	199	279	1268
% App. Total	83.2	16.8		46.5	53.5		28.7	71.3		
PHF	.940	.792	.935	.912	.873	.972	.833	.711	.766	.955

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	121	30	151	50	51	101	20	50	70
+15 mins.	117	17	134	42	65	107	21	70	91
+30 mins.	107	25	132	54	53	107	24	37	61
+45 mins.	125	23	148	51	58	109	15	42	57
Total Volume	470	95	565	197	227	424	80	199	279
% App. Total	83.2	16.8		46.5	53.5		28.7	71.3	
PHF	.940	.792	.935	.912	.873	.972	.833	.711	.766

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

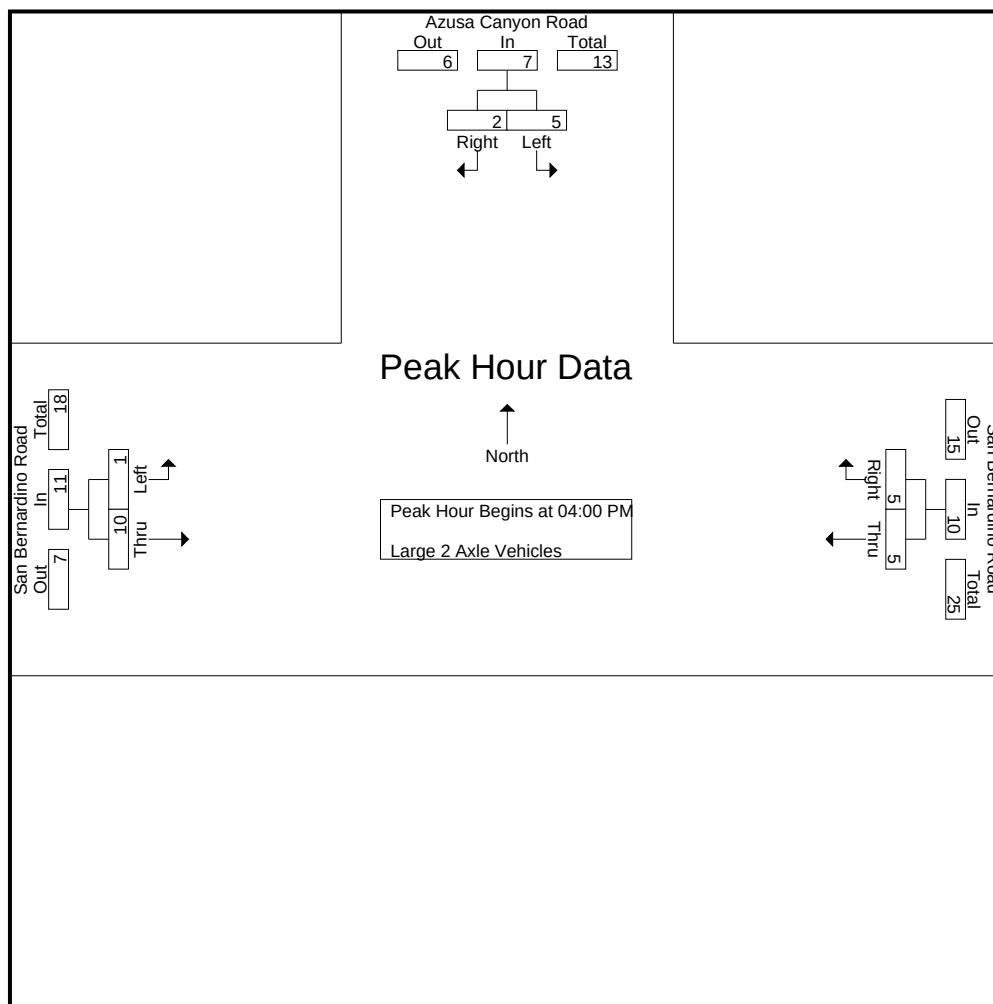
Groups Printed- Large 2 Axle Vehicles

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	3	0	3	1	2	3	0	3	3	9
04:15 PM	1	1	2	2	2	4	0	2	2	8
04:30 PM	1	0	1	1	1	2	1	3	4	7
04:45 PM	0	1	1	1	0	1	0	2	2	4
Total	5	2	7	5	5	10	1	10	11	28
05:00 PM	0	0	0	2	1	3	0	0	0	3
05:15 PM	0	3	3	1	2	3	1	2	3	9
05:30 PM	2	0	2	1	2	3	0	0	0	5
05:45 PM	1	0	1	0	0	0	2	1	3	4
Total	3	3	6	4	5	9	3	3	6	21
Grand Total	8	5	13	9	10	19	4	13	17	49
Apprch %	61.5	38.5		47.4	52.6		23.5	76.5		
Total %	16.3	10.2	26.5	18.4	20.4	38.8	8.2	26.5	34.7	

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	3	0	3	1	2	3	0	3	3	9
04:15 PM	1	1	2	2	2	4	0	2	2	8
04:30 PM	1	0	1	1	1	2	1	3	4	7
04:45 PM	0	1	1	1	0	1	0	2	2	4
Total Volume	5	2	7	5	5	10	1	10	11	28
% App. Total	71.4	28.6		50	50		9.1	90.9		
PHF	.417	.500	.583	.625	.625	.625	.250	.833	.688	.778

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	3	0	3	1	2	3	0	3	3
+15 mins.	1	1	2	2	2	4	0	2	2
+30 mins.	1	0	1	1	1	2	1	3	4
+45 mins.	0	1	1	1	0	1	0	2	2
Total Volume	5	2	7	5	5	10	1	10	11
% App. Total	71.4	28.6		50	50		9.1	90.9	
PHF	.417	.500	.583	.625	.625	.625	.250	.833	.688

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

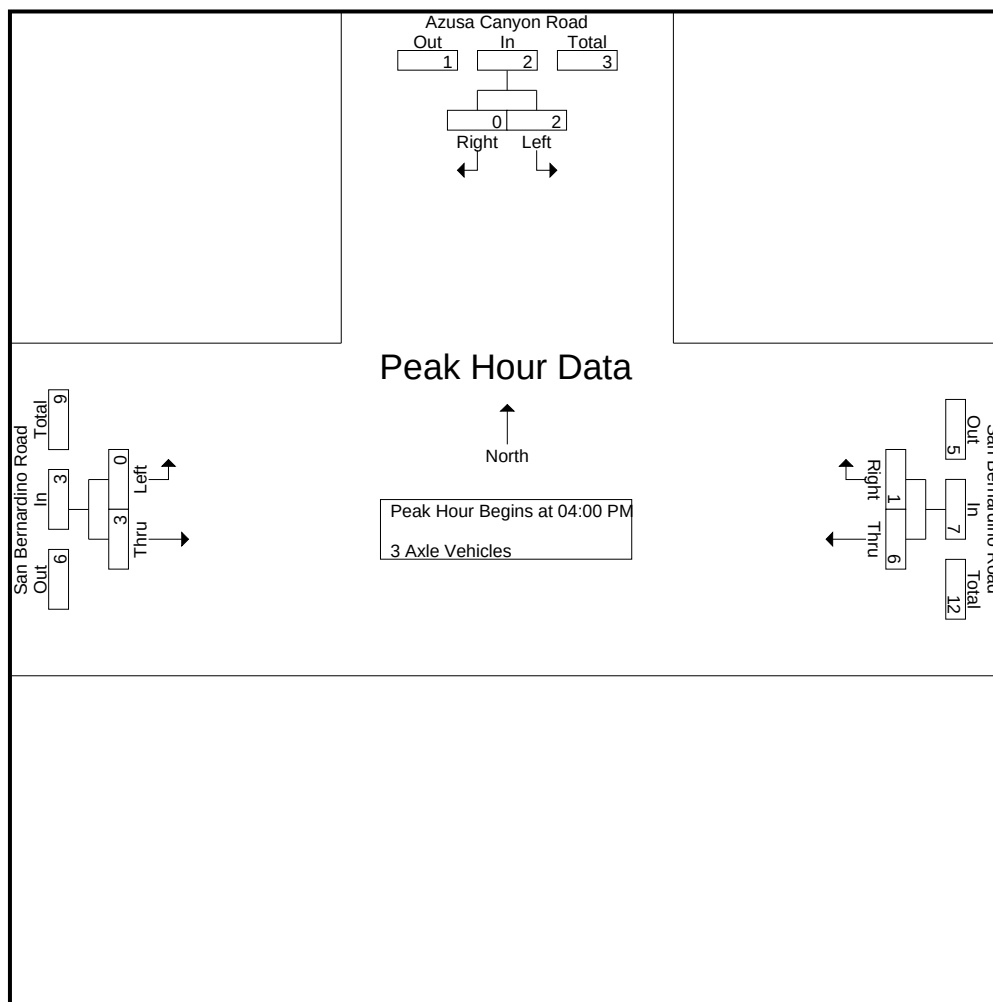
Groups Printed- 3 Axle Vehicles

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	1	0	1	0	0	0	0	1	1	2
04:15 PM	0	0	0	3	0	3	0	0	0	3
04:30 PM	1	0	1	2	0	2	0	2	2	5
04:45 PM	0	0	0	1	1	2	0	0	0	2
Total	2	0	2	6	1	7	0	3	3	12
05:00 PM	0	0	0	1	0	1	0	0	0	1
05:15 PM	0	0	0	0	1	1	0	0	0	1
05:30 PM	0	1	1	0	0	0	0	0	0	1
05:45 PM	1	0	1	1	0	1	0	0	0	2
Total	1	1	2	2	1	3	0	0	0	5
Grand Total	3	1	4	8	2	10	0	3	3	17
Apprch %	75	25		80	20		0	100		
Total %	17.6	5.9	23.5	47.1	11.8	58.8	0	17.6	17.6	

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	1	0	1	0	0	0	0	1	1	2
04:15 PM	0	0	0	3	0	3	0	0	0	3
04:30 PM	1	0	1	2	0	2	0	2	2	5
04:45 PM	0	0	0	1	1	2	0	0	0	2
Total Volume	2	0	2	6	1	7	0	3	3	12
% App. Total	100	0		85.7	14.3		0	100		
PHF	.500	.000	.500	.500	.250	.583	.000	.375	.375	.600

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	1	0	1	0	0	0	0	1	1
+15 mins.	0	0	0	3	0	3	0	0	0
+30 mins.	1	0	1	2	0	2	0	2	2
+45 mins.	0	0	0	1	1	2	0	0	0
Total Volume	2	0	2	6	1	7	0	3	3
% App. Total	100	0		85.7	14.3		0	100	
PHF	.500	.000	.500	.500	.250	.583	.000	.375	.375

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

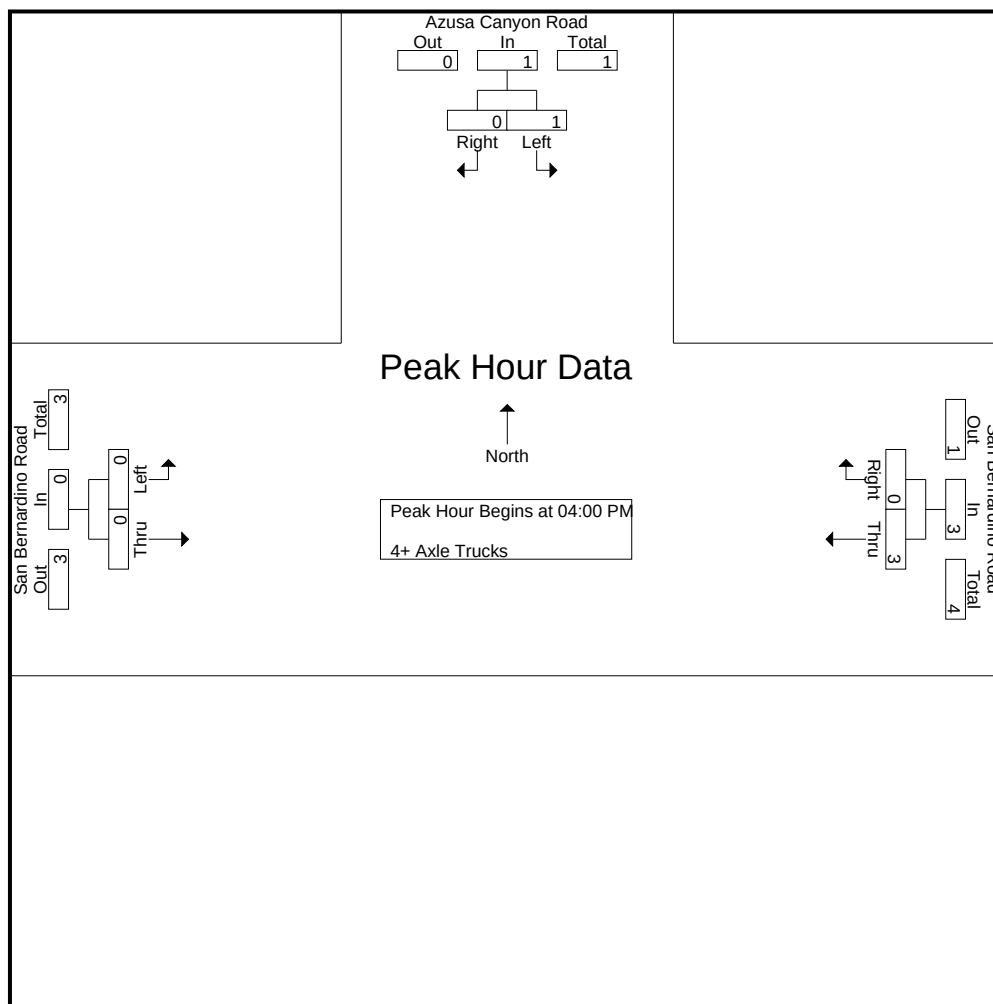
Groups Printed- 4+ Axle Trucks

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	1	0	1	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	2	0	2	0	0	0	2
Total	1	0	1	3	0	3	0	0	0	4
05:00 PM	1	0	1	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	1	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	1	1	1
Total	1	0	1	0	0	0	0	2	2	3
Grand Total	2	0	2	3	0	3	0	2	2	7
Apprch %	100	0		100	0		0	100		
Total %	28.6	0	28.6	42.9	0	42.9	0	28.6	28.6	

	Azusa Canyon Road Southbound			San Bernardino Road Westbound			San Bernardino Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	1	0	1	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	2	0	2	0	0	0	2
Total Volume	1	0	1	3	0	3	0	0	0	4
% App. Total	100	0		100	0		0	0		
PHF	.250	.000	.250	.375	.000	.375	.000	.000	.000	.500

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: San Bernardino Road
 Weather: Clear

File Name : 03_IRW_Azusa Canyon_San Bernardino_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	1	0	1	0	0	0
+15 mins.	1	0	1	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	2	0	2	0	0	0
Total Volume	1	0	1	3	0	3	0	0	0
% App. Total	100	0		100	0		0	0	
PHF	.250	.000	.250	.375	.000	.375	.000	.000	.000

City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

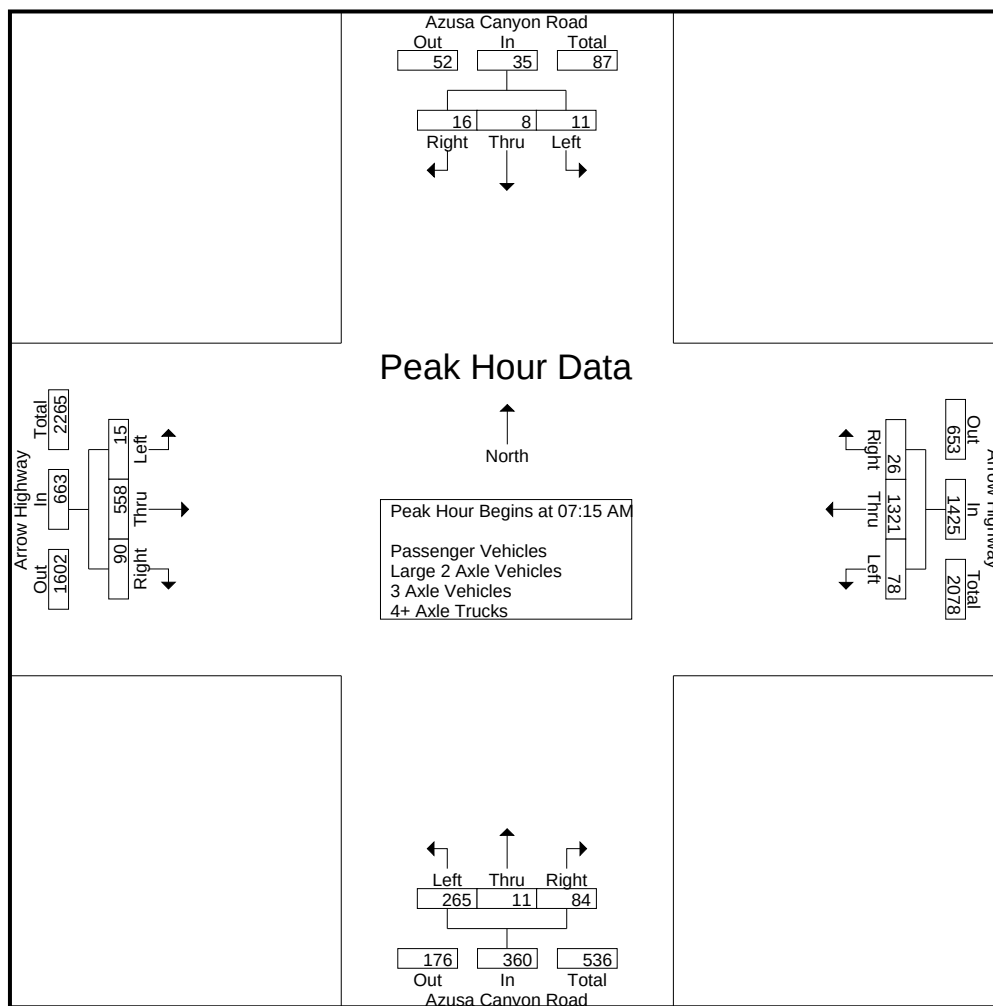
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	1	1	6	14	243	2	259	67	3	16	86	2	112	15	129	480
07:15 AM	5	3	2	10	22	330	4	356	68	0	18	86	2	120	17	139	591
07:30 AM	2	0	6	8	21	319	6	346	55	5	27	87	2	126	19	147	588
07:45 AM	2	2	4	8	20	347	6	373	77	3	19	99	3	177	26	206	686
Total	13	6	13	32	77	1239	18	1334	267	11	80	358	9	535	77	621	2345
08:00 AM	2	3	4	9	15	325	10	350	65	3	20	88	8	135	28	171	618
08:15 AM	3	0	2	5	14	309	4	327	59	2	24	85	4	131	16	151	568
08:30 AM	6	3	7	16	17	259	10	286	49	2	33	84	10	146	17	173	559
08:45 AM	1	2	1	4	15	256	7	278	42	1	26	69	1	139	21	161	512
Total	12	8	14	34	61	1149	31	1241	215	8	103	326	23	551	82	656	2257
Grand Total	25	14	27	66	138	2388	49	2575	482	19	183	684	32	1086	159	1277	4602
Apprch %	37.9	21.2	40.9		5.4	92.7	1.9		70.5	2.8	26.8		2.5	85	12.5		
Total %	0.5	0.3	0.6	1.4	3	51.9	1.1	56	10.5	0.4	4	14.9	0.7	23.6	3.5	27.7	
Passenger Vehicles	20	14	18	52	124	2229	46	2399	454	18	174	646	30	979	116	1125	4222
% Passenger Vehicles	80	100	66.7	78.8	89.9	93.3	93.9	93.2	94.2	94.7	95.1	94.4	93.8	90.1	73	88.1	91.7
Large 2 Axle Vehicles	5	0	3	8	6	78	3	87	8	1	4	13	0	52	6	58	166
% Large 2 Axle Vehicles	20	0	11.1	12.1	4.3	3.3	6.1	3.4	1.7	5.3	2.2	1.9	0	4.8	3.8	4.5	3.6
3 Axle Vehicles	0	0	2	2	1	28	0	29	6	0	1	7	1	27	3	31	69
% 3 Axle Vehicles	0	0	7.4	3	0.7	1.2	0	1.1	1.2	0	0.5	1	3.1	2.5	1.9	2.4	1.5
4+ Axle Trucks	0	0	4	4	7	53	0	60	14	0	4	18	1	28	34	63	145
% 4+ Axle Trucks	0	0	14.8	6.1	5.1	2.2	0	2.3	2.9	0	2.2	2.6	3.1	2.6	21.4	4.9	3.2

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	5	3	2	10	22	330	4	356	68	0	18	86	2	120	17	139	591
07:30 AM	2	0	6	8	21	319	6	346	55	5	27	87	2	126	19	147	588
07:45 AM	2	2	4	8	20	347	6	373	77	3	19	99	3	177	26	206	686
08:00 AM	2	3	4	9	15	325	10	350	65	3	20	88	8	135	28	171	618
Total Volume	11	8	16	35	78	1321	26	1425	265	11	84	360	15	558	90	663	2483
% App. Total	31.4	22.9	45.7		5.5	92.7	1.8		73.6	3.1	23.3		2.3	84.2	13.6		
PHF	.550	.667	.667	.875	.886	.952	.650	.955	.860	.550	.778	.909	.469	.788	.804	.805	.905

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Arrow Highway
 Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 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:

	07:45 AM				07:15 AM				07:15 AM				07:45 AM			
+0 mins.	2	2	4	8	22	330	4	356	68	0	18	86	3	177	26	206
+15 mins.	2	3	4	9	21	319	6	346	55	5	27	87	8	135	28	171
+30 mins.	3	0	2	5	20	347	6	373	77	3	19	99	4	131	16	151
+45 mins.	6	3	7	16	15	325	10	350	65	3	20	88	10	146	17	173
Total Volume	13	8	17	38	78	1321	26	1425	265	11	84	360	25	589	87	701
% App. Total	34.2	21.1	44.7		5.5	92.7	1.8		73.6	3.1	23.3		3.6	84	12.4	
PHF	.542	.667	.607	.594	.886	.952	.650	.955	.860	.550	.778	.909	.625	.832	.777	.851

City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

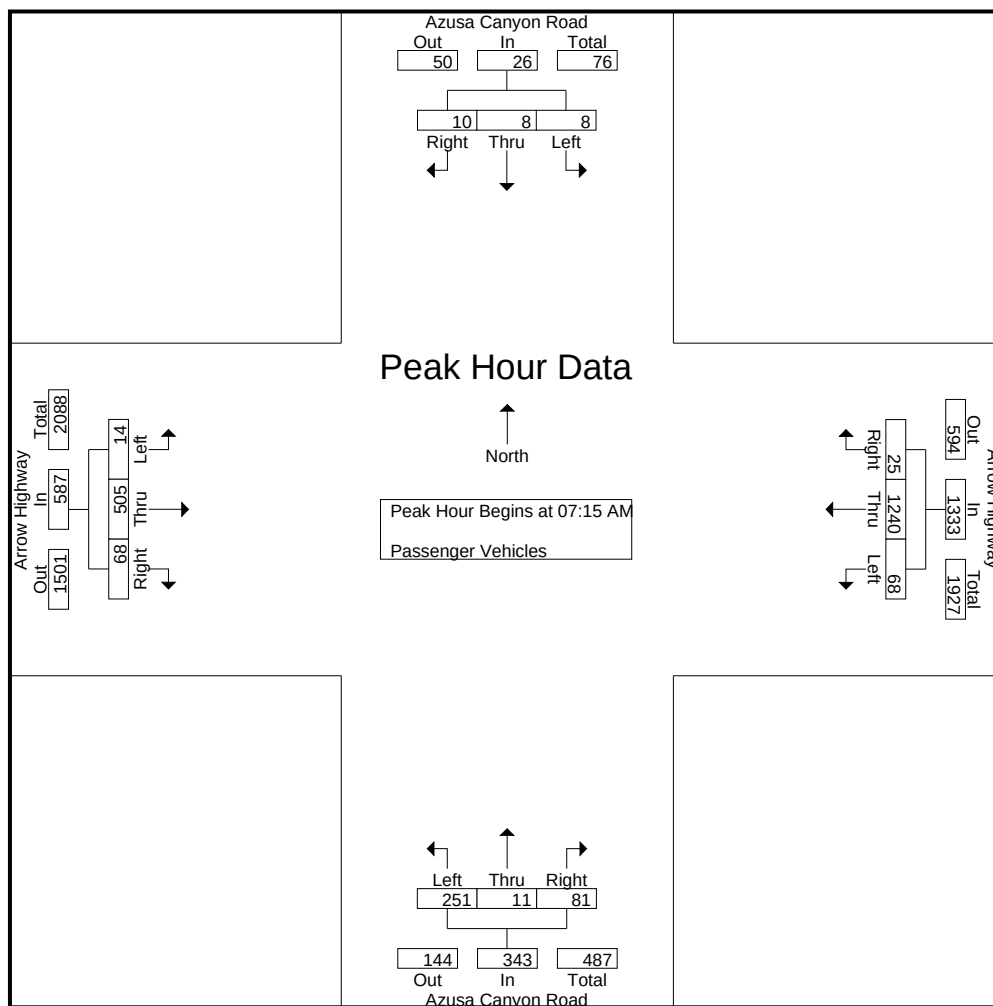
Groups Printed- Passenger Vehicles

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	1	0	4	12	227	2	241	65	3	14	82	2	99	11	112	439
07:15 AM	4	3	1	8	19	308	4	331	66	0	18	84	2	107	15	124	547
07:30 AM	1	0	2	3	19	308	5	332	51	5	25	81	2	114	14	130	546
07:45 AM	2	2	3	7	16	323	6	345	74	3	18	95	3	163	20	186	633
Total	10	6	6	22	66	1166	17	1249	256	11	75	342	9	483	60	552	2165
08:00 AM	1	3	4	8	14	301	10	325	60	3	20	83	7	121	19	147	563
08:15 AM	3	0	2	5	13	291	4	308	54	1	24	79	4	116	8	128	520
08:30 AM	5	3	6	14	16	238	9	263	45	2	29	76	9	129	14	152	505
08:45 AM	1	2	0	3	15	233	6	254	39	1	26	66	1	130	15	146	469
Total	10	8	12	30	58	1063	29	1150	198	7	99	304	21	496	56	573	2057
Grand Total	20	14	18	52	124	2229	46	2399	454	18	174	646	30	979	116	1125	4222
Apprch %	38.5	26.9	34.6		5.2	92.9	1.9		70.3	2.8	26.9		2.7	87	10.3		
Total %	0.5	0.3	0.4	1.2	2.9	52.8	1.1	56.8	10.8	0.4	4.1	15.3	0.7	23.2	2.7	26.6	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	4	3	1	8	19	308	4	331	66	0	18	84	2	107	15	124	547
07:30 AM	1	0	2	3	19	308	5	332	51	5	25	81	2	114	14	130	546
07:45 AM	2	2	3	7	16	323	6	345	74	3	18	95	3	163	20	186	633
08:00 AM	1	3	4	8	14	301	10	325	60	3	20	83	7	121	19	147	563
Total Volume	8	8	10	26	68	1240	25	1333	251	11	81	343	14	505	68	587	2289
% App. Total	30.8	30.8	38.5		5.1	93	1.9		73.2	3.2	23.6		2.4	86	11.6		
PHF	.500	.667	.625	.813	.895	.960	.625	.966	.848	.550	.810	.903	.500	.775	.850	.789	.904

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Arrow Highway
 Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	4	3	1	8	19	308	4	331	66	0	18	84	2	107	15	124
+15 mins.	1	0	2	3	19	308	5	332	51	5	25	81	2	114	14	130
+30 mins.	2	2	3	7	16	323	6	345	74	3	18	95	3	163	20	186
+45 mins.	1	3	4	8	14	301	10	325	60	3	20	83	7	121	19	147
Total Volume	8	8	10	26	68	1240	25	1333	251	11	81	343	14	505	68	587
% App. Total	30.8	30.8	38.5		5.1	93	1.9		73.2	3.2	23.6		2.4	86	11.6	
PHF	.500	.667	.625	.813	.895	.960	.625	.966	.848	.550	.810	.903	.500	.775	.850	.789

City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

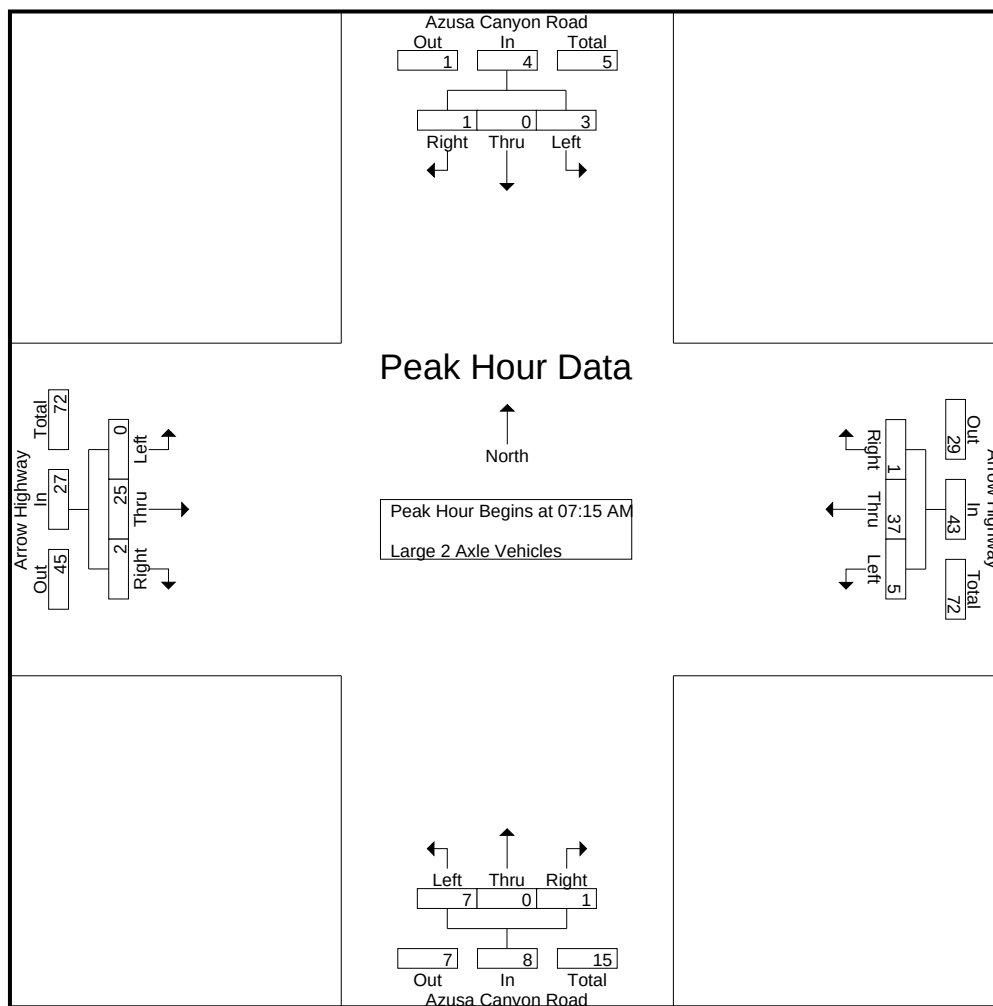
Groups Printed- Large 2 Axle Vehicles

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	0	1	2	1	8	0	9	0	0	1	1	0	6	0	6	18
07:15 AM	1	0	0	1	1	10	0	11	1	0	0	1	0	7	0	7	20
07:30 AM	1	0	1	2	1	7	1	9	0	0	0	0	0	4	1	5	16
07:45 AM	0	0	0	0	3	7	0	10	2	0	1	3	0	6	1	7	20
Total	3	0	2	5	6	32	1	39	3	0	2	5	0	23	2	25	74
08:00 AM	1	0	0	1	0	13	0	13	4	0	0	4	0	8	0	8	26
08:15 AM	0	0	0	0	0	8	0	8	0	1	0	1	0	11	1	12	21
08:30 AM	1	0	0	1	0	10	1	11	1	0	2	3	0	7	1	8	23
08:45 AM	0	0	1	1	0	15	1	16	0	0	0	0	0	3	2	5	22
Total	2	0	1	3	0	46	2	48	5	1	2	8	0	29	4	33	92
Grand Total	5	0	3	8	6	78	3	87	8	1	4	13	0	52	6	58	166
Apprch %	62.5	0	37.5		6.9	89.7	3.4		61.5	7.7	30.8		0	89.7	10.3		
Total %	3	0	1.8	4.8	3.6	47	1.8	52.4	4.8	0.6	2.4	7.8	0	31.3	3.6	34.9	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	0	0	1	1	10	0	11	1	0	0	1	0	7	0	7	20
07:30 AM	1	0	1	2	1	7	1	9	0	0	0	0	0	4	1	5	16
07:45 AM	0	0	0	0	3	7	0	10	2	0	1	3	0	6	1	7	20
08:00 AM	1	0	0	1	0	13	0	13	4	0	0	4	0	8	0	8	26
Total Volume	3	0	1	4	5	37	1	43	7	0	1	8	0	25	2	27	82
% App. Total	75	0	25		11.6	86	2.3		87.5	0	12.5		0	92.6	7.4		
PHF	.750	.000	.250	.500	.417	.712	.250	.827	.438	.000	.250	.500	.000	.781	.500	.844	.788

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Arrow Highway
 Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	1	0	0	1	1	10	0	11	1	0	0	1	0	7	0	7
+15 mins.	1	0	1	2	1	7	1	9	0	0	0	0	0	4	1	5
+30 mins.	0	0	0	0	3	7	0	10	2	0	1	3	0	6	1	7
+45 mins.	1	0	0	1	0	13	0	13	4	0	0	4	0	8	0	8
Total Volume	3	0	1	4	5	37	1	43	7	0	1	8	0	25	2	27
% App. Total	75	0	25		11.6	86	2.3		87.5	0	12.5		0	92.6	7.4	
PHF	.750	.000	.250	.500	.417	.712	.250	.827	.438	.000	.250	.500	.000	.781	.500	.844

City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

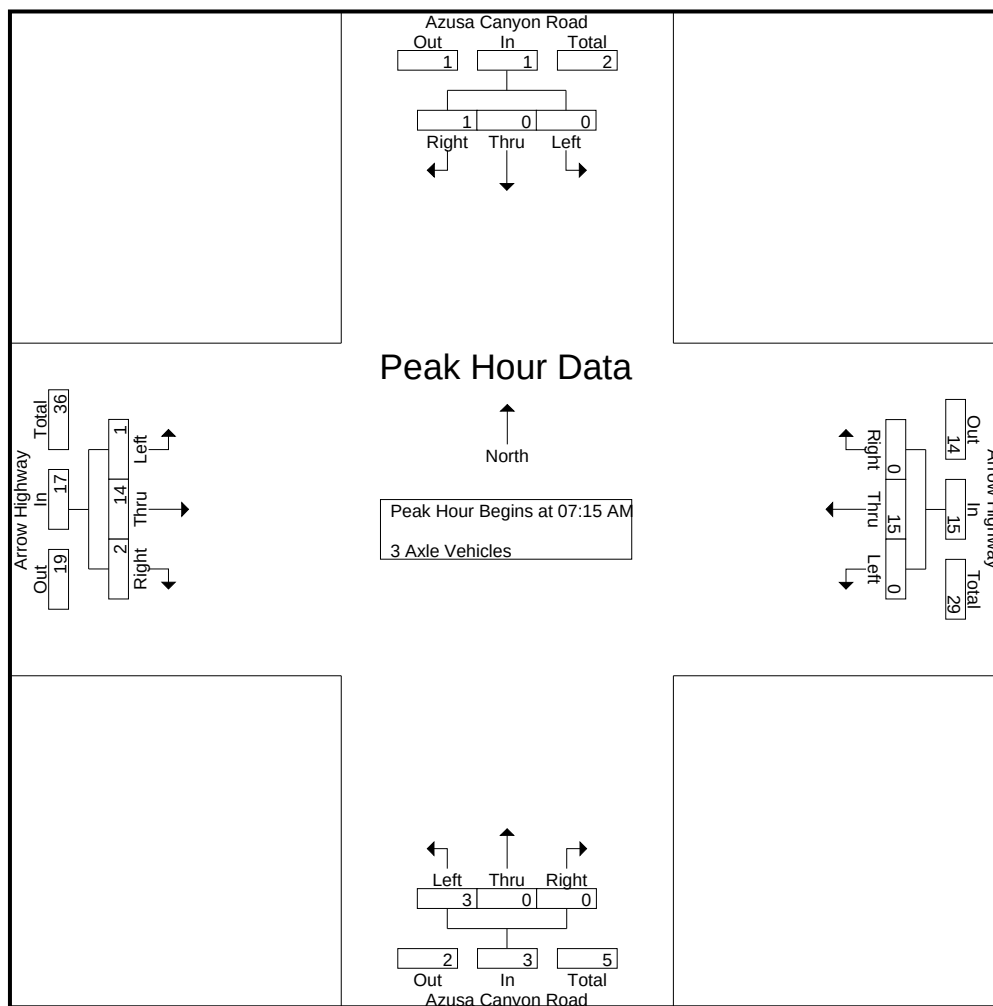
Groups Printed- 3 Axle Vehicles

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	4	1	5	7
07:15 AM	0	0	1	1	0	4	0	4	1	0	0	1	0	3	0	3	9
07:30 AM	0	0	0	0	0	1	0	1	1	0	0	1	0	6	0	6	8
07:45 AM	0	0	0	0	0	9	0	9	0	0	0	0	0	4	1	5	14
Total	0	0	1	1	0	16	0	16	2	0	0	2	0	17	2	19	38
08:00 AM	0	0	0	0	0	1	0	1	1	0	0	1	1	1	1	3	5
08:15 AM	0	0	0	0	0	3	0	3	2	0	0	2	0	2	0	2	7
08:30 AM	0	0	1	1	1	3	0	4	0	0	1	1	0	3	0	3	9
08:45 AM	0	0	0	0	0	5	0	5	1	0	0	1	0	4	0	4	10
Total	0	0	1	1	1	12	0	13	4	0	1	5	1	10	1	12	31
Grand Total	0	0	2	2	1	28	0	29	6	0	1	7	1	27	3	31	69
Apprch %	0	0	100		3.4	96.6	0		85.7	0	14.3		3.2	87.1	9.7		
Total %	0	0	2.9	2.9	1.4	40.6	0	42	8.7	0	1.4	10.1	1.4	39.1	4.3	44.9	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	1	1	0	4	0	4	1	0	0	1	0	3	0	3	9
07:30 AM	0	0	0	0	0	1	0	1	1	0	0	1	0	6	0	6	8
07:45 AM	0	0	0	0	0	9	0	9	0	0	0	0	0	4	1	5	14
08:00 AM	0	0	0	0	0	1	0	1	1	0	0	1	1	1	1	3	5
Total Volume	0	0	1	1	0	15	0	15	3	0	0	3	1	14	2	17	36
% App. Total	0	0	100		0	100	0		100	0	0		5.9	82.4	11.8		
PHF	.000	.000	.250	.250	.000	.417	.000	.417	.750	.000	.000	.750	.250	.583	.500	.708	.643

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Arrow Highway
 Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	1	1	0	4	0	4	1	0	0	1	0	3	0	3
+15 mins.	0	0	0	0	0	1	0	1	1	0	0	1	0	6	0	6
+30 mins.	0	0	0	0	0	9	0	9	0	0	0	0	0	4	1	5
+45 mins.	0	0	0	0	0	1	0	1	1	0	0	1	1	1	1	3
Total Volume	0	0	1	1	0	15	0	15	3	0	0	3	1	14	2	17
% App. Total	0	0	100		0	100	0		100	0	0		5.9	82.4	11.8	
PHF	.000	.000	.250	.250	.000	.417	.000	.417	.750	.000	.000	.750	.250	.583	.500	.708

City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

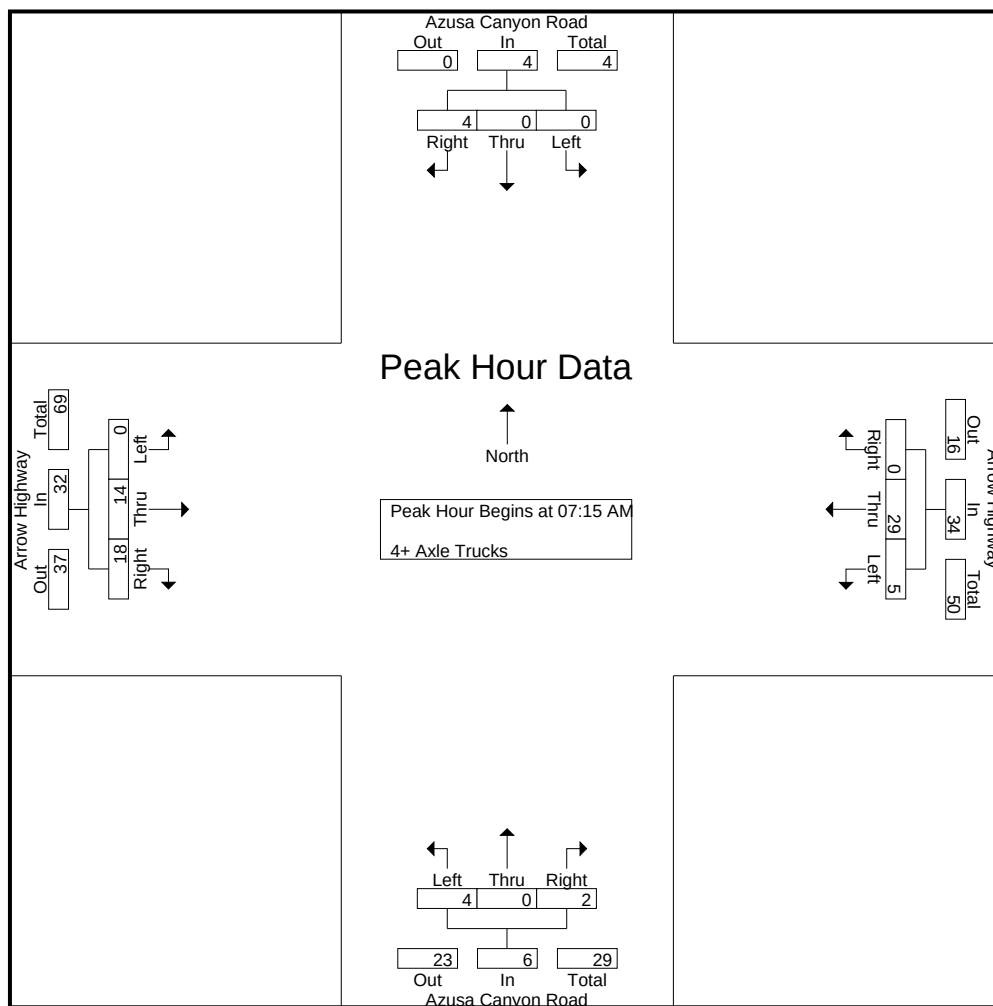
Groups Printed- 4+ Axle Trucks

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	6	0	7	2	0	1	3	0	3	3	6	16
07:15 AM	0	0	0	0	2	8	0	10	0	0	0	0	0	3	2	5	15
07:30 AM	0	0	3	3	1	3	0	4	3	0	2	5	0	2	4	6	18
07:45 AM	0	0	1	1	1	8	0	9	1	0	0	1	0	4	4	8	19
Total	0	0	4	4	5	25	0	30	6	0	3	9	0	12	13	25	68
08:00 AM	0	0	0	0	1	10	0	11	0	0	0	0	0	5	8	13	24
08:15 AM	0	0	0	0	1	7	0	8	3	0	0	3	0	2	7	9	20
08:30 AM	0	0	0	0	0	8	0	8	3	0	1	4	1	7	2	10	22
08:45 AM	0	0	0	0	0	3	0	3	2	0	0	2	0	2	4	6	11
Total	0	0	0	0	2	28	0	30	8	0	1	9	1	16	21	38	77
Grand Total	0	0	4	4	7	53	0	60	14	0	4	18	1	28	34	63	145
Apprch %	0	0	100		11.7	88.3	0		77.8	0	22.2		1.6	44.4	54		
Total %	0	0	2.8	2.8	4.8	36.6	0	41.4	9.7	0	2.8	12.4	0.7	19.3	23.4	43.4	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	2	8	0	10	0	0	0	0	0	3	2	5	15
07:30 AM	0	0	3	3	1	3	0	4	3	0	2	5	0	2	4	6	18
07:45 AM	0	0	1	1	1	8	0	9	1	0	0	1	0	4	4	8	19
08:00 AM	0	0	0	0	1	10	0	11	0	0	0	0	0	5	8	13	24
Total Volume	0	0	4	4	5	29	0	34	4	0	2	6	0	14	18	32	76
% App. Total	0	0	100		14.7	85.3	0		66.7	0	33.3		0	43.8	56.2		
PHF	.000	.000	.333	.333	.625	.725	.000	.773	.333	.000	.250	.300	.000	.700	.563	.615	.792

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Arrow Highway
 Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	2	8	0	10	0	0	0	0	0	3	2	5
+15 mins.	0	0	3	3	1	3	0	4	3	0	2	5	0	2	4	6
+30 mins.	0	0	1	1	1	8	0	9	1	0	0	1	0	4	4	8
+45 mins.	0	0	0	0	1	10	0	11	0	0	0	0	0	5	8	13
Total Volume	0	0	4	4	5	29	0	34	4	0	2	6	0	14	18	32
% App. Total	0	0	100		14.7	85.3	0		66.7	0	33.3		0	43.8	56.2	
PHF	.000	.000	.333	.333	.625	.725	.000	.773	.333	.000	.250	.300	.000	.700	.563	.615

City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

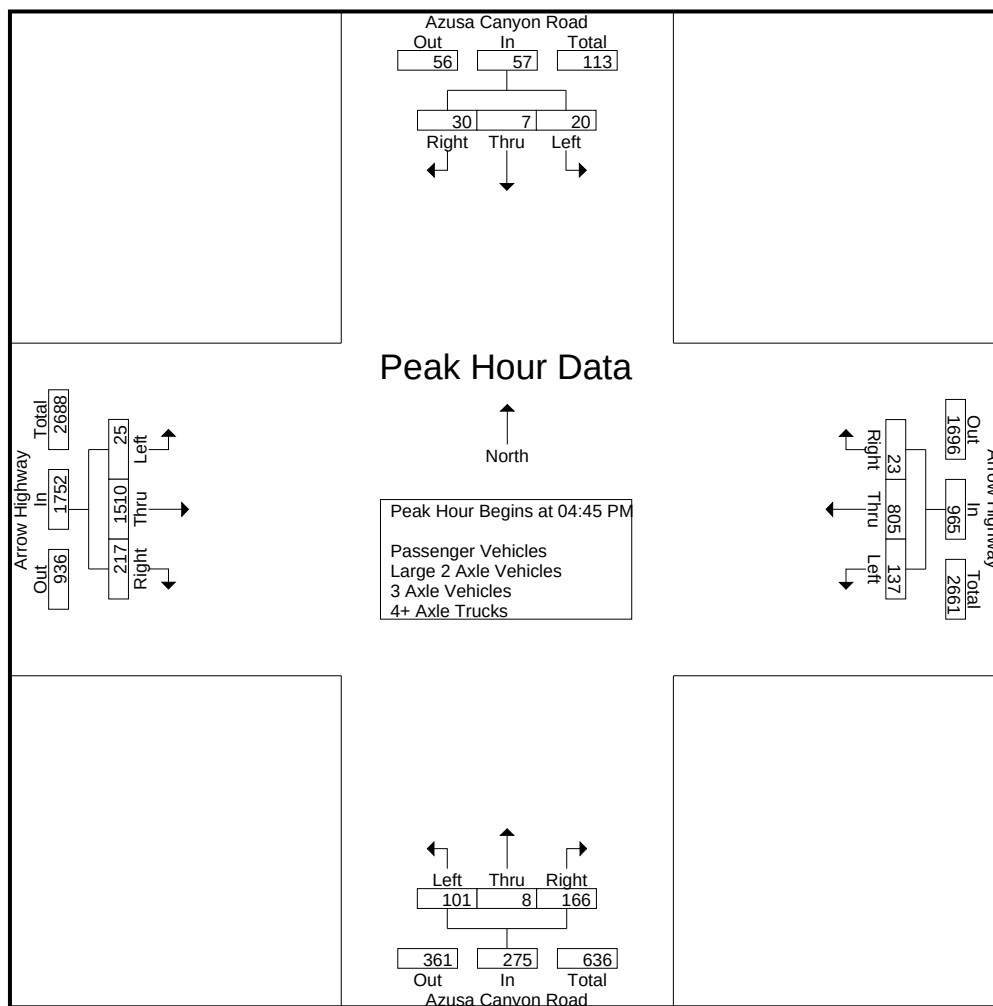
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	8	1	7	16	28	206	2	236	29	0	41	70	5	414	47	466	788
04:15 PM	6	1	12	19	25	170	6	201	29	3	46	78	2	382	53	437	735
04:30 PM	2	3	11	16	17	246	2	265	27	0	32	59	5	392	47	444	784
04:45 PM	6	2	8	16	30	175	6	211	21	0	39	60	3	352	43	398	685
Total	22	7	38	67	100	797	16	913	106	3	158	267	15	1540	190	1745	2992
05:00 PM	5	1	8	14	37	230	6	273	35	2	32	69	7	392	57	456	812
05:15 PM	6	3	10	19	38	185	8	231	19	2	55	76	4	373	58	435	761
05:30 PM	3	1	4	8	32	215	3	250	26	4	40	70	11	393	59	463	791
05:45 PM	6	1	5	12	33	160	4	197	23	2	34	59	4	333	42	379	647
Total	20	6	27	53	140	790	21	951	103	10	161	274	26	1491	216	1733	3011
Grand Total	42	13	65	120	240	1587	37	1864	209	13	319	541	41	3031	406	3478	6003
Apprch %	35	10.8	54.2		12.9	85.1	2		38.6	2.4	59		1.2	87.1	11.7		
Total %	0.7	0.2	1.1	2	4	26.4	0.6	31.1	3.5	0.2	5.3	9	0.7	50.5	6.8	57.9	
Passenger Vehicles	40	13	64	117	229	1495	37	1761	203	12	311	526	38	2927	393	3358	5762
% Passenger Vehicles	95.2	100	98.5	97.5	95.4	94.2	100	94.5	97.1	92.3	97.5	97.2	92.7	96.6	96.8	96.5	96
Large 2 Axle Vehicles	2	0	1	3	8	40	0	48	3	1	4	8	0	57	11	68	127
% Large 2 Axle Vehicles	4.8	0	1.5	2.5	3.3	2.5	0	2.6	1.4	7.7	1.3	1.5	0	1.9	2.7	2	2.1
3 Axle Vehicles	0	0	0	0	3	8	0	11	2	0	3	5	0	15	0	15	31
% 3 Axle Vehicles	0	0	0	0	1.2	0.5	0	0.6	1	0	0.9	0.9	0	0.5	0	0.4	0.5
4+ Axle Trucks	0	0	0	0	0	44	0	44	1	0	1	2	3	32	2	37	83
% 4+ Axle Trucks	0	0	0	0	0	2.8	0	2.4	0.5	0	0.3	0.4	7.3	1.1	0.5	1.1	1.4

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	6	2	8	16	30	175	6	211	21	0	39	60	3	352	43	398	685
05:00 PM	5	1	8	14	37	230	6	273	35	2	32	69	7	392	57	456	812
05:15 PM	6	3	10	19	38	185	8	231	19	2	55	76	4	373	58	435	761
05:30 PM	3	1	4	8	32	215	3	250	26	4	40	70	11	393	59	463	791
Total Volume	20	7	30	57	137	805	23	965	101	8	166	275	25	1510	217	1752	3049
% App. Total	35.1	12.3	52.6		14.2	83.4	2.4		36.7	2.9	60.4		1.4	86.2	12.4		
PHF	.833	.583	.750	.750	.901	.875	.719	.884	.721	.500	.755	.905	.568	.961	.919	.946	.939

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Arrow Highway
 Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 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				04:45 PM				04:45 PM			
+0 mins.	8	1	7	16	17	246	2	265	21	0	39	60	3	352	43	398
+15 mins.	6	1	12	19	30	175	6	211	35	2	32	69	7	392	57	456
+30 mins.	2	3	11	16	37	230	6	273	19	2	55	76	4	373	58	435
+45 mins.	6	2	8	16	38	185	8	231	26	4	40	70	11	393	59	463
Total Volume	22	7	38	67	122	836	22	980	101	8	166	275	25	1510	217	1752
% App. Total	32.8	10.4	56.7		12.4	85.3	2.2		36.7	2.9	60.4		1.4	86.2	12.4	
PHF	.688	.583	.792	.882	.803	.850	.688	.897	.721	.500	.755	.905	.568	.961	.919	.946

City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

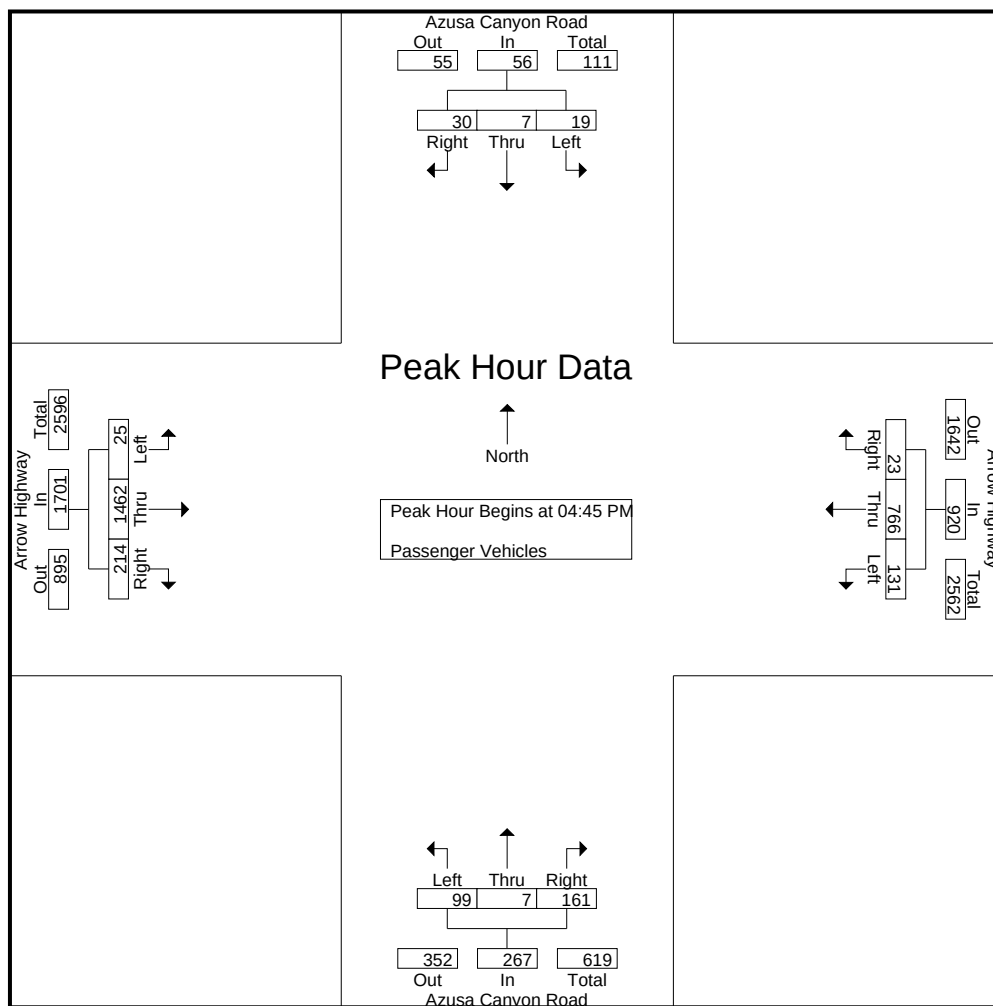
Groups Printed- Passenger Vehicles

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	7	1	6	14	27	185	2	214	27	0	40	67	2	392	42	436	731
04:15 PM	6	1	12	19	23	158	6	187	29	3	45	77	2	367	51	420	703
04:30 PM	2	3	11	16	16	238	2	256	25	0	32	57	5	379	46	430	759
04:45 PM	6	2	8	16	28	165	6	199	20	0	38	58	3	339	42	384	657
Total	21	7	37	65	94	746	16	856	101	3	155	259	12	1477	181	1670	2850
05:00 PM	5	1	8	14	35	222	6	263	35	2	31	68	7	376	56	439	784
05:15 PM	5	3	10	18	36	175	8	219	19	2	52	73	4	367	57	428	738
05:30 PM	3	1	4	8	32	204	3	239	25	3	40	68	11	380	59	450	765
05:45 PM	6	1	5	12	32	148	4	184	23	2	33	58	4	327	40	371	625
Total	19	6	27	52	135	749	21	905	102	9	156	267	26	1450	212	1688	2912
Grand Total	40	13	64	117	229	1495	37	1761	203	12	311	526	38	2927	393	3358	5762
Apprch %	34.2	11.1	54.7		13	84.9	2.1		38.6	2.3	59.1		1.1	87.2	11.7		
Total %	0.7	0.2	1.1	2	4	25.9	0.6	30.6	3.5	0.2	5.4	9.1	0.7	50.8	6.8	58.3	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	6	2	8	16	28	165	6	199	20	0	38	58	3	339	42	384	657
05:00 PM	5	1	8	14	35	222	6	263	35	2	31	68	7	376	56	439	784
05:15 PM	5	3	10	18	36	175	8	219	19	2	52	73	4	367	57	428	738
05:30 PM	3	1	4	8	32	204	3	239	25	3	40	68	11	380	59	450	765
Total Volume	19	7	30	56	131	766	23	920	99	7	161	267	25	1462	214	1701	2944
% App. Total	33.9	12.5	53.6		14.2	83.3	2.5		37.1	2.6	60.3		1.5	85.9	12.6		
PHF	.792	.583	.750	.778	.910	.863	.719	.875	.707	.583	.774	.914	.568	.962	.907	.945	.939

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Arrow Highway
 Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	6	2	8	16	28	165	6	199	20	0	38	58	3	339	42	384
+15 mins.	5	1	8	14	35	222	6	263	35	2	31	68	7	376	56	439
+30 mins.	5	3	10	18	36	175	8	219	19	2	52	73	4	367	57	428
+45 mins.	3	1	4	8	32	204	3	239	25	3	40	68	11	380	59	450
Total Volume	19	7	30	56	131	766	23	920	99	7	161	267	25	1462	214	1701
% App. Total	33.9	12.5	53.6		14.2	83.3	2.5		37.1	2.6	60.3		1.5	85.9	12.6	
PHF	.792	.583	.750	.778	.910	.863	.719	.875	.707	.583	.774	.914	.568	.962	.907	.945

City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

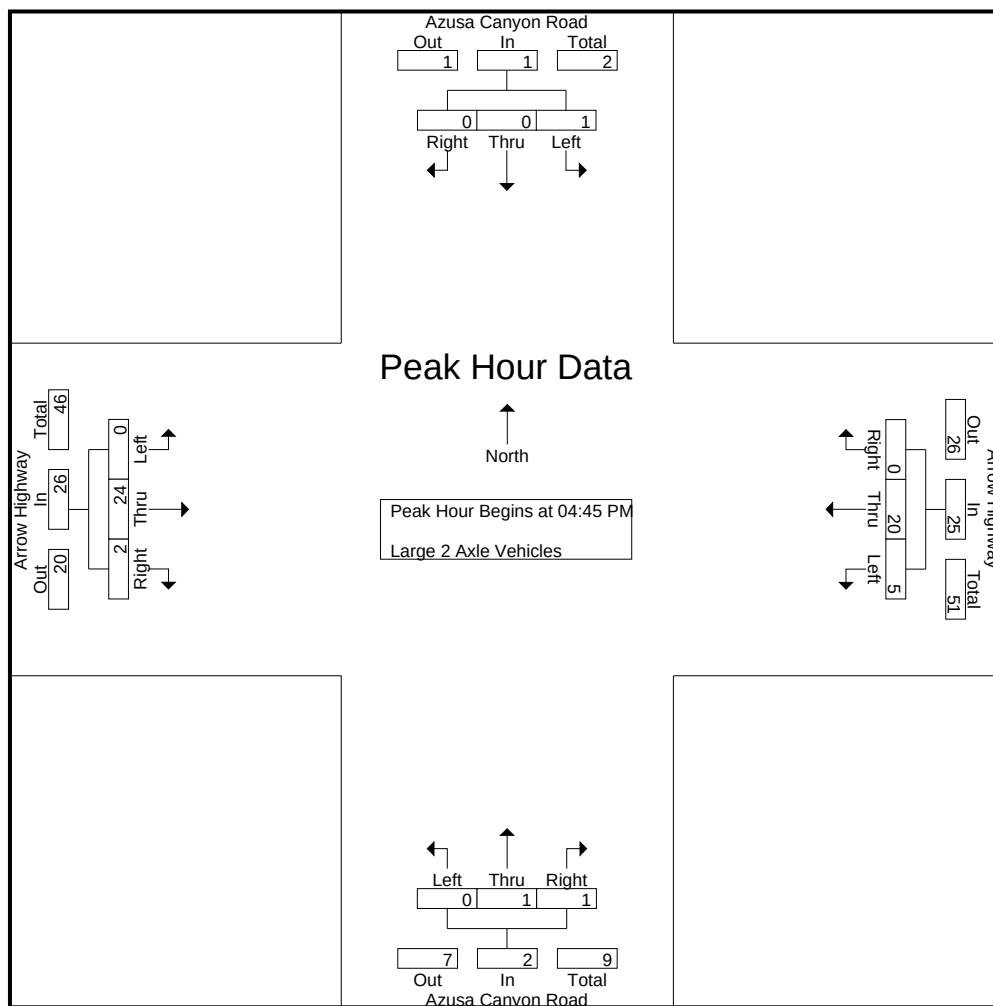
Groups Printed- Large 2 Axle Vehicles

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	1	2	1	6	0	7	2	0	1	3	0	13	5	18	30
04:15 PM	0	0	0	0	1	5	0	6	0	0	1	1	0	8	2	10	17
04:30 PM	0	0	0	0	1	3	0	4	1	0	0	1	0	10	1	11	16
04:45 PM	0	0	0	0	1	4	0	5	0	0	0	0	0	7	1	8	13
Total	1	0	1	2	4	18	0	22	3	0	2	5	0	38	9	47	76
05:00 PM	0	0	0	0	2	3	0	5	0	0	0	0	0	9	0	9	14
05:15 PM	1	0	0	1	2	6	0	8	0	0	1	1	0	3	1	4	14
05:30 PM	0	0	0	0	0	7	0	7	0	1	0	1	0	5	0	5	13
05:45 PM	0	0	0	0	0	6	0	6	0	0	1	1	0	2	1	3	10
Total	1	0	0	1	4	22	0	26	0	1	2	3	0	19	2	21	51
Grand Total	2	0	1	3	8	40	0	48	3	1	4	8	0	57	11	68	127
Apprch %	66.7	0	33.3		16.7	83.3	0		37.5	12.5	50		0	83.8	16.2		
Total %	1.6	0	0.8	2.4	6.3	31.5	0	37.8	2.4	0.8	3.1	6.3	0	44.9	8.7	53.5	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	1	4	0	5	0	0	0	0	0	7	1	8	13
05:00 PM	0	0	0	0	2	3	0	5	0	0	0	0	0	9	0	9	14
05:15 PM	1	0	0	1	2	6	0	8	0	0	1	1	0	3	1	4	14
05:30 PM	0	0	0	0	0	7	0	7	0	1	0	1	0	5	0	5	13
Total Volume	1	0	0	1	5	20	0	25	0	1	1	2	0	24	2	26	54
% App. Total	100	0	0		20	80	0		0	50	50		0	92.3	7.7		
PHF	.250	.000	.000	.250	.625	.714	.000	.781	.000	.250	.250	.500	.000	.667	.500	.722	.964

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Arrow Highway
 Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	1	4	0	5	0	0	0	0	0	7	1	8
+15 mins.	0	0	0	0	2	3	0	5	0	0	0	0	0	9	0	9
+30 mins.	1	0	0	1	2	6	0	8	0	0	1	1	0	3	1	4
+45 mins.	0	0	0	0	0	7	0	7	0	1	0	1	0	5	0	5
Total Volume	1	0	0	1	5	20	0	25	0	1	1	2	0	24	2	26
% App. Total	100	0	0		20	80	0		0	50	50		0	92.3	7.7	
PHF	.250	.000	.000	.250	.625	.714	.000	.781	.000	.250	.250	.500	.000	.667	.500	.722

City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_PM
Site Code : 05121286
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Page No : 1

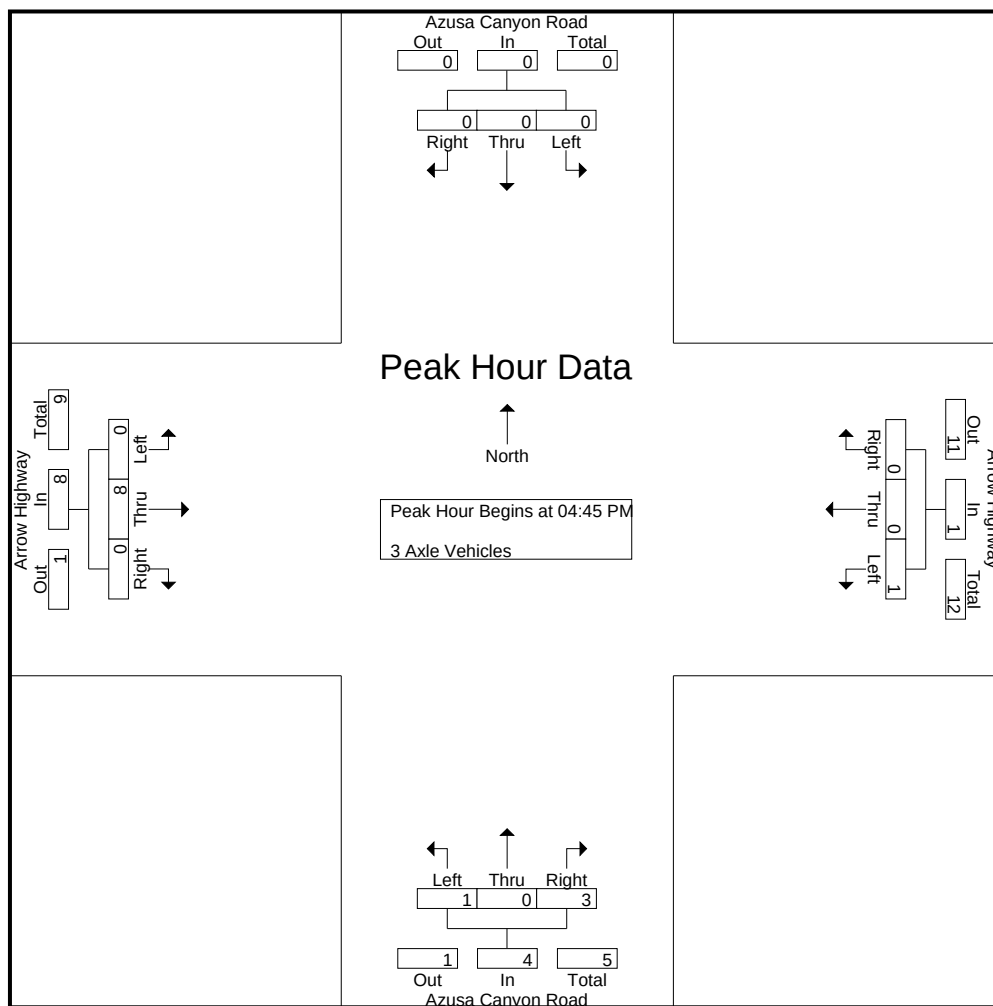
Groups Printed- 3 Axle Vehicles

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	4	0	4	8
04:15 PM	0	0	0	0	1	2	0	3	0	0	0	0	0	2	0	2	5
04:30 PM	0	0	0	0	0	2	0	2	1	0	0	1	0	1	0	1	4
04:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	2
Total	0	0	0	0	2	8	0	10	1	0	0	1	0	8	0	8	19
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	4	0	4	5
05:15 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	3	0	3	4
05:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	1	1	0	3	4	0	7	0	7	12
Grand Total	0	0	0	0	3	8	0	11	2	0	3	5	0	15	0	15	31
Apprch %	0	0	0		27.3	72.7	0		40	0	60		0	100	0		
Total %	0	0	0	0	9.7	25.8	0	35.5	6.5	0	9.7	16.1	0	48.4	0	48.4	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	4	0	4	5
05:15 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	3	0	3	4
Total Volume	0	0	0	0	1	0	0	1	1	0	3	4	0	8	0	8	13
% App. Total	0	0	0		100	0	0		25	0	75		0	100	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.250	.000	.375	.500	.000	.500	.000	.500	.650

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Arrow Highway
 Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	0	0	0	0	1	1	0	4	0	4
+30 mins.	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	3	0	3
Total Volume	0	0	0	0	1	0	0	1	1	0	3	4	0	8	0	8
% App. Total	0	0	0	0	100	0	0		25	0	75		0	100	0	
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.250	.000	.375	.500	.000	.500	.000	.500

City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

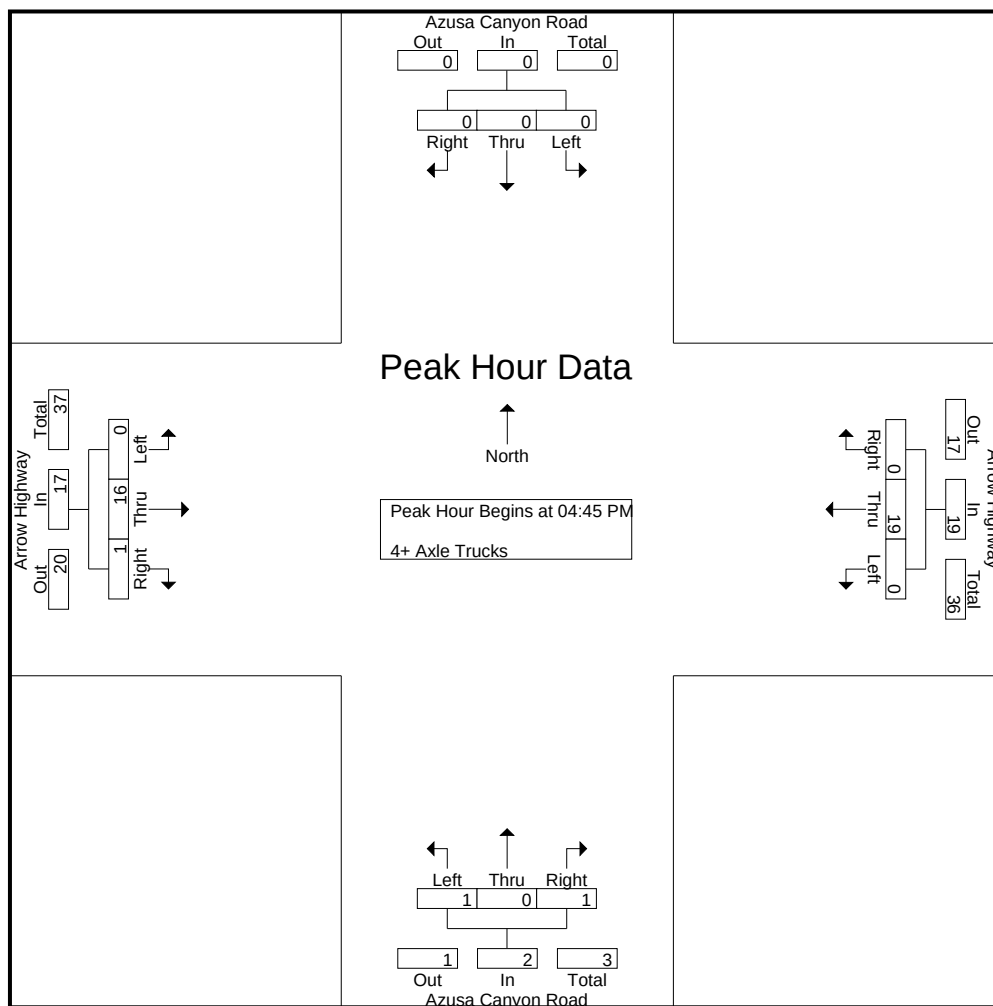
Groups Printed- 4+ Axle Trucks

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	11	0	11	0	0	0	0	3	5	0	8	19
04:15 PM	0	0	0	0	0	5	0	5	0	0	0	0	0	5	0	5	10
04:30 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	5
04:45 PM	0	0	0	0	0	6	0	6	1	0	1	2	0	5	0	5	13
Total	0	0	0	0	0	25	0	25	1	0	1	2	3	17	0	20	47
05:00 PM	0	0	0	0	0	5	0	5	0	0	0	0	0	3	1	4	9
05:15 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	3	0	3	7
05:30 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	5	0	5	9
05:45 PM	0	0	0	0	0	6	0	6	0	0	0	0	0	4	1	5	11
Total	0	0	0	0	0	19	0	19	0	0	0	0	0	15	2	17	36
Grand Total	0	0	0	0	0	44	0	44	1	0	1	2	3	32	2	37	83
Apprch %	0	0	0		0	100	0		50	0	50		8.1	86.5	5.4		
Total %	0	0	0		0	53	0	53	1.2	0	1.2	2.4	3.6	38.6	2.4	44.6	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	6	0	6	1	0	1	2	0	5	0	5	13
05:00 PM	0	0	0	0	0	5	0	5	0	0	0	0	0	3	1	4	9
05:15 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	3	0	3	7
05:30 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	5	0	5	9
Total Volume	0	0	0	0	0	19	0	19	1	0	1	2	0	16	1	17	38
% App. Total	0	0	0		0	100	0		50	0	50		0	94.1	5.9		
PHF	.000	.000	.000	.000	.000	.792	.000	.792	.250	.000	.250	.250	.000	.800	.250	.850	.731

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Arrow Highway
 Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	6	0	6	1	0	1	2	0	5	0	5
+15 mins.	0	0	0	0	0	5	0	5	0	0	0	0	0	3	1	4
+30 mins.	0	0	0	0	0	4	0	4	0	0	0	0	0	3	0	3
+45 mins.	0	0	0	0	0	4	0	4	0	0	0	0	0	5	0	5
Total Volume	0	0	0	0	0	19	0	19	1	0	1	2	0	16	1	17
% App. Total	0	0	0	0	0	100	0		50	0	50		0	94.1	5.9	
PHF	.000	.000	.000	.000	.000	.792	.000	.792	.250	.000	.250	.250	.000	.800	.250	.850

City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

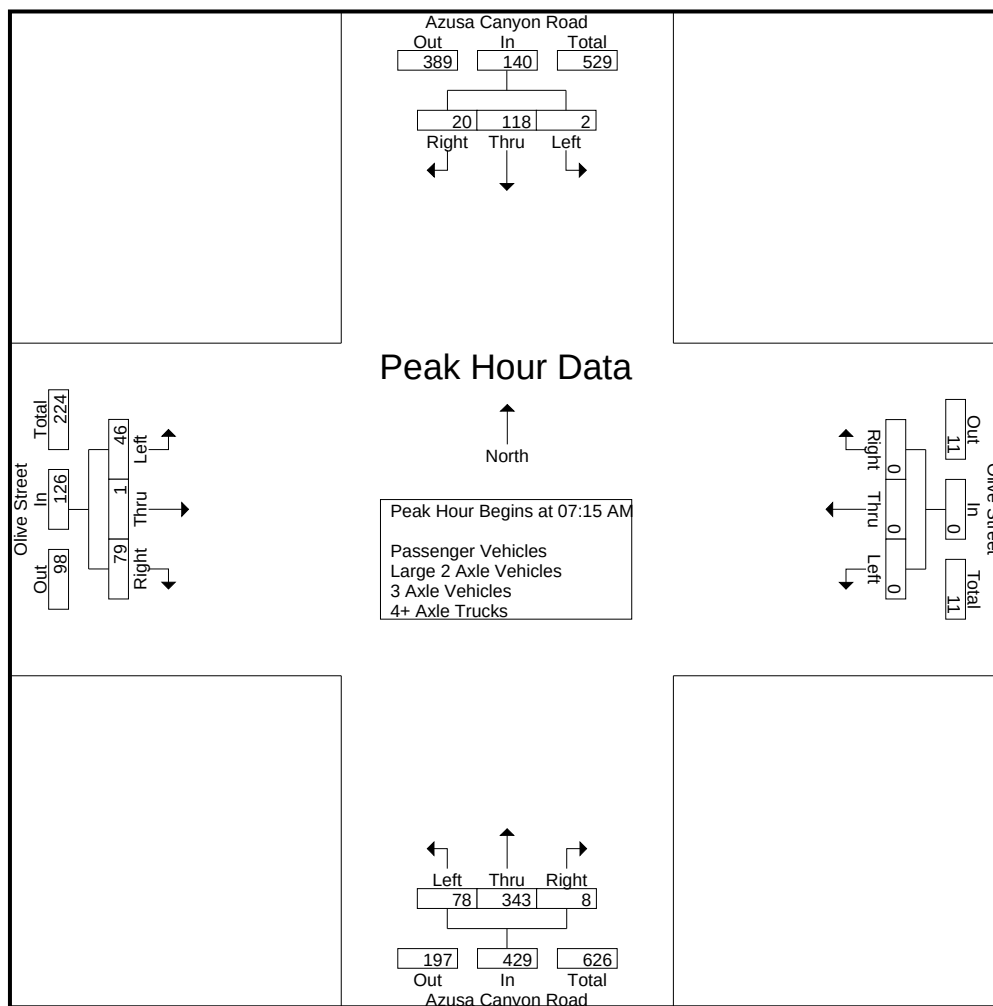
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	27	2	29	0	0	0	0	18	87	2	107	4	0	11	15	151
07:15 AM	2	20	6	28	0	0	0	0	24	83	7	114	10	1	22	33	175
07:30 AM	0	36	6	42	0	0	0	0	17	75	1	93	12	0	21	33	168
07:45 AM	0	29	6	35	0	0	0	0	19	103	0	122	12	0	20	32	189
Total	2	112	20	134	0	0	0	0	78	348	10	436	38	1	74	113	683
08:00 AM	0	33	2	35	0	0	0	0	18	82	0	100	12	0	16	28	163
08:15 AM	0	24	4	28	0	0	0	0	13	77	0	90	7	0	21	28	146
08:30 AM	0	32	2	34	0	0	0	0	11	68	0	79	12	0	22	34	147
08:45 AM	0	31	3	34	0	0	0	0	13	55	0	68	4	0	30	34	136
Total	0	120	11	131	0	0	0	0	55	282	0	337	35	0	89	124	592
Grand Total	2	232	31	265	0	0	0	0	133	630	10	773	73	1	163	237	1275
Apprch %	0.8	87.5	11.7		0	0	0		17.2	81.5	1.3		30.8	0.4	68.8		
Total %	0.2	18.2	2.4	20.8	0	0	0	0	10.4	49.4	0.8	60.6	5.7	0.1	12.8	18.6	
Passenger Vehicles	2	185	29	216	0	0	0	0	130	604	10	744	73	1	162	236	1196
% Passenger Vehicles	100	79.7	93.5	81.5	0	0	0	0	97.7	95.9	100	96.2	100	100	99.4	99.6	93.8
Large 2 Axle Vehicles	0	14	2	16	0	0	0	0	3	12	0	15	0	0	1	1	32
% Large 2 Axle Vehicles	0	6	6.5	6	0	0	0	0	2.3	1.9	0	1.9	0	0	0.6	0.4	2.5
3 Axle Vehicles	0	3	0	3	0	0	0	0	0	7	0	7	0	0	0	0	10
% 3 Axle Vehicles	0	1.3	0	1.1	0	0	0	0	0	1.1	0	0.9	0	0	0	0	0.8
4+ Axle Trucks	0	30	0	30	0	0	0	0	0	7	0	7	0	0	0	0	37
% 4+ Axle Trucks	0	12.9	0	11.3	0	0	0	0	0	1.1	0	0.9	0	0	0	0	2.9

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 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	20	6	28	0	0	0	0	24	83	7	114	10	1	22	33	175
07:30 AM	0	36	6	42	0	0	0	0	17	75	1	93	12	0	21	33	168
07:45 AM	0	29	6	35	0	0	0	0	19	103	0	122	12	0	20	32	189
08:00 AM	0	33	2	35	0	0	0	0	18	82	0	100	12	0	16	28	163
Total Volume	2	118	20	140	0	0	0	0	78	343	8	429	46	1	79	126	695
% App. Total	1.4	84.3	14.3		0	0	0		18.2	80	1.9		36.5	0.8	62.7		
PHF	.250	.819	.833	.833	.000	.000	.000	.000	.813	.833	.286	.879	.958	.250	.898	.955	.919

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Olive Street
 Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 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:

	07:15 AM				07:00 AM				07:00 AM				07:15 AM			
+0 mins.	2	20	6	28	0	0	0	0	18	87	2	107	10	1	22	33
+15 mins.	0	36	6	42	0	0	0	0	24	83	7	114	12	0	21	33
+30 mins.	0	29	6	35	0	0	0	0	17	75	1	93	12	0	20	32
+45 mins.	0	33	2	35	0	0	0	0	19	103	0	122	12	0	16	28
Total Volume	2	118	20	140	0	0	0	0	78	348	10	436	46	1	79	126
% App. Total	1.4	84.3	14.3		0	0	0		17.9	79.8	2.3		36.5	0.8	62.7	
PHF	.250	.819	.833	.833	.000	.000	.000	.000	.813	.845	.357	.893	.958	.250	.898	.955

City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

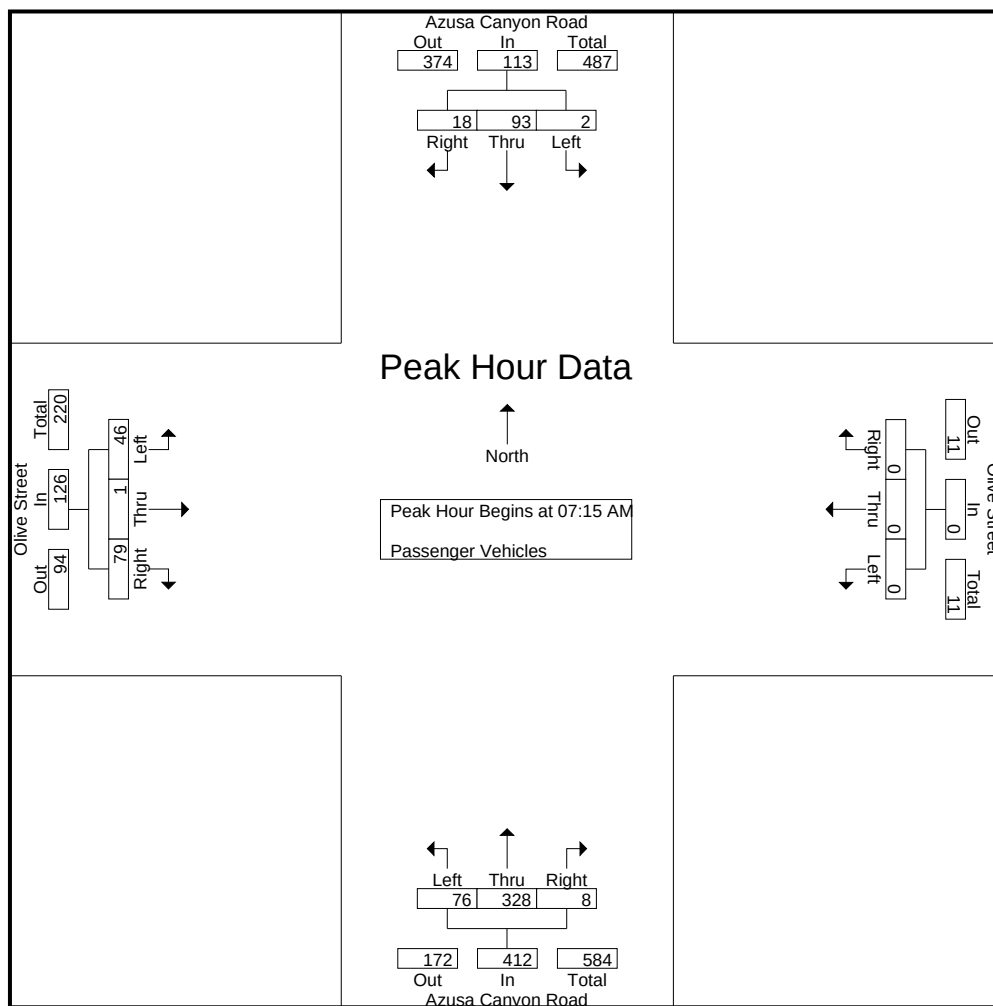
Groups Printed- Passenger Vehicles

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	23	2	25	0	0	0	0	18	84	2	104	4	0	11	15	144
07:15 AM	2	20	5	27	0	0	0	0	22	79	7	108	10	1	22	33	168
07:30 AM	0	29	6	35	0	0	0	0	17	71	1	89	12	0	21	33	157
07:45 AM	0	21	5	26	0	0	0	0	19	100	0	119	12	0	20	32	177
Total	2	93	18	113	0	0	0	0	76	334	10	420	38	1	74	113	646
08:00 AM	0	23	2	25	0	0	0	0	18	78	0	96	12	0	16	28	149
08:15 AM	0	17	4	21	0	0	0	0	13	74	0	87	7	0	21	28	136
08:30 AM	0	26	2	28	0	0	0	0	11	64	0	75	12	0	21	33	136
08:45 AM	0	26	3	29	0	0	0	0	12	54	0	66	4	0	30	34	129
Total	0	92	11	103	0	0	0	0	54	270	0	324	35	0	88	123	550
Grand Total	2	185	29	216	0	0	0	0	130	604	10	744	73	1	162	236	1196
Apprch %	0.9	85.6	13.4		0	0	0		17.5	81.2	1.3		30.9	0.4	68.6		
Total %	0.2	15.5	2.4	18.1	0	0	0	0	10.9	50.5	0.8	62.2	6.1	0.1	13.5	19.7	

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	2	20	5	27	0	0	0	0	22	79	7	108	10	1	22	33	168
07:30 AM	0	29	6	35	0	0	0	0	17	71	1	89	12	0	21	33	157
07:45 AM	0	21	5	26	0	0	0	0	19	100	0	119	12	0	20	32	177
08:00 AM	0	23	2	25	0	0	0	0	18	78	0	96	12	0	16	28	149
Total Volume	2	93	18	113	0	0	0	0	76	328	8	412	46	1	79	126	651
% App. Total	1.8	82.3	15.9		0	0	0		18.4	79.6	1.9		36.5	0.8	62.7		
PHF	.250	.802	.750	.807	.000	.000	.000	.000	.864	.820	.286	.866	.958	.250	.898	.955	.919

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Olive Street
 Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	2	20	5	27	0	0	0	0	22	79	7	108	10	1	22	33
+15 mins.	0	29	6	35	0	0	0	0	17	71	1	89	12	0	21	33
+30 mins.	0	21	5	26	0	0	0	0	19	100	0	119	12	0	20	32
+45 mins.	0	23	2	25	0	0	0	0	18	78	0	96	12	0	16	28
Total Volume	2	93	18	113	0	0	0	0	76	328	8	412	46	1	79	126
% App. Total	1.8	82.3	15.9		0	0	0		18.4	79.6	1.9		36.5	0.8	62.7	
PHF	.250	.802	.750	.807	.000	.000	.000	.000	.864	.820	.286	.866	.958	.250	.898	.955

City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

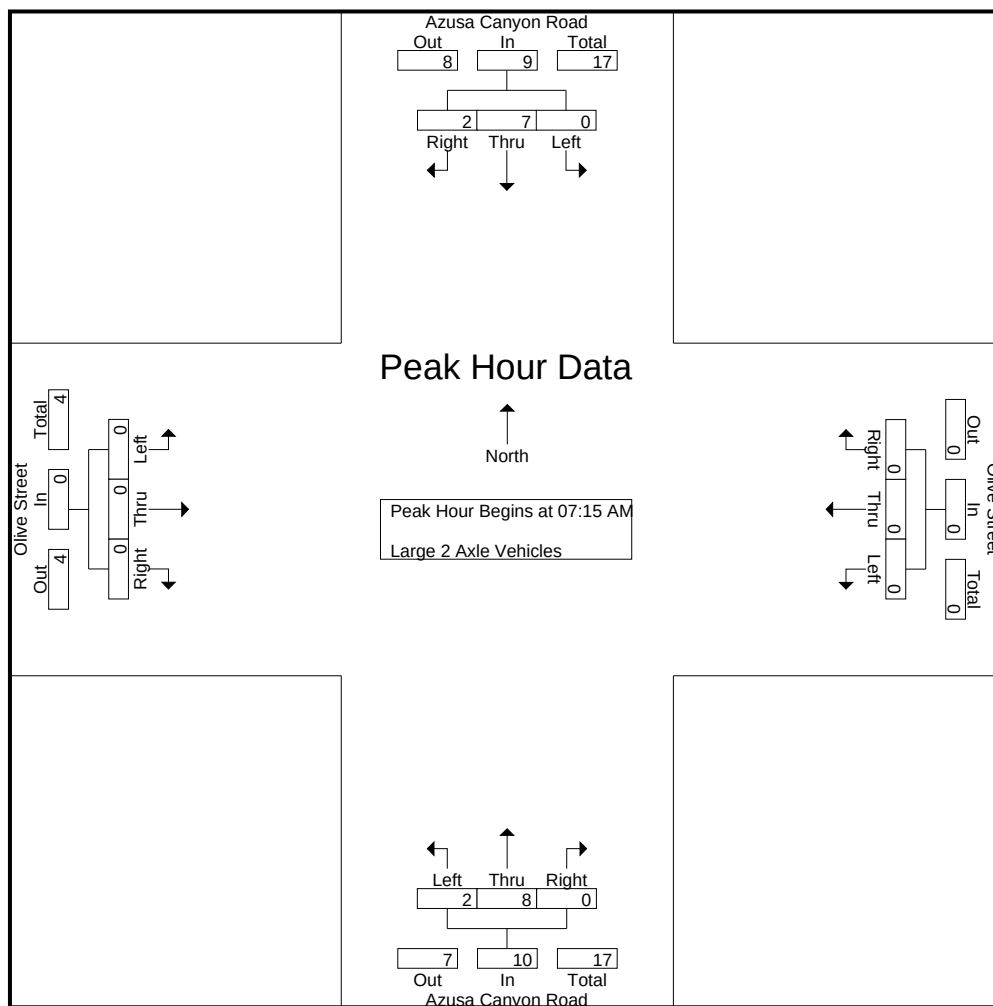
Groups Printed- Large 2 Axle Vehicles

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	1	1	0	0	0	0	2	1	0	3	0	0	0	0	4
07:30 AM	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	5
07:45 AM	0	3	1	4	0	0	0	0	0	2	0	2	0	0	0	0	6
Total	0	6	2	8	0	0	0	0	2	5	0	7	0	0	0	0	15
08:00 AM	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
08:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:30 AM	0	4	0	4	0	0	0	0	0	3	0	3	0	0	1	1	8
08:45 AM	0	3	0	3	0	0	0	0	1	0	0	1	0	0	0	0	4
Total	0	8	0	8	0	0	0	0	1	7	0	8	0	0	1	1	17
Grand Total	0	14	2	16	0	0	0	0	3	12	0	15	0	0	1	1	32
Apprch %	0	87.5	12.5		0	0	0		20	80	0		0	0	100		
Total %	0	43.8	6.2	50	0	0	0	0	9.4	37.5	0	46.9	0	0	3.1	3.1	

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	1	1	0	0	0	0	2	1	0	3	0	0	0	0	4
07:30 AM	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	5
07:45 AM	0	3	1	4	0	0	0	0	0	2	0	2	0	0	0	0	6
08:00 AM	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
Total Volume	0	7	2	9	0	0	0	0	2	8	0	10	0	0	0	0	19
% App. Total	0	77.8	22.2		0	0	0		20	80	0		0	0	0		
PHF	.000	.583	.500	.563	.000	.000	.000	.000	.250	.667	.000	.833	.000	.000	.000	.000	.792

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Olive Street
 Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	1	1	0	0	0	0	2	1	0	3	0	0	0	0
+15 mins.	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0
+30 mins.	0	3	1	4	0	0	0	0	0	2	0	2	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0
Total Volume	0	7	2	9	0	0	0	0	2	8	0	10	0	0	0	0
% App. Total	0	77.8	22.2		0	0	0		20	80	0		0	0	0	
PHF	.000	.583	.500	.563	.000	.000	.000	.000	.250	.667	.000	.833	.000	.000	.000	.000

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Olive Street
 Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 1

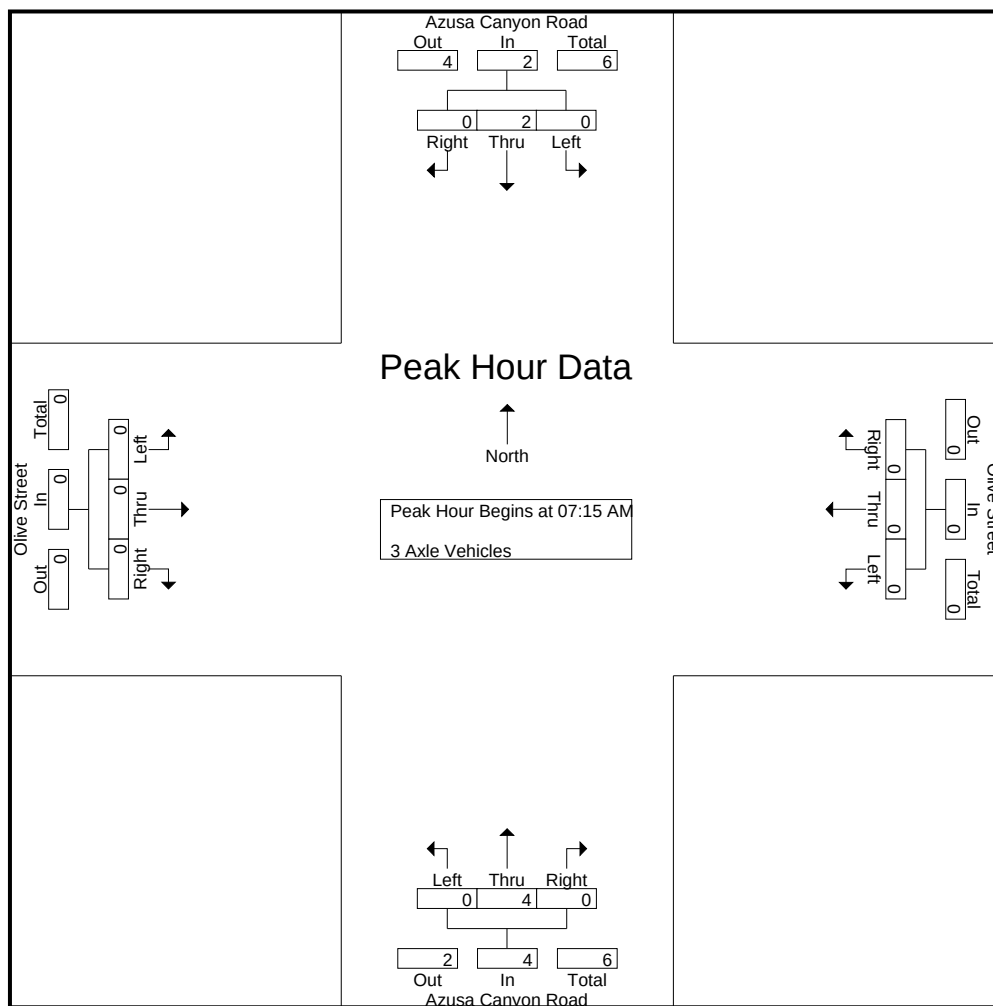
Groups Printed- 3 Axle Vehicles

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0	5
08:00 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	4	0	4	0	0	0	0	5
Grand Total	0	3	0	3	0	0	0	0	0	7	0	7	0	0	0	0	10
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	30	0	30	0	0	0	0	0	70	0	70	0	0	0	0	

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total Volume	0	2	0	2	0	0	0	0	0	4	0	4	0	0	0	0	6
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.750

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Olive Street
 Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	4	0	4	0	0	0	0
% App. Total	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000

City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_AM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

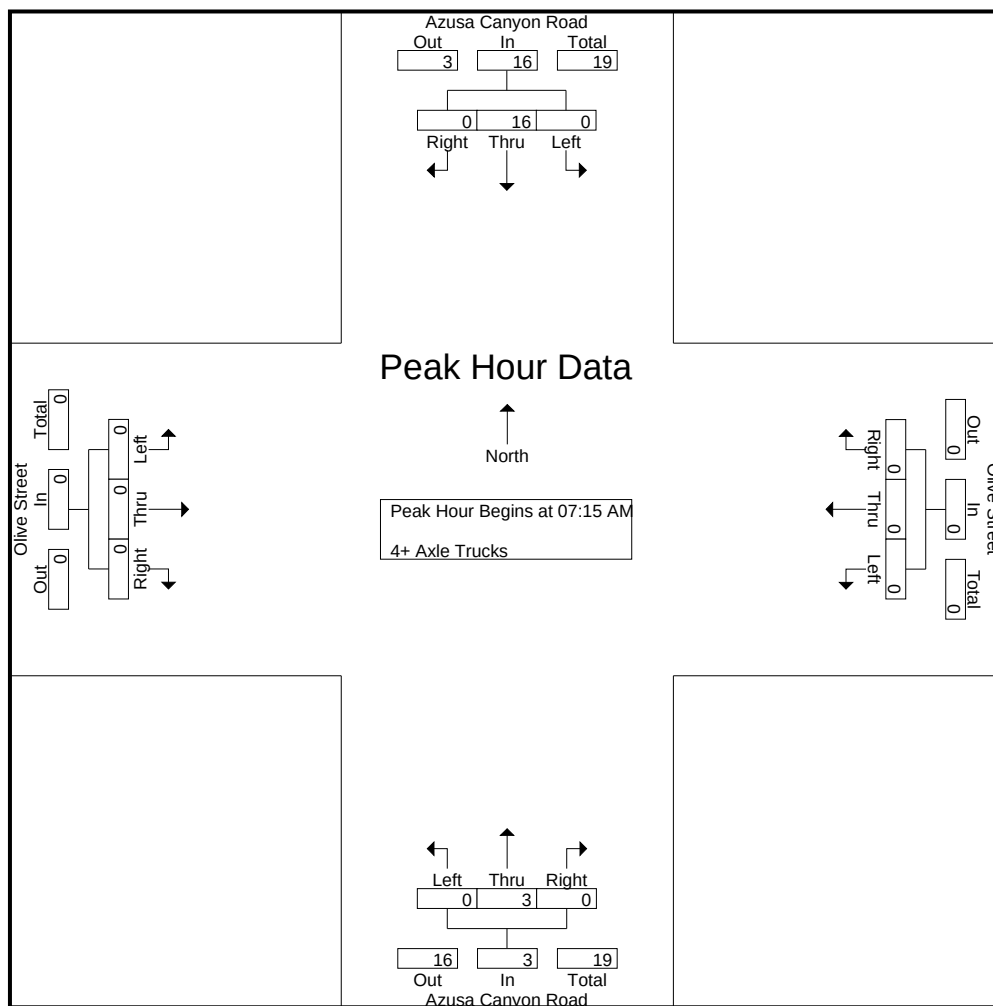
Groups Printed- 4+ Axle Trucks

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	3	0	3	0	0	0	0	0	3	0	3	0	0	0	0	6
07:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
07:30 AM	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
07:45 AM	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0	5
Total	0	11	0	11	0	0	0	0	0	6	0	6	0	0	0	0	17
08:00 AM	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
08:15 AM	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
08:30 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
08:45 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	19	0	19	0	0	0	0	0	1	0	1	0	0	0	0	20
Grand Total	0	30	0	30	0	0	0	0	0	7	0	7	0	0	0	0	37
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	81.1	0	81.1	0	0	0	0	0	18.9	0	18.9	0	0	0	0	

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
07:30 AM	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
07:45 AM	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0	5
08:00 AM	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
Total Volume	0	16	0	16	0	0	0	0	0	3	0	3	0	0	0	0	19
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.594

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Olive Street
 Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_AM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0
+15 mins.	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	16	0	16	0	0	0	0	0	3	0	3	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000

City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

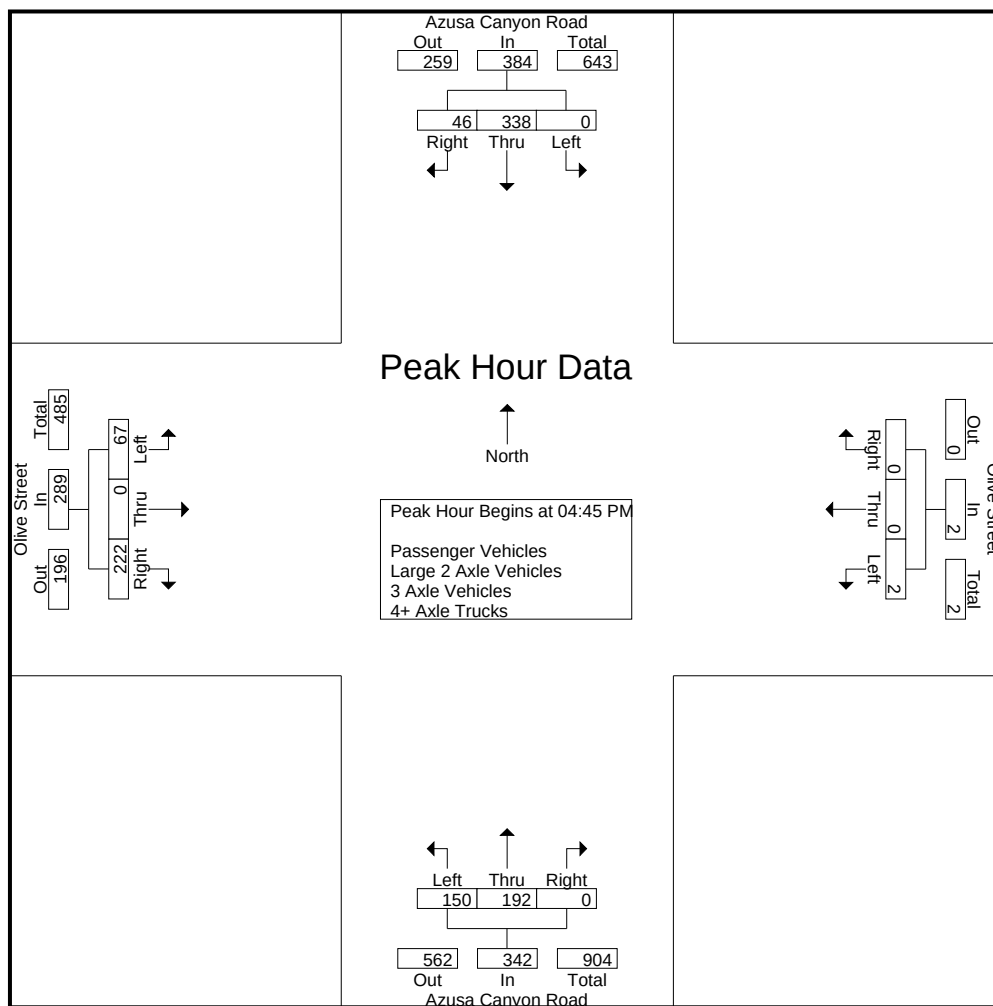
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	79	12	91	10	8	2	20	28	37	0	65	22	0	49	71	247
04:15 PM	0	71	5	76	2	1	0	3	33	51	0	84	19	0	50	69	232
04:30 PM	0	71	7	78	2	0	0	2	44	41	2	87	14	0	57	71	238
04:45 PM	0	80	10	90	0	0	0	0	32	45	0	77	12	0	50	62	229
Total	0	301	34	335	14	9	2	25	137	174	2	313	67	0	206	273	946
05:00 PM	0	90	16	106	0	0	0	0	37	42	0	79	19	0	61	80	265
05:15 PM	0	87	11	98	0	0	0	0	49	53	0	102	22	0	50	72	272
05:30 PM	0	81	9	90	2	0	0	2	32	52	0	84	14	0	61	75	251
05:45 PM	0	63	7	70	0	0	0	0	40	33	0	73	20	0	38	58	201
Total	0	321	43	364	2	0	0	2	158	180	0	338	75	0	210	285	989
Grand Total	0	622	77	699	16	9	2	27	295	354	2	651	142	0	416	558	1935
Apprch %	0	89	11		59.3	33.3	7.4		45.3	54.4	0.3		25.4	0	74.6		
Total %	0	32.1	4	36.1	0.8	0.5	0.1	1.4	15.2	18.3	0.1	33.6	7.3	0	21.5	28.8	
Passenger Vehicles	0	607	76	683	16	9	2	27	293	343	2	638	140	0	414	554	1902
% Passenger Vehicles	0	97.6	98.7	97.7	100	100	100	100	99.3	96.9	100	98	98.6	0	99.5	99.3	98.3
Large 2 Axle Vehicles	0	12	1	13	0	0	0	0	2	8	0	10	2	0	1	3	26
% Large 2 Axle Vehicles	0	1.9	1.3	1.9	0	0	0	0	0.7	2.3	0	1.5	1.4	0	0.2	0.5	1.3
3 Axle Vehicles	0	2	0	2	0	0	0	0	0	2	0	2	0	0	1	1	5
% 3 Axle Vehicles	0	0.3	0	0.3	0	0	0	0	0	0.6	0	0.3	0	0	0.2	0.2	0.3
4+ Axle Trucks	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
% 4+ Axle Trucks	0	0.2	0	0.1	0	0	0	0	0	0.3	0	0.2	0	0	0	0	0.1

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 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	80	10	90	0	0	0	0	32	45	0	77	12	0	50	62	229
05:00 PM	0	90	16	106	0	0	0	0	37	42	0	79	19	0	61	80	265
05:15 PM	0	87	11	98	0	0	0	0	49	53	0	102	22	0	50	72	272
05:30 PM	0	81	9	90	2	0	0	2	32	52	0	84	14	0	61	75	251
Total Volume	0	338	46	384	2	0	0	2	150	192	0	342	67	0	222	289	1017
% App. Total	0	88	12		100	0	0		43.9	56.1	0		23.2	0	76.8		
PHF	.000	.939	.719	.906	.250	.000	.000	.250	.765	.906	.000	.838	.761	.000	.910	.903	.935

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Olive Street
 Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 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				04:00 PM				04:30 PM				04:45 PM			
+0 mins.	0	80	10	90	10	8	2	20	44	41	2	87	12	0	50	62
+15 mins.	0	90	16	106	2	1	0	3	32	45	0	77	19	0	61	80
+30 mins.	0	87	11	98	2	0	0	2	37	42	0	79	22	0	50	72
+45 mins.	0	81	9	90	0	0	0	0	49	53	0	102	14	0	61	75
Total Volume	0	338	46	384	14	9	2	25	162	181	2	345	67	0	222	289
% App. Total	0	88	12		56	36	8		47	52.5	0.6		23.2	0	76.8	
PHF	.000	.939	.719	.906	.350	.281	.250	.313	.827	.854	.250	.846	.761	.000	.910	.903

City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

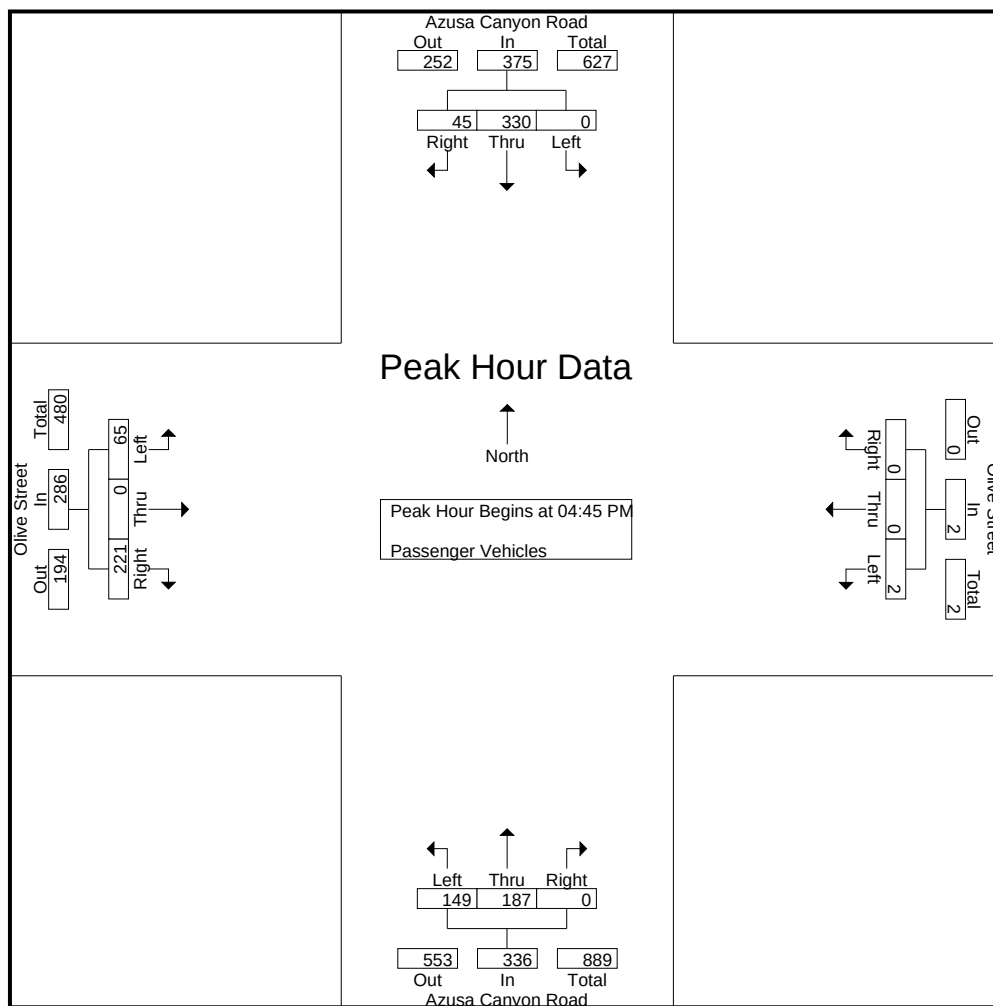
Groups Printed- Passenger Vehicles

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	76	12	88	10	8	2	20	28	36	0	64	22	0	49	71	243
04:15 PM	0	69	5	74	2	1	0	3	33	50	0	83	19	0	50	69	229
04:30 PM	0	69	7	76	2	0	0	2	43	39	2	84	14	0	57	71	233
04:45 PM	0	78	10	88	0	0	0	0	31	44	0	75	12	0	50	62	225
Total	0	292	34	326	14	9	2	25	135	169	2	306	67	0	206	273	930
05:00 PM	0	87	16	103	0	0	0	0	37	41	0	78	19	0	61	80	261
05:15 PM	0	84	11	95	0	0	0	0	49	50	0	99	20	0	50	70	264
05:30 PM	0	81	8	89	2	0	0	2	32	52	0	84	14	0	60	74	249
05:45 PM	0	63	7	70	0	0	0	0	40	31	0	71	20	0	37	57	198
Total	0	315	42	357	2	0	0	2	158	174	0	332	73	0	208	281	972
Grand Total	0	607	76	683	16	9	2	27	293	343	2	638	140	0	414	554	1902
Apprch %	0	88.9	11.1		59.3	33.3	7.4		45.9	53.8	0.3		25.3	0	74.7		
Total %	0	31.9	4	35.9	0.8	0.5	0.1	1.4	15.4	18	0.1	33.5	7.4	0	21.8	29.1	

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	78	10	88	0	0	0	0	31	44	0	75	12	0	50	62	225
05:00 PM	0	87	16	103	0	0	0	0	37	41	0	78	19	0	61	80	261
05:15 PM	0	84	11	95	0	0	0	0	49	50	0	99	20	0	50	70	264
05:30 PM	0	81	8	89	2	0	0	2	32	52	0	84	14	0	60	74	249
Total Volume	0	330	45	375	2	0	0	2	149	187	0	336	65	0	221	286	999
% App. Total	0	88	12		100	0	0		44.3	55.7	0		22.7	0	77.3		
PHF	.000	.948	.703	.910	.250	.000	.000	.250	.760	.899	.000	.848	.813	.000	.906	.894	.946

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Olive Street
 Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	78	10	88	0	0	0	0	31	44	0	75	12	0	50	62
+15 mins.	0	87	16	103	0	0	0	0	37	41	0	78	19	0	61	80
+30 mins.	0	84	11	95	0	0	0	0	49	50	0	99	20	0	50	70
+45 mins.	0	81	8	89	2	0	0	2	32	52	0	84	14	0	60	74
Total Volume	0	330	45	375	2	0	0	2	149	187	0	336	65	0	221	286
% App. Total	0	88	12		100	0	0		44.3	55.7	0		22.7	0	77.3	
PHF	.000	.948	.703	.910	.250	.000	.000	.250	.760	.899	.000	.848	.813	.000	.906	.894

City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

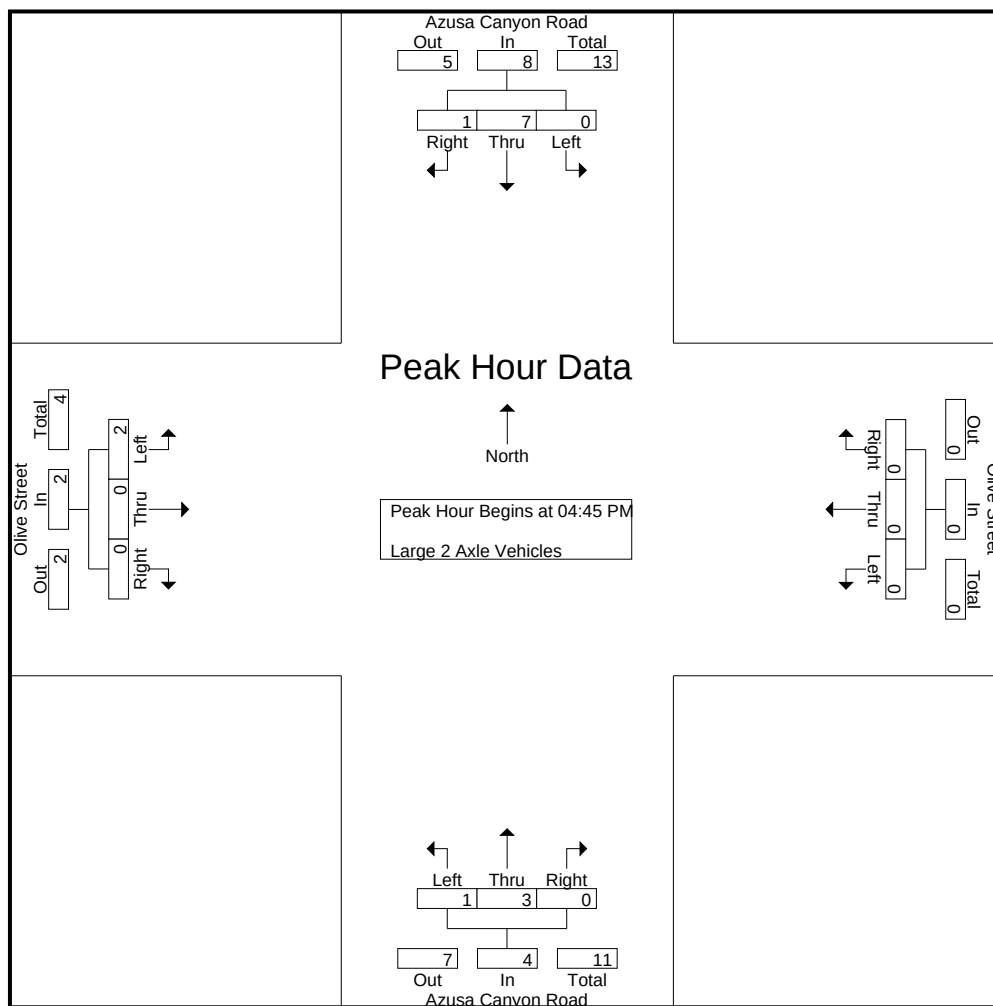
Groups Printed- Large 2 Axle Vehicles

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
04:15 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:30 PM	0	1	0	1	0	0	0	0	1	1	0	2	0	0	0	0	3
04:45 PM	0	1	0	1	0	0	0	0	1	1	0	2	0	0	0	0	3
Total	0	6	0	6	0	0	0	0	2	4	0	6	0	0	0	0	12
05:00 PM	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
05:15 PM	0	3	0	3	0	0	0	0	0	1	0	1	2	0	0	2	6
05:30 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	1	1	3
Total	0	6	1	7	0	0	0	0	0	4	0	4	2	0	1	3	14
Grand Total	0	12	1	13	0	0	0	0	2	8	0	10	2	0	1	3	26
Apprch %	0	92.3	7.7		0	0	0		20	80	0		66.7	0	33.3		
Total %	0	46.2	3.8	50	0	0	0	0	7.7	30.8	0	38.5	7.7	0	3.8	11.5	

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	1	0	1	0	0	0	0	1	1	0	2	0	0	0	0	3
05:00 PM	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
05:15 PM	0	3	0	3	0	0	0	0	0	1	0	1	2	0	0	2	6
05:30 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	7	1	8	0	0	0	0	1	3	0	4	2	0	0	2	14
% App. Total	0	87.5	12.5		0	0	0		25	75	0		100	0	0		
PHF	.000	.583	.250	.667	.000	.000	.000	.000	.250	.750	.000	.500	.250	.000	.000	.250	.583

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Olive Street
 Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	1	0	1	0	0	0	0	1	1	0	2	0	0	0	0
+15 mins.	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	3	0	3	0	0	0	0	0	1	0	1	2	0	0	2
+45 mins.	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	7	1	8	0	0	0	0	1	3	0	4	2	0	0	2
% App. Total	0	87.5	12.5		0	0	0		25	75	0		100	0	0	
PHF	.000	.583	.250	.667	.000	.000	.000	.000	.250	.750	.000	.500	.250	.000	.000	.250

City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_PM
Site Code : 05121286
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Page No : 1

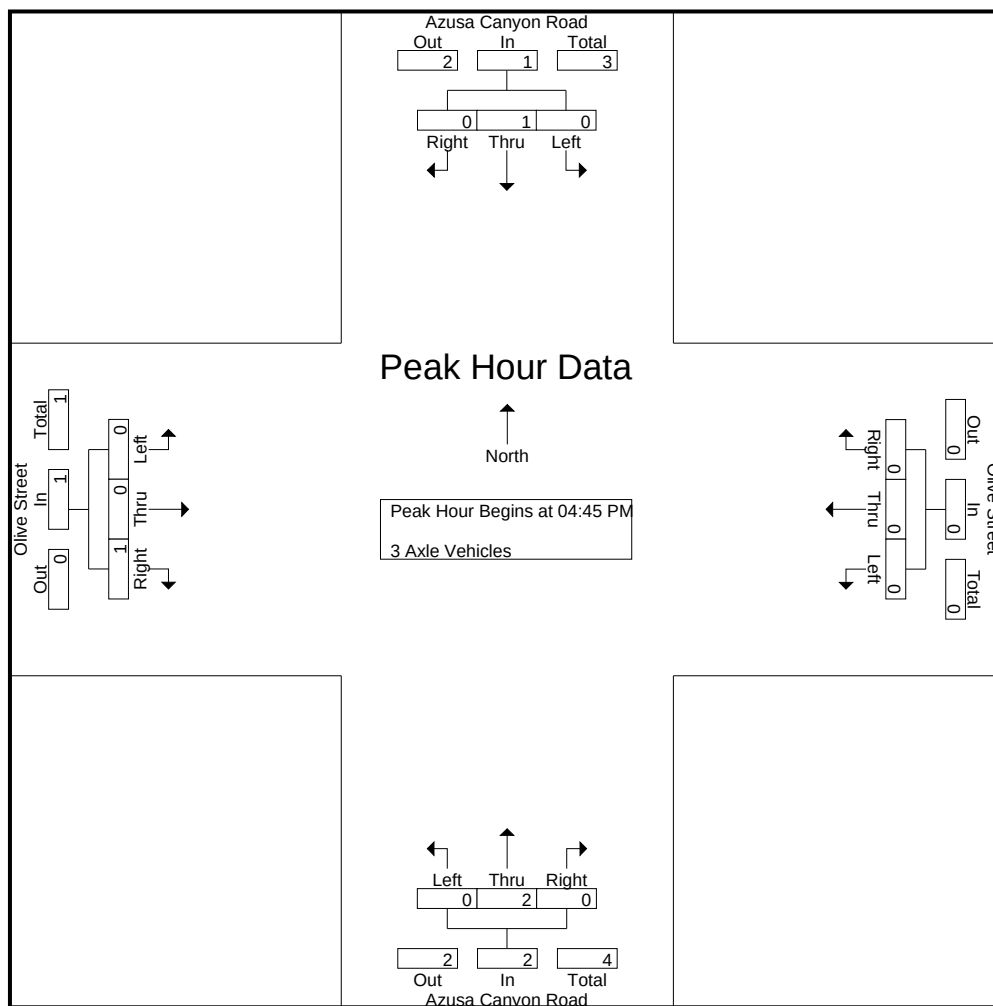
Groups Printed- 3 Axle Vehicles

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	2	0	2	0	0	1	1	3
Grand Total	0	2	0	2	0	0	0	0	0	2	0	2	0	0	1	1	5
Apprch %	0	100	0		0	0	0		0	100	0		0	0	100		
Total %	0	40	0	40	0	0	0	0	0	40	0	40	0	0	20	20	

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total Volume	0	1	0	1	0	0	0	0	0	2	0	2	0	0	1	1	4
% App. Total	0	100	0		0	0	0		0	100	0		0	0	100		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250	.500

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Olive Street
 Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total Volume	0	1	0	1	0	0	0	0	0	2	0	2	0	0	1	1
% App. Total	0	100	0	0	0	0	0	0	0	100	0	0	0	0	100	0
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250

City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_PM
Site Code : 05121286
Start Date : 6/17/2021
Page No : 1

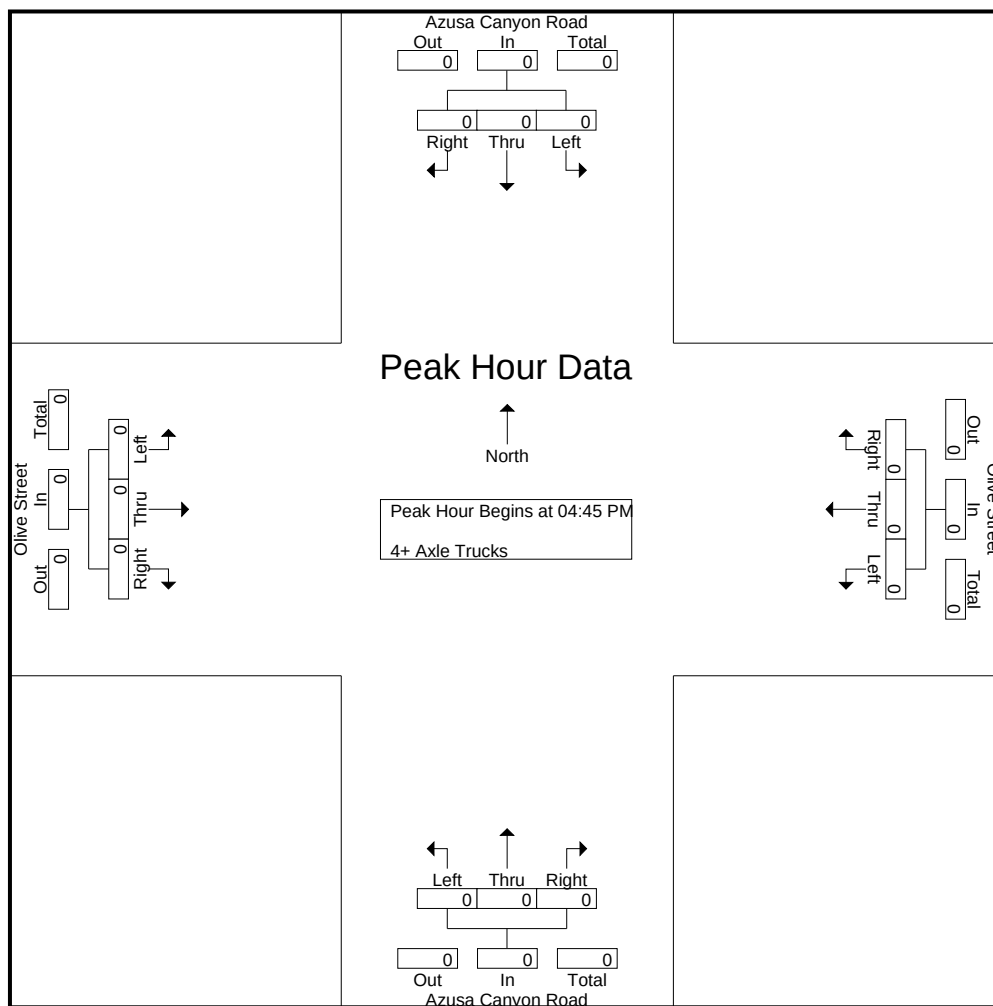
Groups Printed- 4+ Axle Trucks

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	50	0	50	0	0	0	0	0	50	0	50	0	0	0	0	

	Azusa Canyon Road Southbound				Olive Street Westbound				Azusa Canyon Road Northbound				Olive Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Irwindale
 N/S: Azusa Canyon Road
 E/W: Olive Street
 Weather: Clear

File Name : 05_IRW_Azusa Canyon_Olive_PM
 Site Code : 05121286
 Start Date : 6/17/2021
 Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.

City of Irwindale
Azusa Canyon Road
N/ Los Angeles Street
24 Hour Directional Classification Count

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

IRW002
Site Code: 051-21286

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/17/21	0	27	5	0	0	0	0	0	0	0	0	0	0	32
01:00	0	11	0	0	2	0	0	0	1	0	0	0	0	14
02:00	0	23	1	0	1	0	0	0	1	0	0	0	0	26
03:00	0	48	5	0	0	0	0	0	0	0	0	0	0	53
04:00	0	82	10	0	1	0	0	0	0	0	0	0	0	93
05:00	0	144	30	0	4	0	0	0	1	0	2	0	0	181
06:00	2	154	38	0	7	0	0	2	0	0	0	0	0	203
07:00	0	214	47	3	6	2	1	0	1	0	0	0	0	274
08:00	1	212	46	0	13	4	0	1	1	0	1	0	0	279
09:00	0	166	31	1	20	2	0	3	51	0	0	0	0	274
10:00	0	152	45	0	17	4	1	2	37	0	0	0	0	258
11:00	2	173	46	0	14	0	0	2	36	0	0	0	0	273
12 PM	2	196	44	0	12	3	1	3	35	0	0	0	0	296
13:00	2	239	59	1	11	3	0	0	37	0	0	0	0	352
14:00	1	272	67	0	8	3	0	2	37	0	0	0	0	390
15:00	1	388	75	0	17	0	0	0	4	0	0	0	0	485
16:00	0	445	82	0	10	1	0	1	0	0	0	0	0	539
17:00	2	405	77	0	6	3	0	1	0	0	0	0	0	494
18:00	1	291	60	0	6	1	0	1	0	0	0	0	0	360
19:00	0	196	23	0	1	0	0	0	0	0	0	0	0	220
20:00	0	152	20	0	2	0	0	1	0	0	0	0	0	175
21:00	0	104	19	0	2	0	0	0	1	0	0	0	0	126
22:00	0	86	8	0	0	0	0	0	0	0	0	0	0	94
23:00	0	63	4	0	2	0	0	0	1	0	0	0	0	70
Total	14	4243	842	5	162	26	3	19	244	0	3	0	0	5561
Percent	0.3%	76.3%	15.1%	0.1%	2.9%	0.5%	0.1%	0.3%	4.4%	0.0%	0.1%	0.0%	0.0%	
AM Peak	06:00	07:00	07:00	07:00	09:00	08:00	07:00	09:00	09:00		05:00			08:00
Vol.	2	214	47	3	20	4	1	3	51		2			279
PM Peak	12:00	16:00	16:00	13:00	15:00	12:00	12:00	12:00	13:00					16:00
Vol.	2	445	82	1	17	3	1	3	37					539
Grand Total	14	4243	842	5	162	26	3	19	244	0	3	0	0	5561
Percent	0.3%	76.3%	15.1%	0.1%	2.9%	0.5%	0.1%	0.3%	4.4%	0.0%	0.1%	0.0%	0.0%	

Counts Unlimited, Inc.

City of Irwindale
Azusa Canyon Road
N/ Los Angeles Street
24 Hour Directional Classification Count

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

IRW002
Site Code: 051-21286

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/17/21	0	24	4	0	0	0	0	0	0	0	0	0	0	28
01:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
02:00	0	11	1	0	1	0	0	0	0	0	0	0	0	13
03:00	0	73	12	0	0	0	0	0	1	0	0	0	0	86
04:00	0	55	11	0	0	0	0	0	1	0	0	0	0	67
05:00	1	124	28	0	2	0	0	0	1	0	1	0	0	157
06:00	1	137	42	0	12	2	0	1	1	0	0	0	0	196
07:00	0	209	34	0	4	1	1	0	9	0	0	0	0	258
08:00	1	177	41	0	8	0	0	0	18	0	0	0	0	245
09:00	1	154	40	0	14	3	0	0	24	0	0	0	0	236
10:00	0	143	33	1	14	2	0	0	38	0	0	0	0	231
11:00	2	147	43	1	10	3	0	1	38	0	0	0	0	245
12 PM	2	199	42	0	13	3	0	0	36	0	4	0	0	299
13:00	0	195	53	0	11	4	0	1	36	0	2	0	0	302
14:00	1	238	58	0	11	8	0	4	29	0	4	0	0	353
15:00	1	262	75	0	15	0	0	1	2	0	2	0	0	358
16:00	0	295	65	0	15	0	0	0	0	0	0	0	0	375
17:00	1	311	50	0	8	1	0	1	0	0	0	0	0	372
18:00	3	265	44	0	3	0	0	1	0	0	0	0	0	316
19:00	0	193	31	0	2	0	0	0	1	0	0	0	0	227
20:00	0	184	18	0	3	1	0	1	2	0	0	0	0	209
21:00	1	118	14	1	1	1	0	0	0	0	0	0	0	136
22:00	0	81	9	0	0	0	0	0	0	0	0	0	0	90
23:00	0	53	2	0	3	0	0	0	0	0	0	0	0	58
Total	15	3656	750	3	150	29	1	11	237	0	13	0	0	4865
Percent	0.3%	75.1%	15.4%	0.1%	3.1%	0.6%	0.0%	0.2%	4.9%	0.0%	0.3%	0.0%	0.0%	
AM Peak	11:00	07:00	11:00	10:00	09:00	09:00	07:00	06:00	10:00		05:00			07:00
Vol.	2	209	43	1	14	3	1	1	38		1			258
PM Peak	18:00	17:00	15:00	21:00	15:00	14:00		14:00	12:00		12:00			16:00
Vol.	3	311	75	1	15	8		4	36		4			375
Grand Total	15	3656	750	3	150	29	1	11	237	0	13	0	0	4865
Percent	0.3%	75.1%	15.4%	0.1%	3.1%	0.6%	0.0%	0.2%	4.9%	0.0%	0.3%	0.0%	0.0%	

Counts Unlimited, Inc.

City of Irwindale
Azusa Canyon Road
N/ Los Angeles Street
24 Hour Directional Classification Count

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

IRW002
Site Code: 051-21286

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/17/21	0	51	9	0	0	0	0	0	0	0	0	0	0	60
01:00	0	19	0	0	2	0	0	0	1	0	0	0	0	22
02:00	0	34	2	0	2	0	0	0	1	0	0	0	0	39
03:00	0	121	17	0	0	0	0	0	1	0	0	0	0	139
04:00	0	137	21	0	1	0	0	0	1	0	0	0	0	160
05:00	1	268	58	0	6	0	0	0	2	0	3	0	0	338
06:00	3	291	80	0	19	2	0	3	1	0	0	0	0	399
07:00	0	423	81	3	10	3	2	0	10	0	0	0	0	532
08:00	2	389	87	0	21	4	0	1	19	0	1	0	0	524
09:00	1	320	71	1	34	5	0	3	75	0	0	0	0	510
10:00	0	295	78	1	31	6	1	2	75	0	0	0	0	489
11:00	4	320	89	1	24	3	0	3	74	0	0	0	0	518
12 PM	4	395	86	0	25	6	1	3	71	0	4	0	0	595
13:00	2	434	112	1	22	7	0	1	73	0	2	0	0	654
14:00	2	510	125	0	19	11	0	6	66	0	4	0	0	743
15:00	2	650	150	0	32	0	0	1	6	0	2	0	0	843
16:00	0	740	147	0	25	1	0	1	0	0	0	0	0	914
17:00	3	716	127	0	14	4	0	2	0	0	0	0	0	866
18:00	4	556	104	0	9	1	0	2	0	0	0	0	0	676
19:00	0	389	54	0	3	0	0	0	1	0	0	0	0	447
20:00	0	336	38	0	5	1	0	2	2	0	0	0	0	384
21:00	1	222	33	1	3	1	0	0	1	0	0	0	0	262
22:00	0	167	17	0	0	0	0	0	0	0	0	0	0	184
23:00	0	116	6	0	5	0	0	0	1	0	0	0	0	128
Total	29	7899	1592	8	312	55	4	30	481	0	16	0	0	10426
Percent	0.3%	75.8%	15.3%	0.1%	3.0%	0.5%	0.0%	0.3%	4.6%	0.0%	0.2%	0.0%	0.0%	
AM Peak	11:00	07:00	11:00	07:00	09:00	10:00	07:00	06:00	09:00		05:00			07:00
Vol.	4	423	89	3	34	6	2	3	75		3			532
PM Peak	12:00	16:00	15:00	13:00	15:00	14:00	12:00	14:00	13:00		12:00			16:00
Vol.	4	740	150	1	32	11	1	6	73		4			914
Grand Total	29	7899	1592	8	312	55	4	30	481	0	16	0	0	10426
Percent	0.3%	75.8%	15.3%	0.1%	3.0%	0.5%	0.0%	0.3%	4.6%	0.0%	0.2%	0.0%	0.0%	

PCE = 1.0

PCE = 1.5

PCE = 2.0

PCE = 3.0

PCE TOTAL = 11,699

Counts Unlimited, Inc.

City of Irwindale
Azusa Canyon Road
N/ San Bernardino Road
24 Hour Directional Classification Count

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

IRW003
Site Code: 051-21286

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/17/21	0	23	3	0	0	0	0	0	0	0	0	0	0	26
01:00	0	12	0	0	2	0	0	0	0	0	0	0	0	14
02:00	0	20	1	0	0	0	0	0	0	0	3	0	0	24
03:00	0	84	18	0	1	0	0	0	0	0	1	0	0	104
04:00	0	44	10	0	1	0	0	0	0	0	1	0	0	56
05:00	0	120	24	0	3	0	0	0	1	0	7	0	0	155
06:00	1	138	47	0	6	0	0	1	0	0	0	0	0	193
07:00	0	248	40	1	1	2	0	1	2	0	0	0	0	295
08:00	1	224	46	0	10	3	0	0	0	0	0	0	0	284
09:00	0	131	28	1	9	2	0	0	2	0	0	0	0	173
10:00	0	119	38	0	10	0	0	0	0	0	0	0	0	167
11:00	2	150	43	0	5	0	0	2	1	0	0	0	0	203
12 PM	2	177	31	0	8	1	1	3	1	0	0	0	0	224
13:00	1	205	38	0	3	1	0	0	0	0	0	0	0	248
14:00	1	189	39	0	7	1	0	1	1	0	0	0	0	239
15:00	0	195	29	0	6	1	0	0	1	0	0	0	0	232
16:00	0	262	46	0	10	0	0	0	0	0	0	0	0	318
17:00	4	230	45	0	4	1	0	0	0	0	0	0	0	284
18:00	0	185	30	0	3	1	0	0	0	0	0	0	0	219
19:00	0	159	29	0	2	0	0	0	0	0	0	0	0	190
20:00	0	152	11	0	1	0	0	0	0	0	0	0	0	164
21:00	0	100	12	0	1	0	0	0	0	0	0	0	0	113
22:00	0	71	9	0	1	1	0	0	0	0	0	0	0	82
23:00	0	50	4	0	0	0	0	0	1	0	1	0	0	56
Total	12	3288	621	2	94	14	1	8	10	0	13	0	0	4063
Percent	0.3%	80.9%	15.3%	0.0%	2.3%	0.3%	0.0%	0.2%	0.2%	0.0%	0.3%	0.0%	0.0%	
AM Peak	11:00	07:00	06:00	07:00	08:00	08:00		11:00	07:00		05:00			07:00
Vol.	2	248	47	1	10	3		2	2		7			295
PM Peak	17:00	16:00	16:00		16:00	12:00	12:00	12:00	12:00		23:00			16:00
Vol.	4	262	46		10	1	1	3	1		1			318
Grand Total	12	3288	621	2	94	14	1	8	10	0	13	0	0	4063
Percent	0.3%	80.9%	15.3%	0.0%	2.3%	0.3%	0.0%	0.2%	0.2%	0.0%	0.3%	0.0%	0.0%	

Counts Unlimited, Inc.

City of Irwindale
Azusa Canyon Road
N/ San Bernardino Road
24 Hour Directional Classification Count

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

IRW003
Site Code: 051-21286

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/17/21	0	27	4	0	0	0	0	0	1	0	0	0	0	32
01:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
02:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
03:00	0	43	6	0	0	0	0	0	0	0	0	0	0	49
04:00	0	54	12	0	0	0	0	0	1	0	0	0	0	67
05:00	1	109	19	0	2	0	0	0	0	0	0	0	0	131
06:00	1	105	33	1	9	1	0	0	0	0	0	0	0	150
07:00	0	169	29	1	3	0	1	0	1	0	0	0	0	204
08:00	0	172	41	0	7	0	0	0	2	0	0	0	0	222
09:00	0	134	31	0	10	1	0	0	1	0	0	0	0	177
10:00	0	154	36	0	6	0	0	1	1	0	0	0	0	198
11:00	1	171	44	1	7	1	0	0	1	0	1	0	0	227
12 PM	1	194	37	0	4	1	0	0	1	0	5	0	0	243
13:00	0	232	54	0	10	2	0	0	2	0	3	0	0	303
14:00	1	261	71	0	8	4	0	3	1	0	3	0	0	352
15:00	1	371	101	0	12	0	0	0	1	0	2	0	0	488
16:00	0	450	88	0	9	2	0	0	0	0	0	0	0	549
17:00	1	424	63	0	5	1	0	0	0	0	1	0	0	495
18:00	4	290	47	0	2	1	0	1	1	0	0	0	0	346
19:00	0	194	33	0	2	1	0	0	1	0	0	0	0	231
20:00	0	170	21	0	0	1	0	0	3	0	0	0	0	195
21:00	4	108	21	1	1	1	0	0	0	0	0	0	0	136
22:00	0	94	5	0	0	0	0	0	1	0	0	0	0	100
23:00	0	44	4	0	2	0	0	0	1	0	0	0	0	51
Total	15	3992	801	4	99	17	1	5	20	0	15	0	0	4969
Percent	0.3%	80.3%	16.1%	0.1%	2.0%	0.3%	0.0%	0.1%	0.4%	0.0%	0.3%	0.0%	0.0%	
AM Peak	05:00	08:00	11:00	06:00	09:00	06:00	07:00	10:00	08:00		11:00			11:00
Vol.	1	172	44	1	10	1	1	1	2		1			227
PM Peak	18:00	16:00	15:00	21:00	15:00	14:00		14:00	20:00		12:00			16:00
Vol.	4	450	101	1	12	4		3	3		5			549
Grand Total	15	3992	801	4	99	17	1	5	20	0	15	0	0	4969
Percent	0.3%	80.3%	16.1%	0.1%	2.0%	0.3%	0.0%	0.1%	0.4%	0.0%	0.3%	0.0%	0.0%	

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City of Irwindale
Azusa Canyon Road
N/ San Bernardino Road
24 Hour Directional Classification Count

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email: counts@countsunlimited.com

IRW003
Site Code: 051-21286

Northbound, Southbound															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	
06/17/21	0	50	7	0	0	0	0	0	1	0	0	0	0	58	
01:00	0	21	0	0	2	0	0	0	0	0	0	0	0	23	
02:00	0	33	2	0	0	0	0	0	0	0	3	0	0	38	
03:00	0	127	24	0	1	0	0	0	0	0	1	0	0	153	
04:00	0	98	22	0	1	0	0	0	1	0	1	0	0	123	
05:00	1	229	43	0	5	0	0	0	1	0	7	0	0	286	
06:00	2	243	80	1	15	1	0	1	0	0	0	0	0	343	
07:00	0	417	69	2	4	2	1	1	3	0	0	0	0	499	
08:00	1	396	87	0	17	3	0	0	2	0	0	0	0	506	
09:00	0	265	59	1	19	3	0	0	3	0	0	0	0	350	
10:00	0	273	74	0	16	0	0	1	1	0	0	0	0	365	
11:00	3	321	87	1	12	1	0	2	2	0	1	0	0	430	
12 PM	3	371	68	0	12	2	1	3	2	0	5	0	0	467	
13:00	1	437	92	0	13	3	0	0	2	0	3	0	0	551	
14:00	2	450	110	0	15	5	0	4	2	0	3	0	0	591	
15:00	1	566	130	0	18	1	0	0	2	0	2	0	0	720	
16:00	0	712	134	0	19	2	0	0	0	0	0	0	0	867	
17:00	5	654	108	0	9	2	0	0	0	0	1	0	0	779	
18:00	4	475	77	0	5	2	0	1	1	0	0	0	0	565	
19:00	0	353	62	0	4	1	0	0	1	0	0	0	0	421	
20:00	0	322	32	0	1	1	0	0	3	0	0	0	0	359	
21:00	4	208	33	1	2	1	0	0	0	0	0	0	0	249	
22:00	0	165	14	0	1	1	0	0	1	0	0	0	0	182	
23:00	0	94	8	0	2	0	0	0	2	0	1	0	0	107	
Total	27	7280	1422	6	193	31	2	13	30	0	28	0	0	9032	
Percent	0.3%	80.6%	15.7%	0.1%	2.1%	0.3%	0.0%	0.1%	0.3%	0.0%	0.3%	0.0%	0.0%		
AM Peak	11:00	07:00	08:00	07:00	09:00	08:00	07:00	11:00	07:00		05:00			08:00	
Vol.	3	417	87	2	19	3	1	2	3		7			506	
PM Peak	17:00	16:00	16:00	21:00	16:00	14:00	12:00	14:00	20:00		12:00			16:00	
Vol.	5	712	134	1	19	5	1	4	3		5			867	
Grand Total	27	7280	1422	6	193	31	2	13	30	0	28	0	0	9032	
Percent	0.3%	80.6%	15.7%	0.1%	2.1%	0.3%	0.0%	0.1%	0.3%	0.0%	0.3%	0.0%	0.0%		

PCE = 1.0

PCE = 1.5

PCE = 2.0

PCE = 3.0

Counts Unlimited, Inc.

City of Irwindale
Los Angeles Street
W/ Azusa Canyon Road
24 Hour Directional Classification Count

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

IRW001
Site Code: 051-21286

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/17/21	0	23	5	0	0	0	0	0	1	0	0	0	0	29
01:00	0	11	0	0	0	0	0	0	1	0	0	0	0	12
02:00	0	20	3	0	0	0	0	0	1	0	0	0	0	24
03:00	0	77	9	0	0	0	0	0	0	0	0	0	0	86
04:00	0	83	4	0	0	0	0	0	0	0	0	0	0	87
05:00	0	106	18	0	0	0	0	0	0	0	0	0	0	124
06:00	1	111	24	1	1	0	0	0	0	0	1	0	0	139
07:00	0	178	37	3	2	1	1	1	0	0	0	0	0	223
08:00	0	179	34	0	9	1	0	0	0	0	0	0	0	223
09:00	0	133	19	0	19	0	0	3	51	0	0	0	0	225
10:00	0	133	28	0	13	4	1	3	37	0	0	0	0	219
11:00	0	155	26	0	9	0	0	0	35	0	2	0	0	227
12 PM	0	186	27	0	6	3	0	2	35	0	1	0	0	260
13:00	1	221	45	1	12	4	0	0	37	0	1	0	0	322
14:00	0	288	61	0	10	2	0	1	35	0	1	0	0	398
15:00	1	362	83	0	15	0	0	0	3	0	1	0	0	465
16:00	0	497	94	0	6	3	0	1	0	0	0	0	0	601
17:00	0	459	65	0	5	2	0	1	0	0	2	0	0	534
18:00	2	330	51	0	4	1	0	1	1	0	2	0	0	392
19:00	0	186	22	0	0	1	0	0	0	0	0	0	0	209
20:00	0	153	25	0	1	1	0	1	1	0	0	0	0	182
21:00	3	84	19	0	1	0	0	0	0	0	0	0	0	107
22:00	0	95	5	0	0	0	0	0	1	0	0	0	0	101
23:00	0	53	5	0	1	0	0	0	1	0	0	0	0	60
Total	8	4123	709	5	114	23	2	14	240	0	11	0	0	5249
Percent	0.2%	78.5%	13.5%	0.1%	2.2%	0.4%	0.0%	0.3%	4.6%	0.0%	0.2%	0.0%	0.0%	
AM Peak	06:00	08:00	07:00	07:00	09:00	10:00	07:00	09:00	09:00		11:00			11:00
Vol.	1	179	37	3	19	4	1	3	51		2			227
PM Peak	21:00	16:00	16:00	13:00	15:00	13:00		12:00	13:00		17:00			16:00
Vol.	3	497	94	1	15	4		2	37		2			601
Grand Total	8	4123	709	5	114	23	2	14	240	0	11	0	0	5249
Percent	0.2%	78.5%	13.5%	0.1%	2.2%	0.4%	0.0%	0.3%	4.6%	0.0%	0.2%	0.0%	0.0%	

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Los Angeles Street
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24 Hour Directional Classification Count

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Page 2

IRW001
Site Code: 051-21286

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/17/21	0	17	3	0	0	0	0	0	0	0	0	0	0	20
01:00	0	11	0	0	0	0	0	0	0	0	0	0	0	11
02:00	0	8	2	0	0	0	0	0	0	0	3	0	0	13
03:00	0	24	4	0	1	0	0	0	1	0	1	0	0	31
04:00	0	27	3	0	0	0	0	0	0	0	1	0	0	31
05:00	0	86	21	0	1	0	0	0	0	0	6	0	0	114
06:00	0	122	36	0	4	1	0	0	1	0	0	0	0	164
07:00	0	243	35	0	3	2	0	1	8	0	0	0	0	292
08:00	1	195	34	0	7	0	0	0	16	0	0	0	0	253
09:00	1	119	24	0	11	2	0	0	24	0	0	0	0	181
10:00	0	90	17	1	14	2	0	0	38	0	0	0	0	162
11:00	1	108	24	0	4	2	0	0	37	0	0	0	0	176
12 PM	1	172	22	0	10	2	0	0	37	0	1	0	0	245
13:00	0	150	21	0	6	4	0	1	34	0	0	0	0	216
14:00	0	195	24	0	8	4	0	1	28	0	1	0	0	261
15:00	0	208	45	0	6	0	0	1	1	0	1	0	0	262
16:00	0	191	36	0	10	0	0	0	0	0	0	0	0	237
17:00	2	197	25	0	5	0	0	1	0	0	0	0	0	230
18:00	0	201	19	0	2	0	0	0	0	0	0	0	0	222
19:00	0	148	25	0	1	0	0	0	0	0	3	0	0	177
20:00	0	167	13	0	3	1	0	1	0	0	0	0	0	185
21:00	0	91	5	0	0	0	0	0	0	0	0	0	0	96
22:00	0	67	10	0	1	1	0	0	0	0	0	0	0	79
23:00	0	51	3	0	0	0	0	0	0	0	1	0	0	55
Total	6	2888	451	1	97	21	0	6	225	0	18	0	0	3713
Percent	0.2%	77.8%	12.1%	0.0%	2.6%	0.6%	0.0%	0.2%	6.1%	0.0%	0.5%	0.0%	0.0%	
AM Peak	08:00	07:00	06:00	10:00	10:00	07:00		07:00	10:00		05:00			07:00
Vol.	1	243	36	1	14	2		1	38		6			292
PM Peak	17:00	15:00	15:00		12:00	13:00		13:00	12:00		19:00			15:00
Vol.	2	208	45		10	4		1	37		3			262
Grand Total	6	2888	451	1	97	21	0	6	225	0	18	0	0	3713
Percent	0.2%	77.8%	12.1%	0.0%	2.6%	0.6%	0.0%	0.2%	6.1%	0.0%	0.5%	0.0%	0.0%	

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Los Angeles Street
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IRW001
Site Code: 051-21286

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/17/21	0	40	8	0	0	0	0	0	1	0	0	0	0	49
01:00	0	22	0	0	0	0	0	0	1	0	0	0	0	23
02:00	0	28	5	0	0	0	0	0	1	0	3	0	0	37
03:00	0	101	13	0	1	0	0	0	1	0	1	0	0	117
04:00	0	110	7	0	0	0	0	0	0	0	1	0	0	118
05:00	0	192	39	0	1	0	0	0	0	0	6	0	0	238
06:00	1	233	60	1	5	1	0	0	1	0	1	0	0	303
07:00	0	421	72	3	5	3	1	2	8	0	0	0	0	515
08:00	1	374	68	0	16	1	0	0	16	0	0	0	0	476
09:00	1	252	43	0	30	2	0	3	75	0	0	0	0	406
10:00	0	223	45	1	27	6	1	3	75	0	0	0	0	381
11:00	1	263	50	0	13	2	0	0	72	0	2	0	0	403
12 PM	1	358	49	0	16	5	0	2	72	0	2	0	0	505
13:00	1	371	66	1	18	8	0	1	71	0	1	0	0	538
14:00	0	483	85	0	18	6	0	2	63	0	2	0	0	659
15:00	1	570	128	0	21	0	0	1	4	0	2	0	0	727
16:00	0	688	130	0	16	3	0	1	0	0	0	0	0	838
17:00	2	656	90	0	10	2	0	2	0	0	2	0	0	764
18:00	2	531	70	0	6	1	0	1	1	0	2	0	0	614
19:00	0	334	47	0	1	1	0	0	0	0	3	0	0	386
20:00	0	320	38	0	4	2	0	2	1	0	0	0	0	367
21:00	3	175	24	0	1	0	0	0	0	0	0	0	0	203
22:00	0	162	15	0	1	1	0	0	1	0	0	0	0	180
23:00	0	104	8	0	1	0	0	0	1	0	1	0	0	115
Total	14	7011	1160	6	211	44	2	20	465	0	29	0	0	8962
Percent	0.2%	78.2%	12.9%	0.1%	2.4%	0.5%	0.0%	0.2%	5.2%	0.0%	0.3%	0.0%	0.0%	
AM Peak	06:00	07:00	07:00	07:00	09:00	10:00	07:00	09:00	09:00		05:00			07:00
Vol.	1	421	72	3	30	6	1	3	75		6			515
PM Peak	21:00	16:00	16:00	13:00	15:00	13:00		12:00	12:00		19:00			16:00
Vol.	3	688	130	1	21	8		2	72		3			838
Grand Total	14	7011	1160	6	211	44	2	20	465	0	29	0	0	8962
Percent	0.2%	78.2%	12.9%	0.1%	2.4%	0.5%	0.0%	0.2%	5.2%	0.0%	0.3%	0.0%	0.0%	

PCE = 1.0

PCE = 1.5

PCE = 2.0

PCE = 3.0

PCE TOTAL = 10,762

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APPENDIX 3.2:

EXISTING (HYPOTHETICAL “NON-COVID” 2021) CONDITIONS INTERSECTION OPERATIONS ANALYSIS

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Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

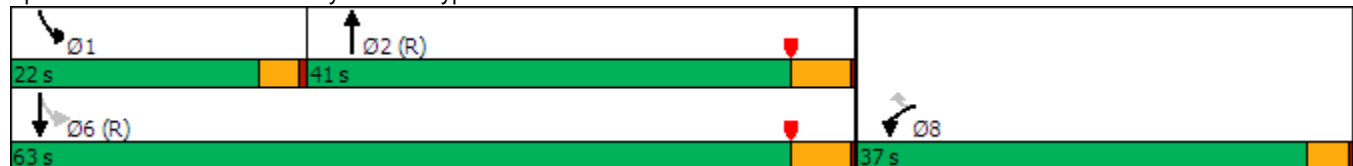
Existing (2021) AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	236	379	305	168	146	216
Future Volume (vph)	236	379	305	168	146	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		48%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	37.0	37.0	41.0		22.0	63.0
Total Split (%)	37.0%	37.0%	41.0%		22.0%	63.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 82 (82%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary

1: Azusa Cyn. Rd. & Cypress St.

Existing (2021) AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	236	379	305	168	146	216
Future Volume (veh/h)	236	379	305	168	146	216
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	228	458	339	187	162	240
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	326	580	1466	793	686	2653
Arrive On Green	0.18	0.18	0.65	0.65	0.10	1.00
Sat Flow, veh/h	1810	3220	2357	1223	1810	3705
Grp Volume(v), veh/h	228	458	269	257	162	240
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1680	1810	1805
Q Serve(g_s), s	11.8	13.6	6.2	6.3	2.9	0.0
Cycle Q Clear(g_c), s	11.8	13.6	6.2	6.3	2.9	0.0
Prop In Lane	1.00	1.00		0.73	1.00	
Lane Grp Cap(c), veh/h	326	580	1170	1089	686	2653
V/C Ratio(X)	0.70	0.79	0.23	0.24	0.24	0.09
Avail Cap(c_a), veh/h	606	1079	1170	1089	928	2653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.98	0.98
Uniform Delay (d), s/veh	38.5	39.2	7.3	7.3	4.5	0.0
Incr Delay (d2), s/veh	2.7	2.5	0.5	0.5	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	5.4	2.3	2.2	0.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.2	41.6	7.7	7.8	4.7	0.1
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	686		526			402
Approach Delay, s/veh	41.5		7.8			1.9
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.7	69.8			78.5	21.5
Change Period (Y+Rc), s	3.5	5.0			5.0	3.5
Max Green Setting (Gmax), s	18.5	36.0			58.0	33.5
Max Q Clear Time (g_c+I1), s	4.9	8.3			2.0	15.6
Green Ext Time (p_c), s	0.3	3.5			1.7	2.4
Intersection Summary						
HCM 6th Ctrl Delay			20.6			
HCM 6th LOS			C			
Notes						
User approved volume balancing among the lanes for turning movement.						

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021) AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	9	186	6	5	18	225	257	8	14	151	274
Future Volume (vph)	194	9	186	6	5	18	225	257	8	14	151	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th AWSC
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021) AM Peak Hour

Intersection	
Intersection Delay, s/veh	31.8
Intersection LOS	D

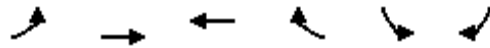
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱		↔			↱	↱
Traffic Vol, veh/h	194	9	186	6	5	18	225	257	8	14	151	274
Future Vol, veh/h	194	9	186	6	5	18	225	257	8	14	151	274
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	206	10	198	6	5	19	239	273	9	15	161	291
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	15.6	11.3	61.4	14.6
HCM LOS	C	B	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	46%	96%	0%	55%	0%	8%	0%
Vol Thru, %	52%	4%	0%	45%	0%	92%	0%
Vol Right, %	2%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	490	203	186	11	18	165	274
LT Vol	225	194	0	6	0	14	0
Through Vol	257	9	0	5	0	151	0
RT Vol	8	0	186	0	18	0	274
Lane Flow Rate	521	216	198	12	19	176	291
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.985	0.476	0.369	0.029	0.042	0.342	0.507
Departure Headway (Hd)	6.802	7.927	6.714	8.839	7.825	7.023	6.263
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	537	456	536	405	457	513	574
Service Time	4.802	5.669	4.455	6.603	5.589	4.766	4.006
HCM Lane V/C Ratio	0.97	0.474	0.369	0.03	0.042	0.343	0.507
HCM Control Delay	61.4	17.7	13.4	11.9	10.9	13.4	15.3
HCM Lane LOS	F	C	B	B	B	B	C
HCM 95th-tile Q	13.5	2.5	1.7	0.1	0.1	1.5	2.9

Lanes, Volumes, Timings
3: San Bernardino Rd. & Azusa Cyn. Rd.

Existing (2021) AM Peak Hour

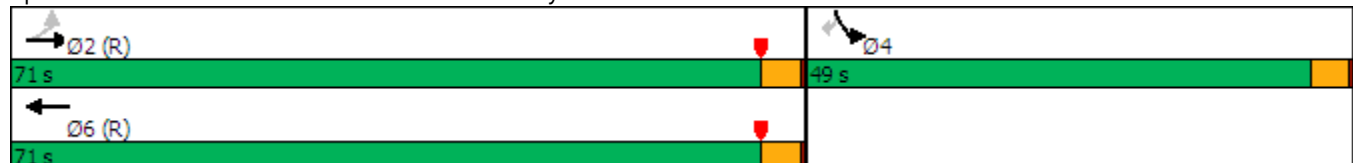


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	145	341	427	259	76
Future Volume (vph)	77	145	341	427	259	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	71.0	71.0	71.0		49.0	49.0
Total Split (%)	59.2%	59.2%	59.2%		40.8%	40.8%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

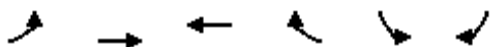
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 40
Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary 3: San Bernardino Rd. & Azusa Cyn. Rd.

Existing (2021) AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	77	145	341	427	259	76
Future Volume (veh/h)	77	145	341	427	259	76
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	87	163	383	480	291	85
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	301	2016	1008	899	679	604
Arrive On Green	0.56	0.56	0.56	0.56	0.38	0.38
Sat Flow, veh/h	651	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	87	163	383	480	291	85
Grp Sat Flow(s),veh/h/ln	651	1805	1805	1610	1810	1610
Q Serve(g_s), s	11.6	2.5	14.3	22.5	14.4	4.2
Cycle Q Clear(g_c), s	34.2	2.5	14.3	22.5	14.4	4.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	301	2016	1008	899	679	604
V/C Ratio(X)	0.29	0.08	0.38	0.53	0.43	0.14
Avail Cap(c_a), veh/h	301	2016	1008	899	679	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	12.3	14.9	16.7	27.9	24.7
Incr Delay (d2), s/veh	2.4	0.1	1.1	2.3	2.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.0	5.8	8.3	6.6	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.8	12.3	15.9	18.9	29.9	25.2
LnGrp LOS	C	B	B	B	C	C
Approach Vol, veh/h		250	863		376	
Approach Delay, s/veh		18.4	17.6		28.8	
Approach LOS		B	B		C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		71.0		49.0		71.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		67.0		45.0		67.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			20.6			
HCM 6th LOS			C			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	945	199	140	2178	42	432	17	137	20	12	40
Future Volume (vph)	25	945	199	140	2178	42	432	17	137	20	12	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	60.2		21.8	74.5	74.5	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	50.2%		18.2%	62.1%	62.1%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

Ø1	Ø2 (R)	Ø4	Ø8
21.8 s	60.2 s	15 s	23 s
Ø5	Ø6 (R)		
7.5 s	74.5 s		

HCM 6th Signalized Intersection Summary

4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	945	199	140	2178	42	432	17	137	20	12	40
Future Volume (veh/h)	25	945	199	140	2178	42	432	17	137	20	12	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	27	1038	219	154	2393	46	489	0	151	22	13	44
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	36	2334	492	183	2252	954	543	0	242	151	32	107
Arrive On Green	0.02	0.51	0.51	0.10	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4565	962	1810	3800	1610	3619	0	1610	1810	380	1288
Grp Volume(v), veh/h	27	864	393	154	2393	46	489	0	151	22	0	57
Grp Sat Flow(s),veh/h/ln	1810	1900	1727	1810	1900	1610	1810	0	1610	1810	0	1668
Q Serve(g_s), s	1.8	17.3	17.3	10.0	71.1	1.4	15.9	0.0	10.6	1.4	0.0	3.9
Cycle Q Clear(g_c), s	1.8	17.3	17.3	10.0	71.1	1.4	15.9	0.0	10.6	1.4	0.0	3.9
Prop In Lane	1.00		0.56	1.00		1.00	1.00		1.00	1.00		0.77
Lane Grp Cap(c), veh/h	36	1943	883	183	2252	954	543	0	242	151	0	139
V/C Ratio(X)	0.75	0.44	0.45	0.84	1.06	0.05	0.90	0.00	0.63	0.15	0.00	0.41
Avail Cap(c_a), veh/h	60	1943	883	276	2252	954	543	0	242	151	0	139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.5	18.5	18.6	53.0	24.4	10.2	50.1	0.0	47.8	51.0	0.0	52.2
Incr Delay (d2), s/veh	26.8	0.7	1.6	13.4	38.1	0.1	20.3	0.0	11.4	2.0	0.0	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.3	6.9	5.1	39.6	0.5	8.7	0.0	5.0	0.7	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.4	19.3	20.2	66.4	62.6	10.3	70.4	0.0	59.2	53.1	0.0	60.9
LnGrp LOS	F	B	C	E	F	B	E	A	E	D	A	E
Approach Vol, veh/h	1284			2593			640			79		
Approach Delay, s/veh	20.9			61.9			67.8			58.7		
Approach LOS	C			E			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.6	66.4		15.0	5.9	76.1		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	18.3	55.2		10.0	4.0	69.5		18.0				
Max Q Clear Time (g_c+I1), s	12.0	19.3		5.9	3.8	73.1		17.9				
Green Ext Time (p_c), s	0.2	9.8		0.1	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	51.2											
HCM 6th LOS	D											
Notes												

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

Existing (2021) AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	2	122	1	1	1	122	550	12	3	240	32
Future Volume (vph)	71	2	122	1	1	1	122	550	12	3	240	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	31.0	54.0		11.0	34.0	34.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	31.0%	54.0%		11.0%	34.0%	34.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

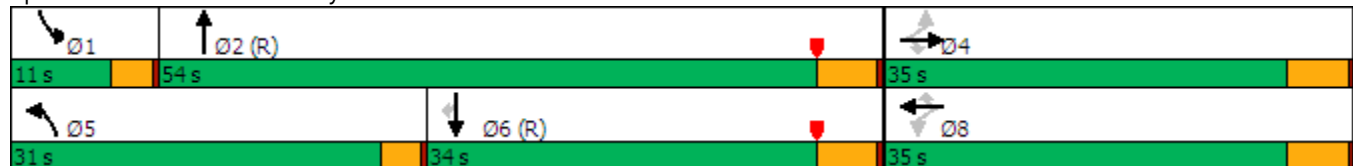
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary
5: Azusa Cyn. Rd. & Olive St.

Existing (2021) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	2	122	1	1	1	122	550	12	3	240	32
Future Volume (veh/h)	71	2	122	1	1	1	122	550	12	3	240	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	77	2	133	1	1	1	133	598	13	3	261	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	224	201	171	206	201	171	165	2730	59	6	2411	1075
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.18	1.00	1.00	0.00	0.67	0.67
Sat Flow, veh/h	1437	1900	1610	1274	1900	1610	1810	3612	78	1810	3610	1610
Grp Volume(v), veh/h	77	2	133	1	1	1	133	299	312	3	261	35
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	1274	1900	1610	1810	1805	1886	1810	1805	1610
Q Serve(g_s), s	5.1	0.1	8.0	0.1	0.0	0.1	7.0	0.0	0.0	0.2	2.6	0.7
Cycle Q Clear(g_c), s	5.1	0.1	8.0	0.2	0.0	0.1	7.0	0.0	0.0	0.2	2.6	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	224	201	171	206	201	171	165	1364	1425	6	2411	1075
V/C Ratio(X)	0.34	0.01	0.78	0.00	0.00	0.01	0.81	0.22	0.22	0.52	0.11	0.03
Avail Cap(c_a), veh/h	503	570	483	453	570	483	498	1364	1425	136	2411	1075
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	0.80	0.80	0.80
Uniform Delay (d), s/veh	42.3	40.0	43.6	40.1	40.0	40.0	40.0	0.0	0.0	49.8	5.9	5.6
Incr Delay (d2), s/veh	0.9	0.0	7.5	0.0	0.0	0.0	8.6	0.4	0.3	47.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	3.5	0.0	0.0	0.0	3.3	0.1	0.1	0.2	0.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	40.0	51.1	40.1	40.0	40.0	48.6	0.4	0.3	97.2	6.0	5.7
LnGrp LOS	D	D	D	D	D	D	D	A	A	F	A	A
Approach Vol, veh/h	212			3			744			299		
Approach Delay, s/veh	48.1			40.0			9.0			6.9		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.8	80.6		15.6	12.6	71.8		15.6				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	7.5	49.0		30.0	27.5	29.0		30.0				
Max Q Clear Time (g_c+I1), s	2.2	2.0		10.0	9.0	4.6		2.2				
Green Ext Time (p_c), s	0.0	4.2		0.6	0.3	1.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	15.1											
HCM 6th LOS	B											

Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

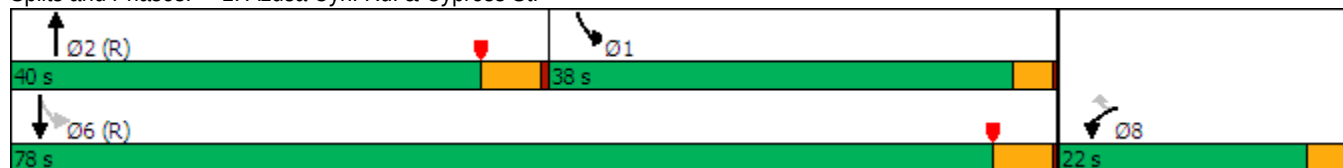
Existing (2021) PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	177	202	336	523	445	431
Future Volume (vph)	177	202	336	523	445	431
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)		41%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	22.0	22.0	40.0		38.0	78.0
Total Split (%)	22.0%	22.0%	40.0%		38.0%	78.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 61 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary

1: Azusa Cyn. Rd. & Cypress St.

Existing (2021) PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	177	202	336	523	445	431
Future Volume (veh/h)	177	202	336	523	445	431
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	261	133	354	551	468	454
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	395	176	632	564	806	2909
Arrive On Green	0.11	0.11	0.35	0.35	0.68	1.00
Sat Flow, veh/h	3619	1610	1900	1610	1810	3705
Grp Volume(v), veh/h	261	133	354	551	468	454
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	6.9	8.0	15.9	33.8	7.7	0.0
Cycle Q Clear(g_c), s	6.9	8.0	15.9	33.8	7.7	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	395	176	632	564	806	2909
V/C Ratio(X)	0.66	0.76	0.56	0.98	0.58	0.16
Avail Cap(c_a), veh/h	670	298	632	564	806	2909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.90	0.90
Uniform Delay (d), s/veh	42.8	43.2	26.3	32.1	10.2	0.0
Incr Delay (d2), s/veh	1.9	6.5	3.6	32.8	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	3.5	7.3	17.8	3.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.6	49.7	29.8	64.9	11.2	0.1
LnGrp LOS	D	D	C	E	B	A
Approach Vol, veh/h	394		905			922
Approach Delay, s/veh	46.4		51.2			5.7
Approach LOS	D		D			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	45.6	40.0			85.6	14.4
Change Period (Y+Rc), s	5.0	* 5			5.0	3.5
Max Green Setting (Gmax), s	34.5	* 35			73.0	18.5
Max Q Clear Time (g_c+I1), s	9.7	35.8			2.0	10.0
Green Ext Time (p_c), s	1.5	0.0			3.5	0.9
Intersection Summary						
HCM 6th Ctrl Delay			31.5			
HCM 6th LOS			C			
Notes						
User approved volume balancing among the lanes for turning movement.						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021) PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	512	6	396	37	20	17	173	316	11	9	424	190
Future Volume (vph)	512	6	396	37	20	17	173	316	11	9	424	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th AWSC
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021) PM Peak Hour

Intersection	
Intersection Delay, s/veh	94.7
Intersection LOS	F

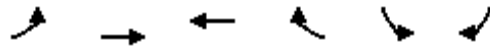
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱		↱			↱	↱
Traffic Vol, veh/h	512	6	396	37	20	17	173	316	11	9	424	190
Future Vol, veh/h	512	6	396	37	20	17	173	316	11	9	424	190
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	528	6	408	38	21	18	178	326	11	9	437	196
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	110.3	15	124.1	57.8
HCM LOS	F	B	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	35%	99%	0%	65%	0%	2%	0%
Vol Thru, %	63%	1%	0%	35%	0%	98%	0%
Vol Right, %	2%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	500	518	396	57	17	433	190
LT Vol	173	512	0	37	0	9	0
Through Vol	316	6	0	20	0	424	0
RT Vol	11	0	396	0	17	0	190
Lane Flow Rate	515	534	408	59	18	446	196
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	1.163	1.267	0.833	0.165	0.044	1.01	0.404
Departure Headway (Hd)	8.449	8.996	7.75	10.823	9.736	8.633	7.895
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	433	406	469	334	370	424	458
Service Time	6.449	6.696	5.45	8.523	7.436	6.333	5.595
HCM Lane V/C Ratio	1.189	1.315	0.87	0.177	0.049	1.052	0.428
HCM Control Delay	124.1	165.2	38.6	15.6	12.9	76.3	15.8
HCM Lane LOS	F	F	E	C	B	F	C
HCM 95th-tile Q	18.6	22	8.1	0.6	0.1	12.8	1.9

Lanes, Volumes, Timings
3: San Bernardino Rd. & Azusa Cyn. Rd.

Existing (2021) PM Peak Hour

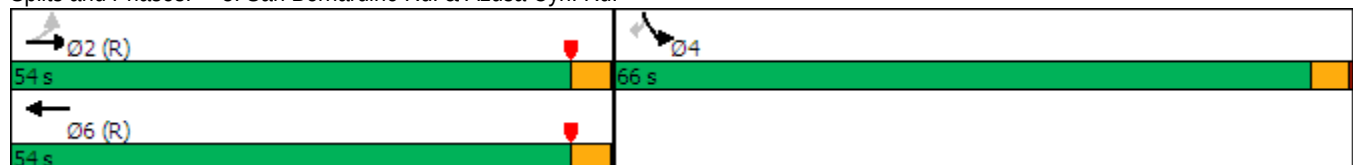


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	126	339	348	365	748	151
Future Volume (vph)	126	339	348	365	748	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	54.0	54.0	54.0		66.0	66.0
Total Split (%)	45.0%	45.0%	45.0%		55.0%	55.0%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



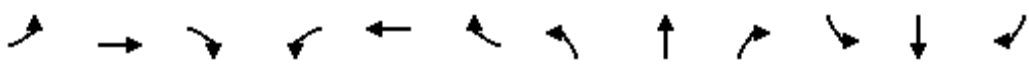
HCM 6th Signalized Intersection Summary 3: San Bernardino Rd. & Azusa Cyn. Rd.

Existing (2021) PM Peak Hour

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	126	339	348	365	748	151
Future Volume (veh/h)	126	339	348	365	748	151
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	133	357	366	384	787	159
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	229	1504	752	671	935	832
Arrive On Green	0.42	0.42	0.42	0.42	0.52	0.52
Sat Flow, veh/h	723	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	133	357	366	384	787	159
Grp Sat Flow(s),veh/h/ln	723	1805	1805	1610	1810	1610
Q Serve(g_s), s	20.7	7.7	17.8	21.9	44.6	6.4
Cycle Q Clear(g_c), s	42.6	7.7	17.8	21.9	44.6	6.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	229	1504	752	671	935	832
V/C Ratio(X)	0.58	0.24	0.49	0.57	0.84	0.19
Avail Cap(c_a), veh/h	229	1504	752	671	935	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	22.7	25.6	26.8	24.8	15.6
Incr Delay (d2), s/veh	10.3	0.4	2.2	3.5	9.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.3	7.9	8.8	20.8	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	53.4	23.0	27.9	30.3	33.9	16.1
LnGrp LOS	D	C	C	C	C	B
Approach Vol, veh/h		490	750		946	
Approach Delay, s/veh		31.3	29.1		30.9	
Approach LOS		C	C		C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		54.0		66.0		54.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		50.0		62.0		50.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			30.4			
HCM 6th LOS			C			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	2408	339	217	1315	35	160	14	265	32	11	46
Future Volume (vph)	39	2408	339	217	1315	35	160	14	265	32	11	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							46%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	10.4	65.0		17.0	71.6	71.6	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	8.7%	54.2%		14.2%	59.7%	59.7%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

Ø1	Ø2 (R)	Ø4	Ø8
17 s	65 s	15 s	23 s
Ø5	Ø6 (R)		
10.4 s	71.6 s		

HCM 6th Signalized Intersection Summary

4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 						 	
Traffic Volume (veh/h)	39	2408	339	217	1315	35	160	14	265	32	11	46
Future Volume (veh/h)	39	2408	339	217	1315	35	160	14	265	32	11	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	41	2535	357	228	1384	37	179	0	279	34	12	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	53	2460	330	204	2216	939	543	0	242	151	28	111
Arrive On Green	0.03	0.50	0.50	0.11	0.58	0.58	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4920	661	1810	3800	1610	3619	0	1610	1810	332	1329
Grp Volume(v), veh/h	41	1930	962	228	1384	37	179	0	279	34	0	60
Grp Sat Flow(s),veh/h/ln	1810	1900	1781	1810	1900	1610	1810	0	1610	1810	0	1661
Q Serve(g_s), s	2.7	60.0	60.0	13.5	28.6	1.2	5.3	0.0	18.0	2.1	0.0	4.1
Cycle Q Clear(g_c), s	2.7	60.0	60.0	13.5	28.6	1.2	5.3	0.0	18.0	2.1	0.0	4.1
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	53	1900	891	204	2216	939	543	0	242	151	0	138
V/C Ratio(X)	0.77	1.02	1.08	1.12	0.62	0.04	0.33	0.00	1.16	0.23	0.00	0.43
Avail Cap(c_a), veh/h	104	1900	891	204	2216	939	543	0	242	151	0	138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.9	30.0	30.0	53.3	16.4	10.7	45.6	0.0	51.0	51.4	0.0	52.3
Incr Delay (d2), s/veh	21.0	24.6	54.4	99.0	1.3	0.1	1.6	0.0	105.7	3.4	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	31.4	36.8	11.6	11.7	0.4	2.5	0.0	14.3	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.8	54.6	84.4	152.3	17.7	10.7	47.2	0.0	156.7	54.8	0.0	61.9
LnGrp LOS	E	F	F	F	B	B	D	A	F	D	A	E
Approach Vol, veh/h	2933			1649			458			94		
Approach Delay, s/veh	64.7			36.2			113.9			59.3		
Approach LOS	E			D			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	65.0		15.0	7.0	75.0		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	13.5	60.0		10.0	6.9	66.6		18.0				
Max Q Clear Time (g_c+I1), s	15.5	62.0		6.1	4.7	30.6		20.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	12.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	59.8											
HCM 6th LOS	E											
Notes												

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

Existing (2021) PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	1	344	3	1	1	233	305	1	1	529	72
Future Volume (vph)	105	1	344	3	1	1	233	305	1	1	529	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	32.0	58.0		8.0	34.0	34.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%	32.0%	58.0%		8.0%	34.0%	34.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary
5: Azusa Cyn. Rd. & Olive St.

Existing (2021) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	1	344	3	1	1	233	305	1	1	529	72
Future Volume (veh/h)	105	1	344	3	1	1	233	305	1	1	529	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	112	1	366	3	1	1	248	324	1	1	563	77
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	429	473	401	328	473	401	282	2271	7	2	1662	741
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.31	1.00	1.00	0.00	0.46	0.46
Sat Flow, veh/h	1437	1900	1610	1031	1900	1610	1810	3692	11	1810	3610	1610
Grp Volume(v), veh/h	112	1	366	3	1	1	248	158	167	1	563	77
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	1031	1900	1610	1810	1805	1898	1810	1805	1610
Q Serve(g_s), s	6.4	0.0	22.1	0.2	0.0	0.0	13.0	0.0	0.0	0.1	10.0	2.7
Cycle Q Clear(g_c), s	6.4	0.0	22.1	0.3	0.0	0.0	13.0	0.0	0.0	0.1	10.0	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	429	473	401	328	473	401	282	1110	1167	2	1662	741
V/C Ratio(X)	0.26	0.00	0.91	0.01	0.00	0.00	0.88	0.14	0.14	0.50	0.34	0.10
Avail Cap(c_a), veh/h	488	551	467	371	551	467	516	1110	1167	81	1662	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.82	0.82	0.29	0.29	0.29
Uniform Delay (d), s/veh	30.6	28.2	36.5	28.3	28.2	28.2	33.5	0.0	0.0	49.9	17.2	15.3
Incr Delay (d2), s/veh	0.3	0.0	20.5	0.0	0.0	0.0	7.3	0.2	0.2	47.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	10.8	0.1	0.0	0.0	5.3	0.1	0.1	0.1	4.1	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	28.2	57.0	28.3	28.2	28.2	40.9	0.2	0.2	97.6	17.4	15.4
LnGrp LOS	C	C	E	C	C	C	D	A	A	F	B	B
Approach Vol, veh/h	479			5			573			641		
Approach Delay, s/veh	50.9			28.3			17.8			17.3		
Approach LOS	D			C			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.6	66.5		29.9	19.1	51.0		29.9				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	4.5	53.0		29.0	28.5	29.0		29.0				
Max Q Clear Time (g_c+I1), s	2.1	2.0		24.1	15.0	12.0		2.3				
Green Ext Time (p_c), s	0.0	2.0		0.8	0.6	3.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	27.0											
HCM 6th LOS	C											

HCM Signalized Intersection Capacity Analysis

1: Azusa Cyn. Rd. & Cypress St.

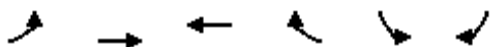
Existing (2021) AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	236	379	305	168	146	216
Future Volume (vph)	236	379	305	168	146	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.93	0.85	0.95		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3351	1470	3417		1805	3610
Flt Permitted	0.97	1.00	1.00		0.43	1.00
Satd. Flow (perm)	3351	1470	3417		811	3610
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	262	421	339	187	162	240
RTOR Reduction (vph)	174	188	39	0	0	0
Lane Group Flow (vph)	290	31	487	0	162	240
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	14.0	14.0	66.3		77.5	77.5
Effective Green, g (s)	14.0	14.0	66.3		77.5	77.5
Actuated g/C Ratio	0.14	0.14	0.66		0.78	0.78
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	469	205	2265		705	2797
v/s Ratio Prot	c0.09		0.14		c0.02	0.07
v/s Ratio Perm		0.02			c0.16	
v/c Ratio	0.62	0.15	0.21		0.23	0.09
Uniform Delay, d1	40.5	37.8	6.6		2.9	2.7
Progression Factor	1.00	1.00	1.00		1.82	1.43
Incremental Delay, d2	2.4	0.3	0.2		0.2	0.1
Delay (s)	42.9	38.1	6.8		5.5	3.9
Level of Service	D	D	A		A	A
Approach Delay (s)	41.4		6.8			4.5
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			20.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.30			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			43.4%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: San Bernardino Rd. & Azusa Cyn. Rd.

Existing (2021) AM Peak Hour



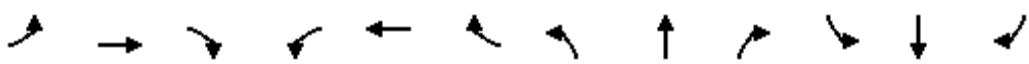
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	145	341	427	259	76
Future Volume (vph)	77	145	341	427	259	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3309		1805	1615
Flt Permitted	0.26	1.00	1.00		0.95	1.00
Satd. Flow (perm)	489	3610	3309		1805	1615
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	87	163	383	480	291	85
RTOR Reduction (vph)	0	0	189	0	0	27
Lane Group Flow (vph)	87	163	674	0	291	58
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	66.0	66.0	66.0		46.0	46.0
Effective Green, g (s)	66.0	66.0	66.0		46.0	46.0
Actuated g/C Ratio	0.55	0.55	0.55		0.38	0.38
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	268	1985	1819		691	619
v/s Ratio Prot		0.05	c0.20		c0.16	
v/s Ratio Perm	0.18					0.04
v/c Ratio	0.32	0.08	0.37		0.42	0.09
Uniform Delay, d1	14.8	12.7	15.3		27.2	23.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.2	0.1	0.6		1.9	0.3
Delay (s)	18.0	12.8	15.8		29.1	24.0
Level of Service	B	B	B		C	C
Approach Delay (s)		14.6	15.8		27.9	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay			18.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.39			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			51.8%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	945	199	140	2178	42	432	17	137	20	12	40
Future Volume (vph)	25	945	199	140	2178	42	432	17	137	20	12	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	27	1038	219	154	2393	46	475	19	151	22	13	44
RTOR Reduction (vph)	0	30	0	0	0	19	0	0	128	0	40	0
Lane Group Flow (vph)	27	1227	0	154	2393	27	247	247	23	22	17	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	2.4	58.9		14.6	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	58.9		14.6	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.49		0.12	0.59	0.59	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2797		231	2251	1125	285	285	285	158	158	
v/s Ratio Prot	0.01	0.22		c0.08	c0.63		c0.13	0.13		c0.01	0.01	
v/s Ratio Perm						0.01			0.01			
v/c Ratio	0.71	0.44		0.67	1.06	0.02	0.87	0.87	0.08	0.14	0.11	
Uniform Delay, d1	58.5	19.8		50.4	24.5	10.1	49.8	49.8	43.9	51.0	50.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	47.3	0.5		7.1	38.4	0.0	28.0	28.0	0.5	1.8	1.3	
Delay (s)	105.7	20.3		57.5	62.8	10.1	77.8	77.8	44.4	52.8	52.2	
Level of Service	F	C		E	E	B	E	E	D	D	D	
Approach Delay (s)		22.1			61.6			70.0			52.4	
Approach LOS		C			E			E			D	
Intersection Summary												
HCM 2000 Control Delay			51.6			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			94.3%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Azusa Cyn. Rd. & Olive St.

Existing (2021) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	2	122	1	1	1	122	550	12	3	240	32
Future Volume (vph)	71	2	122	1	1	1	122	550	12	3	240	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3598		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1437	1900	1615	1805	3598		1805	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	2	133	1	1	1	133	598	13	3	261	35
RTOR Reduction (vph)	0	0	117	0	0	1	0	1	0	0	0	13
Lane Group Flow (vph)	77	2	16	1	1	0	133	610	0	3	261	22
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	12.3	12.3	12.3	12.3	12.3	12.3	12.7	72.9		1.3	61.5	61.5
Effective Green, g (s)	12.3	12.3	12.3	12.3	12.3	12.3	12.7	72.9		1.3	61.5	61.5
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.73		0.01	0.62	0.62
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	176	233	198	176	233	198	229	2622		23	2220	993
v/s Ratio Prot		0.00			0.00		c0.07	c0.17		0.00	0.07	
v/s Ratio Perm	c0.05		0.01	0.00		0.00						0.01
v/c Ratio	0.44	0.01	0.08	0.01	0.00	0.00	0.58	0.23		0.13	0.12	0.02
Uniform Delay, d1	40.6	38.5	38.9	38.5	38.5	38.5	41.1	4.4		48.8	8.0	7.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.06		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.0	0.2	0.0	0.0	0.0	3.6	0.2		2.6	0.1	0.0
Delay (s)	42.4	38.5	39.0	38.5	38.5	38.5	44.4	4.9		51.4	8.1	7.6
Level of Service	D	D	D	D	D	D	D	A		D	A	A
Approach Delay (s)		40.2			38.5			12.0			8.5	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			16.0				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			44.8%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: Azusa Cyn. Rd. & Cypress St.

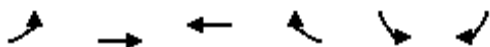
Existing (2021) PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	177	202	336	523	445	431
Future Volume (vph)	177	202	336	523	445	431
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.95	0.85	0.91		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3394	1470	3280		1805	3610
Flt Permitted	0.97	1.00	1.00		0.21	1.00
Satd. Flow (perm)	3394	1470	3280		392	3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	186	213	354	551	468	454
RTOR Reduction (vph)	62	111	255	0	0	0
Lane Group Flow (vph)	211	15	650	0	468	454
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	12.0	12.0	41.5		81.0	79.5
Effective Green, g (s)	12.0	12.0	41.5		81.0	79.5
Actuated g/C Ratio	0.12	0.12	0.42		0.81	0.80
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	407	176	1361		805	2869
v/s Ratio Prot	c0.06		0.20		c0.20	0.13
v/s Ratio Perm		0.01			c0.27	
v/c Ratio	0.52	0.09	0.48		0.58	0.16
Uniform Delay, d1	41.3	39.1	21.3		12.9	2.4
Progression Factor	1.00	1.00	1.00		0.88	1.35
Incremental Delay, d2	1.1	0.2	1.2		1.0	0.1
Delay (s)	42.4	39.3	22.5		12.3	3.4
Level of Service	D	D	C		B	A
Approach Delay (s)	41.4		22.5			7.9
Approach LOS	D		C			A
Intersection Summary						
HCM 2000 Control Delay			19.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.59			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			68.8%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: San Bernardino Rd. & Azusa Cyn. Rd.

Existing (2021) PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	126	339	348	365	748	151
Future Volume (vph)	126	339	348	365	748	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3333		1805	1615
Flt Permitted	0.25	1.00	1.00		0.95	1.00
Satd. Flow (perm)	479	3610	3333		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	133	357	366	384	787	159
RTOR Reduction (vph)	0	0	158	0	0	18
Lane Group Flow (vph)	133	357	592	0	787	141
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	50.0	50.0	50.0		62.0	62.0
Effective Green, g (s)	50.0	50.0	50.0		62.0	62.0
Actuated g/C Ratio	0.42	0.42	0.42		0.52	0.52
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	199	1504	1388		932	834
v/s Ratio Prot		0.10	0.18		c0.44	
v/s Ratio Perm	c0.28					0.09
v/c Ratio	0.67	0.24	0.43		0.84	0.17
Uniform Delay, d1	28.3	22.7	24.8		24.9	15.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	16.4	0.4	1.0		9.3	0.4
Delay (s)	44.7	23.0	25.8		34.1	15.8
Level of Service	D	C	C		C	B
Approach Delay (s)		28.9	25.8		31.0	
Approach LOS		C	C		C	
Intersection Summary						
HCM 2000 Control Delay			28.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.76			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			79.8%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 						 	
Traffic Volume (vph)	39	2408	339	217	1315	35	160	14	265	32	11	46
Future Volume (vph)	39	2408	339	217	1315	35	160	14	265	32	11	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	2535	357	228	1384	37	168	15	279	34	12	48
RTOR Reduction (vph)	0	18	0	0	0	16	0	0	185	0	44	0
Lane Group Flow (vph)	41	2875	0	228	1384	21	91	92	94	34	16	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	5.5	60.0		13.5	68.0	68.0	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	5.5	60.0		13.5	68.0	68.0	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.05	0.50		0.11	0.57	0.57	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	87	2850		213	2153	1076	285	285	285	158	158	
v/s Ratio Prot	0.02	c0.50		c0.12	0.36		0.05	0.05		c0.02	0.01	
v/s Ratio Perm						0.01			c0.05			
v/c Ratio	0.47	1.01		1.07	0.64	0.02	0.32	0.32	0.33	0.22	0.10	
Uniform Delay, d1	55.8	30.0		53.2	17.7	11.4	45.5	45.6	45.6	51.3	50.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0	19.0		81.6	1.5	0.0	2.9	3.0	3.1	3.1	1.3	
Delay (s)	59.8	49.0		134.8	19.2	11.4	48.5	48.5	48.7	54.4	52.1	
Level of Service	E	D		F	B	B	D	D	D	D	D	
Approach Delay (s)		49.1			35.0			48.6			53.0	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			44.6		HCM 2000 Level of Service					D		
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			120.0		Sum of lost time (s)					18.5		
Intersection Capacity Utilization			91.3%		ICU Level of Service					F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Azusa Cyn. Rd. & Olive St.

Existing (2021) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	1	344	3	1	1	233	305	1	1	529	72
Future Volume (vph)	105	1	344	3	1	1	233	305	1	1	529	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3608		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1439	1900	1615	1805	3608		1805	3610	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	112	1	366	3	1	1	248	324	1	1	563	77
RTOR Reduction (vph)	0	0	314	0	0	1	0	0	0	0	0	36
Lane Group Flow (vph)	112	1	52	3	1	0	248	325	0	1	563	41
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	14.1	14.1	14.1	14.1	14.1	14.1	19.0	71.2		1.2	53.4	53.4
Effective Green, g (s)	14.1	14.1	14.1	14.1	14.1	14.1	19.0	71.2		1.2	53.4	53.4
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14	0.14	0.19	0.71		0.01	0.53	0.53
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	202	267	227	202	267	227	342	2568		21	1927	862
v/s Ratio Prot		0.00			0.00		c0.14	0.09		0.00	c0.16	
v/s Ratio Perm	c0.08		0.03	0.00		0.00						0.03
v/c Ratio	0.55	0.00	0.23	0.01	0.00	0.00	0.73	0.13		0.05	0.29	0.05
Uniform Delay, d1	40.0	36.9	38.1	37.0	36.9	36.9	38.0	4.6		48.8	12.9	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.17	0.51		1.00	1.00	1.00
Incremental Delay, d2	3.3	0.0	0.5	0.0	0.0	0.0	6.7	0.1		0.9	0.4	0.1
Delay (s)	43.3	36.9	38.6	37.0	36.9	36.9	51.3	2.4		49.8	13.3	11.2
Level of Service	D	D	D	D	D	D	D	A		D	B	B
Approach Delay (s)		39.7			37.0			23.6			13.1	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			24.2				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.43									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			56.8%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

APPENDIX 3.3:

EXISTING (HYPOTHETICAL “NON-COVID” 2021) TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (2021) AM PEAK HOUR WARRANTS**

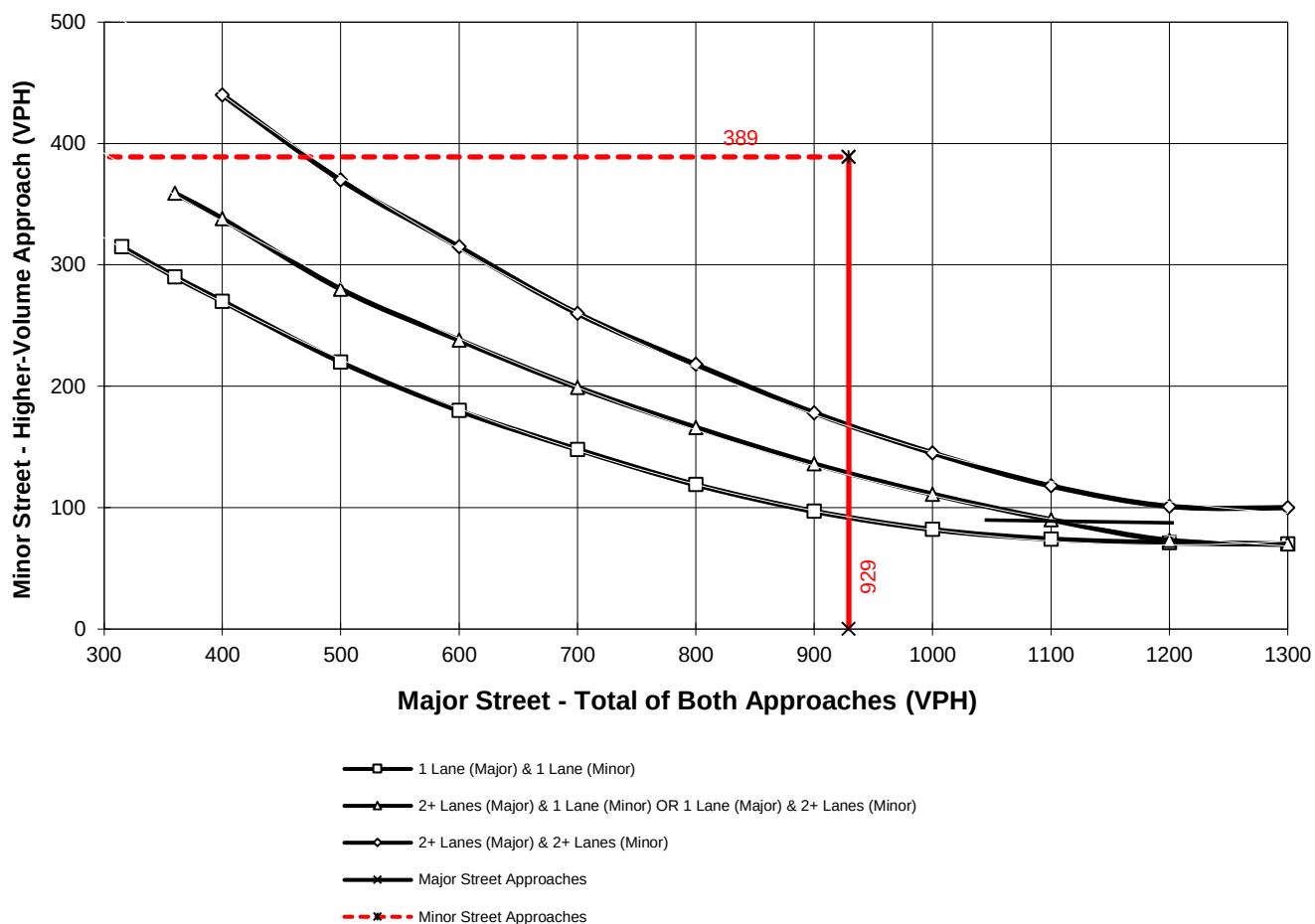
Major Street Name = **Azusa Canyon Rd.**

Total of Both Approaches (VPH) = **929**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Los Angeles St.**

High Volume Approach (VPH) = **389**
Number of Approach Lanes Minor Street = **2**

WARRANTED FOR A SIGNAL



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

Intersection ID: #2

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

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

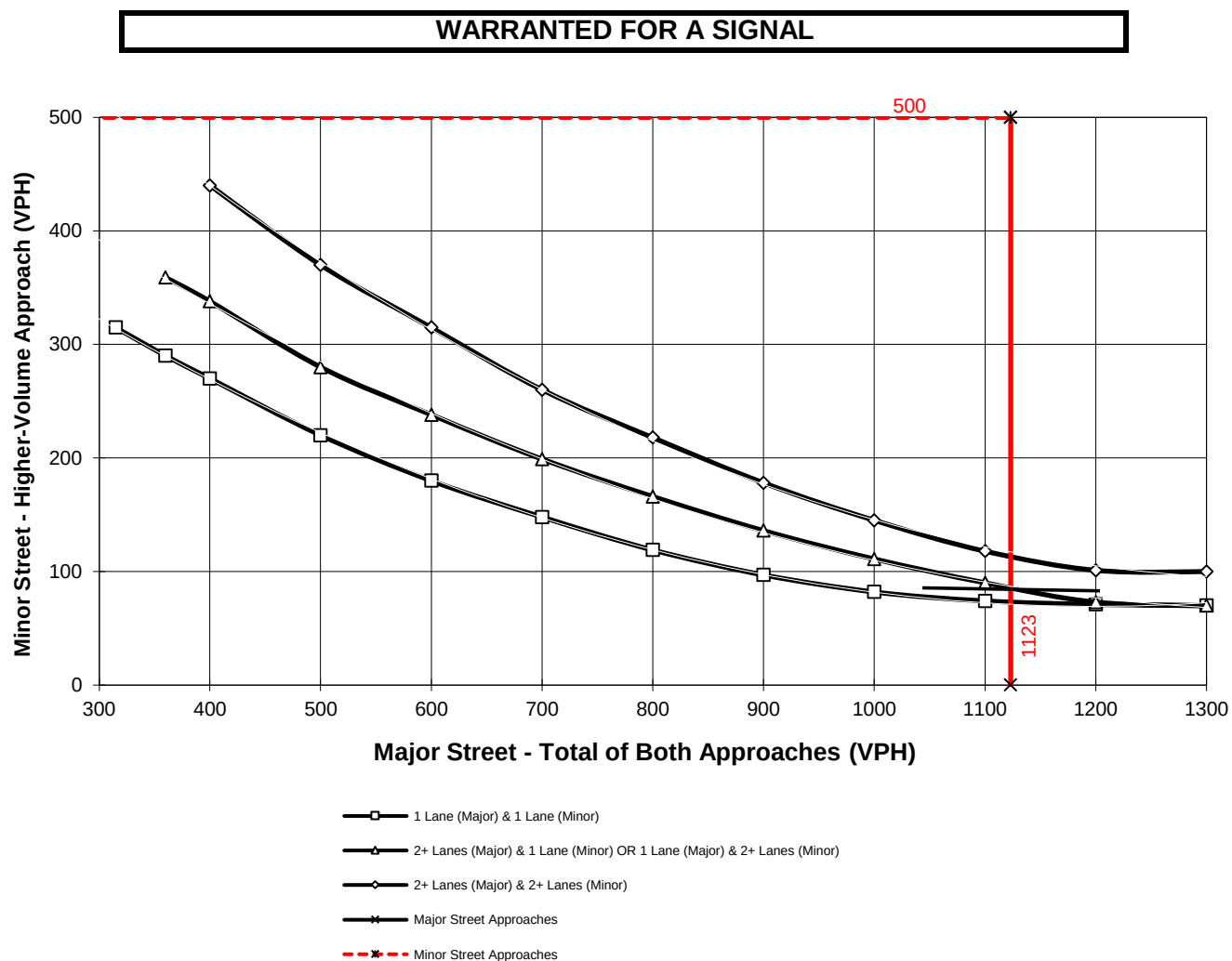
Traffic Conditions = **EXISTING (2021) PM PEAK HOUR WARRANTS**

Major Street Name = **Azusa Canyon Rd.**

Total of Both Approaches (VPH) = **1,123**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Los Angeles St.**

High Volume Approach (VPH) = **914**
Number of Approach Lanes Minor Street = **2**



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

Intersection ID: #2

APPENDIX 5.1:

EXISTING (HYPOTHETICAL “NON-COVID” 2021) PLUS SITE BASELINE LAND USE CONDITIONS INTERSECTION OPERATIONS ANALYSIS

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Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

Existing (2021) + Site Baseline AM Peak Hour

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	237	379	308	168	146	223
Future Volume (vph)	237	379	308	168	146	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		48%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	32.0	32.0	46.0		22.0	68.0
Total Split (%)	32.0%	32.0%	46.0%		22.0%	68.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary

1: Azusa Cyn. Rd. & Cypress St.

Existing (2021) + Site Baseline AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	237	379	308	168	146	223
Future Volume (veh/h)	237	379	308	168	146	223
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	228	458	342	187	162	248
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	322	573	1476	792	687	2660
Arrive On Green	0.18	0.18	0.65	0.65	0.10	1.00
Sat Flow, veh/h	1810	3220	2364	1217	1810	3705
Grp Volume(v), veh/h	228	458	271	258	162	248
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1681	1810	1805
Q Serve(g_s), s	11.8	13.6	6.2	6.3	2.9	0.0
Cycle Q Clear(g_c), s	11.8	13.6	6.2	6.3	2.9	0.0
Prop In Lane	1.00	1.00		0.72	1.00	
Lane Grp Cap(c), veh/h	322	573	1174	1093	687	2660
V/C Ratio(X)	0.71	0.80	0.23	0.24	0.24	0.09
Avail Cap(c_a), veh/h	516	918	1174	1093	928	2660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.98	0.98
Uniform Delay (d), s/veh	38.6	39.4	7.2	7.2	4.4	0.0
Incr Delay (d2), s/veh	2.9	2.6	0.5	0.5	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	5.5	2.3	2.2	0.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.5	42.0	7.6	7.7	4.6	0.1
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	686		529			410
Approach Delay, s/veh	41.8		7.7			1.9
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.6	70.0			78.7	21.3
Change Period (Y+Rc), s	3.5	5.0			5.0	3.5
Max Green Setting (Gmax), s	18.5	41.0			63.0	28.5
Max Q Clear Time (g_c+I1), s	4.9	8.3			2.0	15.6
Green Ext Time (p_c), s	0.3	3.6			1.8	2.2
Intersection Summary						
HCM 6th Ctrl Delay			20.6			
HCM 6th LOS			C			
Notes						
User approved volume balancing among the lanes for turning movement.						

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021) + Site Baseline AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	12	186	7	6	19	225	257	11	15	151	274
Future Volume (vph)	194	12	186	7	6	19	225	257	11	15	151	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th AWSC
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021) + Site Baseline AM Peak Hour

Intersection	
Intersection Delay, s/veh	32.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰	↱		↰↱			↰	↱
Traffic Vol, veh/h	194	12	186	7	6	19	225	257	11	15	151	274
Future Vol, veh/h	194	12	186	7	6	19	225	257	11	15	151	274
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	206	13	198	7	6	20	239	273	12	16	161	291
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	15.8	11.4	64	14.7
HCM LOS	C	B	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	46%	94%	0%	54%	0%	9%	0%
Vol Thru, %	52%	6%	0%	46%	0%	91%	0%
Vol Right, %	2%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	493	206	186	13	19	166	274
LT Vol	225	194	0	7	0	15	0
Through Vol	257	12	0	6	0	151	0
RT Vol	11	0	186	0	19	0	274
Lane Flow Rate	524	219	198	14	20	177	291
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.995	0.484	0.371	0.034	0.044	0.347	0.511
Departure Headway (Hd)	6.832	7.952	6.746	8.874	7.864	7.07	6.306
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	535	454	532	403	454	509	571
Service Time	4.832	5.697	4.49	6.641	5.63	4.812	4.048
HCM Lane V/C Ratio	0.979	0.482	0.372	0.035	0.044	0.348	0.51
HCM Control Delay	64	18	13.4	12	11	13.5	15.5
HCM Lane LOS	F	C	B	B	B	B	C
HCM 95th-tile Q	13.9	2.6	1.7	0.1	0.1	1.5	2.9

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

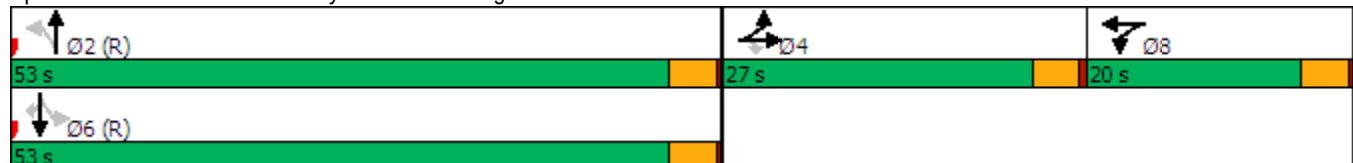
Existing (2021) + Site Baseline AM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	12	186	7	6	19	225	257	11	15	151	274
Future Volume (vph)	194	12	186	7	6	19	225	257	11	15	151	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		50	0		0	0		400
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	60			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)	47%											
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	27.0	27.0	27.0	20.0	20.0		53.0	53.0		53.0	53.0	53.0
Total Split (%)	27.0%	27.0%	27.0%	20.0%	20.0%		53.0%	53.0%		53.0%	53.0%	53.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	C-Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.



HCM 6th Signalized Intersection Summary

2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021) + Site Baseline AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	12	186	7	6	19	225	257	11	15	151	274
Future Volume (veh/h)	194	12	186	7	6	19	225	257	11	15	151	274
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	215	0	198	7	6	20	239	273	12	16	161	291
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	539	0	240	43	9	31	455	500	21	122	1202	1139
Arrive On Green	0.15	0.00	0.15	0.02	0.02	0.02	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	3619	0	1610	1810	385	1284	570	708	30	117	1700	1610
Grp Volume(v), veh/h	215	0	198	7	0	26	524	0	0	177	0	291
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1669	1307	0	0	1817	0	1610
Q Serve(g_s), s	5.4	0.0	11.9	0.4	0.0	1.5	16.4	0.0	0.0	0.0	0.0	6.5
Cycle Q Clear(g_c), s	5.4	0.0	11.9	0.4	0.0	1.5	19.4	0.0	0.0	3.0	0.0	6.5
Prop In Lane	1.00		1.00	1.00		0.77	0.46		0.02	0.09		1.00
Lane Grp Cap(c), veh/h	539	0	240	43	0	40	977	0	0	1324	0	1139
V/C Ratio(X)	0.40	0.00	0.83	0.16	0.00	0.65	0.54	0.00	0.00	0.13	0.00	0.26
Avail Cap(c_a), veh/h	832	0	370	290	0	267	977	0	0	1324	0	1139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.95	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.5	0.0	41.3	47.8	0.0	48.4	7.1	0.0	0.0	4.7	0.0	5.2
Incr Delay (d2), s/veh	0.5	0.0	8.7	1.7	0.0	16.3	2.0	0.0	0.0	0.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	5.1	0.2	0.0	0.8	5.1	0.0	0.0	1.1	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.0	0.0	50.0	49.5	0.0	64.7	9.1	0.0	0.0	4.9	0.0	5.8
LnGrp LOS	D	A	D	D	A	E	A	A	A	A	A	A
Approach Vol, veh/h	413			33			524			468		
Approach Delay, s/veh	44.2			61.4			9.1			5.5		
Approach LOS	D			E			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	74.7			18.9			74.7			6.4		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	49.0			23.0			49.0			16.0		
Max Q Clear Time (g_c+I1), s	21.4			13.9			8.5			3.5		
Green Ext Time (p_c), s	4.6			1.0			2.2			0.1		

Intersection Summary

HCM 6th Ctrl Delay 19.2

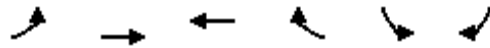
HCM 6th LOS B

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
3: San Bernardino Rd. & Azusa Cyn. Rd.

Existing (2021) + Site Baseline AM Peak Hour

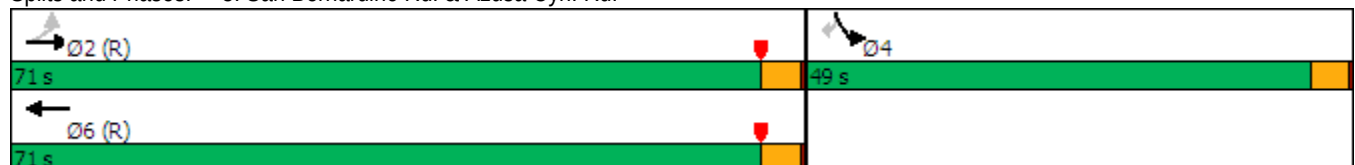


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	78	145	341	429	260	76
Future Volume (vph)	78	145	341	429	260	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	71.0	71.0	71.0		49.0	49.0
Total Split (%)	59.2%	59.2%	59.2%		40.8%	40.8%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

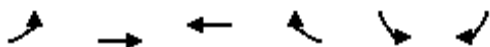
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 40
Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary 3: San Bernardino Rd. & Azusa Cyn. Rd.

Existing (2021) + Site Baseline AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	78	145	341	429	260	76
Future Volume (veh/h)	78	145	341	429	260	76
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	88	163	383	482	292	85
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	300	2016	1008	899	679	604
Arrive On Green	0.56	0.56	0.56	0.56	0.38	0.38
Sat Flow, veh/h	650	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	88	163	383	482	292	85
Grp Sat Flow(s),veh/h/ln	650	1805	1805	1610	1810	1610
Q Serve(g_s), s	11.9	2.5	14.3	22.6	14.4	4.2
Cycle Q Clear(g_c), s	34.5	2.5	14.3	22.6	14.4	4.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	300	2016	1008	899	679	604
V/C Ratio(X)	0.29	0.08	0.38	0.54	0.43	0.14
Avail Cap(c_a), veh/h	300	2016	1008	899	679	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	12.3	14.9	16.7	27.9	24.7
Incr Delay (d2), s/veh	2.5	0.1	1.1	2.3	2.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.0	5.8	8.4	6.6	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.0	12.3	15.9	19.0	29.9	25.2
LnGrp LOS	C	B	B	B	C	C
Approach Vol, veh/h		251	865		377	
Approach Delay, s/veh		18.5	17.6		28.9	
Approach LOS		B	B		C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		71.0		49.0		71.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		67.0		45.0		67.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			20.6			
HCM 6th LOS			C			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) + Site Baseline AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	945	202	143	2178	42	433	17	138	20	12	40
Future Volume (vph)	25	945	202	143	2178	42	433	17	138	20	12	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	60.0		22.0	74.5	74.5	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	50.0%		18.3%	62.1%	62.1%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

22 s	60 s	15 s	23 s
7.5 s	74.5 s		

HCM 6th Signalized Intersection Summary

4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) + Site Baseline AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  			 						 		
Traffic Volume (veh/h)	25	945	202	143	2178	42	433	17	138	20	12	40	
Future Volume (veh/h)	25	945	202	143	2178	42	433	17	138	20	12	40	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adj Flow Rate, veh/h	27	1038	222	157	2393	46	490	0	152	22	13	44	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0	
Cap, veh/h	36	2320	495	186	2252	954	543	0	242	151	32	107	
Arrive On Green	0.02	0.51	0.51	0.10	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08	
Sat Flow, veh/h	1810	4553	972	1810	3800	1610	3619	0	1610	1810	380	1288	
Grp Volume(v), veh/h	27	866	394	157	2393	46	490	0	152	22	0	57	
Grp Sat Flow(s),veh/h/ln	1810	1900	1725	1810	1900	1610	1810	0	1610	1810	0	1668	
Q Serve(g_s), s	1.8	17.4	17.4	10.2	71.1	1.4	16.0	0.0	10.6	1.4	0.0	3.9	
Cycle Q Clear(g_c), s	1.8	17.4	17.4	10.2	71.1	1.4	16.0	0.0	10.6	1.4	0.0	3.9	
Prop In Lane	1.00		0.56	1.00		1.00	1.00		1.00	1.00		0.77	
Lane Grp Cap(c), veh/h	36	1936	879	186	2252	954	543	0	242	151	0	139	
V/C Ratio(X)	0.75	0.45	0.45	0.84	1.06	0.05	0.90	0.00	0.63	0.15	0.00	0.41	
Avail Cap(c_a), veh/h	60	1936	879	279	2252	954	543	0	242	151	0	139	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00	
Uniform Delay (d), s/veh	58.5	18.7	18.7	52.9	24.4	10.2	50.1	0.0	47.9	51.0	0.0	52.2	
Incr Delay (d2), s/veh	26.8	0.7	1.7	13.7	38.1	0.1	20.5	0.0	11.6	2.0	0.0	8.7	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.1	7.4	6.9	5.2	39.6	0.5	8.8	0.0	5.0	0.7	0.0	2.0	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	85.4	19.4	20.4	66.6	62.6	10.3	70.7	0.0	59.5	53.1	0.0	60.9	
LnGrp LOS	F	B	C	E	F	B	E	A	E	D	A	E	
Approach Vol, veh/h	1287				2596				642				79
Approach Delay, s/veh	21.1				61.9				68.0				58.7
Approach LOS	C				E				E				E
Timer - Assigned Phs	1	2	4		5	6	8						
Phs Duration (G+Y+Rc), s	15.8	66.2	15.0		5.9	76.1	23.0						
Change Period (Y+Rc), s	3.5	5.0	5.0		3.5	5.0	5.0						
Max Green Setting (Gmax), s	18.5	55.0	10.0		4.0	69.5	18.0						
Max Q Clear Time (g_c+I1), s	12.2	19.4	5.9		3.8	73.1	18.0						
Green Ext Time (p_c), s	0.2	9.8	0.1		0.0	0.0	0.0						
Intersection Summary													
HCM 6th Ctrl Delay	51.3												
HCM 6th LOS	D												
Notes													

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) + Site Baseline AM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	945	202	143	2178	42	433	17	138	20	12	40
Future Volume (vph)	25	945	202	143	2178	42	433	17	138	20	12	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0		23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	60.0		22.0	74.5		23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	50.0%		18.3%	62.1%		19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

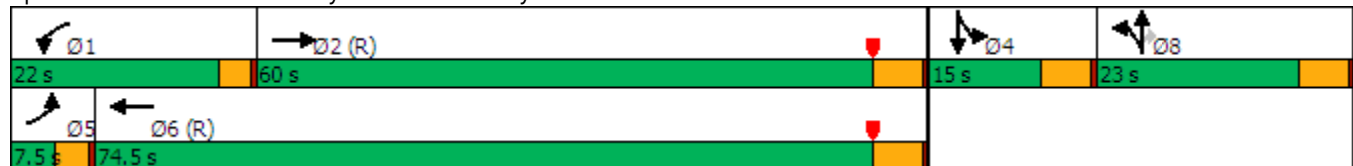
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.



HCM 6th Signalized Intersection Summary

4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) + Site Baseline AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 				
Traffic Volume (veh/h)	25	945	202	143	2178	42	433	17	138	20	12	40
Future Volume (veh/h)	25	945	202	143	2178	42	433	17	138	20	12	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	27	1038	222	157	2393	46	490	0	152	22	13	44
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	36	2320	495	186	3304	63	543	0	242	151	32	107
Arrive On Green	0.02	0.51	0.51	0.10	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4553	972	1810	5574	107	3619	0	1610	1810	380	1288
Grp Volume(v), veh/h	27	866	394	157	1629	810	490	0	152	22	0	57
Grp Sat Flow(s),veh/h/ln	1810	1900	1725	1810	1900	1881	1810	0	1610	1810	0	1668
Q Serve(g_s), s	1.8	17.4	17.4	10.2	36.7	37.0	16.0	0.0	10.6	1.4	0.0	3.9
Cycle Q Clear(g_c), s	1.8	17.4	17.4	10.2	36.7	37.0	16.0	0.0	10.6	1.4	0.0	3.9
Prop In Lane	1.00		0.56	1.00		0.06	1.00		1.00	1.00		0.77
Lane Grp Cap(c), veh/h	36	1936	879	186	2252	1115	543	0	242	151	0	139
V/C Ratio(X)	0.75	0.45	0.45	0.84	0.72	0.73	0.90	0.00	0.63	0.15	0.00	0.41
Avail Cap(c_a), veh/h	60	1936	879	279	2252	1115	543	0	242	151	0	139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.5	18.7	18.7	52.9	17.4	17.5	50.1	0.0	47.9	51.0	0.0	52.2
Incr Delay (d2), s/veh	26.8	0.7	1.7	13.7	2.1	4.2	20.5	0.0	11.6	2.0	0.0	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.4	6.9	5.2	14.9	15.5	8.8	0.0	5.0	0.7	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.4	19.4	20.4	66.6	19.5	21.6	70.7	0.0	59.5	53.1	0.0	60.9
LnGrp LOS	F	B	C	E	B	C	E	A	E	D	A	E
Approach Vol, veh/h	1287			2596			642			79		
Approach Delay, s/veh	21.1			23.0			68.0			58.7		
Approach LOS	C			C			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.8	66.2		15.0	5.9	76.1		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	18.5	55.0		10.0	4.0	69.5		18.0				
Max Q Clear Time (g_c+I1), s	12.2	19.4		5.9	3.8	39.0		18.0				
Green Ext Time (p_c), s	0.2	9.8		0.1	0.0	22.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay 29.4

HCM 6th LOS C

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

Existing (2021) + Site Baseline AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	2	123	1	1	1	122	552	12	3	246	32
Future Volume (vph)	71	2	123	1	1	1	122	552	12	3	246	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	31.0	55.0		11.0	35.0	35.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%	31.0%	55.0%		11.0%	35.0%	35.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

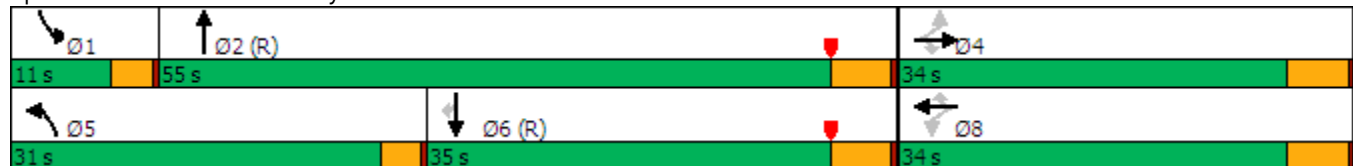
Actuated Cycle Length: 100

Offset: 11 (11%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary 5: Azusa Cyn. Rd. & Olive St.

Existing (2021) + Site Baseline AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	2	123	1	1	1	122	552	12	3	246	32
Future Volume (veh/h)	71	2	123	1	1	1	122	552	12	3	246	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	77	2	134	1	1	1	133	600	13	3	267	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	224	202	171	206	202	171	165	2729	59	6	2409	1075
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.18	1.00	1.00	0.00	0.67	0.67
Sat Flow, veh/h	1437	1900	1610	1273	1900	1610	1810	3613	78	1810	3610	1610
Grp Volume(v), veh/h	77	2	134	1	1	1	133	300	313	3	267	35
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	1273	1900	1610	1810	1805	1886	1810	1805	1610
Q Serve(g_s), s	5.1	0.1	8.1	0.1	0.0	0.1	7.0	0.0	0.0	0.2	2.7	0.7
Cycle Q Clear(g_c), s	5.1	0.1	8.1	0.2	0.0	0.1	7.0	0.0	0.0	0.2	2.7	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	224	202	171	206	202	171	165	1363	1424	6	2409	1075
V/C Ratio(X)	0.34	0.01	0.78	0.00	0.00	0.01	0.81	0.22	0.22	0.52	0.11	0.03
Avail Cap(c_a), veh/h	488	551	467	440	551	467	498	1363	1424	136	2409	1075
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	0.80	0.80	0.80
Uniform Delay (d), s/veh	42.2	40.0	43.5	40.0	39.9	39.9	40.0	0.0	0.0	49.8	6.0	5.7
Incr Delay (d2), s/veh	0.9	0.0	7.5	0.0	0.0	0.0	8.6	0.4	0.3	47.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	3.6	0.0	0.0	0.0	3.3	0.1	0.1	0.2	0.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	40.0	51.1	40.0	39.9	40.0	48.6	0.4	0.3	97.2	6.0	5.7
LnGrp LOS	D	D	D	D	D	D	D	A	A	F	A	A
Approach Vol, veh/h	213			3			746			305		
Approach Delay, s/veh	48.1			40.0			9.0			6.9		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.8	80.5		15.6	12.6	71.7		15.6				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	7.5	50.0		29.0	27.5	30.0		29.0				
Max Q Clear Time (g_c+I1), s	2.2	2.0		10.1	9.0	4.7		2.2				
Green Ext Time (p_c), s	0.0	4.2		0.6	0.3	1.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	15.1											
HCM 6th LOS	B											

Lanes, Volumes, Timings
6: Azusa Cyn. Rd. & Dwy. 1

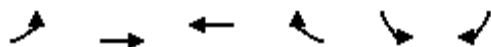
Existing (2021) + Site Baseline AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	0	2	470	0	6	440
Future Volume (vph)	0	2	470	0	6	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	208		299			985
Travel Time (s)	4.7		6.8			22.4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	470	0	6	440
Future Vol, veh/h	0	2	470	0	6	440
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2	495	0	6	463
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	248	0	0	495	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	758	-	-	1079	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	758	-	-	1079	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.8	0		0.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	758	1079	-	
HCM Lane V/C Ratio	-	-	0.003	0.006	-	
HCM Control Delay (s)	-	-	9.8	8.4	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Lanes, Volumes, Timings
7: Los Angeles St. & Dwy. 2

Existing (2021) + Site Baseline AM Peak Hour

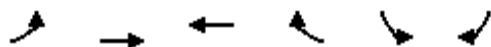


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	33	30	0	0	2
Future Volume (vph)	5	33	30	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		160	175		164	
Travel Time (s)		3.6	4.0		3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	33	30	0	0	2
Future Vol, veh/h	5	33	30	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	35	32	0	0	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	32	0	-	0	77	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1593	-	-	-	931	1048
Stage 1	-	-	-	-	996	-
Stage 2	-	-	-	-	983	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1593	-	-	-	928	1048
Mov Cap-2 Maneuver	-	-	-	-	928	-
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	983	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		8.4		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1593	-	-	-	1048	
HCM Lane V/C Ratio	0.003	-	-	-	0.002	
HCM Control Delay (s)	7.3	0	-	-	8.4	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
8: Los Angeles St. & Dwy. 3

Existing (2021) + Site Baseline AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	31	29	0	0	1
Future Volume (vph)	2	31	29	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		175	247		166	
Travel Time (s)		4.0	5.6		3.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
8: Los Angeles St. & Dwy. 3

Existing (2021) + Site Baseline AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	31	29	0	0	1
Future Vol, veh/h	2	31	29	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	33	31	0	0	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	31	0	-	0	68	31
Stage 1	-	-	-	-	31	-
Stage 2	-	-	-	-	37	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1595	-	-	-	942	1049
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	991	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1595	-	-	-	941	1049
Mov Cap-2 Maneuver	-	-	-	-	941	-
Stage 1	-	-	-	-	996	-
Stage 2	-	-	-	-	991	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		8.4		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1595	-	-	-	1049	
HCM Lane V/C Ratio	0.001	-	-	-	0.001	
HCM Control Delay (s)	7.3	0	-	-	8.4	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile O(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

Existing (2021) + Site Baseline PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	177	202	342	524	445	433
Future Volume (vph)	177	202	342	524	445	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)		41%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	22.0	22.0	40.0		38.0	78.0
Total Split (%)	22.0%	22.0%	40.0%		38.0%	78.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

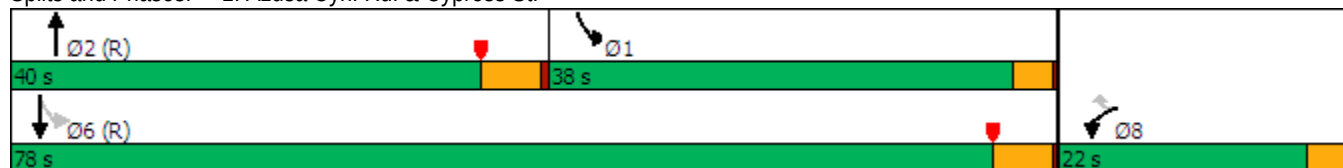
Actuated Cycle Length: 100

Offset: 61 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary

1: Azusa Cyn. Rd. & Cypress St.

Existing (2021) + Site Baseline PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	177	202	342	524	445	433
Future Volume (veh/h)	177	202	342	524	445	433
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	261	133	360	552	468	456
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	395	176	632	564	806	2909
Arrive On Green	0.11	0.11	0.35	0.35	0.68	1.00
Sat Flow, veh/h	3619	1610	1900	1610	1810	3705
Grp Volume(v), veh/h	261	133	360	552	468	456
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	6.9	8.0	16.2	33.9	7.7	0.0
Cycle Q Clear(g_c), s	6.9	8.0	16.2	33.9	7.7	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	395	176	632	564	806	2909
V/C Ratio(X)	0.66	0.76	0.57	0.98	0.58	0.16
Avail Cap(c_a), veh/h	670	298	632	564	806	2909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.90	0.90
Uniform Delay (d), s/veh	42.8	43.2	26.4	32.1	10.2	0.0
Incr Delay (d2), s/veh	1.9	6.5	3.7	33.2	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	3.5	7.5	17.9	3.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.6	49.7	30.1	65.3	11.2	0.1
LnGrp LOS	D	D	C	E	B	A
Approach Vol, veh/h	394		912			924
Approach Delay, s/veh	46.4		51.4			5.7
Approach LOS	D		D			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	45.6	40.0			85.6	14.4
Change Period (Y+Rc), s	5.0	* 5			5.0	3.5
Max Green Setting (Gmax), s	34.5	* 35			73.0	18.5
Max Q Clear Time (g_c+I1), s	9.7	35.9			2.0	10.0
Green Ext Time (p_c), s	1.5	0.0			3.5	0.9

Intersection Summary

HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021) + Site Baseline PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	512	7	396	39	23	18	173	316	12	9	424	190
Future Volume (vph)	512	7	396	39	23	18	173	316	12	9	424	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th AWSC
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021) + Site Baseline PM Peak Hour

Intersection	
Intersection Delay, s/veh	96.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱		↱			↱	↱
Traffic Vol, veh/h	512	7	396	39	23	18	173	316	12	9	424	190
Future Vol, veh/h	512	7	396	39	23	18	173	316	12	9	424	190
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	528	7	408	40	24	19	178	326	12	9	437	196
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	112.4	15.2	127.2	58.7
HCM LOS	F	C	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	35%	99%	0%	63%	0%	2%	0%
Vol Thru, %	63%	1%	0%	37%	0%	98%	0%
Vol Right, %	2%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	501	519	396	62	18	433	190
LT Vol	173	512	0	39	0	9	0
Through Vol	316	7	0	23	0	424	0
RT Vol	12	0	396	0	18	0	190
Lane Flow Rate	516	535	408	64	19	446	196
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	1.171	1.274	0.837	0.179	0.047	1.014	0.406
Departure Headway (Hd)	8.495	9.046	7.8	10.832	9.755	8.677	7.938
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	434	407	469	333	369	420	456
Service Time	6.495	6.746	5.5	8.532	7.455	6.377	5.638
HCM Lane V/C Ratio	1.189	1.314	0.87	0.192	0.051	1.062	0.43
HCM Control Delay	127.2	168.2	39.3	15.9	12.9	77.5	16
HCM Lane LOS	F	F	E	C	B	F	C
HCM 95th-tile Q	18.9	22.2	8.2	0.6	0.1	12.9	1.9

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021) + Site Baseline PM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	512	7	396	39	23	18	173	316	12	9	424	190
Future Volume (vph)	512	7	396	39	23	18	173	316	12	9	424	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		50	0		0	0		400
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	60			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)	49%											
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	37.0	37.0	37.0	20.0	20.0		43.0	43.0		43.0	43.0	43.0
Total Split (%)	37.0%	37.0%	37.0%	20.0%	20.0%		43.0%	43.0%		43.0%	43.0%	43.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.

 02 (R)	 04	 08
43 s	37 s	20 s
 06 (R)		
43 s		

HCM 6th Signalized Intersection Summary

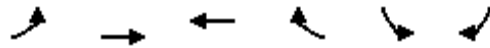
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021) + Site Baseline PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	512	7	396	39	23	18	173	316	12	9	424	190
Future Volume (veh/h)	512	7	396	39	23	18	173	316	12	9	424	190
Initial Q (Qb), veh	0	2	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	533	0	408	40	24	19	178	326	12	9	437	196
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	1027	0	457	75	41	32	281	487	17	43	1042	893
Arrive On Green	0.28	0.00	0.28	0.04	0.04	0.04	0.55	0.55	0.55	1.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610	1810	982	778	419	877	31	12	1879	1610
Grp Volume(v), veh/h	533	0	408	40	0	43	516	0	0	446	0	196
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1760	1327	0	0	1891	0	1610
Q Serve(g_s), s	12.4	0.0	24.3	2.2	0.0	2.4	23.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.4	0.0	24.3	2.2	0.0	2.4	27.1	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.44	0.34		0.02	0.02		1.00
Lane Grp Cap(c), veh/h	1027	0	457	75	0	73	785	0	0	1086	0	893
V/C Ratio(X)	0.52	0.00	0.89	0.54	0.00	0.59	0.66	0.00	0.00	0.41	0.00	0.22
Avail Cap(c_a), veh/h	1194	0	531	290	0	282	785	0	0	1086	0	893
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.69	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	34.3	47.0	0.0	47.1	15.5	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	15.7	5.9	0.0	7.5	3.0	0.0	0.0	1.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	10.9	1.1	0.0	1.2	8.4	0.0	0.0	0.3	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	0.0	50.1	52.9	0.0	54.6	18.5	0.0	0.0	1.2	0.0	0.6
LnGrp LOS	C	A	D	D	A	D	B	A	A	A	A	A
Approach Vol, veh/h	941		83			516			642			
Approach Delay, s/veh	39.0		53.8			18.5			1.0			
Approach LOS	D		D			B			A			
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	59.5		32.4		59.5		8.1					
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0					
Max Green Setting (Gmax), s	39.0		33.0		39.0		16.0					
Max Q Clear Time (g_c+I1), s	29.1		26.3		2.0		4.4					
Green Ext Time (p_c), s	2.9		2.1		3.9		0.2					
Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									
Notes												

Lanes, Volumes, Timings
3: San Bernardino Rd. & Azusa Cyn. Rd.

Existing (2021) + Site Baseline PM Peak Hour

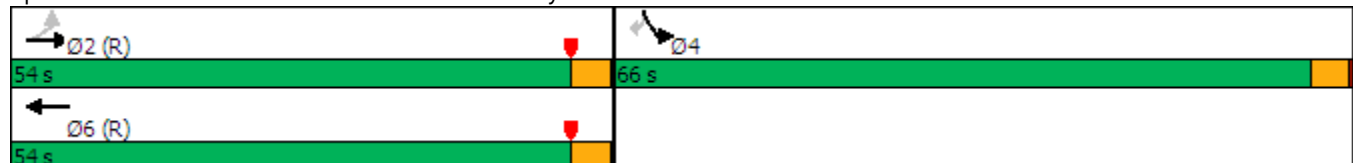


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	126	339	348	366	750	152
Future Volume (vph)	126	339	348	366	750	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	54.0	54.0	54.0		66.0	66.0
Total Split (%)	45.0%	45.0%	45.0%		55.0%	55.0%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

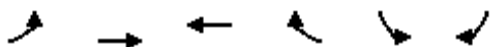
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary 3: San Bernardino Rd. & Azusa Cyn. Rd.

Existing (2021) + Site Baseline PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	126	339	348	366	750	152
Future Volume (veh/h)	126	339	348	366	750	152
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	133	357	366	385	789	160
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	229	1504	752	671	935	832
Arrive On Green	0.42	0.42	0.42	0.42	0.52	0.52
Sat Flow, veh/h	723	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	133	357	366	385	789	160
Grp Sat Flow(s),veh/h/ln	723	1805	1805	1610	1810	1610
Q Serve(g_s), s	20.7	7.7	17.8	22.0	44.8	6.4
Cycle Q Clear(g_c), s	42.7	7.7	17.8	22.0	44.8	6.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	229	1504	752	671	935	832
V/C Ratio(X)	0.58	0.24	0.49	0.57	0.84	0.19
Avail Cap(c_a), veh/h	229	1504	752	671	935	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	22.7	25.6	26.8	24.9	15.6
Incr Delay (d2), s/veh	10.4	0.4	2.2	3.5	9.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.3	7.9	8.8	20.9	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	53.6	23.0	27.9	30.4	34.1	16.1
LnGrp LOS	D	C	C	C	C	B
Approach Vol, veh/h		490	751		949	
Approach Delay, s/veh		31.3	29.2		31.0	
Approach LOS		C	C		C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		54.0		66.0		54.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		50.0		62.0		50.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			30.4			
HCM 6th LOS			C			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) + Site Baseline PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 						 	
Traffic Volume (vph)	39	2408	340	218	1315	35	162	14	268	32	11	46
Future Volume (vph)	39	2408	340	218	1315	35	162	14	268	32	11	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							46%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	10.4	65.0		17.0	71.6	71.6	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	8.7%	54.2%		14.2%	59.7%	59.7%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

 Ø1	 Ø2 (R)	 Ø4	 Ø8
17 s	65 s	15 s	23 s
 Ø5	 Ø6 (R)		
10.4 s	71.6 s		

HCM 6th Signalized Intersection Summary 4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) + Site Baseline PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 						 	
Traffic Volume (veh/h)	39	2408	340	218	1315	35	162	14	268	32	11	46
Future Volume (veh/h)	39	2408	340	218	1315	35	162	14	268	32	11	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	41	2535	358	229	1384	37	182	0	282	34	12	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	53	2459	331	204	2216	939	543	0	242	151	28	111
Arrive On Green	0.03	0.50	0.50	0.11	0.58	0.58	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4919	662	1810	3800	1610	3619	0	1610	1810	332	1329
Grp Volume(v), veh/h	41	1930	963	229	1384	37	182	0	282	34	0	60
Grp Sat Flow(s),veh/h/ln	1810	1900	1781	1810	1900	1610	1810	0	1610	1810	0	1661
Q Serve(g_s), s	2.7	60.0	60.0	13.5	28.6	1.2	5.4	0.0	18.0	2.1	0.0	4.1
Cycle Q Clear(g_c), s	2.7	60.0	60.0	13.5	28.6	1.2	5.4	0.0	18.0	2.1	0.0	4.1
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	53	1900	890	204	2216	939	543	0	242	151	0	138
V/C Ratio(X)	0.77	1.02	1.08	1.12	0.62	0.04	0.34	0.00	1.17	0.23	0.00	0.43
Avail Cap(c_a), veh/h	104	1900	890	204	2216	939	543	0	242	151	0	138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.9	30.0	30.0	53.3	16.4	10.7	45.6	0.0	51.0	51.4	0.0	52.3
Incr Delay (d2), s/veh	21.0	24.7	54.6	100.7	1.3	0.1	1.6	0.0	110.2	3.4	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	31.4	36.8	11.7	11.7	0.4	2.6	0.0	14.6	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.8	54.7	84.6	153.9	17.7	10.7	47.3	0.0	161.2	54.8	0.0	61.9
LnGrp LOS	E	F	F	F	B	B	D	A	F	D	A	E
Approach Vol, veh/h	2934			1650			464			94		
Approach Delay, s/veh	64.8			36.5			116.5			59.3		
Approach LOS	E			D			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	65.0		15.0	7.0	75.0		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	13.5	60.0		10.0	6.9	66.6		18.0				
Max Q Clear Time (g_c+I1), s	15.5	62.0		6.1	4.7	30.6		20.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	12.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	60.3											
HCM 6th LOS	E											
Notes												

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) + Site Baseline PM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	2408	340	218	1315	35	162	14	268	32	11	46
Future Volume (vph)	39	2408	340	218	1315	35	162	14	268	32	11	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							46%					
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0		23.0	23.0	23.0	15.0	15.0	
Total Split (s)	10.4	65.0		16.0	70.6		23.0	23.0	23.0	16.0	16.0	
Total Split (%)	8.7%	54.2%		13.3%	58.8%		19.2%	19.2%	19.2%	13.3%	13.3%	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

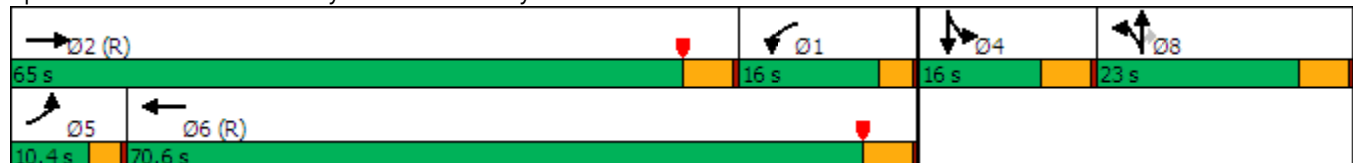
Actuated Cycle Length: 120

Offset: 17 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.



HCM 6th Signalized Intersection Summary 4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021) + Site Baseline PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	39	2408	340	218	1315	35	162	14	268	32	11	46
Future Volume (veh/h)	39	2408	340	218	1315	35	162	14	268	32	11	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	41	2535	358	229	1384	37	182	0	282	34	12	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	53	2459	331	509	4224	113	543	0	242	166	30	122
Arrive On Green	0.06	1.00	1.00	0.56	1.00	1.00	0.15	0.00	0.15	0.09	0.09	0.09
Sat Flow, veh/h	1810	4919	662	1810	5526	148	3619	0	1610	1810	332	1329
Grp Volume(v), veh/h	41	1930	963	229	952	469	182	0	282	34	0	60
Grp Sat Flow(s),veh/h/ln	1810	1900	1781	1810	1900	1873	1810	0	1610	1810	0	1661
Q Serve(g_s), s	2.7	60.0	60.0	8.9	0.0	0.0	5.4	0.0	18.0	2.1	0.0	4.1
Cycle Q Clear(g_c), s	2.7	60.0	60.0	8.9	0.0	0.0	5.4	0.0	18.0	2.1	0.0	4.1
Prop In Lane	1.00		0.37	1.00		0.08	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	53	1900	890	509	2905	1432	543	0	242	166	0	152
V/C Ratio(X)	0.78	1.02	1.08	0.45	0.33	0.33	0.34	0.00	1.17	0.20	0.00	0.39
Avail Cap(c_a), veh/h	104	1900	890	509	2905	1432	543	0	242	166	0	152
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.1	0.0	0.0	20.8	0.0	0.0	45.6	0.0	51.0	50.5	0.0	51.4
Incr Delay (d2), s/veh	21.3	24.7	54.6	0.6	0.3	0.6	1.6	0.0	110.2	2.8	0.0	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.5	13.5	3.2	0.1	0.2	2.6	0.0	14.6	1.1	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.4	24.7	54.6	21.5	0.3	0.6	47.3	0.0	161.2	53.2	0.0	58.8
LnGrp LOS	E	F	F	C	A	A	D	A	F	D	A	E
Approach Vol, veh/h	2934				1650				464			
Approach Delay, s/veh	35.2				3.3				116.5			
Approach LOS	D				A				F			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.7	65.0		16.0	7.0	96.7		23.0				
Change Period (Y+Rc), s	5.0	* 5		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	12.5	* 60		11.0	6.9	65.6		18.0				
Max Q Clear Time (g_c+I1), s	10.9	62.0		6.1	4.7	2.0		20.0				
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	12.5		0.0				

Intersection Summary

HCM 6th Ctrl Delay 32.7
HCM 6th LOS C

Notes

User approved volume balancing among the lanes for turning movement.

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

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

Existing (2021) + Site Baseline PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	1	344	3	1	1	234	310	1	1	531	72
Future Volume (vph)	105	1	344	3	1	1	234	310	1	1	531	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	33.0	33.0	33.0	33.0	33.0	33.0	32.0	59.0		8.0	35.0	35.0
Total Split (%)	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	32.0%	59.0%		8.0%	35.0%	35.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

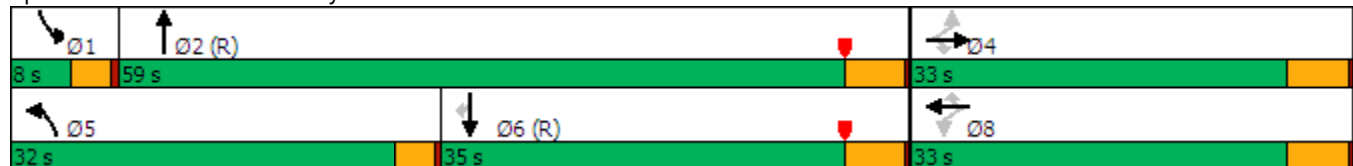
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 60

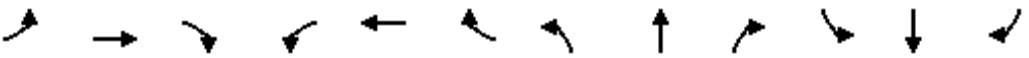
Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary 5: Azusa Cyn. Rd. & Olive St.

Existing (2021) + Site Baseline PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	1	344	3	1	1	234	310	1	1	531	72
Future Volume (veh/h)	105	1	344	3	1	1	234	310	1	1	531	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	112	1	366	3	1	1	249	330	1	1	565	77
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	428	471	399	327	471	399	283	2274	7	2	1664	742
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.31	1.00	1.00	0.00	0.46	0.46
Sat Flow, veh/h	1437	1900	1610	1031	1900	1610	1810	3692	11	1810	3610	1610
Grp Volume(v), veh/h	112	1	366	3	1	1	249	161	170	1	565	77
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	1031	1900	1610	1810	1805	1898	1810	1805	1610
Q Serve(g_s), s	6.4	0.0	22.1	0.2	0.0	0.0	13.1	0.0	0.0	0.1	10.0	2.7
Cycle Q Clear(g_c), s	6.4	0.0	22.1	0.3	0.0	0.0	13.1	0.0	0.0	0.1	10.0	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	428	471	399	327	471	399	283	1112	1169	2	1664	742
V/C Ratio(X)	0.26	0.00	0.92	0.01	0.00	0.00	0.88	0.15	0.15	0.50	0.34	0.10
Avail Cap(c_a), veh/h	474	532	451	360	532	451	516	1112	1169	81	1664	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.82	0.82	0.29	0.29	0.29
Uniform Delay (d), s/veh	30.7	28.3	36.6	28.4	28.3	28.3	33.5	0.0	0.0	49.9	17.2	15.3
Incr Delay (d2), s/veh	0.3	0.0	22.1	0.0	0.0	0.0	7.3	0.2	0.2	47.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	11.0	0.1	0.0	0.0	5.3	0.1	0.1	0.1	4.1	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	28.3	58.7	28.4	28.3	28.3	40.8	0.2	0.2	97.6	17.4	15.3
LnGrp LOS	C	C	E	C	C	C	D	A	A	F	B	B
Approach Vol, veh/h	479			5			580			643		
Approach Delay, s/veh	52.2			28.4			17.6			17.3		
Approach LOS	D			C			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.6	66.6		29.8	19.1	51.1		29.8				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	4.5	54.0		28.0	28.5	30.0		28.0				
Max Q Clear Time (g_c+I1), s	2.1	2.0		24.1	15.1	12.0		2.3				
Green Ext Time (p_c), s	0.0	2.1		0.7	0.6	3.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	27.2											
HCM 6th LOS	C											

Lanes, Volumes, Timings
6: Azusa Cyn. Rd. & Dwy. 1

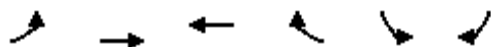
Existing (2021) + Site Baseline PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	5	846	0	2	623
Future Volume (vph)	0	5	846	0	2	623
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	208		299			985
Travel Time (s)	4.7		6.8			22.4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	846	0	2	623
Future Vol, veh/h	0	5	846	0	2	623
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	5	891	0	2	656
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	446	0	0	891	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	565	-	-	769	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	565	-	-	769	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.4	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	565	769	-	
HCM Lane V/C Ratio	-	-	0.009	0.003	-	
HCM Control Delay (s)	-	-	11.4	9.7	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Lanes, Volumes, Timings
7: Los Angeles St. & Dwy. 2

Existing (2021) + Site Baseline PM Peak Hour

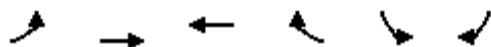


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	27	76	0	0	5
Future Volume (vph)	2	27	76	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		160	175		164	
Travel Time (s)		3.6	4.0		3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	27	76	0	0	5
Future Vol, veh/h	2	27	76	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	28	80	0	0	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	80	0	-	0	112	80
Stage 1	-	-	-	-	80	-
Stage 2	-	-	-	-	32	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1531	-	-	-	890	986
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	996	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1531	-	-	-	889	986
Mov Cap-2 Maneuver	-	-	-	-	889	-
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	996	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		8.7		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1531	-	-	-	986	
HCM Lane V/C Ratio	0.001	-	-	-	0.005	
HCM Control Delay (s)	7.4	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
8: Los Angeles St. & Dwy. 3

Existing (2021) + Site Baseline PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	26	74	0	0	2
Future Volume (vph)	1	26	74	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		175	247		166	
Travel Time (s)		4.0	5.6		3.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
8: Los Angeles St. & Dwy. 3

Existing (2021) + Site Baseline PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	26	74	0	0	2
Future Vol, veh/h	1	26	74	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	27	78	0	0	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	78	0	-	0	107	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	29	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1533	-	-	-	895	988
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	999	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1533	-	-	-	894	988
Mov Cap-2 Maneuver	-	-	-	-	894	-
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	999	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		8.7		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1533	-	-	-	988	
HCM Lane V/C Ratio	0.001	-	-	-	0.002	
HCM Control Delay (s)	7.3	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile O(veh)	0	-	-	-	0	

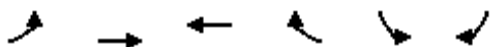
HCM Signalized Intersection Capacity Analysis Existing (2021) + Site Baseline AM Peak Hour 1: Azusa Cyn. Rd. & Cypress St.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	237	379	308	168	146	223
Future Volume (vph)	237	379	308	168	146	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.93	0.85	0.95		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3351	1470	3419		1805	3610
Flt Permitted	0.97	1.00	1.00		0.42	1.00
Satd. Flow (perm)	3351	1470	3419		807	3610
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	263	421	342	187	162	248
RTOR Reduction (vph)	168	188	43	0	0	0
Lane Group Flow (vph)	297	31	487	0	162	248
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	14.2	14.2	66.0		77.3	77.3
Effective Green, g (s)	14.2	14.2	66.0		77.3	77.3
Actuated g/C Ratio	0.14	0.14	0.66		0.77	0.77
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	475	208	2256		701	2790
v/s Ratio Prot	c0.09		0.14		c0.02	0.07
v/s Ratio Perm		0.02			c0.16	
v/c Ratio	0.62	0.15	0.22		0.23	0.09
Uniform Delay, d1	40.4	37.6	6.7		3.0	2.8
Progression Factor	1.00	1.00	1.00		1.37	0.93
Incremental Delay, d2	2.6	0.3	0.2		0.2	0.1
Delay (s)	43.0	37.9	7.0		4.2	2.6
Level of Service	D	D	A		A	A
Approach Delay (s)	41.3		7.0			3.3
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			20.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.30			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			43.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis Existing (2021) + Site Baseline AM Peak Hour 2: Azusa Cyn. Rd. & Los Angeles St. WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	12	186	7	6	19	225	257	11	15	151	274
Future Volume (vph)	194	12	186	7	6	19	225	257	11	15	151	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.88			1.00			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1715	1805	1900	1805	1681			1900			1900	1900
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.77			0.95	1.00
Satd. Flow (perm)	1715	1805	1900	1805	1681			1463			1805	1900
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	206	13	198	7	6	20	239	273	12	16	161	291
RTOR Reduction (vph)	0	0	175	0	19	0	0	1	0	0	0	81
Lane Group Flow (vph)	109	110	23	7	7	0	0	523	0	0	177	210
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)	11.8	11.8	11.8	4.1	4.1			72.1			72.1	72.1
Effective Green, g (s)	11.8	11.8	11.8	4.1	4.1			72.1			72.1	72.1
Actuated g/C Ratio	0.12	0.12	0.12	0.04	0.04			0.72			0.72	0.72
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	202	212	224	74	68			1054			1301	1369
v/s Ratio Prot	c0.06	0.06		0.00	c0.00							
v/s Ratio Perm			0.01					c0.36			0.10	0.11
v/c Ratio	0.54	0.52	0.10	0.09	0.10			0.50			0.14	0.15
Uniform Delay, d1	41.5	41.4	39.4	46.2	46.2			6.1			4.3	4.4
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			0.98	1.80
Incremental Delay, d2	2.8	2.1	0.2	0.6	0.6			1.7			0.2	0.2
Delay (s)	44.3	43.6	39.6	46.7	46.8			7.7			4.4	8.1
Level of Service	D	D	D	D	D			A			A	A
Approach Delay (s)		41.9			46.8			7.7			6.7	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			18.2			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			57.8%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis Existing (2021) + Site Baseline AM Peak Hour 3: San Bernardino Rd. & Azusa Cyn. Rd.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	78	145	341	429	260	76
Future Volume (vph)	78	145	341	429	260	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3308		1805	1615
Flt Permitted	0.26	1.00	1.00		0.95	1.00
Satd. Flow (perm)	493	3610	3308		1805	1615
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	88	163	383	482	292	85
RTOR Reduction (vph)	0	0	190	0	0	26
Lane Group Flow (vph)	88	163	675	0	292	59
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	67.0	67.0	67.0		45.0	45.0
Effective Green, g (s)	67.0	67.0	67.0		45.0	45.0
Actuated g/C Ratio	0.56	0.56	0.56		0.38	0.38
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	275	2015	1846		676	605
v/s Ratio Prot		0.05	c0.20		c0.16	
v/s Ratio Perm	0.18					0.04
v/c Ratio	0.32	0.08	0.37		0.43	0.10
Uniform Delay, d1	14.3	12.3	14.7		28.0	24.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.0	0.1	0.6		2.0	0.3
Delay (s)	17.3	12.3	15.3		30.0	24.6
Level of Service	B	B	B		C	C
Approach Delay (s)		14.1	15.3		28.8	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay			18.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.39			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			52.0%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis Existing (2021) + Site Baseline AM Peak Hour 4: Azusa Cyn. Rd. & Arrow Hwy.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	945	202	143	2178	42	433	17	138	20	12	40
Future Volume (vph)	25	945	202	143	2178	42	433	17	138	20	12	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	27	1038	222	157	2393	46	476	19	152	22	13	44
RTOR Reduction (vph)	0	30	0	0	0	19	0	0	129	0	40	0
Lane Group Flow (vph)	27	1230	0	157	2393	27	248	247	23	22	17	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	2.4	58.8		14.7	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	58.8		14.7	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.49		0.12	0.59	0.59	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2793		232	2251	1125	285	285	285	158	158	
v/s Ratio Prot	0.01	0.22		c0.08	c0.63		c0.13	0.13		c0.01	0.01	
v/s Ratio Perm						0.01			0.01			
v/c Ratio	0.71	0.44		0.68	1.06	0.02	0.87	0.87	0.08	0.14	0.11	
Uniform Delay, d1	58.5	19.9		50.4	24.5	10.1	49.9	49.8	43.9	51.0	50.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	47.3	0.5		7.6	38.4	0.0	28.5	28.0	0.5	1.8	1.3	
Delay (s)	105.7	20.4		58.0	62.8	10.1	78.3	77.8	44.4	52.8	52.2	
Level of Service	F	C		E	E	B	E	E	D	D	D	
Approach Delay (s)		22.2			61.6			70.2			52.4	
Approach LOS		C			E			E			D	
Intersection Summary												
HCM 2000 Control Delay			51.6			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			94.3%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis Existing (2021) + Site Baseline AM Peak Hour 4: Azusa Cyn. Rd. & Arrow Hwy. WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	945	202	143	2178	42	433	17	138	20	12	40
Future Volume (vph)	25	945	202	143	2178	42	433	17	138	20	12	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00		*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	27	1038	222	157	2393	46	476	19	152	22	13	44
RTOR Reduction (vph)	0	30	0	0	2	0	0	0	129	0	40	0
Lane Group Flow (vph)	27	1230	0	157	2437	0	248	247	23	22	17	0
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Actuated Green, G (s)	2.4	58.8		14.7	71.1		18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	58.8		14.7	71.1		18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.49		0.12	0.59		0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2793		232	3377		285	285	285	158	158	
v/s Ratio Prot	0.01	0.22		c0.08	c0.43		c0.13	0.13		c0.01	0.01	
v/s Ratio Perm									0.01			
v/c Ratio	0.71	0.44		0.68	0.72		0.87	0.87	0.08	0.14	0.11	
Uniform Delay, d1	58.5	19.9		50.4	17.4		49.9	49.8	43.9	51.0	50.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	47.3	0.5		7.6	1.4		28.5	28.0	0.5	1.8	1.3	
Delay (s)	105.7	20.4		58.0	18.8		78.3	77.8	44.4	52.8	52.2	
Level of Service	F	C		E	B		E	E	D	D	D	
Approach Delay (s)		22.2			21.1			70.2			52.4	
Approach LOS		C			C			E			D	
Intersection Summary												
HCM 2000 Control Delay			28.9			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			77.1%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis Existing (2021) + Site Baseline AM Peak Hour

5: Azusa Cyn. Rd. & Olive St.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	2	123	1	1	1	122	552	12	3	246	32
Future Volume (vph)	71	2	123	1	1	1	122	552	12	3	246	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3599		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1437	1900	1615	1805	3599		1805	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	2	134	1	1	1	133	600	13	3	267	35
RTOR Reduction (vph)	0	0	118	0	0	1	0	1	0	0	0	13
Lane Group Flow (vph)	77	2	16	1	1	0	133	612	0	3	267	22
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	12.3	12.3	12.3	12.3	12.3	12.3	12.7	72.9		1.3	61.5	61.5
Effective Green, g (s)	12.3	12.3	12.3	12.3	12.3	12.3	12.7	72.9		1.3	61.5	61.5
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.73		0.01	0.62	0.62
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	176	233	198	176	233	198	229	2623		23	2220	993
v/s Ratio Prot		0.00			0.00		c0.07	c0.17		0.00	0.07	
v/s Ratio Perm	c0.05		0.01	0.00		0.00						0.01
v/c Ratio	0.44	0.01	0.08	0.01	0.00	0.00	0.58	0.23		0.13	0.12	0.02
Uniform Delay, d1	40.6	38.5	38.9	38.5	38.5	38.5	41.1	4.4		48.8	8.0	7.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.92		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.0	0.2	0.0	0.0	0.0	3.6	0.2		2.6	0.1	0.0
Delay (s)	42.4	38.5	39.0	38.5	38.5	38.5	40.9	4.3		51.4	8.1	7.6
Level of Service	D	D	D	D	D	D	D	A		D	A	A
Approach Delay (s)		40.2			38.5			10.8			8.5	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			15.3				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			44.8%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

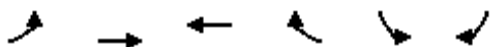
HCM Signalized Intersection Capacity Analysis Existing (2021) + Site Baseline PM Peak Hour 1: Azusa Cyn. Rd. & Cypress St.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	177	202	342	524	445	433
Future Volume (vph)	177	202	342	524	445	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.95	0.85	0.91		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3394	1470	3282		1805	3610
Flt Permitted	0.97	1.00	1.00		0.20	1.00
Satd. Flow (perm)	3394	1470	3282		386	3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	186	213	360	552	468	456
RTOR Reduction (vph)	62	111	249	0	0	0
Lane Group Flow (vph)	211	15	663	0	468	456
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	12.0	12.0	41.5		81.0	79.5
Effective Green, g (s)	12.0	12.0	41.5		81.0	79.5
Actuated g/C Ratio	0.12	0.12	0.42		0.81	0.80
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	407	176	1362		802	2869
v/s Ratio Prot	c0.06		0.20		c0.20	0.13
v/s Ratio Perm		0.01			c0.27	
v/c Ratio	0.52	0.09	0.49		0.58	0.16
Uniform Delay, d1	41.3	39.1	21.4		13.0	2.4
Progression Factor	1.00	1.00	1.00		0.88	1.37
Incremental Delay, d2	1.1	0.2	1.2		1.0	0.1
Delay (s)	42.4	39.3	22.7		12.4	3.4
Level of Service	D	D	C		B	A
Approach Delay (s)	41.4		22.7			8.0
Approach LOS	D		C			A
Intersection Summary						
HCM 2000 Control Delay			20.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.59			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			69.0%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis Existing (2021) + Site Baseline PM Peak Hour 2: Azusa Cyn. Rd. & Los Angeles St. WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	512	7	396	39	23	18	173	316	12	9	424	190
Future Volume (vph)	512	7	396	39	23	18	173	316	12	9	424	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.93			1.00			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1715	1805	1900	1805	1774			1900			1900	1900
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.62			0.99	1.00
Satd. Flow (perm)	1715	1805	1900	1805	1774			1173			1882	1900
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	528	7	408	40	24	19	178	326	12	9	437	196
RTOR Reduction (vph)	0	0	313	0	18	0	0	0	0	0	0	82
Lane Group Flow (vph)	269	266	95	40	25	0	0	516	0	0	446	114
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)	23.3	23.3	23.3	6.6	6.6			58.1			58.1	58.1
Effective Green, g (s)	23.3	23.3	23.3	6.6	6.6			58.1			58.1	58.1
Actuated g/C Ratio	0.23	0.23	0.23	0.07	0.07			0.58			0.58	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	399	420	442	119	117			681			1093	1103
v/s Ratio Prot	c0.16	0.15		c0.02	0.01							
v/s Ratio Perm			0.05					c0.44			0.24	0.06
v/c Ratio	0.67	0.63	0.22	0.34	0.22			0.76			0.41	0.10
Uniform Delay, d1	34.9	34.5	31.0	44.6	44.2			15.7			11.5	9.3
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.02	2.08
Incremental Delay, d2	4.5	3.1	0.2	1.7	0.9			7.7			1.1	0.2
Delay (s)	39.4	37.6	31.2	46.3	45.2			23.4			12.8	19.6
Level of Service	D	D	C	D	D			C			B	B
Approach Delay (s)		35.3			45.7			23.4			14.9	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			26.9			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			80.8%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis Existing (2021) + Site Baseline PM Peak Hour 3: San Bernardino Rd. & Azusa Cyn. Rd.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	126	339	348	366	750	152
Future Volume (vph)	126	339	348	366	750	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3332		1805	1615
Flt Permitted	0.25	1.00	1.00		0.95	1.00
Satd. Flow (perm)	478	3610	3332		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	133	357	366	385	789	160
RTOR Reduction (vph)	0	0	158	0	0	18
Lane Group Flow (vph)	133	357	593	0	789	142
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	50.0	50.0	50.0		62.0	62.0
Effective Green, g (s)	50.0	50.0	50.0		62.0	62.0
Actuated g/C Ratio	0.42	0.42	0.42		0.52	0.52
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	199	1504	1388		932	834
v/s Ratio Prot		0.10	0.18		c0.44	
v/s Ratio Perm	c0.28					0.09
v/c Ratio	0.67	0.24	0.43		0.85	0.17
Uniform Delay, d1	28.3	22.7	24.8		24.9	15.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	16.4	0.4	1.0		9.4	0.4
Delay (s)	44.7	23.0	25.8		34.3	15.8
Level of Service	D	C	C		C	B
Approach Delay (s)		28.9	25.8		31.2	
Approach LOS		C	C		C	
Intersection Summary						
HCM 2000 Control Delay			28.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.77			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			79.9%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis Existing (2021) + Site Baseline PM Peak Hour 4: Azusa Cyn. Rd. & Arrow Hwy.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	2408	340	218	1315	35	162	14	268	32	11	46
Future Volume (vph)	39	2408	340	218	1315	35	162	14	268	32	11	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	2535	358	229	1384	37	171	15	282	34	12	48
RTOR Reduction (vph)	0	18	0	0	0	16	0	0	185	0	44	0
Lane Group Flow (vph)	41	2876	0	229	1384	21	92	94	97	34	16	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	5.5	60.0		13.5	68.0	68.0	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	5.5	60.0		13.5	68.0	68.0	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.05	0.50		0.11	0.57	0.57	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	87	2850		213	2153	1076	285	285	285	158	158	
v/s Ratio Prot	0.02	c0.50		c0.12	0.36		0.05	0.05		c0.02	0.01	
v/s Ratio Perm						0.01			c0.05			
v/c Ratio	0.47	1.01		1.08	0.64	0.02	0.32	0.33	0.34	0.22	0.10	
Uniform Delay, d1	55.8	30.0		53.2	17.7	11.4	45.6	45.6	45.7	51.3	50.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0	19.1		83.0	1.5	0.0	3.0	3.1	3.2	3.1	1.3	
Delay (s)	59.8	49.1		136.3	19.2	11.4	48.5	48.7	48.9	54.4	52.1	
Level of Service	E	D		F	B	B	D	D	D	D	D	
Approach Delay (s)		49.2			35.3			48.8			53.0	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			44.8									HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			120.0									Sum of lost time (s) 18.5
Intersection Capacity Utilization			91.5%									ICU Level of Service F
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis Existing (2021) + Site Baseline PM Peak Hour 4: Azusa Cyn. Rd. & Arrow Hwy. WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	39	2408	340	218	1315	35	162	14	268	32	11	46
Future Volume (vph)	39	2408	340	218	1315	35	162	14	268	32	11	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00		*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	2535	358	229	1384	37	171	15	282	34	12	48
RTOR Reduction (vph)	0	18	0	0	3	0	0	0	212	0	44	0
Lane Group Flow (vph)	41	2875	0	229	1418	0	92	94	70	34	16	0
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Actuated Green, G (s)	5.5	59.3		13.2	67.0		18.0	18.0	18.0	11.0	11.0	
Effective Green, g (s)	5.5	59.3		13.2	67.0		18.0	18.0	18.0	11.0	11.0	
Actuated g/C Ratio	0.05	0.49		0.11	0.56		0.15	0.15	0.15	0.09	0.09	
Clearance Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	87	2816		209	3182		285	285	285	174	174	
v/s Ratio Prot	0.02	c0.50		c0.12	0.25		0.05	c0.05		c0.02	0.01	
v/s Ratio Perm									0.04			
v/c Ratio	0.47	1.02		1.10	0.45		0.32	0.33	0.25	0.20	0.09	
Uniform Delay, d1	55.8	30.4		53.4	15.6		45.6	45.6	45.0	50.4	49.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0	22.5		90.2	0.5		3.0	3.1	2.1	2.5	1.1	
Delay (s)	59.8	52.9		143.6	16.0		48.5	48.7	47.1	52.9	51.0	
Level of Service	E	D		F	B		D	D	D	D	D	
Approach Delay (s)		53.0			33.7			47.7			51.7	
Approach LOS		D			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			46.3			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			91.5%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis Existing (2021) + Site Baseline PM Peak Hour 5: Azusa Cyn. Rd. & Olive St.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	1	344	3	1	1	234	310	1	1	531	72
Future Volume (vph)	105	1	344	3	1	1	234	310	1	1	531	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3608		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1439	1900	1615	1805	3608		1805	3610	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	112	1	366	3	1	1	249	330	1	1	565	77
RTOR Reduction (vph)	0	0	314	0	0	1	0	0	0	0	0	36
Lane Group Flow (vph)	112	1	52	3	1	0	249	331	0	1	565	41
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	14.1	14.1	14.1	14.1	14.1	14.1	19.0	71.2		1.2	53.4	53.4
Effective Green, g (s)	14.1	14.1	14.1	14.1	14.1	14.1	19.0	71.2		1.2	53.4	53.4
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14	0.14	0.19	0.71		0.01	0.53	0.53
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	202	267	227	202	267	227	342	2568		21	1927	862
v/s Ratio Prot		0.00			0.00		c0.14	0.09		0.00	c0.16	
v/s Ratio Perm	c0.08		0.03	0.00		0.00						0.03
v/c Ratio	0.55	0.00	0.23	0.01	0.00	0.00	0.73	0.13		0.05	0.29	0.05
Uniform Delay, d1	40.0	36.9	38.1	37.0	36.9	36.9	38.1	4.6		48.8	12.9	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.18	0.50		1.00	1.00	1.00
Incremental Delay, d2	3.3	0.0	0.5	0.0	0.0	0.0	6.7	0.1		0.9	0.4	0.1
Delay (s)	43.3	36.9	38.6	37.0	36.9	36.9	51.8	2.4		49.8	13.3	11.2
Level of Service	D	D	D	D	D	D	D	A		D	B	B
Approach Delay (s)		39.7			37.0			23.6			13.1	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			24.2				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.43									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			56.8%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

APPENDIX 5.2:

EXISTING (HYPOTHETICAL “NON-COVID” 2021) PLUS SITE BASELINE LAND USE WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS

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Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

Existing (2021)+Site Baseline+Project AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	238	379	311	168	146	234
Future Volume (vph)	238	379	311	168	146	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		48%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	31.0	31.0	47.0		22.0	69.0
Total Split (%)	31.0%	31.0%	47.0%		22.0%	69.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

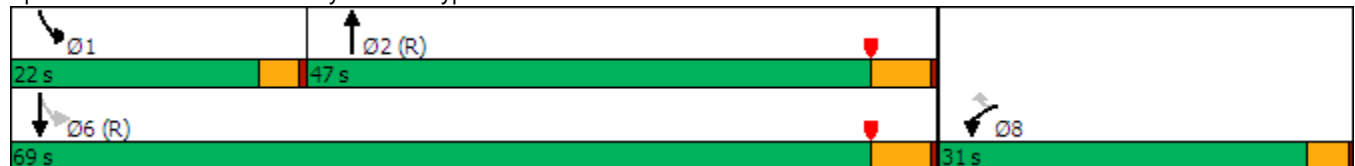
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary Existing (2021)+Site Baseline+Project AM Peak Hour 1: Azusa Cyn. Rd. & Cypress St.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	238	379	311	168	146	234
Future Volume (veh/h)	238	379	311	168	146	234
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	228	459	346	187	162	260
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	322	573	1483	787	684	2661
Arrive On Green	0.18	0.18	0.65	0.65	0.10	1.00
Sat Flow, veh/h	1810	3220	2374	1209	1810	3705
Grp Volume(v), veh/h	228	459	273	260	162	260
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1682	1810	1805
Q Serve(g_s), s	11.9	13.7	6.2	6.4	2.9	0.0
Cycle Q Clear(g_c), s	11.9	13.7	6.2	6.4	2.9	0.0
Prop In Lane	1.00	1.00		0.72	1.00	
Lane Grp Cap(c), veh/h	322	573	1175	1095	684	2661
V/C Ratio(X)	0.71	0.80	0.23	0.24	0.24	0.10
Avail Cap(c_a), veh/h	498	886	1175	1095	926	2661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.98	0.98
Uniform Delay (d), s/veh	38.7	39.4	7.2	7.2	4.4	0.0
Incr Delay (d2), s/veh	2.9	3.0	0.5	0.5	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	5.5	2.3	2.3	0.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.6	42.4	7.6	7.7	4.6	0.1
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	687		533			422
Approach Delay, s/veh	42.1		7.7			1.8
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.6	70.1			78.7	21.3
Change Period (Y+Rc), s	3.5	5.0			5.0	3.5
Max Green Setting (Gmax), s	18.5	42.0			64.0	27.5
Max Q Clear Time (g_c+I1), s	4.9	8.4			2.0	15.7
Green Ext Time (p_c), s	0.3	3.7			1.9	2.1
Intersection Summary						
HCM 6th Ctrl Delay			20.6			
HCM 6th LOS			C			
Notes						
User approved volume balancing among the lanes for turning movement.						

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021)+Site Baseline+Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	17	186	8	8	20	225	257	15	17	151	274
Future Volume (vph)	194	17	186	8	8	20	225	257	15	17	151	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th AWSC
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021)+Site Baseline+Project AM Peak Hour

Intersection	
Intersection Delay, s/veh	34.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱		↱↲			↱	↱
Traffic Vol, veh/h	194	17	186	8	8	20	225	257	15	17	151	274
Future Vol, veh/h	194	17	186	8	8	20	225	257	15	17	151	274
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	206	18	198	9	9	21	239	273	16	18	161	291
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	16.2	11.5	68.4	15
HCM LOS	C	B	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	45%	92%	0%	50%	0%	10%	0%
Vol Thru, %	52%	8%	0%	50%	0%	90%	0%
Vol Right, %	3%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	497	211	186	16	20	168	274
LT Vol	225	194	0	8	0	17	0
Through Vol	257	17	0	8	0	151	0
RT Vol	15	0	186	0	20	0	274
Lane Flow Rate	529	224	198	17	21	179	291
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	1.011	0.498	0.374	0.042	0.047	0.355	0.516
Departure Headway (Hd)	6.883	7.994	6.798	8.915	7.925	7.141	6.371
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	529	451	528	401	451	504	565
Service Time	4.883	5.74	4.544	6.687	5.695	4.887	4.117
HCM Lane V/C Ratio	1	0.497	0.375	0.042	0.047	0.355	0.515
HCM Control Delay	68.4	18.5	13.6	12.1	11.1	13.8	15.8
HCM Lane LOS	F	C	B	B	B	B	C
HCM 95th-tile Q	14.4	2.7	1.7	0.1	0.1	1.6	2.9

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021)+Site Baseline+Project AM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	17	186	8	8	20	225	257	15	17	151	274
Future Volume (vph)	194	17	186	8	8	20	225	257	15	17	151	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		50	0		0	0		400
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	60			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)	46%											
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	28.0	28.0	28.0	20.0	20.0		52.0	52.0		52.0	52.0	52.0
Total Split (%)	28.0%	28.0%	28.0%	20.0%	20.0%		52.0%	52.0%		52.0%	52.0%	52.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.

 Ø2 (R)	 Ø4	 Ø8
52 s	28 s	20 s
 Ø6 (R)		
52 s		

HCM 6th Signalized Intersection Summary Existing (2021)+Site Baseline+Project AM Peak Hour
 2: Azusa Cyn. Rd. & Los Angeles St. WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	17	186	8	8	20	225	257	15	17	151	274
Future Volume (veh/h)	194	17	186	8	8	20	225	257	15	17	151	274
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	219	0	198	9	9	21	239	273	16	18	161	291
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	541	0	241	48	13	31	450	494	28	134	1179	1134
Arrive On Green	0.15	0.00	0.15	0.03	0.03	0.03	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	3619	0	1610	1810	506	1181	565	702	40	134	1674	1610
Grp Volume(v), veh/h	219	0	198	9	0	30	528	0	0	179	0	291
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1687	1307	0	0	1808	0	1610
Q Serve(g_s), s	5.5	0.0	11.9	0.5	0.0	1.8	16.9	0.0	0.0	0.0	0.0	6.5
Cycle Q Clear(g_c), s	5.5	0.0	11.9	0.5	0.0	1.8	20.0	0.0	0.0	3.1	0.0	6.5
Prop In Lane	1.00		1.00	1.00		0.70	0.45		0.03	0.10		1.00
Lane Grp Cap(c), veh/h	541	0	241	48	0	45	973	0	0	1313	0	1134
V/C Ratio(X)	0.40	0.00	0.82	0.19	0.00	0.67	0.54	0.00	0.00	0.14	0.00	0.26
Avail Cap(c_a), veh/h	869	0	386	290	0	270	973	0	0	1313	0	1134
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.95	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.5	0.0	41.2	47.6	0.0	48.2	7.3	0.0	0.0	4.8	0.0	5.3
Incr Delay (d2), s/veh	0.5	0.0	7.5	1.9	0.0	16.1	2.1	0.0	0.0	0.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	5.0	0.2	0.0	0.9	5.3	0.0	0.0	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.0	0.0	48.7	49.5	0.0	64.3	9.4	0.0	0.0	5.1	0.0	5.9
LnGrp LOS	D	A	D	D	A	E	A	A	A	A	A	A
Approach Vol, veh/h	417			39			528			470		
Approach Delay, s/veh	43.6			60.9			9.4			5.6		
Approach LOS	D			E			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	74.4			18.9			74.4			6.6		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	48.0			24.0			48.0			16.0		
Max Q Clear Time (g_c+I1), s	22.0			13.9			8.5			3.8		
Green Ext Time (p_c), s	4.5			1.0			2.2			0.1		

Intersection Summary

HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

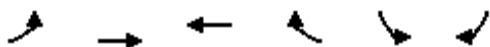
Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings

Existing (2021)+Site Baseline+Project AM Peak Hour

3: San Bernardino Rd. & Azusa Cyn. Rd.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	79	145	341	432	261	76
Future Volume (vph)	79	145	341	432	261	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	71.0	71.0	71.0		49.0	49.0
Total Split (%)	59.2%	59.2%	59.2%		40.8%	40.8%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

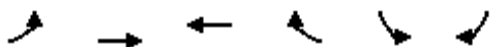
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary Existing (2021)+Site Baseline+Project AM Peak Hour 3: San Bernardino Rd. & Azusa Cyn. Rd.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	79	145	341	432	261	76
Future Volume (veh/h)	79	145	341	432	261	76
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	89	163	383	485	293	85
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	298	2016	1008	899	679	604
Arrive On Green	0.56	0.56	0.56	0.56	0.38	0.38
Sat Flow, veh/h	648	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	89	163	383	485	293	85
Grp Sat Flow(s),veh/h/ln	648	1805	1805	1610	1810	1610
Q Serve(g_s), s	12.1	2.5	14.3	22.8	14.5	4.2
Cycle Q Clear(g_c), s	34.9	2.5	14.3	22.8	14.5	4.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	298	2016	1008	899	679	604
V/C Ratio(X)	0.30	0.08	0.38	0.54	0.43	0.14
Avail Cap(c_a), veh/h	298	2016	1008	899	679	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	12.3	14.9	16.7	28.0	24.7
Incr Delay (d2), s/veh	2.5	0.1	1.1	2.3	2.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.0	5.8	8.5	6.6	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.3	12.3	15.9	19.1	30.0	25.2
LnGrp LOS	C	B	B	B	C	C
Approach Vol, veh/h		252	868		378	
Approach Delay, s/veh		18.7	17.7		28.9	
Approach LOS		B	B		C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		71.0		49.0		71.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		67.0		45.0		67.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			20.7			
HCM 6th LOS			C			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021)+Site Baseline+Project AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	945	206	148	2178	42	434	17	140	20	12	40
Future Volume (vph)	25	945	206	148	2178	42	434	17	140	20	12	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	60.0		22.0	74.5	74.5	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	50.0%		18.3%	62.1%	62.1%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

22 s	60 s	15 s	23 s
7.5 s	74.5 s		

HCM 6th Signalized Intersection Summary Existing (2021)+Site Baseline+Project AM Peak Hour 4: Azusa Cyn. Rd. & Arrow Hwy.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	945	206	148	2178	42	434	17	140	20	12	40
Future Volume (veh/h)	25	945	206	148	2178	42	434	17	140	20	12	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	27	1038	226	163	2393	46	491	0	154	22	13	44
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	36	2296	499	192	2252	954	543	0	242	151	32	107
Arrive On Green	0.02	0.51	0.51	0.11	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4536	986	1810	3800	1610	3619	0	1610	1810	380	1288
Grp Volume(v), veh/h	27	869	395	163	2393	46	491	0	154	22	0	57
Grp Sat Flow(s),veh/h/ln	1810	1900	1722	1810	1900	1610	1810	0	1610	1810	0	1668
Q Serve(g_s), s	1.8	17.6	17.6	10.6	71.1	1.4	16.0	0.0	10.8	1.4	0.0	3.9
Cycle Q Clear(g_c), s	1.8	17.6	17.6	10.6	71.1	1.4	16.0	0.0	10.8	1.4	0.0	3.9
Prop In Lane	1.00		0.57	1.00		1.00	1.00		1.00	1.00		0.77
Lane Grp Cap(c), veh/h	36	1924	872	192	2252	954	543	0	242	151	0	139
V/C Ratio(X)	0.75	0.45	0.45	0.85	1.06	0.05	0.90	0.00	0.64	0.15	0.00	0.41
Avail Cap(c_a), veh/h	60	1924	872	279	2252	954	543	0	242	151	0	139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.5	19.0	19.0	52.7	24.4	10.2	50.2	0.0	47.9	51.0	0.0	52.2
Incr Delay (d2), s/veh	26.8	0.8	1.7	14.9	38.1	0.1	20.8	0.0	12.0	2.0	0.0	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.5	7.0	5.5	39.6	0.5	8.8	0.0	5.1	0.7	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.4	19.7	20.7	67.6	62.6	10.3	70.9	0.0	59.9	53.1	0.0	60.9
LnGrp LOS	F	B	C	E	F	B	E	A	E	D	A	E
Approach Vol, veh/h	1291		2602			645			79			
Approach Delay, s/veh	21.4		62.0			68.3			58.7			
Approach LOS	C		E			E			E			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	16.2	65.8	15.0		5.9	76.1	23.0					
Change Period (Y+Rc), s	3.5	5.0	5.0		3.5	5.0	5.0					
Max Green Setting (Gmax), s	18.5	55.0	10.0		4.0	69.5	18.0					
Max Q Clear Time (g_c+I1), s	12.6	19.6	5.9		3.8	73.1	18.0					
Green Ext Time (p_c), s	0.2	9.8	0.1		0.0	0.0	0.0					
Intersection Summary												
HCM 6th Ctrl Delay	51.4											
HCM 6th LOS	D											
Notes												

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021)+Site Baseline+Project AM Peak Hour
WITH IMPROVEMENTS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	945	206	148	2178	42	434	17	140	20	12	40
Future Volume (vph)	25	945	206	148	2178	42	434	17	140	20	12	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0		23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	60.0		22.0	74.5		23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	50.0%		18.3%	62.1%		19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

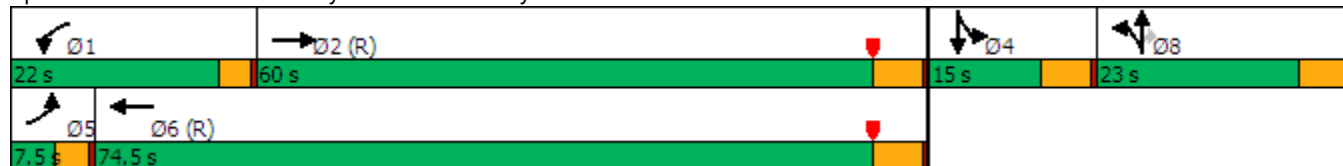
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.



HCM 6th Signalized Intersection Summary Existing (2021)+Site Baseline+Project AM Peak Hour

4: Azusa Cyn. Rd. & Arrow Hwy. WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	945	206	148	2178	42	434	17	140	20	12	40
Future Volume (veh/h)	25	945	206	148	2178	42	434	17	140	20	12	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	27	1038	226	163	2393	46	491	0	154	22	13	44
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	36	2296	499	192	3304	63	543	0	242	151	32	107
Arrive On Green	0.02	0.51	0.51	0.11	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4536	986	1810	5574	107	3619	0	1610	1810	380	1288
Grp Volume(v), veh/h	27	869	395	163	1629	810	491	0	154	22	0	57
Grp Sat Flow(s),veh/h/ln	1810	1900	1722	1810	1900	1881	1810	0	1610	1810	0	1668
Q Serve(g_s), s	1.8	17.6	17.6	10.6	36.7	37.0	16.0	0.0	10.8	1.4	0.0	3.9
Cycle Q Clear(g_c), s	1.8	17.6	17.6	10.6	36.7	37.0	16.0	0.0	10.8	1.4	0.0	3.9
Prop In Lane	1.00		0.57	1.00		0.06	1.00		1.00	1.00		0.77
Lane Grp Cap(c), veh/h	36	1924	872	192	2252	1115	543	0	242	151	0	139
V/C Ratio(X)	0.75	0.45	0.45	0.85	0.72	0.73	0.90	0.00	0.64	0.15	0.00	0.41
Avail Cap(c_a), veh/h	60	1924	872	279	2252	1115	543	0	242	151	0	139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.5	19.0	19.0	52.7	17.4	17.5	50.2	0.0	47.9	51.0	0.0	52.2
Incr Delay (d2), s/veh	26.8	0.8	1.7	14.9	2.1	4.2	20.8	0.0	12.0	2.0	0.0	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.5	7.0	5.5	14.9	15.5	8.8	0.0	5.1	0.7	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.4	19.7	20.7	67.6	19.5	21.6	70.9	0.0	59.9	53.1	0.0	60.9
LnGrp LOS	F	B	C	E	B	C	E	A	E	D	A	E
Approach Vol, veh/h	1291				2602				645		79	
Approach Delay, s/veh	21.4				23.2				68.3		58.7	
Approach LOS	C				C				E		E	
Timer - Assigned Phs	1	2			4	5	6			8		
Phs Duration (G+Y+Rc), s	16.2	65.8			15.0	5.9	76.1			23.0		
Change Period (Y+Rc), s	3.5	5.0			5.0	3.5	5.0			5.0		
Max Green Setting (Gmax), s	18.5	55.0			10.0	4.0	69.5			18.0		
Max Q Clear Time (g_c+I1), s	12.6	19.6			5.9	3.8	39.0			18.0		
Green Ext Time (p_c), s	0.2	9.8			0.1	0.0	22.0			0.0		
Intersection Summary												
HCM 6th Ctrl Delay			29.6									
HCM 6th LOS			C									
Notes												

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

Existing (2021)+Site Baseline+Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	2	124	1	1	1	122	555	12	3	255	32
Future Volume (vph)	71	2	124	1	1	1	122	555	12	3	255	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	31.0	60.0		11.0	40.0	40.0
Total Split (%)	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	31.0%	60.0%		11.0%	40.0%	40.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary Existing (2021)+Site Baseline+Project AM Peak Hour 5: Azusa Cyn. Rd. & Olive St.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	2	124	1	1	1	122	555	12	3	255	32
Future Volume (veh/h)	71	2	124	1	1	1	122	555	12	3	255	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	77	2	135	1	1	1	133	603	13	3	277	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	224	202	172	206	202	172	165	2729	59	6	2409	1074
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.18	1.00	1.00	0.00	0.67	0.67
Sat Flow, veh/h	1437	1900	1610	1272	1900	1610	1810	3613	78	1810	3610	1610
Grp Volume(v), veh/h	77	2	135	1	1	1	133	301	315	3	277	35
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	1272	1900	1610	1810	1805	1886	1810	1805	1610
Q Serve(g_s), s	5.1	0.1	8.2	0.1	0.0	0.1	7.0	0.0	0.0	0.2	2.8	0.7
Cycle Q Clear(g_c), s	5.1	0.1	8.2	0.2	0.0	0.1	7.0	0.0	0.0	0.2	2.8	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	224	202	172	206	202	172	165	1363	1424	6	2409	1074
V/C Ratio(X)	0.34	0.01	0.79	0.00	0.00	0.01	0.81	0.22	0.22	0.52	0.11	0.03
Avail Cap(c_a), veh/h	416	456	386	376	456	386	498	1363	1424	136	2409	1074
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	0.78	0.78	0.78
Uniform Delay (d), s/veh	42.2	40.0	43.6	40.0	39.9	39.9	40.0	0.0	0.0	49.8	6.0	5.7
Incr Delay (d2), s/veh	0.9	0.0	7.8	0.0	0.0	0.0	8.6	0.4	0.3	46.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	3.6	0.0	0.0	0.0	3.3	0.1	0.1	0.1	1.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	40.0	51.3	40.0	39.9	40.0	48.6	0.4	0.3	96.2	6.1	5.7
LnGrp LOS	D	D	D	D	D	D	D	A	A	F	A	A
Approach Vol, veh/h	214			3			749			315		
Approach Delay, s/veh	48.3			40.0			8.9			6.9		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.8	80.5		15.7	12.6	71.7		15.7				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	7.5	55.0		24.0	27.5	35.0		24.0				
Max Q Clear Time (g_c+I1), s	2.2	2.0		10.2	9.0	4.8		2.2				
Green Ext Time (p_c), s	0.0	4.3		0.5	0.3	2.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	15.1											
HCM 6th LOS	B											

Lanes, Volumes, Timings
6: Azusa Cyn. Rd. & Dwy. 1

Existing (2021)+Site Baseline+Project AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	5	471	0	15	442
Future Volume (vph)	0	5	471	0	15	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	208		299			985
Travel Time (s)	4.7		6.8			22.4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

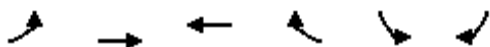
HCM 6th TWSC
6: Azusa Cyn. Rd. & Dwy. 1

Existing (2021)+Site Baseline+Project AM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	471	0	15	442
Future Vol, veh/h	0	5	471	0	15	442
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	5	496	0	16	465
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	248	0	0	496	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	758	-	-	1078	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	758	-	-	1078	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.8	0		0.4		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	758	1078	-	
HCM Lane V/C Ratio	-	-	0.007	0.015	-	
HCM Control Delay (s)	-	-	9.8	8.4	0.1	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Lanes, Volumes, Timings
7: Los Angeles St. & Dwy. 2

Existing (2021)+Site Baseline+Project AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	36	31	0	0	4
Future Volume (vph)	13	36	31	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		160	175		164	
Travel Time (s)		3.6	4.0		3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

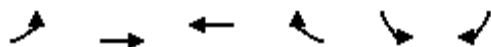
HCM 6th TWSC
7: Los Angeles St. & Dwy. 2

Existing (2021)+Site Baseline+Project AM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	36	31	0	0	4
Future Vol, veh/h	13	36	31	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	14	38	33	0	0	4
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	33	0	-	0	99	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	66	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1592	-	-	-	905	1046
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	962	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1592	-	-	-	897	1046
Mov Cap-2 Maneuver	-	-	-	-	897	-
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	962	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.9	0		8.5		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1592	-	-	-	1046	
HCM Lane V/C Ratio	0.009	-	-	-	0.004	
HCM Control Delay (s)	7.3	0	-	-	8.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
8: Los Angeles St. & Dwy. 3

Existing (2021)+Site Baseline+Project AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	31	29	0	0	2
Future Volume (vph)	5	31	29	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		175	247		166	
Travel Time (s)		4.0	5.6		3.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
8: Los Angeles St. & Dwy. 3

Existing (2021)+Site Baseline+Project AM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	31	29	0	0	2
Future Vol, veh/h	5	31	29	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	33	31	0	0	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	31	0	-	0	74	31
Stage 1	-	-	-	-	31	-
Stage 2	-	-	-	-	43	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1595	-	-	-	935	1049
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	985	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1595	-	-	-	932	1049
Mov Cap-2 Maneuver	-	-	-	-	932	-
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	985	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		8.4		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1595	-	-	-	-	1049
HCM Lane V/C Ratio	0.003	-	-	-	-	0.002
HCM Control Delay (s)	7.3	0	-	-	-	8.4
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0

Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

Existing (2021)+Site Baseline+Project PM Peak Hour

	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	177	202	353	525	445	437
Future Volume (vph)	177	202	353	525	445	437
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)		41%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	22.0	22.0	40.0		38.0	78.0
Total Split (%)	22.0%	22.0%	40.0%		38.0%	78.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

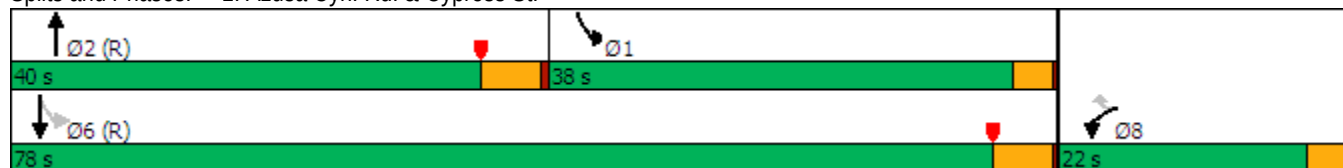
Actuated Cycle Length: 100

Offset: 61 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary Existing (2021)+Site Baseline+Project PM Peak Hour 1: Azusa Cyn. Rd. & Cypress St.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	177	202	353	525	445	437
Future Volume (veh/h)	177	202	353	525	445	437
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	261	133	372	553	468	460
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	395	176	632	564	806	2909
Arrive On Green	0.11	0.11	0.35	0.35	0.68	1.00
Sat Flow, veh/h	3619	1610	1900	1610	1810	3705
Grp Volume(v), veh/h	261	133	372	553	468	460
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	6.9	8.0	16.9	34.0	7.7	0.0
Cycle Q Clear(g_c), s	6.9	8.0	16.9	34.0	7.7	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	395	176	632	564	806	2909
V/C Ratio(X)	0.66	0.76	0.59	0.98	0.58	0.16
Avail Cap(c_a), veh/h	670	298	632	564	806	2909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.90	0.90
Uniform Delay (d), s/veh	42.8	43.2	26.6	32.2	10.2	0.0
Incr Delay (d2), s/veh	1.9	6.5	4.0	33.6	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	3.5	7.8	18.0	3.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.6	49.7	30.6	65.8	11.2	0.1
LnGrp LOS	D	D	C	E	B	A
Approach Vol, veh/h	394		925			928
Approach Delay, s/veh	46.4		51.6			5.7
Approach LOS	D		D			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	45.6	40.0			85.6	14.4
Change Period (Y+Rc), s	5.0	* 5			5.0	3.5
Max Green Setting (Gmax), s	34.5	* 35			73.0	18.5
Max Q Clear Time (g_c+I1), s	9.7	36.0			2.0	10.0
Green Ext Time (p_c), s	1.5	0.0			3.5	0.9
Intersection Summary						
HCM 6th Ctrl Delay			31.7			
HCM 6th LOS			C			
Notes						
User approved volume balancing among the lanes for turning movement.						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021)+Site Baseline+Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	512	9	396	43	29	20	173	316	14	10	424	190
Future Volume (vph)	512	9	396	43	29	20	173	316	14	10	424	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th AWSC
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021)+Site Baseline+Project PM Peak Hour

Intersection	
Intersection Delay, s/veh	100.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱		↱			↱	↱
Traffic Vol, veh/h	512	9	396	43	29	20	173	316	14	10	424	190
Future Vol, veh/h	512	9	396	43	29	20	173	316	14	10	424	190
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	528	9	408	44	30	21	178	326	14	10	437	196
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	116.9	15.7	133.8	61.1
HCM LOS	F	C	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	34%	98%	0%	60%	0%	2%	0%
Vol Thru, %	63%	2%	0%	40%	0%	98%	0%
Vol Right, %	3%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	503	521	396	72	20	434	190
LT Vol	173	512	0	43	0	10	0
Through Vol	316	9	0	29	0	424	0
RT Vol	14	0	396	0	20	0	190
Lane Flow Rate	519	537	408	74	21	447	196
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	1.188	1.29	0.845	0.208	0.052	1.024	0.409
Departure Headway (Hd)	8.589	9.149	7.904	10.859	9.798	8.768	8.027
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	425	403	461	333	368	416	451
Service Time	6.589	6.849	5.604	8.559	7.498	6.468	5.727
HCM Lane V/C Ratio	1.221	1.333	0.885	0.222	0.057	1.075	0.435
HCM Control Delay	133.8	174.9	40.7	16.4	13	80.7	16.2
HCM Lane LOS	F	F	E	C	B	F	C
HCM 95th-tile Q	19.5	22.7	8.4	0.8	0.2	13.2	2

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

Existing (2021)+Site Baseline+Project PM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	512	9	396	43	29	20	173	316	14	10	424	190
Future Volume (vph)	512	9	396	43	29	20	173	316	14	10	424	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		50	0		0	0		400
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	60			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)	49%											
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	37.0	37.0	37.0	20.0	20.0		43.0	43.0		43.0	43.0	43.0
Total Split (%)	37.0%	37.0%	37.0%	20.0%	20.0%		43.0%	43.0%		43.0%	43.0%	43.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	C-Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.

 Ø2 (R)	 Ø4	 Ø8
43 s	37 s	20 s
 Ø6 (R)		
43 s		

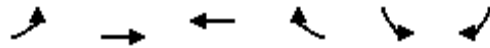
HCM 6th Signalized Intersection Summary Existing (2021)+Site Baseline+Project PM Peak Hour
2: Azusa Cyn. Rd. & Los Angeles St. WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	512	9	396	43	29	20	173	316	14	10	424	190
Future Volume (veh/h)	512	9	396	43	29	20	173	316	14	10	424	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	534	0	408	44	30	21	178	326	14	10	437	196
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	1027	0	457	85	49	34	278	480	20	44	1030	884
Arrive On Green	0.28	0.00	0.28	0.05	0.05	0.05	0.55	0.55	0.55	1.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610	1810	1041	728	418	874	36	14	1875	1610
Grp Volume(v), veh/h	534	0	408	44	0	51	518	0	0	447	0	196
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1769	1327	0	0	1889	0	1610
Q Serve(g_s), s	12.4	0.0	24.3	2.4	0.0	2.8	24.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.4	0.0	24.3	2.4	0.0	2.8	27.7	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.41	0.34		0.03	0.02		1.00
Lane Grp Cap(c), veh/h	1027	0	457	85	0	83	777	0	0	1074	0	884
V/C Ratio(X)	0.52	0.00	0.89	0.52	0.00	0.62	0.67	0.00	0.00	0.42	0.00	0.22
Avail Cap(c_a), veh/h	1194	0	531	290	0	283	777	0	0	1074	0	884
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.69	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	34.3	46.6	0.0	46.8	15.9	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	15.7	4.8	0.0	7.2	3.1	0.0	0.0	1.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	10.9	1.2	0.0	1.4	8.6	0.0	0.0	0.4	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	0.0	50.0	51.4	0.0	54.0	19.1	0.0	0.0	1.2	0.0	0.6
LnGrp LOS	C	A	D	D	A	D	B	A	A	A	A	A
Approach Vol, veh/h	942					95		518		643		
Approach Delay, s/veh	39.0					52.8		19.1		1.0		
Approach LOS	D					D		B		A		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	58.9		32.4		58.9		8.7					
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0					
Max Green Setting (Gmax), s	39.0		33.0		39.0		16.0					
Max Q Clear Time (g_c+I1), s	29.7		26.3		2.0		4.8					
Green Ext Time (p_c), s	2.8		2.1		3.9		0.2					
Intersection Summary												
HCM 6th Ctrl Delay			23.8									
HCM 6th LOS			C									
Notes												

Lanes, Volumes, Timings

Existing (2021)+Site Baseline+Project PM Peak Hour

3: San Bernardino Rd. & Azusa Cyn. Rd.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	126	339	348	367	753	153
Future Volume (vph)	126	339	348	367	753	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	54.0	54.0	54.0		66.0	66.0
Total Split (%)	45.0%	45.0%	45.0%		55.0%	55.0%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

Area Type: Other

Cycle Length: 120

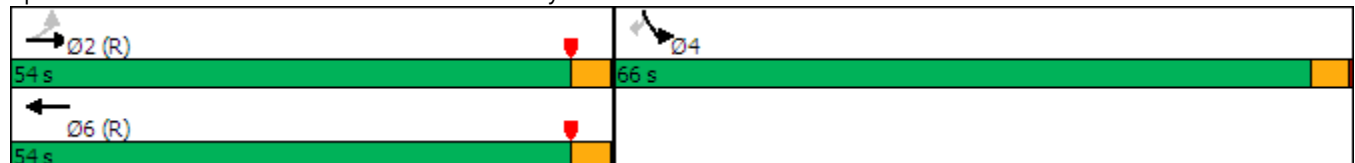
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

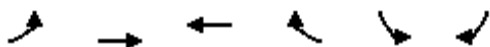
Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary Existing (2021)+Site Baseline+Project PM Peak Hour 3: San Bernardino Rd. & Azusa Cyn. Rd.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	126	339	348	367	753	153
Future Volume (veh/h)	126	339	348	367	753	153
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	133	357	366	386	793	161
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	228	1504	752	671	935	832
Arrive On Green	0.42	0.42	0.42	0.42	0.52	0.52
Sat Flow, veh/h	722	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	133	357	366	386	793	161
Grp Sat Flow(s),veh/h/ln	722	1805	1805	1610	1810	1610
Q Serve(g_s), s	20.8	7.7	17.8	22.1	45.2	6.4
Cycle Q Clear(g_c), s	42.9	7.7	17.8	22.1	45.2	6.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	228	1504	752	671	935	832
V/C Ratio(X)	0.58	0.24	0.49	0.58	0.85	0.19
Avail Cap(c_a), veh/h	228	1504	752	671	935	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	22.7	25.6	26.9	25.0	15.6
Incr Delay (d2), s/veh	10.5	0.4	2.2	3.6	9.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.3	7.9	8.8	21.1	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	53.8	23.0	27.9	30.4	34.4	16.1
LnGrp LOS	D	C	C	C	C	B
Approach Vol, veh/h		490	752		954	
Approach Delay, s/veh		31.4	29.2		31.3	
Approach LOS		C	C		C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		54.0		66.0		54.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		50.0		62.0		50.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			30.6			
HCM 6th LOS			C			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021)+Site Baseline+Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	2408	342	220	1315	35	166	14	274	32	11	46
Future Volume (vph)	39	2408	342	220	1315	35	166	14	274	32	11	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							46%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	10.4	65.0		17.0	71.6	71.6	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	8.7%	54.2%		14.2%	59.7%	59.7%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

 Ø1	 Ø2 (R)	 Ø4	 Ø8
17 s	65 s	15 s	23 s
 Ø5	 Ø6 (R)		
10.4 s	71.6 s		

HCM 6th Signalized Intersection Summary Existing (2021)+Site Baseline+Project PM Peak Hour 4: Azusa Cyn. Rd. & Arrow Hwy.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	2408	342	220	1315	35	166	14	274	32	11	46
Future Volume (veh/h)	39	2408	342	220	1315	35	166	14	274	32	11	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	41	2535	360	232	1384	37	186	0	288	34	12	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	53	2458	333	204	2216	939	543	0	242	151	28	111
Arrive On Green	0.03	0.50	0.50	0.11	0.58	0.58	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4915	665	1810	3800	1610	3619	0	1610	1810	332	1329
Grp Volume(v), veh/h	41	1931	964	232	1384	37	186	0	288	34	0	60
Grp Sat Flow(s),veh/h/ln	1810	1900	1780	1810	1900	1610	1810	0	1610	1810	0	1661
Q Serve(g_s), s	2.7	60.0	60.0	13.5	28.6	1.2	5.5	0.0	18.0	2.1	0.0	4.1
Cycle Q Clear(g_c), s	2.7	60.0	60.0	13.5	28.6	1.2	5.5	0.0	18.0	2.1	0.0	4.1
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	53	1900	890	204	2216	939	543	0	242	151	0	138
V/C Ratio(X)	0.77	1.02	1.08	1.14	0.62	0.04	0.34	0.00	1.19	0.23	0.00	0.43
Avail Cap(c_a), veh/h	104	1900	890	204	2216	939	543	0	242	151	0	138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.9	30.0	30.0	53.3	16.4	10.7	45.7	0.0	51.0	51.4	0.0	52.3
Incr Delay (d2), s/veh	21.0	24.9	55.0	105.7	1.3	0.1	1.7	0.0	119.4	3.4	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	31.4	36.9	11.9	11.7	0.4	2.6	0.0	15.2	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.8	54.9	85.0	159.0	17.7	10.7	47.4	0.0	170.4	54.8	0.0	61.9
LnGrp LOS	E	F	F	F	B	B	D	A	F	D	A	E
Approach Vol, veh/h	2936			1653			474			94		
Approach Delay, s/veh	65.1			37.4			122.1			59.3		
Approach LOS	E			D			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	65.0		15.0	7.0	75.0		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	13.5	60.0		10.0	6.9	66.6		18.0				
Max Q Clear Time (g_c+I1), s	15.5	62.0		6.1	4.7	30.6		20.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	12.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	61.4											
HCM 6th LOS	E											
Notes												

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

Existing (2021)+Site Baseline+Project PM Peak Hour
WITH IMPROVEMENTS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	2408	342	220	1315	35	166	14	274	32	11	46
Future Volume (vph)	39	2408	342	220	1315	35	166	14	274	32	11	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							46%					
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0		23.0	23.0	23.0	15.0	15.0	
Total Split (s)	10.4	65.0		15.4	70.0		23.0	23.0	23.0	16.6	16.6	
Total Split (%)	8.7%	54.2%		12.8%	58.3%		19.2%	19.2%	19.2%	13.8%	13.8%	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 17 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

	Ø2 (R)			Ø1		Ø4		Ø8
65 s			15.4 s		16.6 s		23 s	
	Ø5		Ø6 (R)					
10.4 s		70 s						

HCM 6th Signalized Intersection Summary Existing (2021)+Site Baseline+Project PM Peak Hour 4: Azusa Cyn. Rd. & Arrow Hwy. WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	2408	342	220	1315	35	166	14	274	32	11	46
Future Volume (veh/h)	39	2408	342	220	1315	35	166	14	274	32	11	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	41	2535	360	232	1384	37	186	0	288	34	12	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	53	2458	333	542	4325	116	543	0	242	175	32	128
Arrive On Green	0.06	1.00	1.00	0.60	1.00	1.00	0.15	0.00	0.15	0.10	0.10	0.10
Sat Flow, veh/h	1810	4915	665	1810	5526	148	3619	0	1610	1810	332	1329
Grp Volume(v), veh/h	41	1931	964	232	952	469	186	0	288	34	0	60
Grp Sat Flow(s),veh/h/ln	1810	1900	1780	1810	1900	1873	1810	0	1610	1810	0	1661
Q Serve(g_s), s	2.7	60.0	59.3	8.3	0.0	0.0	5.5	0.0	18.0	2.1	0.0	4.1
Cycle Q Clear(g_c), s	2.7	60.0	59.3	8.3	0.0	0.0	5.5	0.0	18.0	2.1	0.0	4.1
Prop In Lane	1.00		0.37	1.00		0.08	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	53	1900	890	542	2975	1467	543	0	242	175	0	161
V/C Ratio(X)	0.78	1.02	1.08	0.43	0.32	0.32	0.34	0.00	1.19	0.19	0.00	0.37
Avail Cap(c_a), veh/h	104	1900	890	542	2975	1467	543	0	242	175	0	161
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.1	0.0	0.0	18.5	0.0	0.0	45.7	0.0	51.0	49.9	0.0	50.8
Incr Delay (d2), s/veh	21.3	24.9	55.0	0.5	0.3	0.6	1.7	0.0	119.4	2.5	0.0	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.6	13.6	2.9	0.1	0.2	2.6	0.0	15.2	1.1	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.4	24.9	55.0	19.1	0.3	0.6	47.4	0.0	170.4	52.4	0.0	57.3
LnGrp LOS	E	F	F	B	A	A	D	A	F	D	A	E
Approach Vol, veh/h	2936			1653			474			94		
Approach Delay, s/veh	35.5			3.0			122.1			55.5		
Approach LOS	D			A			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	40.9	65.0		16.6	7.0	98.9		23.0				
Change Period (Y+Rc), s	5.0	* 5		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	11.9	* 60		11.6	6.9	65.0		18.0				
Max Q Clear Time (g_c+I1), s	10.3	62.0		6.1	4.7	2.0		20.0				
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	12.5		0.0				

Intersection Summary

HCM 6th Ctrl Delay 33.4

HCM 6th LOS C

Notes

User approved volume balancing among the lanes for turning movement.

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

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

Existing (2021)+Site Baseline+Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	1	344	3	1	1	235	320	1	1	535	72
Future Volume (vph)	105	1	344	3	1	1	235	320	1	1	535	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	32.0	32.0	32.0	32.0	32.0	32.0	32.0	60.0		8.0	36.0	36.0
Total Split (%)	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	60.0%		8.0%	36.0%	36.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

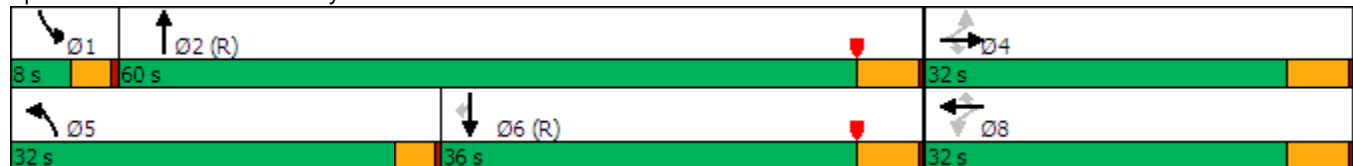
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary Existing (2021)+Site Baseline+Project PM Peak Hour 5: Azusa Cyn. Rd. & Olive St.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	1	344	3	1	1	235	320	1	1	535	72
Future Volume (veh/h)	105	1	344	3	1	1	235	320	1	1	535	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	112	1	366	3	1	1	250	340	1	1	569	77
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	426	469	397	326	469	397	284	2279	7	2	1666	743
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.31	1.00	1.00	0.00	0.46	0.46
Sat Flow, veh/h	1437	1900	1610	1031	1900	1610	1810	3692	11	1810	3610	1610
Grp Volume(v), veh/h	112	1	366	3	1	1	250	166	175	1	569	77
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	1031	1900	1610	1810	1805	1898	1810	1805	1610
Q Serve(g_s), s	6.4	0.0	22.2	0.2	0.0	0.0	13.1	0.0	0.0	0.1	10.1	2.7
Cycle Q Clear(g_c), s	6.4	0.0	22.2	0.3	0.0	0.0	13.1	0.0	0.0	0.1	10.1	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	426	469	397	326	469	397	284	1114	1171	2	1666	743
V/C Ratio(X)	0.26	0.00	0.92	0.01	0.00	0.00	0.88	0.15	0.15	0.50	0.34	0.10
Avail Cap(c_a), veh/h	460	513	435	350	513	435	516	1114	1171	81	1666	743
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81	0.26	0.26	0.26
Uniform Delay (d), s/veh	30.8	28.4	36.7	28.5	28.4	28.4	33.4	0.0	0.0	49.9	17.2	15.2
Incr Delay (d2), s/veh	0.3	0.0	23.8	0.0	0.0	0.0	7.2	0.2	0.2	43.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	11.2	0.1	0.0	0.0	5.3	0.1	0.1	0.0	4.1	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	28.4	60.5	28.5	28.4	28.4	40.7	0.2	0.2	93.3	17.4	15.3
LnGrp LOS	C	C	E	C	C	C	D	A	A	F	B	B
Approach Vol, veh/h	479			5			591			647		
Approach Delay, s/veh	53.6			28.5			17.3			17.2		
Approach LOS	D			C			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.6	66.7		29.7	19.2	51.1		29.7				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	4.5	55.0		27.0	28.5	31.0		27.0				
Max Q Clear Time (g_c+I1), s	2.1	2.0		24.2	15.1	12.1		2.3				
Green Ext Time (p_c), s	0.0	2.2		0.5	0.6	4.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	27.4											
HCM 6th LOS	C											

Lanes, Volumes, Timings
6: Azusa Cyn. Rd. & Dwy. 1

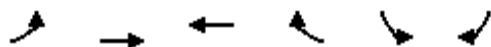
Existing (2021)+Site Baseline+Project PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			
Traffic Volume (vph)	0	15	848	0	6	624
Future Volume (vph)	0	15	848	0	6	624
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	208		299			985
Travel Time (s)	4.7		6.8			22.4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	15	848	0	6	624
Future Vol, veh/h	0	15	848	0	6	624
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	893	0	6	657
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	447	0	0	893	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	564	-	-	768	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	564	-	-	768	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.6	0		0.2		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	564	768	-	
HCM Lane V/C Ratio	-	-	0.028	0.008	-	
HCM Control Delay (s)	-	-	11.6	9.7	0.1	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Lanes, Volumes, Timings
7: Los Angeles St. & Dwy. 2

Existing (2021)+Site Baseline+Project PM Peak Hour

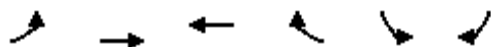


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	28	79	0	0	14
Future Volume (vph)	5	28	79	0	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		160	175		164	
Travel Time (s)		3.6	4.0		3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	28	79	0	0	14
Future Vol, veh/h	5	28	79	0	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	29	83	0	0	15
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	83	0	-	0	122	83
Stage 1	-	-	-	-	83	-
Stage 2	-	-	-	-	39	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1527	-	-	-	878	982
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	989	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1527	-	-	-	875	982
Mov Cap-2 Maneuver	-	-	-	-	875	-
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	989	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		8.7		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1527	-	-	-	982	
HCM Lane V/C Ratio	0.003	-	-	-	0.015	
HCM Control Delay (s)	7.4	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
8: Los Angeles St. & Dwy. 3

Existing (2021)+Site Baseline+Project PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	26	74	0	0	5
Future Volume (vph)	2	26	74	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		175	247		166	
Travel Time (s)		4.0	5.6		3.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
8: Los Angeles St. & Dwy. 3

Existing (2021)+Site Baseline+Project PM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	26	74	0	0	5
Future Vol, veh/h	2	26	74	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	27	78	0	0	5
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	78	0	-	0	109	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	31	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1533	-	-	-	893	988
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	997	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1533	-	-	-	892	988
Mov Cap-2 Maneuver	-	-	-	-	892	-
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	997	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1533	-	-	-	988	
HCM Lane V/C Ratio	0.001	-	-	-	0.005	
HCM Control Delay (s)	7.4	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

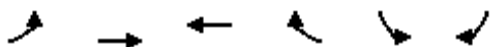
HCM Signalized Intersection Capacity Analysis (Existing (2021)+Site Baseline+Project AM Peak Hour 1: Azusa Cyn. Rd. & Cypress St.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	238	379	311	168	146	234
Future Volume (vph)	238	379	311	168	146	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.93	0.85	0.95		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3351	1470	3420		1805	3610
Flt Permitted	0.97	1.00	1.00		0.42	1.00
Satd. Flow (perm)	3351	1470	3420		803	3610
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	264	421	346	187	162	260
RTOR Reduction (vph)	165	188	42	0	0	0
Lane Group Flow (vph)	301	31	491	0	162	260
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	14.3	14.3	65.9		77.2	77.2
Effective Green, g (s)	14.3	14.3	65.9		77.2	77.2
Actuated g/C Ratio	0.14	0.14	0.66		0.77	0.77
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	479	210	2253		698	2786
v/s Ratio Prot	c0.09		0.14		c0.02	0.07
v/s Ratio Perm		0.02			c0.16	
v/c Ratio	0.63	0.15	0.22		0.23	0.09
Uniform Delay, d1	40.3	37.5	6.8		3.0	2.8
Progression Factor	1.00	1.00	1.00		1.15	0.93
Incremental Delay, d2	2.6	0.3	0.2		0.2	0.1
Delay (s)	42.9	37.9	7.0		3.6	2.7
Level of Service	D	D	A		A	A
Approach Delay (s)	41.3		7.0			3.0
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			20.3		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.30			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			43.7%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis (2021)+Site Baseline+Project AM Peak Hour 2: Azusa Cyn. Rd. & Los Angeles St. WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	17	186	8	8	20	225	257	15	17	151	274
Future Volume (vph)	194	17	186	8	8	20	225	257	15	17	151	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.90			1.00			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1715	1805	1900	1805	1700			1900			1900	1900
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.77			0.94	1.00
Satd. Flow (perm)	1715	1805	1900	1805	1700			1464			1789	1900
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	206	18	198	9	9	21	239	273	16	18	161	291
RTOR Reduction (vph)	0	0	174	0	20	0	0	1	0	0	0	82
Lane Group Flow (vph)	111	113	24	9	10	0	0	527	0	0	179	209
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)	12.0	12.0	12.0	4.3	4.3			71.7			71.7	71.7
Effective Green, g (s)	12.0	12.0	12.0	4.3	4.3			71.7			71.7	71.7
Actuated g/C Ratio	0.12	0.12	0.12	0.04	0.04			0.72			0.72	0.72
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	205	216	228	77	73			1049			1282	1362
v/s Ratio Prot	c0.06	0.06		0.00	c0.01							
v/s Ratio Perm			0.01					c0.36			0.10	0.11
v/c Ratio	0.54	0.52	0.10	0.12	0.14			0.50			0.14	0.15
Uniform Delay, d1	41.4	41.3	39.2	46.0	46.1			6.3			4.4	4.5
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			0.98	1.81
Incremental Delay, d2	2.9	2.3	0.2	0.7	0.8			1.7			0.2	0.2
Delay (s)	44.3	43.6	39.4	46.7	46.9			8.0			4.6	8.4
Level of Service	D	D	D	D	D			A			A	A
Approach Delay (s)		41.8			46.9			8.0			6.9	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			18.5			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			58.3%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis - Existing (2021)+Site Baseline+Project AM Peak Hour 3: San Bernardino Rd. & Azusa Cyn. Rd.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	79	145	341	432	261	76
Future Volume (vph)	79	145	341	432	261	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3307		1805	1615
Flt Permitted	0.26	1.00	1.00		0.95	1.00
Satd. Flow (perm)	491	3610	3307		1805	1615
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	89	163	383	485	293	85
RTOR Reduction (vph)	0	0	191	0	0	26
Lane Group Flow (vph)	89	163	677	0	293	59
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	67.0	67.0	67.0		45.0	45.0
Effective Green, g (s)	67.0	67.0	67.0		45.0	45.0
Actuated g/C Ratio	0.56	0.56	0.56		0.38	0.38
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	274	2015	1846		676	605
v/s Ratio Prot		0.05	c0.20		c0.16	
v/s Ratio Perm	0.18					0.04
v/c Ratio	0.32	0.08	0.37		0.43	0.10
Uniform Delay, d1	14.3	12.3	14.7		28.0	24.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.1	0.1	0.6		2.0	0.3
Delay (s)	17.4	12.3	15.3		30.0	24.6
Level of Service	B	B	B		C	C
Approach Delay (s)		14.1	15.3		28.8	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay			18.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.39			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			52.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis (Existing (2021)+Site Baseline+Project AM Peak Hour 4: Azusa Cyn. Rd. & Arrow Hwy.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	945	206	148	2178	42	434	17	140	20	12	40
Future Volume (vph)	25	945	206	148	2178	42	434	17	140	20	12	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	27	1038	226	163	2393	46	477	19	154	22	13	44
RTOR Reduction (vph)	0	31	0	0	0	19	0	0	131	0	40	0
Lane Group Flow (vph)	27	1233	0	163	2393	27	248	248	23	22	17	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	2.4	58.5		15.0	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	58.5		15.0	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.49		0.12	0.59	0.59	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2778		237	2251	1125	285	285	285	158	158	
v/s Ratio Prot	0.01	0.22		c0.09	c0.63		c0.13	0.13		c0.01	0.01	
v/s Ratio Perm						0.01			0.01			
v/c Ratio	0.71	0.44		0.69	1.06	0.02	0.87	0.87	0.08	0.14	0.11	
Uniform Delay, d1	58.5	20.1		50.3	24.5	10.1	49.9	49.9	43.9	51.0	50.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	47.3	0.5		8.0	38.4	0.0	28.5	28.5	0.6	1.8	1.3	
Delay (s)	105.7	20.6		58.3	62.8	10.1	78.3	78.3	44.4	52.8	52.2	
Level of Service	F	C		E	E	B	E	E	D	D	D	
Approach Delay (s)		22.4			61.6			70.3			52.4	
Approach LOS		C			E			E			D	
Intersection Summary												
HCM 2000 Control Delay			51.7			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			94.3%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis (2021)+Site Baseline+Project AM Peak Hour 4: Azusa Cyn. Rd. & Arrow Hwy. WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	945	206	148	2178	42	434	17	140	20	12	40
Future Volume (vph)	25	945	206	148	2178	42	434	17	140	20	12	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00		*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	27	1038	226	163	2393	46	477	19	154	22	13	44
RTOR Reduction (vph)	0	31	0	0	2	0	0	0	131	0	40	0
Lane Group Flow (vph)	27	1233	0	163	2437	0	248	248	23	22	17	0
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Actuated Green, G (s)	2.4	58.5		15.0	71.1		18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	58.5		15.0	71.1		18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.49		0.12	0.59		0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2778		237	3377		285	285	285	158	158	
v/s Ratio Prot	0.01	0.22		c0.09	c0.43		c0.13	0.13		c0.01	0.01	
v/s Ratio Perm									0.01			
v/c Ratio	0.71	0.44		0.69	0.72		0.87	0.87	0.08	0.14	0.11	
Uniform Delay, d1	58.5	20.1		50.3	17.4		49.9	49.9	43.9	51.0	50.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	47.3	0.5		8.0	1.4		28.5	28.5	0.6	1.8	1.3	
Delay (s)	105.7	20.6		58.3	18.8		78.3	78.3	44.4	52.8	52.2	
Level of Service	F	C		E	B		E	E	D	D	D	
Approach Delay (s)		22.4			21.3			70.3			52.4	
Approach LOS		C			C			E			D	
Intersection Summary												
HCM 2000 Control Delay			29.0			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			77.2%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis (Existing (2021)+Site Baseline+Project AM Peak Hour 5: Azusa Cyn. Rd. & Olive St.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	2	124	1	1	1	122	555	12	3	255	32
Future Volume (vph)	71	2	124	1	1	1	122	555	12	3	255	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3599		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1437	1900	1615	1805	3599		1805	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	2	135	1	1	1	133	603	13	3	277	35
RTOR Reduction (vph)	0	0	118	0	0	1	0	1	0	0	0	13
Lane Group Flow (vph)	77	2	17	1	1	0	133	615	0	3	277	22
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	12.3	12.3	12.3	12.3	12.3	12.3	12.7	72.9		1.3	61.5	61.5
Effective Green, g (s)	12.3	12.3	12.3	12.3	12.3	12.3	12.7	72.9		1.3	61.5	61.5
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.73		0.01	0.62	0.62
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	176	233	198	176	233	198	229	2623		23	2220	993
v/s Ratio Prot		0.00			0.00		c0.07	c0.17		0.00	0.08	
v/s Ratio Perm	c0.05		0.01	0.00		0.00						0.01
v/c Ratio	0.44	0.01	0.08	0.01	0.00	0.00	0.58	0.23		0.13	0.12	0.02
Uniform Delay, d1	40.6	38.5	38.9	38.5	38.5	38.5	41.1	4.4		48.8	8.0	7.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.03	0.80		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.0	0.2	0.0	0.0	0.0	3.6	0.2		2.6	0.1	0.0
Delay (s)	42.4	38.5	39.0	38.5	38.5	38.5	46.0	3.8		51.4	8.1	7.6
Level of Service	D	D	D	D	D	D	D	A		D	A	A
Approach Delay (s)		40.2			38.5			11.3			8.5	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			15.5				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			44.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

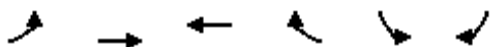
HCM Signalized Intersection Capacity Analysis (Existing (2021)+Site Baseline+Project PM Peak Hour 1: Azusa Cyn. Rd. & Cypress St.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	177	202	353	525	445	437
Future Volume (vph)	177	202	353	525	445	437
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.95	0.85	0.91		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3394	1470	3286		1805	3610
Flt Permitted	0.97	1.00	1.00		0.20	1.00
Satd. Flow (perm)	3394	1470	3286		376	3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	186	213	372	553	468	460
RTOR Reduction (vph)	62	111	242	0	0	0
Lane Group Flow (vph)	211	15	683	0	468	460
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	12.0	12.0	41.5		81.0	79.5
Effective Green, g (s)	12.0	12.0	41.5		81.0	79.5
Actuated g/C Ratio	0.12	0.12	0.42		0.81	0.80
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	407	176	1363		797	2869
v/s Ratio Prot	c0.06		0.21		c0.20	0.13
v/s Ratio Perm		0.01			c0.27	
v/c Ratio	0.52	0.09	0.50		0.59	0.16
Uniform Delay, d1	41.3	39.1	21.6		13.2	2.4
Progression Factor	1.00	1.00	1.00		0.87	1.37
Incremental Delay, d2	1.1	0.2	1.3		1.0	0.1
Delay (s)	42.4	39.3	22.9		12.6	3.4
Level of Service	D	D	C		B	A
Approach Delay (s)	41.4		22.9			8.0
Approach LOS	D		C			A
Intersection Summary						
HCM 2000 Control Delay			20.1		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.60			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			69.3%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis (2021)+Site Baseline+Project PM Peak Hour 2: Azusa Cyn. Rd. & Los Angeles St. WITH IMPROVEMENTS

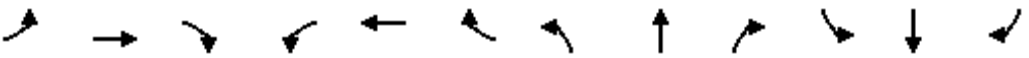
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	512	9	396	43	29	20	173	316	14	10	424	190
Future Volume (vph)	512	9	396	43	29	20	173	316	14	10	424	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.94			1.00			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1715	1805	1900	1805	1783			1900			1900	1900
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.62			0.99	1.00
Satd. Flow (perm)	1715	1805	1900	1805	1783			1170			1879	1900
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	528	9	408	44	30	21	178	326	14	10	437	196
RTOR Reduction (vph)	0	0	309	0	20	0	0	1	0	0	0	83
Lane Group Flow (vph)	269	268	99	44	31	0	0	517	0	0	447	113
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)	23.3	23.3	23.3	6.8	6.8			57.9			57.9	57.9
Effective Green, g (s)	23.3	23.3	23.3	6.8	6.8			57.9			57.9	57.9
Actuated g/C Ratio	0.23	0.23	0.23	0.07	0.07			0.58			0.58	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	399	420	442	122	121			677			1087	1100
v/s Ratio Prot	c0.16	0.15		c0.02	0.02							
v/s Ratio Perm			0.05					c0.44			0.24	0.06
v/c Ratio	0.67	0.64	0.22	0.36	0.26			0.76			0.41	0.10
Uniform Delay, d1	34.9	34.6	31.0	44.5	44.2			15.9			11.6	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.01	2.08
Incremental Delay, d2	4.5	3.2	0.3	1.8	1.1			8.0			1.1	0.2
Delay (s)	39.4	37.7	31.3	46.3	45.4			23.9			12.9	19.7
Level of Service	D	D	C	D	D			C			B	B
Approach Delay (s)		35.4			45.8			23.9			15.0	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			27.2			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			81.0%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis (2021)+Site Baseline+Project PM Peak Hour 3: San Bernardino Rd. & Azusa Cyn. Rd.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	126	339	348	367	753	153
Future Volume (vph)	126	339	348	367	753	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3332		1805	1615
Flt Permitted	0.25	1.00	1.00		0.95	1.00
Satd. Flow (perm)	477	3610	3332		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	133	357	366	386	793	161
RTOR Reduction (vph)	0	0	159	0	0	18
Lane Group Flow (vph)	133	357	593	0	793	143
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	50.0	50.0	50.0		62.0	62.0
Effective Green, g (s)	50.0	50.0	50.0		62.0	62.0
Actuated g/C Ratio	0.42	0.42	0.42		0.52	0.52
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	198	1504	1388		932	834
v/s Ratio Prot		0.10	0.18		0.44	
v/s Ratio Perm	0.28					0.09
v/c Ratio	0.67	0.24	0.43		0.85	0.17
Uniform Delay, d1	28.4	22.7	24.8		25.0	15.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	16.7	0.4	1.0		9.6	0.4
Delay (s)	45.1	23.0	25.8		34.6	15.8
Level of Service	D	C	C		C	B
Approach Delay (s)		29.0	25.8		31.5	
Approach LOS		C	C		C	
Intersection Summary						
HCM 2000 Control Delay			29.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.77			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			80.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis (Existing (2021)+Site Baseline+Project PM Peak Hour 4: Azusa Cyn. Rd. & Arrow Hwy.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	2408	342	220	1315	35	166	14	274	32	11	46
Future Volume (vph)	39	2408	342	220	1315	35	166	14	274	32	11	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	2535	360	232	1384	37	175	15	288	34	12	48
RTOR Reduction (vph)	0	18	0	0	0	16	0	0	185	0	44	0
Lane Group Flow (vph)	41	2877	0	232	1384	21	94	96	103	34	16	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	5.5	60.0		13.5	68.0	68.0	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	5.5	60.0		13.5	68.0	68.0	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.05	0.50		0.11	0.57	0.57	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	87	2850		213	2153	1076	285	285	285	158	158	
v/s Ratio Prot	0.02	c0.50		c0.12	0.36		0.05	0.05		c0.02	0.01	
v/s Ratio Perm						0.01			c0.05			
v/c Ratio	0.47	1.01		1.09	0.64	0.02	0.33	0.34	0.36	0.22	0.10	
Uniform Delay, d1	55.8	30.0		53.2	17.7	11.4	45.6	45.7	45.8	51.3	50.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0	19.2		87.5	1.5	0.0	3.1	3.2	3.5	3.1	1.3	
Delay (s)	59.8	49.2		140.7	19.2	11.4	48.7	48.8	49.3	54.4	52.1	
Level of Service	E	D		F	B	B	D	D	D	D	D	
Approach Delay (s)		49.4			36.1			49.1			53.0	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			45.1			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			91.9%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis (2021)+Site Baseline+Project PM Peak Hour 4: Azusa Cyn. Rd. & Arrow Hwy. WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	2408	342	220	1315	35	166	14	274	32	11	46
Future Volume (vph)	39	2408	342	220	1315	35	166	14	274	32	11	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00		*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	2535	360	232	1384	37	175	15	288	34	12	48
RTOR Reduction (vph)	0	18	0	0	3	0	0	0	211	0	43	0
Lane Group Flow (vph)	41	2877	0	232	1418	0	94	96	77	34	17	0
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Actuated Green, G (s)	5.5	59.3		12.6	66.4		18.0	18.0	18.0	11.6	11.6	
Effective Green, g (s)	5.5	59.3		12.6	66.4		18.0	18.0	18.0	11.6	11.6	
Actuated g/C Ratio	0.05	0.49		0.10	0.55		0.15	0.15	0.15	0.10	0.10	
Clearance Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	87	2816		199	3154		285	285	285	183	183	
v/s Ratio Prot	0.02	c0.50		c0.12	0.25		0.05	c0.05		c0.02	0.01	
v/s Ratio Perm									0.04			
v/c Ratio	0.47	1.02		1.17	0.45		0.33	0.34	0.27	0.19	0.09	
Uniform Delay, d1	55.8	30.4		53.7	15.9		45.6	45.7	45.2	49.9	49.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0	22.7		115.7	0.5		3.1	3.2	2.3	2.2	1.0	
Delay (s)	59.8	53.0		169.4	16.4		48.7	48.8	47.5	52.1	50.4	
Level of Service	E	D		F	B		D	D	D	D	D	
Approach Delay (s)		53.1			37.9			48.0			51.0	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			47.7			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			91.9%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis (Existing (2021)+Site Baseline+Project PM Peak Hour 5: Azusa Cyn. Rd. & Olive St.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	1	344	3	1	1	235	320	1	1	535	72
Future Volume (vph)	105	1	344	3	1	1	235	320	1	1	535	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3608		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1439	1900	1615	1805	3608		1805	3610	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	112	1	366	3	1	1	250	340	1	1	569	77
RTOR Reduction (vph)	0	0	314	0	0	1	0	0	0	0	0	36
Lane Group Flow (vph)	112	1	52	3	1	0	250	341	0	1	569	41
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	14.1	14.1	14.1	14.1	14.1	14.1	19.1	71.2		1.2	53.3	53.3
Effective Green, g (s)	14.1	14.1	14.1	14.1	14.1	14.1	19.1	71.2		1.2	53.3	53.3
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14	0.14	0.19	0.71		0.01	0.53	0.53
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	202	267	227	202	267	227	344	2568		21	1924	860
v/s Ratio Prot		0.00			0.00		c0.14	0.09		0.00	c0.16	
v/s Ratio Perm	c0.08		0.03	0.00		0.00						0.03
v/c Ratio	0.55	0.00	0.23	0.01	0.00	0.00	0.73	0.13		0.05	0.30	0.05
Uniform Delay, d1	40.0	36.9	38.1	37.0	36.9	36.9	38.0	4.6		48.8	12.9	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.20	0.48		1.00	1.00	1.00
Incremental Delay, d2	3.3	0.0	0.5	0.0	0.0	0.0	6.6	0.1		0.9	0.4	0.1
Delay (s)	43.3	36.9	38.6	37.0	36.9	36.9	52.1	2.3		49.8	13.3	11.3
Level of Service	D	D	D	D	D	D	D	A		D	B	B
Approach Delay (s)		39.7			37.0			23.4			13.2	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			24.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.43									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			56.9%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

APPENDIX 6.1:

INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE CONDITIONS INTERSECTION OPERATIONS ANALYSIS

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Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

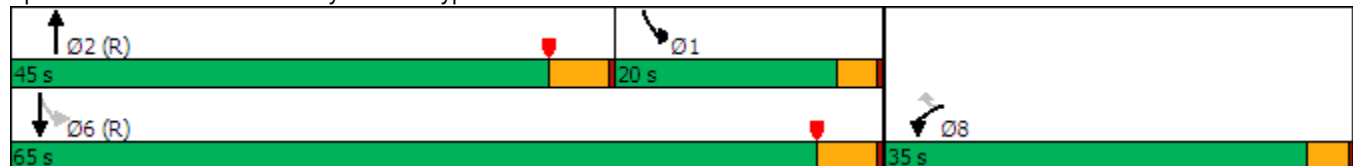
IY (2022) Without Project AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	242	397	359	171	151	238
Future Volume (vph)	242	397	359	171	151	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		49%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	35.0	35.0	45.0		20.0	65.0
Total Split (%)	35.0%	35.0%	45.0%		20.0%	65.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 81 (81%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary

1: Azusa Cyn. Rd. & Cypress St.

IY (2022) Without Project AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	242	397	359	171	151	238
Future Volume (veh/h)	242	397	359	171	151	238
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	237	476	399	190	168	264
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	336	597	953	448	794	2633
Arrive On Green	0.19	0.19	0.40	0.40	0.56	1.00
Sat Flow, veh/h	1810	3220	2478	1120	1810	3705
Grp Volume(v), veh/h	237	476	301	288	168	264
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1698	1810	1805
Q Serve(g_s), s	12.3	14.1	12.0	12.3	0.0	0.0
Cycle Q Clear(g_c), s	12.3	14.1	12.0	12.3	0.0	0.0
Prop In Lane	1.00	1.00		0.66	1.00	
Lane Grp Cap(c), veh/h	336	597	722	679	794	2633
V/C Ratio(X)	0.71	0.80	0.42	0.42	0.21	0.10
Avail Cap(c_a), veh/h	570	1014	722	679	794	2633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.98	0.98
Uniform Delay (d), s/veh	38.2	38.9	21.6	21.7	7.5	0.0
Incr Delay (d2), s/veh	2.7	2.5	1.8	1.9	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	5.7	5.3	5.1	1.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.9	41.4	23.4	23.6	7.6	0.1
LnGrp LOS	D	D	C	C	A	A
Approach Vol, veh/h	713		589			432
Approach Delay, s/veh	41.2		23.5			3.0
Approach LOS	D		C			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	32.9	45.0			77.9	22.1
Change Period (Y+Rc), s	5.0	* 5			5.0	3.5
Max Green Setting (Gmax), s	16.5	* 40			60.0	31.5
Max Q Clear Time (g_c+I1), s	2.0	14.3			2.0	16.1
Green Ext Time (p_c), s	0.4	3.9			1.9	2.4

Intersection Summary

HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) Without Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	12	190	7	6	19	231	294	11	15	161	283
Future Volume (vph)	211	12	190	7	6	19	231	294	11	15	161	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th AWSC
2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) Without Project AM Peak Hour

Intersection												
Intersection Delay, s/veh	43.4											
Intersection LOS	E											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	211	12	190	7	6	19	231	294	11	15	161	283
Future Vol, veh/h	211	12	190	7	6	19	231	294	11	15	161	283
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	224	13	202	7	6	20	246	313	12	16	171	301
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	2			2			2			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			1			2			2		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			2			2			2		
HCM Control Delay	16.7			11.7			89.8			15.4		
HCM LOS	C			B			F			C		
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2					
Vol Left, %	43%	95%	0%	54%	0%	9%	0%					
Vol Thru, %	55%	5%	0%	46%	0%	91%	0%					
Vol Right, %	2%	0%	100%	0%	100%	0%	100%					
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane	536	223	190	13	19	176	283					
LT Vol	231	211	0	7	0	15	0					
Through Vol	294	12	0	6	0	161	0					
RT Vol	11	0	190	0	19	0	283					
Lane Flow Rate	570	237	202	14	20	187	301					
Geometry Grp	6	7	7	7	7	7	7					
Degree of Util (X)	1.084	0.517	0.374	0.034	0.044	0.365	0.525					
Departure Headway (Hd)	6.842	8.156	6.945	9.193	8.179	7.263	6.5					
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Cap	530	446	521	392	440	498	557					
Service Time	4.9	5.856	4.645	6.893	5.879	4.963	4.2					
HCM Lane V/C Ratio	1.075	0.531	0.388	0.036	0.045	0.376	0.54					
HCM Control Delay	89.8	19.3	13.7	12.2	11.3	14.1	16.2					
HCM Lane LOS	F	C	B	B	B	B	C					
HCM 95th-tile Q	17.6	2.9	1.7	0.1	0.1	1.7	3					

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

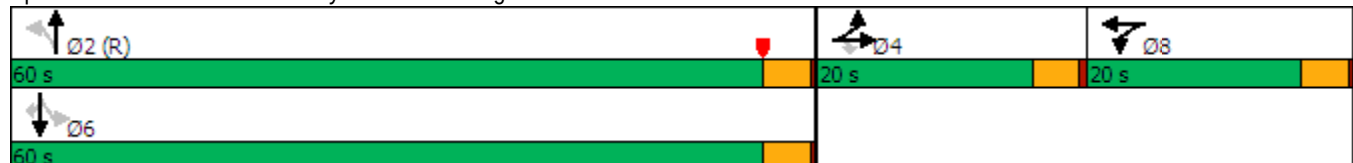
IY (2022) Without Project AM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	12	190	7	6	19	231	294	11	15	161	283
Future Volume (vph)	211	12	190	7	6	19	231	294	11	15	161	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		50	0		0	0		400
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	60			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)	47%											
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0		60.0	60.0		60.0	60.0	60.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%		60.0%	60.0%		60.0%	60.0%	60.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		C-Max	C-Max		Max	Max	Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.



HCM 6th Signalized Intersection Summary

2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) Without Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	12	190	7	6	19	231	294	11	15	161	283
Future Volume (veh/h)	211	12	190	7	6	19	231	294	11	15	161	283
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	233	0	202	7	6	20	246	313	12	16	171	301
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	527	0	234	43	9	31	442	534	20	116	1213	1144
Arrive On Green	0.15	0.00	0.15	0.02	0.02	0.02	0.71	0.71	0.71	1.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610	1810	385	1284	550	751	28	109	1708	1610
Grp Volume(v), veh/h	233	0	202	7	0	26	571	0	0	187	0	301
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1669	1329	0	0	1816	0	1610
Q Serve(g_s), s	5.9	0.0	12.3	0.4	0.0	1.5	18.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.9	0.0	12.3	0.4	0.0	1.5	20.7	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.77	0.43		0.02	0.09		1.00
Lane Grp Cap(c), veh/h	527	0	234	43	0	40	996	0	0	1330	0	1144
V/C Ratio(X)	0.44	0.00	0.86	0.16	0.00	0.65	0.57	0.00	0.00	0.14	0.00	0.26
Avail Cap(c_a), veh/h	579	0	258	290	0	267	996	0	0	1330	0	1144
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.93	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	41.7	47.8	0.0	48.4	7.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	23.1	1.7	0.0	16.3	2.2	0.0	0.0	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	6.2	0.2	0.0	0.8	5.6	0.0	0.0	0.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	0.0	64.9	49.5	0.0	64.7	9.2	0.0	0.0	0.2	0.0	0.6
LnGrp LOS	D	A	E	D	A	E	A	A	A	A	A	A
Approach Vol, veh/h	435			33			571			488		
Approach Delay, s/veh	51.3			61.4			9.2			0.4		
Approach LOS	D			E			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	75.0			18.6			75.0			6.4		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	56.0			16.0			56.0			16.0		
Max Q Clear Time (g_c+I1), s	22.7			14.3			2.0			3.5		
Green Ext Time (p_c), s	5.4			0.3			2.3			0.1		

Intersection Summary

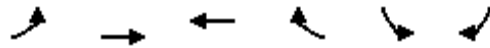
HCM 6th Ctrl Delay 19.5
HCM 6th LOS B

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
3: San Bernardino Rd. & Azusa Cyn. Rd.

IY (2022) Without Project AM Peak Hour

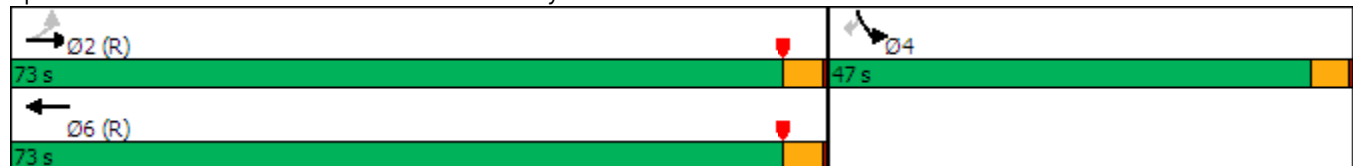


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	152	358	460	270	80
Future Volume (vph)	90	152	358	460	270	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	73.0	73.0	73.0		47.0	47.0
Total Split (%)	60.8%	60.8%	60.8%		39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

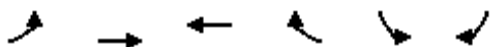
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary 3: San Bernardino Rd. & Azusa Cyn. Rd.

IY (2022) Without Project AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	90	152	358	460	270	80
Future Volume (veh/h)	90	152	358	460	270	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	101	171	402	517	303	90
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	291	2076	1038	926	648	577
Arrive On Green	0.57	0.57	0.57	0.57	0.36	0.36
Sat Flow, veh/h	618	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	101	171	402	517	303	90
Grp Sat Flow(s),veh/h/ln	618	1805	1805	1610	1810	1610
Q Serve(g_s), s	14.7	2.5	14.6	24.1	15.5	4.6
Cycle Q Clear(g_c), s	38.8	2.5	14.6	24.1	15.5	4.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	291	2076	1038	926	648	577
V/C Ratio(X)	0.35	0.08	0.39	0.56	0.47	0.16
Avail Cap(c_a), veh/h	291	2076	1038	926	648	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	11.4	13.9	16.0	29.7	26.2
Incr Delay (d2), s/veh	3.3	0.1	1.1	2.4	2.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.0	5.9	8.9	7.2	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.4	11.5	15.0	18.4	32.1	26.7
LnGrp LOS	C	B	B	B	C	C
Approach Vol, veh/h		272	919		393	
Approach Delay, s/veh		18.8	16.9		30.9	
Approach LOS		B	B		C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		73.0		47.0		73.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		69.0		43.0		69.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			20.7			
HCM 6th LOS			C			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) Without Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	1213	301	191	2276	43	457	17	154	20	12	41
Future Volume (vph)	26	1213	301	191	2276	43	457	17	154	20	12	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	55.2		26.8	74.5	74.5	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	46.0%		22.3%	62.1%	62.1%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

 Ø1	 Ø2 (R)	 Ø4	 Ø8
26.8 s	55.2 s	15 s	23 s
 Ø5	 Ø6 (R)		
7.5 s	74.5 s		

HCM 6th Signalized Intersection Summary 4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) Without Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	1213	301	191	2276	43	457	17	154	20	12	41
Future Volume (veh/h)	26	1213	301	191	2276	43	457	17	154	20	12	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	29	1333	331	210	2501	47	516	0	169	22	13	45
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	37	2114	524	241	2249	953	543	0	242	151	31	108
Arrive On Green	0.02	0.48	0.48	0.13	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4410	1093	1810	3800	1610	3619	0	1610	1810	374	1293
Grp Volume(v), veh/h	29	1148	516	210	2501	47	516	0	169	22	0	58
Grp Sat Flow(s),veh/h/ln	1810	1900	1703	1810	1900	1610	1810	0	1610	1810	0	1667
Q Serve(g_s), s	1.9	27.1	27.1	13.7	71.0	1.5	17.0	0.0	12.0	1.4	0.0	4.0
Cycle Q Clear(g_c), s	1.9	27.1	27.1	13.7	71.0	1.5	17.0	0.0	12.0	1.4	0.0	4.0
Prop In Lane	1.00		0.64	1.00		1.00	1.00		1.00	1.00		0.78
Lane Grp Cap(c), veh/h	37	1822	817	241	2249	953	543	0	242	151	0	139
V/C Ratio(X)	0.78	0.63	0.63	0.87	1.11	0.05	0.95	0.00	0.70	0.15	0.00	0.42
Avail Cap(c_a), veh/h	60	1822	817	351	2249	953	543	0	242	151	0	139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.5	23.3	23.3	51.0	24.5	10.3	50.6	0.0	48.4	51.0	0.0	52.2
Incr Delay (d2), s/veh	28.2	1.7	3.7	14.9	57.4	0.1	27.6	0.0	15.1	2.0	0.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	11.8	11.0	7.0	45.6	0.5	9.7	0.0	5.8	0.7	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.6	25.0	27.0	66.0	81.9	10.4	78.2	0.0	63.6	53.1	0.0	61.2
LnGrp LOS	F	C	C	E	F	B	E	A	E	D	A	E
Approach Vol, veh/h	1693					2758		685		80		
Approach Delay, s/veh	26.6					79.5		74.6		59.0		
Approach LOS	C					E		E		E		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	19.5	62.5	15.0		6.0	76.0	23.0					
Change Period (Y+Rc), s	3.5	5.0	5.0		3.5	5.0	5.0					
Max Green Setting (Gmax), s	23.3	50.2	10.0		4.0	69.5	18.0					
Max Q Clear Time (g_c+I1), s	15.7	29.1	6.0		3.9	73.0	19.0					
Green Ext Time (p_c), s	0.3	11.4	0.1		0.0	0.0	0.0					
Intersection Summary												
HCM 6th Ctrl Delay	61.4											
HCM 6th LOS	E											
Notes												

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) Without Project AM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	1213	301	191	2276	43	457	17	154	20	12	41
Future Volume (vph)	26	1213	301	191	2276	43	457	17	154	20	12	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0		23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	55.2		26.8	74.5		23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	46.0%		22.3%	62.1%		19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

Ø1	Ø2 (R)	Ø4	Ø8
26.8 s	55.2 s	15 s	23 s
Ø5	Ø6 (R)		
7.5 s	74.5 s		

HCM 6th Signalized Intersection Summary

4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) Without Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	1213	301	191	2276	43	457	17	154	20	12	41
Future Volume (veh/h)	26	1213	301	191	2276	43	457	17	154	20	12	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	29	1333	331	210	2501	47	516	0	169	22	13	45
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	37	2114	524	241	3301	62	543	0	242	151	31	108
Arrive On Green	0.02	0.48	0.48	0.13	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4410	1093	1810	5577	104	3619	0	1610	1810	374	1293
Grp Volume(v), veh/h	29	1148	516	210	1701	847	516	0	169	22	0	58
Grp Sat Flow(s),veh/h/ln	1810	1900	1703	1810	1900	1881	1810	0	1610	1810	0	1667
Q Serve(g_s), s	1.9	27.1	27.1	13.7	39.7	40.1	17.0	0.0	12.0	1.4	0.0	4.0
Cycle Q Clear(g_c), s	1.9	27.1	27.1	13.7	39.7	40.1	17.0	0.0	12.0	1.4	0.0	4.0
Prop In Lane	1.00		0.64	1.00		0.06	1.00		1.00	1.00		0.78
Lane Grp Cap(c), veh/h	37	1822	817	241	2249	1113	543	0	242	151	0	139
V/C Ratio(X)	0.78	0.63	0.63	0.87	0.76	0.76	0.95	0.00	0.70	0.15	0.00	0.42
Avail Cap(c_a), veh/h	60	1822	817	351	2249	1113	543	0	242	151	0	139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.5	23.3	23.3	51.0	18.1	18.2	50.6	0.0	48.4	51.0	0.0	52.2
Incr Delay (d2), s/veh	28.2	1.7	3.7	14.9	2.4	4.9	27.6	0.0	15.1	2.0	0.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	11.8	11.0	7.0	16.2	17.0	9.7	0.0	5.8	0.7	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.6	25.0	27.0	66.0	20.5	23.1	78.2	0.0	63.6	53.1	0.0	61.2
LnGrp LOS	F	C	C	E	C	C	E	A	E	D	A	E
Approach Vol, veh/h	1693			2758			685			80		
Approach Delay, s/veh	26.6			24.8			74.6			59.0		
Approach LOS	C			C			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.5	62.5		15.0	6.0	76.0		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	23.3	50.2		10.0	4.0	69.5		18.0				
Max Q Clear Time (g_c+I1), s	15.7	29.1		6.0	3.9	42.1		19.0				
Green Ext Time (p_c), s	0.3	11.4		0.1	0.0	21.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	32.4											
HCM 6th LOS	C											
Notes												

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

IY (2022) Without Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	2	131	1	1	1	132	610	12	3	258	39
Future Volume (vph)	86	2	131	1	1	1	132	610	12	3	258	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	33.0	33.0	33.0	33.0	33.0	33.0	32.0	56.0		11.0	35.0	35.0
Total Split (%)	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	32.0%	56.0%		11.0%	35.0%	35.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

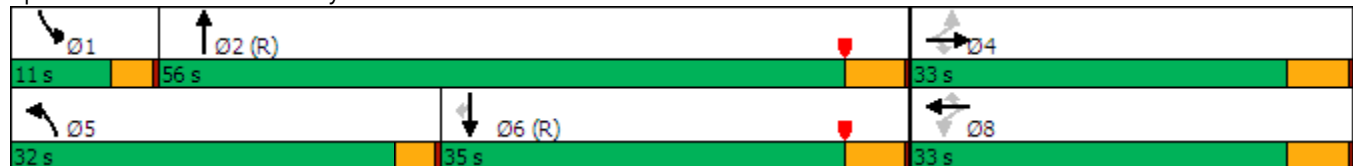
Actuated Cycle Length: 100

Offset: 22 (22%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary
5: Azusa Cyn. Rd. & Olive St.

IY (2022) Without Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	2	131	1	1	1	132	610	12	3	258	39
Future Volume (veh/h)	86	2	131	1	1	1	132	610	12	3	258	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	93	2	142	1	1	1	143	663	13	3	280	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	232	213	180	212	213	180	176	2715	53	6	2368	1056
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.19	1.00	1.00	0.00	0.66	0.66
Sat Flow, veh/h	1437	1900	1610	1264	1900	1610	1810	3621	71	1810	3610	1610
Grp Volume(v), veh/h	93	2	142	1	1	1	143	330	346	3	280	42
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	1264	1900	1610	1810	1805	1887	1810	1805	1610
Q Serve(g_s), s	6.1	0.1	8.6	0.1	0.0	0.1	7.6	0.0	0.0	0.2	2.9	0.9
Cycle Q Clear(g_c), s	6.2	0.1	8.6	0.2	0.0	0.1	7.6	0.0	0.0	0.2	2.9	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	232	213	180	212	213	180	176	1353	1415	6	2368	1056
V/C Ratio(X)	0.40	0.01	0.79	0.00	0.00	0.01	0.81	0.24	0.24	0.52	0.12	0.04
Avail Cap(c_a), veh/h	474	532	451	425	532	451	516	1353	1415	136	2368	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	0.73	0.73	0.73
Uniform Delay (d), s/veh	42.2	39.5	43.2	39.5	39.5	39.5	39.4	0.0	0.0	49.8	6.4	6.1
Incr Delay (d2), s/veh	1.1	0.0	7.4	0.0	0.0	0.0	8.3	0.4	0.4	43.9	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	3.8	0.0	0.0	0.0	3.4	0.2	0.2	0.1	1.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	39.5	50.7	39.6	39.5	39.5	47.7	0.4	0.4	93.7	6.5	6.1
LnGrp LOS	D	D	D	D	D	D	D	A	A	F	A	A
Approach Vol, veh/h	237					3	819			325		
Approach Delay, s/veh	47.7					39.5	8.7			7.2		
Approach LOS	D					D	A			A		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	3.8	80.0	16.2		13.2	70.6	16.2					
Change Period (Y+Rc), s	3.5	5.0	5.0		3.5	5.0	5.0					
Max Green Setting (Gmax), s	7.5	51.0	28.0		28.5	30.0	28.0					
Max Q Clear Time (g_c+I1), s	2.2	2.0	10.6		9.6	4.9	2.2					
Green Ext Time (p_c), s	0.0	4.8	0.6		0.3	1.9	0.0					
Intersection Summary												
HCM 6th Ctrl Delay	15.1											
HCM 6th LOS	B											

Lanes, Volumes, Timings
6: Azusa Cyn. Rd. & Dwy. 1

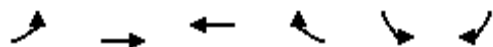
IY (2022) Without Project AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	2	524	0	6	460
Future Volume (vph)	0	2	524	0	6	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	208		299			985
Travel Time (s)	4.7		6.8			22.4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	524	0	6	460
Future Vol, veh/h	0	2	524	0	6	460
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2	552	0	6	484
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	276	0	0	552	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	727	-	-	1028	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	727	-	-	1028	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10	0		0.1		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	727	1028	-	
HCM Lane V/C Ratio	-	-	0.003	0.006	-	
HCM Control Delay (s)	-	-	10	8.5	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Lanes, Volumes, Timings
7: Los Angeles St. & Dwy. 2

IY (2022) Without Project AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	34	31	0	0	2
Future Volume (vph)	5	34	31	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		160	175		164	
Travel Time (s)		3.6	4.0		3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

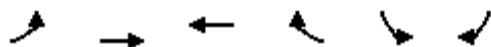
HCM 6th TWSC
7: Los Angeles St. & Dwy. 2

IY (2022) Without Project AM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	34	31	0	0	2
Future Vol, veh/h	5	34	31	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	36	33	0	0	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	33	0	-	0	79	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1592	-	-	-	929	1046
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1592	-	-	-	926	1046
Mov Cap-2 Maneuver	-	-	-	-	926	-
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	982	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.9	0		8.4		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1592	-	-	-	1046	
HCM Lane V/C Ratio	0.003	-	-	-	0.002	
HCM Control Delay (s)	7.3	0	-	-	8.4	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
8: Los Angeles St. & Dwy. 3

IY (2022) Without Project AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	32	30	0	0	1
Future Volume (vph)	2	32	30	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		175	247		166	
Travel Time (s)		4.0	5.6		3.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
8: Los Angeles St. & Dwy. 3

IY (2022) Without Project AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	32	30	0	0	1
Future Vol, veh/h	2	32	30	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	34	32	0	0	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	32	0	-	0	70	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	38	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1593	-	-	-	939	1048
Stage 1	-	-	-	-	996	-
Stage 2	-	-	-	-	990	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1593	-	-	-	938	1048
Mov Cap-2 Maneuver	-	-	-	-	938	-
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	990	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		8.4		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1593	-	-	-	1048	
HCM Lane V/C Ratio	0.001	-	-	-	0.001	
HCM Control Delay (s)	7.3	0	-	-	8.4	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile O(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

IY (2022) Without Project PM Peak Hour

	↖	↗	↑	↘	↙	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↖	↗	↑↑		↘	↑↑
Traffic Volume (vph)	181	208	361	534	463	484
Future Volume (vph)	181	208	361	534	463	484
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)		41%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	22.0	22.0	38.0		40.0	78.0
Total Split (%)	22.0%	22.0%	38.0%		40.0%	78.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

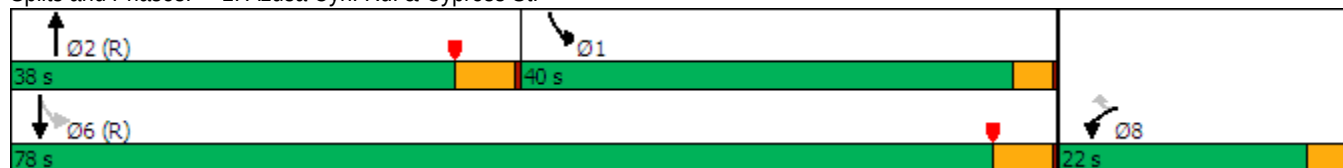
Actuated Cycle Length: 100

Offset: 61 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary

1: Azusa Cyn. Rd. & Cypress St.

IY (2022) Without Project PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	181	208	361	534	463	484
Future Volume (veh/h)	181	208	361	534	463	484
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	268	137	380	562	487	509
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	405	180	596	531	838	2900
Arrive On Green	0.11	0.11	0.33	0.33	0.85	1.00
Sat Flow, veh/h	3619	1610	1900	1610	1810	3705
Grp Volume(v), veh/h	268	137	380	562	487	509
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	7.1	8.3	17.9	33.0	0.3	0.0
Cycle Q Clear(g_c), s	7.1	8.3	17.9	33.0	0.3	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	405	180	596	531	838	2900
V/C Ratio(X)	0.66	0.76	0.64	1.06	0.58	0.18
Avail Cap(c_a), veh/h	670	298	596	531	838	2900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.88	0.88
Uniform Delay (d), s/veh	42.6	43.1	28.4	33.5	4.4	0.0
Incr Delay (d2), s/veh	1.9	6.5	5.2	55.2	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.6	8.4	20.6	1.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.5	49.6	33.6	88.7	5.3	0.1
LnGrp LOS	D	D	C	F	A	A
Approach Vol, veh/h	405		942			996
Approach Delay, s/veh	46.2		66.5			2.7
Approach LOS	D		E			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	47.3	38.0			85.3	14.7
Change Period (Y+Rc), s	5.0	* 5			5.0	3.5
Max Green Setting (Gmax), s	36.5	* 33			73.0	18.5
Max Q Clear Time (g_c+l1), s	2.3	35.0			2.0	10.3
Green Ext Time (p_c), s	1.6	0.0			3.9	0.9

Intersection Summary

HCM 6th Ctrl Delay	35.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

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

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) Without Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	527	7	405	40	23	18	177	329	12	9	461	207
Future Volume (vph)	527	7	405	40	23	18	177	329	12	9	461	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

Intersection	
Intersection Delay, s/veh	109.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱		↱			↱	↱
Traffic Vol, veh/h	527	7	405	40	23	18	177	329	12	9	461	207
Future Vol, veh/h	527	7	405	40	23	18	177	329	12	9	461	207
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	543	7	418	41	24	19	182	339	12	9	475	213
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	122.1	15.5	144.6	77.4
HCM LOS	F	C	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	34%	99%	0%	63%	0%	2%	0%
Vol Thru, %	64%	1%	0%	37%	0%	98%	0%
Vol Right, %	2%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	518	534	405	63	18	470	207
LT Vol	177	527	0	40	0	9	0
Through Vol	329	7	0	23	0	461	0
RT Vol	12	0	405	0	18	0	207
Lane Flow Rate	534	551	418	65	19	485	213
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	1.217	1.308	0.86	0.183	0.047	1.102	0.444
Departure Headway (Hd)	8.581	9.184	7.936	11.022	9.939	8.729	7.99
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	427	402	459	327	362	422	455
Service Time	6.581	6.884	5.636	8.722	7.639	6.429	5.69
HCM Lane V/C Ratio	1.251	1.371	0.911	0.199	0.052	1.149	0.468
HCM Control Delay	144.6	182.2	42.9	16.2	13.1	104.1	16.9
HCM Lane LOS	F	F	E	C	B	F	C
HCM 95th-tile Q	20.7	23.3	8.8	0.7	0.1	15.9	2.2

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) Without Project PM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	527	7	405	40	23	18	177	329	12	9	461	207
Future Volume (vph)	527	7	405	40	23	18	177	329	12	9	461	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		50	0		0	0		400
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	60			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)	49%											
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	20.0	20.0		45.0	45.0		45.0	45.0	45.0
Total Split (%)	35.0%	35.0%	35.0%	20.0%	20.0%		45.0%	45.0%		45.0%	45.0%	45.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		C-Max	C-Max		Max	Max	Max

Intersection Summary

Area Type: Other

Cycle Length: 100

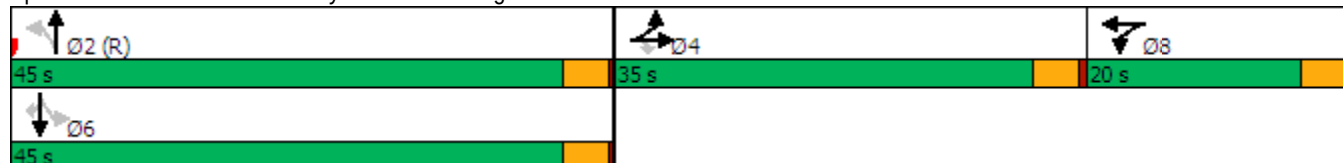
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.



HCM 6th Signalized Intersection Summary

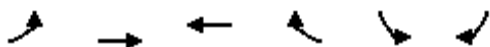
2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) Without Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	527	7	405	40	23	18	177	329	12	9	461	207
Future Volume (veh/h)	527	7	405	40	23	18	177	329	12	9	461	207
Initial Q (Qb), veh	0	1	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	548	0	418	41	24	19	182	339	12	9	475	213
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	1033	0	459	75	41	32	273	476	16	43	1040	891
Arrive On Green	0.29	0.00	0.29	0.04	0.04	0.04	0.55	0.55	0.55	1.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610	1810	982	778	406	860	29	11	1880	1610
Grp Volume(v), veh/h	548	0	418	41	0	43	533	0	0	484	0	213
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1760	1295	0	0	1891	0	1610
Q Serve(g_s), s	12.8	0.0	25.1	2.2	0.0	2.4	27.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.8	0.0	25.1	2.2	0.0	2.4	30.1	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.44	0.34		0.02	0.02		1.00
Lane Grp Cap(c), veh/h	1033	0	459	75	0	73	765	0	0	1083	0	891
V/C Ratio(X)	0.53	0.00	0.91	0.55	0.00	0.59	0.70	0.00	0.00	0.45	0.00	0.24
Avail Cap(c_a), veh/h	1122	0	499	290	0	282	765	0	0	1083	0	891
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.60	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	34.5	47.0	0.0	47.1	16.2	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	19.8	6.1	0.0	7.4	3.2	0.0	0.0	1.3	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	11.7	1.1	0.0	1.2	9.1	0.0	0.0	0.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	0.0	54.3	53.1	0.0	54.5	19.4	0.0	0.0	1.3	0.0	0.6
LnGrp LOS	C	A	D	D	A	D	B	A	A	A	A	A
Approach Vol, veh/h	966		84			533			697			
Approach Delay, s/veh	40.8		53.8			19.4			1.1			
Approach LOS	D		D			B			A			
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	59.3		32.5		59.3		8.1					
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0					
Max Green Setting (Gmax), s	41.0		31.0		41.0		16.0					
Max Q Clear Time (g_c+I1), s	32.1		27.1		2.0		4.4					
Green Ext Time (p_c), s	2.8		1.5		4.3		0.2					
Intersection Summary												
HCM 6th Ctrl Delay	24.1											
HCM 6th LOS	C											
Notes												

Lanes, Volumes, Timings
3: San Bernardino Rd. & Azusa Cyn. Rd.

IY (2022) Without Project PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	131	357	362	379	786	164
Future Volume (vph)	131	357	362	379	786	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	54.0	54.0	54.0		66.0	66.0
Total Split (%)	45.0%	45.0%	45.0%		55.0%	55.0%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

Area Type: Other

Cycle Length: 120

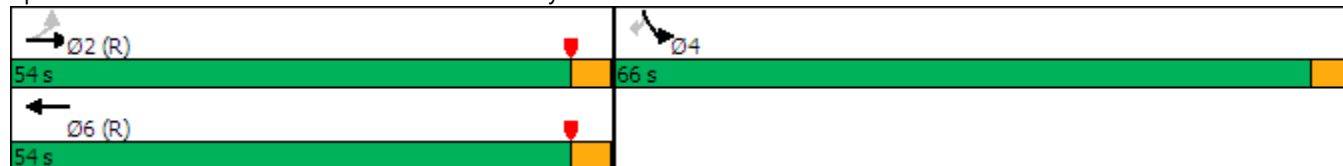
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 65

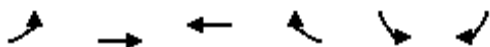
Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary 3: San Bernardino Rd. & Azusa Cyn. Rd.

IY (2022) Without Project PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	131	357	362	379	786	164
Future Volume (veh/h)	131	357	362	379	786	164
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	138	376	381	399	827	173
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	218	1504	752	671	935	832
Arrive On Green	0.42	0.42	0.42	0.42	0.52	0.52
Sat Flow, veh/h	703	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	138	376	381	399	827	173
Grp Sat Flow(s),veh/h/ln	703	1805	1805	1610	1810	1610
Q Serve(g_s), s	22.7	8.1	18.7	23.1	48.8	7.0
Cycle Q Clear(g_c), s	45.8	8.1	18.7	23.1	48.8	7.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	218	1504	752	671	935	832
V/C Ratio(X)	0.63	0.25	0.51	0.59	0.88	0.21
Avail Cap(c_a), veh/h	218	1504	752	671	935	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	22.8	25.9	27.1	25.8	15.7
Incr Delay (d2), s/veh	13.2	0.4	2.4	3.9	12.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	3.5	8.3	9.3	23.2	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	58.1	23.2	28.3	31.0	37.8	16.3
LnGrp LOS	E	C	C	C	D	B
Approach Vol, veh/h		514	780		1000	
Approach Delay, s/veh		32.6	29.7		34.1	
Approach LOS		C	C		C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		54.0		66.0		54.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		50.0		62.0		50.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			32.2			
HCM 6th LOS			C			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) Without Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	2510	362	234	1564	36	249	14	314	33	11	47
Future Volume (vph)	40	2510	362	234	1564	36	249	14	314	33	11	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							47%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	8.6	65.0		17.0	73.4	73.4	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	7.2%	54.2%		14.2%	61.2%	61.2%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

			
Ø1	Ø2 (R)	Ø4	Ø8
17 s	65 s	15 s	23 s
			
Ø5	Ø6 (R)		
8.6 s	73.4 s		

HCM 6th Signalized Intersection Summary

4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) Without Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 						 	
Traffic Volume (veh/h)	40	2510	362	234	1564	36	249	14	314	33	11	47
Future Volume (veh/h)	40	2510	362	234	1564	36	249	14	314	33	11	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	42	2642	381	246	1646	38	273	0	331	35	12	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	54	2453	336	204	2214	938	543	0	242	151	27	111
Arrive On Green	0.03	0.50	0.50	0.11	0.58	0.58	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4906	673	1810	3800	1610	3619	0	1610	1810	327	1333
Grp Volume(v), veh/h	42	2015	1008	246	1646	38	273	0	331	35	0	61
Grp Sat Flow(s),veh/h/ln	1810	1900	1779	1810	1900	1610	1810	0	1610	1810	0	1660
Q Serve(g_s), s	2.8	60.0	60.0	13.5	38.3	1.2	8.3	0.0	18.0	2.2	0.0	4.2
Cycle Q Clear(g_c), s	2.8	60.0	60.0	13.5	38.3	1.2	8.3	0.0	18.0	2.2	0.0	4.2
Prop In Lane	1.00		0.38	1.00		1.00	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	54	1900	889	204	2214	938	543	0	242	151	0	138
V/C Ratio(X)	0.78	1.06	1.13	1.21	0.74	0.04	0.50	0.00	1.37	0.23	0.00	0.44
Avail Cap(c_a), veh/h	77	1900	889	204	2214	938	543	0	242	151	0	138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.8	30.0	30.0	53.3	18.4	10.7	46.9	0.0	51.0	51.4	0.0	52.3
Incr Delay (d2), s/veh	26.3	38.9	73.8	130.6	2.3	0.1	3.2	0.0	190.4	3.6	0.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	35.1	41.6	13.4	15.8	0.4	4.0	0.0	20.0	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.1	68.9	103.8	183.9	20.8	10.8	50.1	0.0	241.4	55.0	0.0	62.2
LnGrp LOS	F	F	F	F	C	B	D	A	F	D	A	E
Approach Vol, veh/h	3065			1930			604			96		
Approach Delay, s/veh	80.6			41.3			154.9			59.6		
Approach LOS	F			D			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	65.0		15.0	7.1	74.9		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	13.5	60.0		10.0	5.1	68.4		18.0				
Max Q Clear Time (g_c+I1), s	15.5	62.0		6.2	4.8	40.3		20.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	14.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	74.8											
HCM 6th LOS	E											
Notes												

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) Without Project PM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	2510	362	234	1564	36	249	14	314	33	11	47
Future Volume (vph)	40	2510	362	234	1564	36	249	14	314	33	11	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							47%					
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0		10.0	10.0	4.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0		23.0	23.0	7.5	15.0	15.0	
Total Split (s)	10.5	65.0		17.0	71.5		23.0	23.0	17.0	15.0	15.0	
Total Split (%)	8.8%	54.2%		14.2%	59.6%		19.2%	19.2%	14.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5	3.0	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag				Lag			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	C-Max		None	C-Max		Max	Max	None	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

														
65 s						17 s			15 s			23 s		
														
10.5 s	71.5 s													

HCM 6th Signalized Intersection Summary

4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) Without Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 				
Traffic Volume (veh/h)	40	2510	362	234	1564	36	249	14	314	33	11	47
Future Volume (veh/h)	40	2510	362	234	1564	36	249	14	314	33	11	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	42	2642	381	246	1646	38	273	0	331	35	12	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	54	2453	336	505	4228	98	543	0	691	151	27	111
Arrive On Green	0.06	1.00	1.00	0.56	1.00	1.00	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4906	673	1810	5549	128	3619	0	1610	1810	327	1333
Grp Volume(v), veh/h	42	2015	1008	246	1127	557	273	0	331	35	0	61
Grp Sat Flow(s),veh/h/ln	1810	1900	1779	1810	1900	1877	1810	0	1610	1810	0	1660
Q Serve(g_s), s	2.7	60.0	59.2	9.9	0.0	0.0	8.3	0.0	0.0	2.2	0.0	4.2
Cycle Q Clear(g_c), s	2.7	60.0	59.2	9.9	0.0	0.0	8.3	0.0	0.0	2.2	0.0	4.2
Prop In Lane	1.00		0.38	1.00		0.07	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	54	1900	889	505	2896	1430	543	0	691	151	0	138
V/C Ratio(X)	0.78	1.06	1.13	0.49	0.39	0.39	0.50	0.00	0.48	0.23	0.00	0.44
Avail Cap(c_a), veh/h	106	1900	889	505	2896	1430	543	0	691	151	0	138
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.0	0.0	0.0	21.3	0.0	0.0	46.9	0.0	24.6	51.4	0.0	52.3
Incr Delay (d2), s/veh	20.8	38.9	73.8	0.7	0.4	0.8	3.2	0.0	2.3	3.6	0.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	10.3	18.2	3.5	0.2	0.3	4.0	0.0	7.2	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.8	38.9	73.8	22.0	0.4	0.8	50.1	0.0	26.9	55.0	0.0	62.2
LnGrp LOS	E	F	F	C	A	A	D	A	C	D	A	E
Approach Vol, veh/h	3065			1930			604			96		
Approach Delay, s/veh	50.9			3.3			37.4			59.6		
Approach LOS	D			A			D			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.5	65.0		15.0	7.1	96.4		23.0				
Change Period (Y+Rc), s	5.0	* 5		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	13.5	* 60		10.0	7.0	66.5		18.0				
Max Q Clear Time (g_c+I1), s	11.9	62.0		6.2	4.7	2.0		10.3				
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	17.0		1.4				
Intersection Summary												
HCM 6th Ctrl Delay	33.5											
HCM 6th LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

IY (2022) Without Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	1	361	3	1	1	246	323	1	1	583	85
Future Volume (vph)	112	1	361	3	1	1	246	323	1	1	583	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	32.0	32.0	32.0	32.0	32.0	32.0	32.0	60.0		8.0	36.0	36.0
Total Split (%)	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	60.0%		8.0%	36.0%	36.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

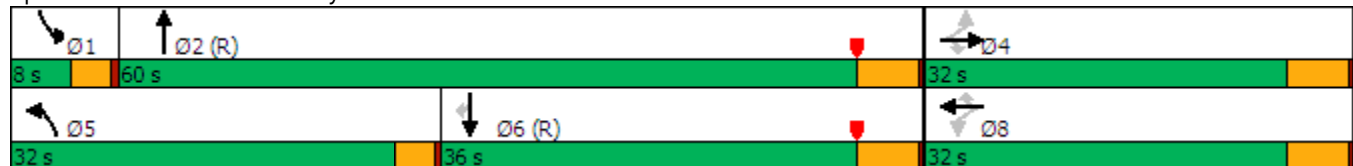
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary
5: Azusa Cyn. Rd. & Olive St.

IY (2022) Without Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	1	361	3	1	1	246	323	1	1	583	85
Future Volume (veh/h)	112	1	361	3	1	1	246	323	1	1	583	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	119	1	384	3	1	1	262	344	1	1	620	90
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	440	487	413	332	487	413	295	2243	7	2	1608	717
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.33	1.00	1.00	0.00	0.45	0.45
Sat Flow, veh/h	1437	1900	1610	1014	1900	1610	1810	3692	11	1810	3610	1610
Grp Volume(v), veh/h	119	1	384	3	1	1	262	168	177	1	620	90
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	1014	1900	1610	1810	1805	1898	1810	1805	1610
Q Serve(g_s), s	6.7	0.0	23.3	0.2	0.0	0.0	13.7	0.0	0.0	0.1	11.5	3.3
Cycle Q Clear(g_c), s	6.8	0.0	23.3	0.3	0.0	0.0	13.7	0.0	0.0	0.1	11.5	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	440	487	413	332	487	413	295	1097	1153	2	1608	717
V/C Ratio(X)	0.27	0.00	0.93	0.01	0.00	0.00	0.89	0.15	0.15	0.50	0.39	0.13
Avail Cap(c_a), veh/h	460	513	435	345	513	435	516	1097	1153	81	1608	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.78	0.78	0.13	0.13	0.13
Uniform Delay (d), s/veh	30.2	27.7	36.3	27.8	27.7	27.7	32.8	0.0	0.0	49.9	18.6	16.3
Incr Delay (d2), s/veh	0.3	0.0	26.0	0.0	0.0	0.0	7.4	0.2	0.2	23.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	11.9	0.1	0.0	0.0	5.5	0.1	0.1	0.0	4.7	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	27.7	62.3	27.8	27.7	27.7	40.2	0.2	0.2	73.4	18.7	16.3
LnGrp LOS	C	C	E	C	C	C	D	A	A	E	B	B
Approach Vol, veh/h	504			5			607			711		
Approach Delay, s/veh	54.7			27.7			17.5			18.4		
Approach LOS	D			C			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.6	65.7		30.6	19.8	49.5		30.6				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	4.5	55.0		27.0	28.5	31.0		27.0				
Max Q Clear Time (g_c+I1), s	2.1	2.0		25.3	15.7	13.5		2.3				
Green Ext Time (p_c), s	0.0	2.2		0.4	0.6	4.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	28.2											
HCM 6th LOS	C											

Lanes, Volumes, Timings
6: Azusa Cyn. Rd. & Dwy. 1

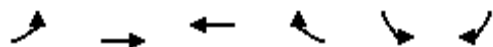
IY (2022) Without Project PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	5	875	0	2	677
Future Volume (vph)	0	5	875	0	2	677
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	208		299			985
Travel Time (s)	4.7		6.8			22.4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	875	0	2	677
Future Vol, veh/h	0	5	875	0	2	677
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	5	921	0	2	713
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	461	0	0	921	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	553	-	-	750	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	553	-	-	750	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.6	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	553	750	-	
HCM Lane V/C Ratio	-	-	0.01	0.003	-	
HCM Control Delay (s)	-	-	11.6	9.8	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Lanes, Volumes, Timings
7: Los Angeles St. & Dwy. 2

IY (2022) Without Project PM Peak Hour

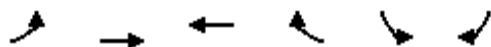


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	28	77	0	0	5
Future Volume (vph)	2	28	77	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		160	175		164	
Travel Time (s)		3.6	4.0		3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	28	77	0	0	5
Future Vol, veh/h	2	28	77	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	29	81	0	0	5
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	81	0	-	0	114	81
Stage 1	-	-	-	-	81	-
Stage 2	-	-	-	-	33	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1529	-	-	-	887	985
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	995	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1529	-	-	-	886	985
Mov Cap-2 Maneuver	-	-	-	-	886	-
Stage 1	-	-	-	-	946	-
Stage 2	-	-	-	-	995	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1529	-	-	-	985	
HCM Lane V/C Ratio	0.001	-	-	-	0.005	
HCM Control Delay (s)	7.4	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
8: Los Angeles St. & Dwy. 3

IY (2022) Without Project PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	27	75	0	0	2
Future Volume (vph)	1	27	75	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		175	247		166	
Travel Time (s)		4.0	5.6		3.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	27	75	0	0	2
Future Vol, veh/h	1	27	75	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	28	79	0	0	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	79	0	-	0	109	79
Stage 1	-	-	-	-	79	-
Stage 2	-	-	-	-	30	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1532	-	-	-	893	987
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	998	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1532	-	-	-	892	987
Mov Cap-2 Maneuver	-	-	-	-	892	-
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	998	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1532	-	-	-	987	
HCM Lane V/C Ratio	0.001	-	-	-	0.002	
HCM Control Delay (s)	7.4	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM Signalized Intersection Capacity Analysis

1: Azusa Cyn. Rd. & Cypress St.

IY (2022) Without Project AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	242	397	359	171	151	238
Future Volume (vph)	242	397	359	171	151	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.93	0.85	0.95		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3347	1470	3435		1805	3610
Flt Permitted	0.97	1.00	1.00		0.40	1.00
Satd. Flow (perm)	3347	1470	3435		765	3610
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	269	441	399	190	168	264
RTOR Reduction (vph)	183	193	41	0	0	0
Lane Group Flow (vph)	302	32	548	0	168	264
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	14.3	14.3	57.2		78.7	77.2
Effective Green, g (s)	14.3	14.3	57.2		78.7	77.2
Actuated g/C Ratio	0.14	0.14	0.57		0.79	0.77
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	478	210	1964		773	2786
v/s Ratio Prot	c0.09		c0.16		c0.04	0.07
v/s Ratio Perm		0.02			0.14	
v/c Ratio	0.63	0.15	0.28		0.22	0.09
Uniform Delay, d1	40.4	37.5	10.9		4.0	2.8
Progression Factor	1.00	1.00	1.00		2.00	1.76
Incremental Delay, d2	2.7	0.3	0.4		0.1	0.1
Delay (s)	43.1	37.9	11.3		8.2	5.0
Level of Service	D	D	B		A	A
Approach Delay (s)	41.4		11.3			6.2
Approach LOS	D		B			A
Intersection Summary						
HCM 2000 Control Delay			22.4		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.33			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			45.7%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) Without Project AM Peak Hour
WITH IMPROVEMENTS

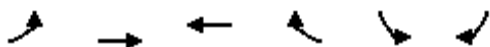
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	12	190	7	6	19	231	294	11	15	161	283
Future Volume (vph)	211	12	190	7	6	19	231	294	11	15	161	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.88			1.00			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1715	1805	1900	1805	1681			1900			1900	1900
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.77			0.95	1.00
Satd. Flow (perm)	1715	1805	1900	1805	1681			1472			1803	1900
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	224	13	202	7	6	20	246	313	12	16	171	301
RTOR Reduction (vph)	0	0	177	0	19	0	0	1	0	0	0	85
Lane Group Flow (vph)	119	118	25	7	7	0	0	570	0	0	187	216
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)	12.2	12.2	12.2	4.1	4.1			71.7			71.7	71.7
Effective Green, g (s)	12.2	12.2	12.2	4.1	4.1			71.7			71.7	71.7
Actuated g/C Ratio	0.12	0.12	0.12	0.04	0.04			0.72			0.72	0.72
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	209	220	231	74	68			1055			1292	1362
v/s Ratio Prot	c0.07	0.07		0.00	c0.00							
v/s Ratio Perm			0.01					c0.39			0.10	0.11
v/c Ratio	0.57	0.54	0.11	0.09	0.10			0.54			0.14	0.16
Uniform Delay, d1	41.4	41.2	39.1	46.2	46.2			6.5			4.5	4.5
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			0.46	0.61
Incremental Delay, d2	3.5	2.5	0.2	0.6	0.6			2.0			0.2	0.2
Delay (s)	45.0	43.7	39.3	46.7	46.8			8.5			2.3	3.0
Level of Service	D	D	D	D	D			A			A	A
Approach Delay (s)		42.0			46.8			8.5			2.7	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			17.1			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			61.1%			ICU Level of Service			B			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: San Bernardino Rd. & Azusa Cyn. Rd.

IY (2022) Without Project AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	152	358	460	270	80
Future Volume (vph)	90	152	358	460	270	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3305		1805	1615
Flt Permitted	0.24	1.00	1.00		0.95	1.00
Satd. Flow (perm)	464	3610	3305		1805	1615
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	101	171	402	517	303	90
RTOR Reduction (vph)	0	0	194	0	0	27
Lane Group Flow (vph)	101	171	725	0	303	63
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	69.0	69.0	69.0		43.0	43.0
Effective Green, g (s)	69.0	69.0	69.0		43.0	43.0
Actuated g/C Ratio	0.58	0.58	0.58		0.36	0.36
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	266	2075	1900		646	578
v/s Ratio Prot		0.05	c0.22		c0.17	
v/s Ratio Perm	0.22					0.04
v/c Ratio	0.38	0.08	0.38		0.47	0.11
Uniform Delay, d1	13.9	11.4	13.9		29.7	25.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.1	0.1	0.6		2.4	0.4
Delay (s)	17.9	11.5	14.5		32.1	26.1
Level of Service	B	B	B		C	C
Approach Delay (s)		13.9	14.5		30.7	
Approach LOS		B	B		C	

Intersection Summary

HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) Without Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 			 	
Traffic Volume (vph)	26	1213	301	191	2276	43	457	17	154	20	12	41
Future Volume (vph)	26	1213	301	191	2276	43	457	17	154	20	12	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	29	1333	331	210	2501	47	502	19	169	22	13	45
RTOR Reduction (vph)	0	35	0	0	0	19	0	0	144	0	41	0
Lane Group Flow (vph)	29	1629	0	210	2501	28	261	260	25	22	17	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	2.4	55.3		18.2	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	55.3		18.2	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.46		0.15	0.59	0.59	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2626		288	2251	1125	285	285	285	158	158	
v/s Ratio Prot	0.02	0.29		c0.11	c0.66		c0.14	0.14		c0.01	0.01	
v/s Ratio Perm						0.01			0.01			
v/c Ratio	0.76	0.62		0.73	1.11	0.02	0.92	0.91	0.09	0.14	0.11	
Uniform Delay, d1	58.5	24.4		48.5	24.5	10.1	50.3	50.2	43.9	51.0	50.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	60.7	1.1		8.9	57.0	0.0	35.5	34.9	0.6	1.8	1.3	
Delay (s)	119.2	25.5		57.5	81.4	10.2	85.7	85.1	44.6	52.8	52.2	
Level of Service	F	C		E	F	B	F	F	D	D	D	
Approach Delay (s)		27.1			78.4			75.4			52.4	
Approach LOS		C			E			E			D	
Intersection Summary												
HCM 2000 Control Delay			61.0			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			97.7%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) Without Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	26	1213	301	191	2276	43	457	17	154	20	12	41
Future Volume (vph)	26	1213	301	191	2276	43	457	17	154	20	12	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00		*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	29	1333	331	210	2501	47	502	19	169	22	13	45
RTOR Reduction (vph)	0	35	0	0	2	0	0	0	144	0	41	0
Lane Group Flow (vph)	29	1629	0	210	2546	0	261	260	25	22	17	0
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Actuated Green, G (s)	2.4	55.3		18.2	71.1		18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	55.3		18.2	71.1		18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.46		0.15	0.59		0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2626		288	3377		285	285	285	158	158	
v/s Ratio Prot	0.02	0.29		c0.11	c0.45		c0.14	0.14		c0.01	0.01	
v/s Ratio Perm									0.01			
v/c Ratio	0.76	0.62		0.73	0.75		0.92	0.91	0.09	0.14	0.11	
Uniform Delay, d1	58.5	24.4		48.5	18.0		50.3	50.2	43.9	51.0	50.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	60.7	1.1		8.9	1.6		35.5	34.9	0.6	1.8	1.3	
Delay (s)	119.2	25.5		57.5	19.6		85.7	85.1	44.6	52.8	52.2	
Level of Service	F	C		E	B		F	F	D	D	D	
Approach Delay (s)		27.1			22.5			75.4			52.4	
Approach LOS		C			C			E			D	
Intersection Summary												
HCM 2000 Control Delay			31.5			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			79.7%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Azusa Cyn. Rd. & Olive St.

IY (2022) Without Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	2	131	1	1	1	132	610	12	3	258	39
Future Volume (vph)	86	2	131	1	1	1	132	610	12	3	258	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3600		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1437	1900	1615	1805	3600		1805	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	2	142	1	1	1	143	663	13	3	280	42
RTOR Reduction (vph)	0	0	124	0	0	1	0	1	0	0	0	17
Lane Group Flow (vph)	93	2	18	1	1	0	143	675	0	3	280	25
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	12.7	12.7	12.7	12.7	12.7	12.7	13.3	72.5		1.3	60.5	60.5
Effective Green, g (s)	12.7	12.7	12.7	12.7	12.7	12.7	13.3	72.5		1.3	60.5	60.5
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.72		0.01	0.60	0.60
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	182	241	205	182	241	205	240	2610		23	2184	977
v/s Ratio Prot		0.00			0.00		c0.08	c0.19		0.00	0.08	
v/s Ratio Perm	c0.06		0.01	0.00		0.00						0.02
v/c Ratio	0.51	0.01	0.09	0.01	0.00	0.00	0.60	0.26		0.13	0.13	0.03
Uniform Delay, d1	40.8	38.1	38.5	38.1	38.1	38.1	40.8	4.7		48.8	8.5	7.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.96		1.00	1.00	1.00
Incremental Delay, d2	2.4	0.0	0.2	0.0	0.0	0.0	3.8	0.2		2.6	0.1	0.0
Delay (s)	43.2	38.2	38.7	38.1	38.1	38.1	43.3	4.7		51.4	8.6	8.0
Level of Service	D	D	D	D	D	D	D	A		D	A	A
Approach Delay (s)		40.5			38.1			11.4			8.9	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			15.9				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			46.4%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: Azusa Cyn. Rd. & Cypress St.

IY (2022) Without Project PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	181	208	361	534	463	484
Future Volume (vph)	181	208	361	534	463	484
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.95	0.85	0.91		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3394	1470	3287		1805	3610
Flt Permitted	0.97	1.00	1.00		0.18	1.00
Satd. Flow (perm)	3394	1470	3287		343	3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	191	219	380	562	487	509
RTOR Reduction (vph)	63	113	241	0	0	0
Lane Group Flow (vph)	218	16	701	0	487	509
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	12.1	12.1	39.4		80.9	79.4
Effective Green, g (s)	12.1	12.1	39.4		80.9	79.4
Actuated g/C Ratio	0.12	0.12	0.39		0.81	0.79
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	410	177	1295		811	2866
v/s Ratio Prot	c0.06		0.21		c0.22	0.14
v/s Ratio Perm		0.01			c0.27	
v/c Ratio	0.53	0.09	0.54		0.60	0.18
Uniform Delay, d1	41.3	39.0	23.3		13.8	2.5
Progression Factor	1.00	1.00	1.00		0.86	1.40
Incremental Delay, d2	1.3	0.2	1.6		1.2	0.1
Delay (s)	42.6	39.3	25.0		13.0	3.6
Level of Service	D	D	C		B	A
Approach Delay (s)	41.6		25.0			8.2
Approach LOS	D		C			A
Intersection Summary						
HCM 2000 Control Delay			20.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.61			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			71.0%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: Azusa Cyn. Rd. & Los Angeles St.

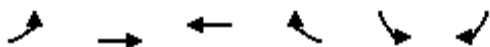
IY (2022) Without Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	527	7	405	40	23	18	177	329	12	9	461	207
Future Volume (vph)	527	7	405	40	23	18	177	329	12	9	461	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.93			1.00			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1715	1805	1900	1805	1774			1900			1900	1900
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.58			0.99	1.00
Satd. Flow (perm)	1715	1805	1900	1805	1774			1107			1882	1900
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	543	7	418	41	24	19	182	339	12	9	475	213
RTOR Reduction (vph)	0	0	301	0	18	0	0	0	0	0	0	90
Lane Group Flow (vph)	277	273	117	41	25	0	0	533	0	0	484	123
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)	23.5	23.5	23.5	6.7	6.7			57.8			57.8	57.8
Effective Green, g (s)	23.5	23.5	23.5	6.7	6.7			57.8			57.8	57.8
Actuated g/C Ratio	0.24	0.24	0.24	0.07	0.07			0.58			0.58	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	403	424	446	120	118			639			1087	1098
v/s Ratio Prot	c0.16	0.15		c0.02	0.01							
v/s Ratio Perm			0.06					c0.48			0.26	0.06
v/c Ratio	0.69	0.64	0.26	0.34	0.21			0.83			0.45	0.11
Uniform Delay, d1	34.9	34.5	31.2	44.5	44.2			17.2			12.0	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	2.19
Incremental Delay, d2	4.8	3.3	0.3	1.7	0.9			12.1			1.3	0.2
Delay (s)	39.7	37.8	31.5	46.2	45.1			29.3			13.3	21.1
Level of Service	D	D	C	D	D			C			B	C
Approach Delay (s)		35.6			45.6			29.3			15.7	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			28.4			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			84.0%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: San Bernardino Rd. & Azusa Cyn. Rd.

IY (2022) Without Project PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	131	357	362	379	786	164
Future Volume (vph)	131	357	362	379	786	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3333		1805	1615
Flt Permitted	0.24	1.00	1.00		0.95	1.00
Satd. Flow (perm)	451	3610	3333		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	138	376	381	399	827	173
RTOR Reduction (vph)	0	0	158	0	0	19
Lane Group Flow (vph)	138	376	623	0	827	154
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	50.0	50.0	50.0		62.0	62.0
Effective Green, g (s)	50.0	50.0	50.0		62.0	62.0
Actuated g/C Ratio	0.42	0.42	0.42		0.52	0.52
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	187	1504	1388		932	834
v/s Ratio Prot		0.10	0.19		c0.46	
v/s Ratio Perm	c0.31					0.10
v/c Ratio	0.74	0.25	0.45		0.89	0.18
Uniform Delay, d1	29.5	22.8	25.1		25.9	15.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	22.7	0.4	1.1		12.3	0.5
Delay (s)	52.2	23.2	26.2		38.1	16.0
Level of Service	D	C	C		D	B
Approach Delay (s)		31.0	26.2		34.3	
Approach LOS		C	C		C	
Intersection Summary						
HCM 2000 Control Delay			30.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.82			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			83.0%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) Without Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 			 	
Traffic Volume (vph)	40	2510	362	234	1564	36	249	14	314	33	11	47
Future Volume (vph)	40	2510	362	234	1564	36	249	14	314	33	11	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	2642	381	246	1646	38	262	15	331	35	12	49
RTOR Reduction (vph)	0	18	0	0	0	16	0	0	184	0	45	0
Lane Group Flow (vph)	42	3005	0	246	1646	22	139	138	147	35	16	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	4.1	60.0		13.5	69.4	69.4	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	4.1	60.0		13.5	69.4	69.4	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.03	0.50		0.11	0.58	0.58	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	64	2850		213	2197	1098	285	285	285	158	158	
v/s Ratio Prot	0.02	c0.53		c0.13	0.43		0.07	0.07		c0.02	0.01	
v/s Ratio Perm						0.01			c0.08			
v/c Ratio	0.66	1.05		1.15	0.75	0.02	0.49	0.48	0.52	0.22	0.10	
Uniform Delay, d1	57.3	30.0		53.2	18.8	10.8	46.8	46.7	47.0	51.4	50.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	21.7	33.4		109.7	2.4	0.0	5.9	5.8	6.6	3.2	1.3	
Delay (s)	78.9	63.4		163.0	21.2	10.8	52.6	52.5	53.6	54.6	52.1	
Level of Service	E	E		F	C	B	D	D	D	D	D	
Approach Delay (s)		63.6			39.1			53.1			53.0	
Approach LOS		E			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			54.0			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			96.8%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) Without Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 				
Traffic Volume (vph)	40	2510	362	234	1564	36	249	14	314	33	11	47
Future Volume (vph)	40	2510	362	234	1564	36	249	14	314	33	11	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00		*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	2642	381	246	1646	38	262	15	331	35	12	49
RTOR Reduction (vph)	0	18	0	0	2	0	0	0	70	0	45	0
Lane Group Flow (vph)	42	3005	0	246	1682	0	139	138	261	35	16	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Actuated Green, G (s)	5.6	59.3		14.2	67.9		18.0	18.0	32.2	10.0	10.0	
Effective Green, g (s)	5.6	59.3		14.2	67.9		18.0	18.0	32.2	10.0	10.0	
Actuated g/C Ratio	0.05	0.49		0.12	0.57		0.15	0.15	0.27	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	88	2816		224	3225		285	285	509	158	158	
v/s Ratio Prot	0.02	c0.53		c0.13	0.30		0.07	0.07	c0.06	c0.02	0.01	
v/s Ratio Perm									0.08			
v/c Ratio	0.48	1.07		1.10	0.52		0.49	0.48	0.51	0.22	0.10	
Uniform Delay, d1	55.8	30.4		52.9	16.0		46.8	46.7	37.2	51.4	50.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0	38.2		88.9	0.6		5.9	5.8	0.9	3.2	1.3	
Delay (s)	59.8	68.6		141.8	16.7		52.6	52.5	38.1	54.6	52.1	
Level of Service	E	E		F	B		D	D	D	D	D	
Approach Delay (s)		68.4			32.6			44.7			53.0	
Approach LOS		E			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			53.5			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			96.0%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Azusa Cyn. Rd. & Olive St.

IY (2022) Without Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	1	361	3	1	1	246	323	1	1	583	85
Future Volume (vph)	112	1	361	3	1	1	246	323	1	1	583	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3608		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1439	1900	1615	1805	3608		1805	3610	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	119	1	384	3	1	1	262	344	1	1	620	90
RTOR Reduction (vph)	0	0	328	0	0	1	0	0	0	0	0	43
Lane Group Flow (vph)	119	1	56	3	1	0	262	345	0	1	620	47
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	14.5	14.5	14.5	14.5	14.5	14.5	19.7	70.8		1.2	52.3	52.3
Effective Green, g (s)	14.5	14.5	14.5	14.5	14.5	14.5	19.7	70.8		1.2	52.3	52.3
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14	0.14	0.20	0.71		0.01	0.52	0.52
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	208	275	234	208	275	234	355	2554		21	1888	844
v/s Ratio Prot		0.00			0.00		c0.15	0.10		0.00	c0.17	
v/s Ratio Perm	c0.08		0.03	0.00		0.00						0.03
v/c Ratio	0.57	0.00	0.24	0.01	0.00	0.00	0.74	0.14		0.05	0.33	0.06
Uniform Delay, d1	39.9	36.6	37.9	36.6	36.6	36.6	37.7	4.7		48.8	13.7	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.21	0.45		1.00	1.00	1.00
Incremental Delay, d2	3.8	0.0	0.5	0.0	0.0	0.0	6.8	0.1		0.9	0.5	0.1
Delay (s)	43.6	36.6	38.4	36.7	36.6	36.6	52.6	2.2		49.8	14.2	11.8
Level of Service	D	D	D	D	D	D	D	A		D	B	B
Approach Delay (s)		39.6			36.6			24.0			14.0	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			24.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			59.3%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

APPENDIX 6.2:

INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS

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Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

IY (2022) With Project AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	243	397	362	171	151	249
Future Volume (vph)	243	397	362	171	151	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		48%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	35.0	35.0	43.0		22.0	65.0
Total Split (%)	35.0%	35.0%	43.0%		22.0%	65.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

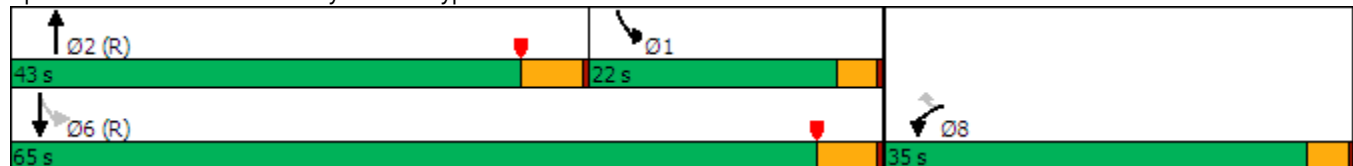
Actuated Cycle Length: 100

Offset: 1 (1%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary

1: Azusa Cyn. Rd. & Cypress St.

IY (2022) With Project AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	243	397	362	171	151	249
Future Volume (veh/h)	243	397	362	171	151	249
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	237	476	402	190	168	277
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	336	597	908	424	809	2633
Arrive On Green	0.19	0.19	0.38	0.38	0.60	1.00
Sat Flow, veh/h	1810	3220	2484	1115	1810	3705
Grp Volume(v), veh/h	237	476	303	289	168	277
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1699	1810	1805
Q Serve(g_s), s	12.3	14.1	12.5	12.7	0.0	0.0
Cycle Q Clear(g_c), s	12.3	14.1	12.5	12.7	0.0	0.0
Prop In Lane	1.00	1.00		0.66	1.00	
Lane Grp Cap(c), veh/h	336	597	686	646	809	2633
V/C Ratio(X)	0.71	0.80	0.44	0.45	0.21	0.11
Avail Cap(c_a), veh/h	570	1014	686	646	809	2633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.98	0.98
Uniform Delay (d), s/veh	38.2	38.9	23.1	23.2	7.1	0.0
Incr Delay (d2), s/veh	2.7	2.5	2.1	2.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	5.7	5.6	5.4	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.9	41.4	25.1	25.4	7.2	0.1
LnGrp LOS	D	D	C	C	A	A
Approach Vol, veh/h	713		592			445
Approach Delay, s/veh	41.2		25.3			2.8
Approach LOS	D		C			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	34.9	43.0			77.9	22.1
Change Period (Y+Rc), s	5.0	* 5			5.0	3.5
Max Green Setting (Gmax), s	18.5	* 38			60.0	31.5
Max Q Clear Time (g_c+I1), s	2.0	14.7			2.0	16.1
Green Ext Time (p_c), s	0.4	3.8			2.0	2.4
Intersection Summary						
HCM 6th Ctrl Delay			26.1			
HCM 6th LOS			C			
Notes						
User approved volume balancing among the lanes for turning movement.						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) With Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	17	190	8	8	20	231	294	15	17	161	283
Future Volume (vph)	211	17	190	8	8	20	231	294	15	17	161	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th AWSC
2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) With Project AM Peak Hour

Intersection	
Intersection Delay, s/veh	45.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱		↱↲			↱	↱
Traffic Vol, veh/h	211	17	190	8	8	20	231	294	15	17	161	283
Future Vol, veh/h	211	17	190	8	8	20	231	294	15	17	161	283
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	224	18	202	9	9	21	246	313	16	18	171	301
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	17	11.7	94.9	15.6
HCM LOS	C	B	F	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	43%	93%	0%	50%	0%	10%	0%
Vol Thru, %	54%	7%	0%	50%	0%	90%	0%
Vol Right, %	3%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	540	228	190	16	20	178	283
LT Vol	231	211	0	8	0	17	0
Through Vol	294	17	0	8	0	161	0
RT Vol	15	0	190	0	20	0	283
Lane Flow Rate	574	243	202	17	21	189	301
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	1.099	0.529	0.376	0.041	0.046	0.372	0.529
Departure Headway (Hd)	6.887	8.193	6.992	9.23	8.236	7.329	6.56
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	529	444	517	390	437	494	554
Service Time	4.941	5.893	4.692	6.93	5.936	5.029	4.26
HCM Lane V/C Ratio	1.085	0.547	0.391	0.044	0.048	0.383	0.543
HCM Control Delay	94.9	19.7	13.8	12.3	11.3	14.3	16.4
HCM Lane LOS	F	C	B	B	B	B	C
HCM 95th-tile Q	18.2	3	1.7	0.1	0.1	1.7	3.1

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) With Project AM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	17	190	8	8	20	231	294	15	17	161	283
Future Volume (vph)	211	17	190	8	8	20	231	294	15	17	161	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		50	0		0	0		400
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	60			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)	46%											
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0		60.0	60.0		60.0	60.0	60.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%		60.0%	60.0%		60.0%	60.0%	60.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	C-Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.

 Ø2 (R)	 Ø4	 Ø8
60 s	20 s	20 s
 Ø6 (R)		
60 s		

HCM 6th Signalized Intersection Summary

2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) With Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	17	190	8	8	20	231	294	15	17	161	283
Future Volume (veh/h)	211	17	190	8	8	20	231	294	15	17	161	283
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	237	0	202	9	9	21	246	313	16	18	171	301
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	527	0	234	48	13	31	431	520	26	128	1192	1140
Arrive On Green	0.15	0.00	0.15	0.03	0.03	0.03	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	3619	0	1610	1810	506	1181	537	734	36	125	1684	1610
Grp Volume(v), veh/h	237	0	202	9	0	30	575	0	0	189	0	301
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1687	1307	0	0	1809	0	1610
Q Serve(g_s), s	6.0	0.0	12.3	0.5	0.0	1.8	20.2	0.0	0.0	0.0	0.0	6.7
Cycle Q Clear(g_c), s	6.0	0.0	12.3	0.5	0.0	1.8	23.4	0.0	0.0	3.2	0.0	6.7
Prop In Lane	1.00		1.00	1.00		0.70	0.43		0.03	0.10		1.00
Lane Grp Cap(c), veh/h	527	0	234	48	0	45	977	0	0	1320	0	1140
V/C Ratio(X)	0.45	0.00	0.86	0.19	0.00	0.67	0.59	0.00	0.00	0.14	0.00	0.26
Avail Cap(c_a), veh/h	579	0	258	290	0	270	977	0	0	1320	0	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.93	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.1	0.0	41.7	47.6	0.0	48.2	7.7	0.0	0.0	4.7	0.0	5.2
Incr Delay (d2), s/veh	0.6	0.0	23.1	1.9	0.0	16.1	2.4	0.0	0.0	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	6.2	0.2	0.0	0.9	6.2	0.0	0.0	1.2	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.7	0.0	64.8	49.5	0.0	64.3	10.2	0.0	0.0	5.0	0.0	5.8
LnGrp LOS	D	A	E	D	A	E	B	A	A	A	A	A
Approach Vol, veh/h	439			39			575			490		
Approach Delay, s/veh	51.2			60.9			10.2			5.5		
Approach LOS	D			E			B			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	74.8			18.6			74.8			6.6		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	56.0			16.0			56.0			16.0		
Max Q Clear Time (g_c+I1), s	25.4			14.3			8.7			3.8		
Green Ext Time (p_c), s	5.3			0.3			2.3			0.1		

Intersection Summary

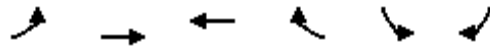
HCM 6th Ctrl Delay 21.6
HCM 6th LOS C

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
3: San Bernardino Rd. & Azusa Cyn. Rd.

IY (2022) With Project AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	91	152	358	463	271	80
Future Volume (vph)	91	152	358	463	271	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	73.0	73.0	73.0		47.0	47.0
Total Split (%)	60.8%	60.8%	60.8%		39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

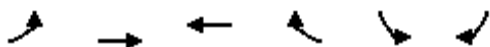
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary 3: San Bernardino Rd. & Azusa Cyn. Rd.

IY (2022) With Project AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	91	152	358	463	271	80
Future Volume (veh/h)	91	152	358	463	271	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	102	171	402	520	304	90
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	289	2076	1038	926	648	577
Arrive On Green	0.57	0.57	0.57	0.57	0.36	0.36
Sat Flow, veh/h	616	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	102	171	402	520	304	90
Grp Sat Flow(s),veh/h/ln	616	1805	1805	1610	1810	1610
Q Serve(g_s), s	15.0	2.5	14.6	24.3	15.5	4.6
Cycle Q Clear(g_c), s	39.3	2.5	14.6	24.3	15.5	4.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	289	2076	1038	926	648	577
V/C Ratio(X)	0.35	0.08	0.39	0.56	0.47	0.16
Avail Cap(c_a), veh/h	289	2076	1038	926	648	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	11.4	13.9	16.0	29.7	26.2
Incr Delay (d2), s/veh	3.4	0.1	1.1	2.5	2.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.0	5.9	8.9	7.2	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.7	11.5	15.0	18.5	32.1	26.7
LnGrp LOS	C	B	B	B	C	C
Approach Vol, veh/h		273	922		394	
Approach Delay, s/veh		19.0	17.0		30.9	
Approach LOS		B	B		C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		73.0		47.0		73.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		69.0		43.0		69.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			20.8			
HCM 6th LOS			C			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) With Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	1213	305	196	2276	43	458	17	156	20	12	41
Future Volume (vph)	26	1213	305	196	2276	43	458	17	156	20	12	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	56.0		26.0	74.5	74.5	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	46.7%		21.7%	62.1%	62.1%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

Ø1	Ø2 (R)	Ø4	Ø8
26 s	56 s	15 s	23 s
Ø5	Ø6 (R)		
7.5 s	74.5 s		

HCM 6th Signalized Intersection Summary 4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) With Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	1213	305	196	2276	43	458	17	156	20	12	41
Future Volume (veh/h)	26	1213	305	196	2276	43	458	17	156	20	12	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	29	1333	335	215	2501	47	517	0	171	22	13	45
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	37	2097	526	245	2249	953	543	0	242	151	31	108
Arrive On Green	0.02	0.48	0.48	0.14	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4398	1103	1810	3800	1610	3619	0	1610	1810	374	1293
Grp Volume(v), veh/h	29	1151	517	215	2501	47	517	0	171	22	0	58
Grp Sat Flow(s),veh/h/ln	1810	1900	1701	1810	1900	1610	1810	0	1610	1810	0	1667
Q Serve(g_s), s	1.9	27.3	27.4	14.0	71.0	1.5	17.0	0.0	12.1	1.4	0.0	4.0
Cycle Q Clear(g_c), s	1.9	27.3	27.4	14.0	71.0	1.5	17.0	0.0	12.1	1.4	0.0	4.0
Prop In Lane	1.00		0.65	1.00		1.00	1.00		1.00	1.00		0.78
Lane Grp Cap(c), veh/h	37	1812	811	245	2249	953	543	0	242	151	0	139
V/C Ratio(X)	0.78	0.64	0.64	0.88	1.11	0.05	0.95	0.00	0.71	0.15	0.00	0.42
Avail Cap(c_a), veh/h	60	1812	811	339	2249	953	543	0	242	151	0	139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.5	23.6	23.6	50.9	24.5	10.3	50.6	0.0	48.5	51.0	0.0	52.2
Incr Delay (d2), s/veh	28.2	1.7	3.8	16.9	57.4	0.1	27.9	0.0	15.7	2.0	0.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	11.9	11.2	7.3	45.6	0.5	9.8	0.0	5.9	0.7	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.6	25.3	27.4	67.8	81.9	10.4	78.5	0.0	64.2	53.1	0.0	61.2
LnGrp LOS	F	C	C	E	F	B	E	A	E	D	A	E
Approach Vol, veh/h	1697			2763			688			80		
Approach Delay, s/veh	27.0			79.6			74.9			59.0		
Approach LOS	C			E			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.8	62.2		15.0	6.0	76.0		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	22.5	51.0		10.0	4.0	69.5		18.0				
Max Q Clear Time (g_c+I1), s	16.0	29.4		6.0	3.9	73.0		19.0				
Green Ext Time (p_c), s	0.3	11.6		0.1	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	61.6											
HCM 6th LOS	E											
Notes												

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) With Project AM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	1213	305	196	2276	43	458	17	156	20	12	41
Future Volume (vph)	26	1213	305	196	2276	43	458	17	156	20	12	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0		23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	54.9		27.1	74.5		23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	45.8%		22.6%	62.1%		19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

Ø1	Ø2 (R)	Ø4	Ø8
27.1 s	54.9 s	15 s	23 s
Ø5	Ø6 (R)		
7.5 s	74.5 s		

HCM 6th Signalized Intersection Summary

4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) With Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 				
Traffic Volume (veh/h)	26	1213	305	196	2276	43	458	17	156	20	12	41
Future Volume (veh/h)	26	1213	305	196	2276	43	458	17	156	20	12	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	29	1333	335	215	2501	47	517	0	171	22	13	45
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	37	2096	526	246	3301	62	543	0	242	151	31	108
Arrive On Green	0.02	0.48	0.48	0.14	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4398	1103	1810	5577	104	3619	0	1610	1810	374	1293
Grp Volume(v), veh/h	29	1151	517	215	1701	847	517	0	171	22	0	58
Grp Sat Flow(s),veh/h/ln	1810	1900	1701	1810	1900	1881	1810	0	1610	1810	0	1667
Q Serve(g_s), s	1.9	27.3	27.4	14.0	39.7	40.1	17.0	0.0	12.1	1.4	0.0	4.0
Cycle Q Clear(g_c), s	1.9	27.3	27.4	14.0	39.7	40.1	17.0	0.0	12.1	1.4	0.0	4.0
Prop In Lane	1.00		0.65	1.00		0.06	1.00		1.00	1.00		0.78
Lane Grp Cap(c), veh/h	37	1811	811	246	2249	1113	543	0	242	151	0	139
V/C Ratio(X)	0.78	0.64	0.64	0.87	0.76	0.76	0.95	0.00	0.71	0.15	0.00	0.42
Avail Cap(c_a), veh/h	60	1811	811	356	2249	1113	543	0	242	151	0	139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.5	23.6	23.6	50.8	18.1	18.2	50.6	0.0	48.5	51.0	0.0	52.2
Incr Delay (d2), s/veh	28.2	1.7	3.8	15.2	2.4	4.9	27.9	0.0	15.7	2.0	0.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	11.9	11.2	7.2	16.2	17.0	9.8	0.0	5.9	0.7	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.6	25.3	27.4	66.1	20.5	23.1	78.5	0.0	64.2	53.1	0.0	61.2
LnGrp LOS	F	C	C	E	C	C	E	A	E	D	A	E
Approach Vol, veh/h		1697			2763			688			80	
Approach Delay, s/veh		27.0			24.9			74.9			59.0	
Approach LOS		C			C			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.8	62.2		15.0	6.0	76.0		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	23.6	49.9		10.0	4.0	69.5		18.0				
Max Q Clear Time (g_c+I1), s	16.0	29.4		6.0	3.9	42.1		19.0				
Green Ext Time (p_c), s	0.3	11.3		0.1	0.0	21.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay 32.7
HCM 6th LOS C

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

IY (2022) With Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	2	132	1	1	1	132	613	12	3	267	39
Future Volume (vph)	86	2	132	1	1	1	132	613	12	3	267	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	33.0	33.0	33.0	33.0	33.0	33.0	31.0	54.0		13.0	36.0	36.0
Total Split (%)	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	31.0%	54.0%		13.0%	36.0%	36.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

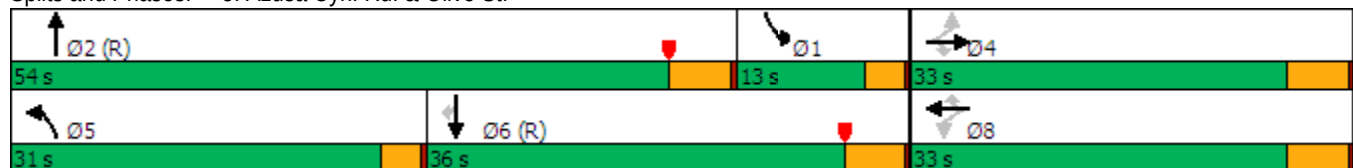
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary 5: Azusa Cyn. Rd. & Olive St.

IY (2022) With Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	2	132	1	1	1	132	613	12	3	267	39
Future Volume (veh/h)	86	2	132	1	1	1	132	613	12	3	267	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	93	2	143	1	1	1	143	666	13	3	290	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	233	214	181	213	214	181	176	1775	35	448	2366	1055
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.19	0.98	0.98	0.25	0.66	0.66
Sat Flow, veh/h	1437	1900	1610	1263	1900	1610	1810	3622	71	1810	3610	1610
Grp Volume(v), veh/h	93	2	143	1	1	1	143	332	347	3	290	42
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	1263	1900	1610	1810	1805	1887	1810	1805	1610
Q Serve(g_s), s	6.1	0.1	8.6	0.1	0.0	0.1	7.6	0.6	0.6	0.1	3.0	0.9
Cycle Q Clear(g_c), s	6.2	0.1	8.6	0.2	0.0	0.1	7.6	0.6	0.6	0.1	3.0	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	233	214	181	213	214	181	176	884	925	448	2366	1055
V/C Ratio(X)	0.40	0.01	0.79	0.00	0.00	0.01	0.81	0.38	0.38	0.01	0.12	0.04
Avail Cap(c_a), veh/h	474	532	451	424	532	451	498	884	925	448	2366	1055
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.71	0.71	0.71
Uniform Delay (d), s/veh	42.1	39.4	43.2	39.5	39.4	39.4	39.4	0.5	0.5	28.4	6.5	6.1
Incr Delay (d2), s/veh	1.1	0.0	7.4	0.0	0.0	0.0	8.2	1.1	1.1	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	3.8	0.0	0.0	0.0	3.4	0.4	0.4	0.1	1.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	39.4	50.6	39.5	39.4	39.4	47.6	1.6	1.6	28.4	6.5	6.1
LnGrp LOS	D	D	D	D	D	D	D	A	A	C	A	A
Approach Vol, veh/h	238			3			822			335		
Approach Delay, s/veh	47.7			39.4			9.6			6.7		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.7	54.0		16.3	13.2	70.5		16.3				
Change Period (Y+Rc), s	5.0	* 5		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	9.5	* 49		28.0	27.5	31.0		28.0				
Max Q Clear Time (g_c+I1), s	2.1	2.6		10.6	9.6	5.0		2.2				
Green Ext Time (p_c), s	0.0	4.8		0.6	0.3	2.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay 15.5

HCM 6th LOS B

Notes

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

Lanes, Volumes, Timings
6: Azusa Cyn. Rd. & Dwy. 1

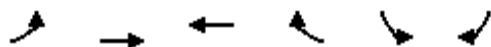
IY (2022) With Project AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	5	525	0	15	462
Future Volume (vph)	0	5	525	0	15	462
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	208		299			985
Travel Time (s)	4.7		6.8			22.4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	525	0	15	462
Future Vol, veh/h	0	5	525	0	15	462
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	5	553	0	16	486
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	277	0	0	553	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	726	-	-	1027	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	726	-	-	1027	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10	0		0.4		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	726	1027	-	
HCM Lane V/C Ratio	-	-	0.007	0.015	-	
HCM Control Delay (s)	-	-	10	8.6	0.1	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Lanes, Volumes, Timings
7: Los Angeles St. & Dwy. 2

IY (2022) With Project AM Peak Hour

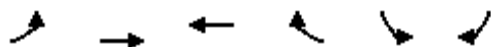


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	37	32	0	0	4
Future Volume (vph)	13	37	32	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		160	175		164	
Travel Time (s)		3.6	4.0		3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	37	32	0	0	4
Future Vol, veh/h	13	37	32	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	14	39	34	0	0	4
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	34	0	-	0	101	34
Stage 1	-	-	-	-	34	-
Stage 2	-	-	-	-	67	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1591	-	-	-	902	1045
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	961	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1591	-	-	-	894	1045
Mov Cap-2 Maneuver	-	-	-	-	894	-
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	961	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.9	0		8.5		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1591	-	-	-	1045	
HCM Lane V/C Ratio	0.009	-	-	-	0.004	
HCM Control Delay (s)	7.3	0	-	-	8.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
8: Los Angeles St. & Dwy. 3

IY (2022) With Project AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	32	30	0	0	2
Future Volume (vph)	5	32	30	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		175	247		166	
Travel Time (s)		4.0	5.6		3.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
8: Los Angeles St. & Dwy. 3

IY (2022) With Project AM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	32	30	0	0	2
Future Vol, veh/h	5	32	30	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	34	32	0	0	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	32	0	-	0	76	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	44	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1593	-	-	-	932	1048
Stage 1	-	-	-	-	996	-
Stage 2	-	-	-	-	984	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1593	-	-	-	929	1048
Mov Cap-2 Maneuver	-	-	-	-	929	-
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	984	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		8.4		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1593	-	-	-	1048	
HCM Lane V/C Ratio	0.003	-	-	-	0.002	
HCM Control Delay (s)	7.3	0	-	-	8.4	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile O(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

IY (2022) With Project PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	181	208	372	535	463	488
Future Volume (vph)	181	208	372	535	463	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)		41%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	22.0	22.0	38.0		40.0	78.0
Total Split (%)	22.0%	22.0%	38.0%		40.0%	78.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

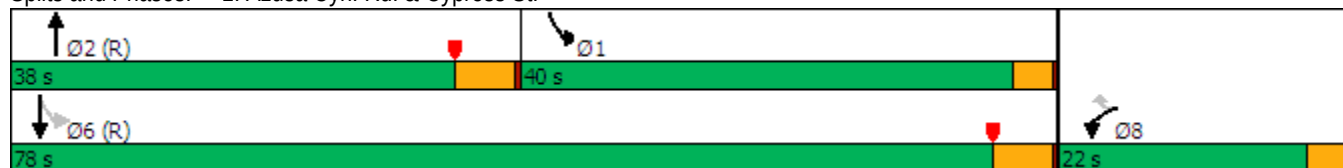
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary

1: Azusa Cyn. Rd. & Cypress St.

IY (2022) With Project PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	181	208	372	535	463	488
Future Volume (veh/h)	181	208	372	535	463	488
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	268	137	392	563	487	514
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	405	180	596	531	838	2900
Arrive On Green	0.11	0.11	0.33	0.33	0.85	1.00
Sat Flow, veh/h	3619	1610	1900	1610	1810	3705
Grp Volume(v), veh/h	268	137	392	563	487	514
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	7.1	8.3	18.6	33.0	0.3	0.0
Cycle Q Clear(g_c), s	7.1	8.3	18.6	33.0	0.3	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	405	180	596	531	838	2900
V/C Ratio(X)	0.66	0.76	0.66	1.06	0.58	0.18
Avail Cap(c_a), veh/h	670	298	596	531	838	2900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.88	0.88
Uniform Delay (d), s/veh	42.6	43.1	28.7	33.5	4.4	0.0
Incr Delay (d2), s/veh	1.9	6.5	5.6	55.8	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.6	8.8	20.7	1.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.5	49.6	34.3	89.3	5.3	0.1
LnGrp LOS	D	D	C	F	A	A
Approach Vol, veh/h	405		955			1001
Approach Delay, s/veh	46.2		66.7			2.7
Approach LOS	D		E			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	47.3	38.0			85.3	14.7
Change Period (Y+Rc), s	5.0	* 5			5.0	3.5
Max Green Setting (Gmax), s	36.5	* 33			73.0	18.5
Max Q Clear Time (g_c+l1), s	2.3	35.0			2.0	10.3
Green Ext Time (p_c), s	1.6	0.0			4.0	0.9
Intersection Summary						
HCM 6th Ctrl Delay			36.0			
HCM 6th LOS			D			
Notes						
User approved volume balancing among the lanes for turning movement.						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) With Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	527	9	405	44	29	20	177	329	14	10	461	207
Future Volume (vph)	527	9	405	44	29	20	177	329	14	10	461	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th AWSC
2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) With Project PM Peak Hour

Intersection												
Intersection Delay, s/veh	113.6											
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱		↱			↱	↱
Traffic Vol, veh/h	527	9	405	44	29	20	177	329	14	10	461	207
Future Vol, veh/h	527	9	405	44	29	20	177	329	14	10	461	207
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	543	9	418	45	30	21	182	339	14	10	475	213
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	2			2			2			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			1			2			2		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			2			2			2		
HCM Control Delay	126.6			15.9			151			80.3		
HCM LOS	F			C			F			F		
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2					
Vol Left, %	34%	98%	0%	60%	0%	2%	0%					
Vol Thru, %	63%	2%	0%	40%	0%	98%	0%					
Vol Right, %	3%	0%	100%	0%	100%	0%	100%					
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane	520	536	405	73	20	471	207					
LT Vol	177	527	0	44	0	10	0					
Through Vol	329	9	0	29	0	461	0					
RT Vol	14	0	405	0	20	0	207					
Lane Flow Rate	536	553	418	75	21	486	213					
Geometry Grp	6	7	7	7	7	7	7					
Degree of Util (X)	1.233	1.323	0.868	0.211	0.052	1.113	0.447					
Departure Headway (Hd)	8.673	9.285	8.038	11.042	9.977	8.815	8.075					
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Cap	424	398	455	327	361	418	448					
Service Time	6.673	6.985	5.738	8.742	7.677	6.515	5.775					
HCM Lane V/C Ratio	1.264	1.389	0.919	0.229	0.058	1.163	0.475					
HCM Control Delay	151	188.6	44.5	16.7	13.2	108.1	17.1					
HCM Lane LOS	F	F	E	C	B	F	C					
HCM 95th-tile Q	21.2	23.8	8.9	0.8	0.2	16.3	2.3					

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) With Project PM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	527	9	405	44	29	20	177	329	14	10	461	207
Future Volume (vph)	527	9	405	44	29	20	177	329	14	10	461	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		50	0		0	0		400
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	60			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)	49%											
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	33.0	33.0	33.0	20.0	20.0		47.0	47.0		47.0	47.0	47.0
Total Split (%)	33.0%	33.0%	33.0%	20.0%	20.0%		47.0%	47.0%		47.0%	47.0%	47.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	C-Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.

 Ø2 (R)	 Ø4	 Ø8
47 s	33 s	20 s
 Ø6 (R)		
47 s		

HCM 6th Signalized Intersection Summary

2: Azusa Cyn. Rd. & Los Angeles St.

IY (2022) With Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	527	9	405	44	29	20	177	329	14	10	461	207
Future Volume (veh/h)	527	9	405	44	29	20	177	329	14	10	461	207
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	549	0	418	45	30	21	182	339	14	10	475	213
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	1013	0	451	85	49	34	272	474	19	44	1038	891
Arrive On Green	0.28	0.00	0.28	0.05	0.05	0.05	0.55	0.55	0.55	1.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610	1810	1041	728	405	857	34	13	1877	1610
Grp Volume(v), veh/h	549	0	418	45	0	51	535	0	0	485	0	213
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1769	1295	0	0	1889	0	1610
Q Serve(g_s), s	12.9	0.0	25.2	2.4	0.0	2.8	27.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.9	0.0	25.2	2.4	0.0	2.8	30.3	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.41	0.34		0.03	0.02		1.00
Lane Grp Cap(c), veh/h	1013	0	451	85	0	83	765	0	0	1082	0	891
V/C Ratio(X)	0.54	0.00	0.93	0.53	0.00	0.61	0.70	0.00	0.00	0.45	0.00	0.24
Avail Cap(c_a), veh/h	1050	0	467	290	0	283	765	0	0	1082	0	891
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.60	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.6	0.0	35.0	46.6	0.0	46.8	16.3	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	24.4	5.0	0.0	7.2	3.2	0.0	0.0	1.3	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	12.3	1.2	0.0	1.4	9.1	0.0	0.0	0.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	0.0	59.4	51.6	0.0	53.9	19.5	0.0	0.0	1.3	0.0	0.6
LnGrp LOS	C	A	E	D	A	D	B	A	A	A	A	A
Approach Vol, veh/h	967			96			535			698		
Approach Delay, s/veh	43.3			52.8			19.5			1.1		
Approach LOS	D			D			B			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	59.3			32.0			59.3			8.7		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	43.0			29.0			43.0			16.0		
Max Q Clear Time (g_c+I1), s	32.3			27.2			2.0			4.8		
Green Ext Time (p_c), s	3.2			0.8			4.3			0.2		

Intersection Summary

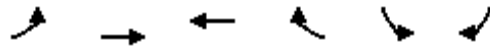
HCM 6th Ctrl Delay	25.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
3: San Bernardino Rd. & Azusa Cyn. Rd.

IY (2022) With Project PM Peak Hour

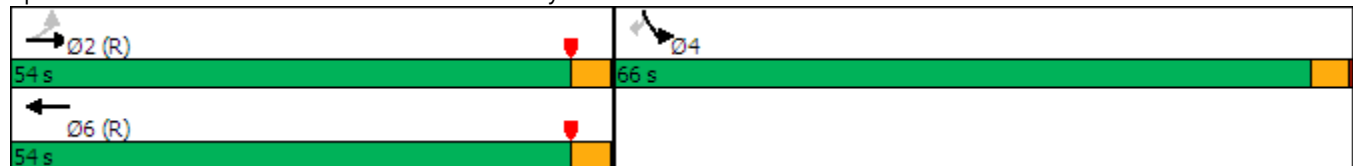


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	131	357	362	380	789	165
Future Volume (vph)	131	357	362	380	789	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	54.0	54.0	54.0		66.0	66.0
Total Split (%)	45.0%	45.0%	45.0%		55.0%	55.0%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

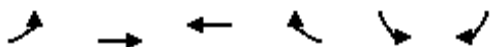
Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary

3: San Bernardino Rd. & Azusa Cyn. Rd.

IY (2022) With Project PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	131	357	362	380	789	165
Future Volume (veh/h)	131	357	362	380	789	165
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	138	376	381	400	831	174
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	217	1504	752	671	935	832
Arrive On Green	0.42	0.42	0.42	0.42	0.52	0.52
Sat Flow, veh/h	703	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	138	376	381	400	831	174
Grp Sat Flow(s),veh/h/ln	703	1805	1805	1610	1810	1610
Q Serve(g_s), s	22.8	8.1	18.7	23.1	49.3	7.0
Cycle Q Clear(g_c), s	45.9	8.1	18.7	23.1	49.3	7.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	217	1504	752	671	935	832
V/C Ratio(X)	0.63	0.25	0.51	0.60	0.89	0.21
Avail Cap(c_a), veh/h	217	1504	752	671	935	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	22.8	25.9	27.2	25.9	15.7
Incr Delay (d2), s/veh	13.3	0.4	2.4	3.9	12.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	3.5	8.3	9.3	23.5	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	58.3	23.2	28.3	31.0	38.3	16.3
LnGrp LOS	E	C	C	C	D	B
Approach Vol, veh/h		514	781		1005	
Approach Delay, s/veh		32.6	29.7		34.5	
Approach LOS		C	C		C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		54.0		66.0		54.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		50.0		62.0		50.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			32.4			
HCM 6th LOS			C			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) With Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 			 	
Traffic Volume (vph)	40	2510	364	236	1564	36	253	14	320	33	11	47
Future Volume (vph)	40	2510	364	236	1564	36	253	14	320	33	11	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							47%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	8.6	64.0		18.0	73.4	73.4	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	7.2%	53.3%		15.0%	61.2%	61.2%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

 Ø1	 Ø2 (R)	 Ø4	 Ø8
18 s	64 s	15 s	23 s
 Ø5	 Ø6 (R)		
8.6 s	73.4 s		

HCM 6th Signalized Intersection Summary 4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) With Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	2510	364	236	1564	36	253	14	320	33	11	47
Future Volume (veh/h)	40	2510	364	236	1564	36	253	14	320	33	11	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	42	2642	383	248	1646	38	277	0	337	35	12	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	54	2411	332	219	2214	938	543	0	242	151	27	111
Arrive On Green	0.03	0.49	0.49	0.12	0.58	0.58	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4903	676	1810	3800	1610	3619	0	1610	1810	327	1333
Grp Volume(v), veh/h	42	2017	1008	248	1646	38	277	0	337	35	0	61
Grp Sat Flow(s),veh/h/ln	1810	1900	1778	1810	1900	1610	1810	0	1610	1810	0	1660
Q Serve(g_s), s	2.8	59.0	59.0	14.5	38.3	1.2	8.5	0.0	18.0	2.2	0.0	4.2
Cycle Q Clear(g_c), s	2.8	59.0	59.0	14.5	38.3	1.2	8.5	0.0	18.0	2.2	0.0	4.2
Prop In Lane	1.00		0.38	1.00		1.00	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	54	1868	874	219	2214	938	543	0	242	151	0	138
V/C Ratio(X)	0.78	1.08	1.15	1.13	0.74	0.04	0.51	0.00	1.40	0.23	0.00	0.44
Avail Cap(c_a), veh/h	77	1868	874	219	2214	938	543	0	242	151	0	138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.8	30.5	30.5	52.8	18.4	10.7	46.9	0.0	51.0	51.4	0.0	52.3
Incr Delay (d2), s/veh	26.3	45.9	82.0	101.7	2.3	0.1	3.3	0.0	200.7	3.6	0.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	36.5	42.9	12.6	15.8	0.4	4.1	0.0	20.7	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.1	76.4	112.5	154.5	20.8	10.8	50.3	0.0	251.7	55.0	0.0	62.2
LnGrp LOS	F	F	F	F	C	B	D	A	F	D	A	E
Approach Vol, veh/h	3067			1932			614			96		
Approach Delay, s/veh	88.4			37.7			160.8			59.6		
Approach LOS	F			D			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.0	64.0		15.0	7.1	74.9		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	14.5	59.0		10.0	5.1	68.4		18.0				
Max Q Clear Time (g_c+I1), s	16.5	61.0		6.2	4.8	40.3		20.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	14.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	78.5											
HCM 6th LOS	E											
Notes												

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) With Project PM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	2510	364	236	1564	36	253	14	320	33	11	47
Future Volume (vph)	40	2510	364	236	1564	36	253	14	320	33	11	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							47%					
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0		10.0	10.0	4.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0		23.0	23.0	7.5	15.0	15.0	
Total Split (s)	12.0	65.0		17.0	70.0		23.0	23.0	17.0	15.0	15.0	
Total Split (%)	10.0%	54.2%		14.2%	58.3%		19.2%	19.2%	14.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5	3.0	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag				Lag			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	C-Max		None	C-Max		Max	Max	None	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 16 (13%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

											
65 s				17 s		15 s			23 s		
											
12 s	70 s										

HCM 6th Signalized Intersection Summary 4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) With Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	2510	364	236	1564	36	253	14	320	33	11	47
Future Volume (veh/h)	40	2510	364	236	1564	36	253	14	320	33	11	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	42	2642	383	248	1646	38	277	0	337	35	12	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	54	2451	338	510	4242	98	543	0	695	151	27	111
Arrive On Green	0.06	1.00	1.00	0.56	1.00	1.00	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4903	676	1810	5549	128	3619	0	1610	1810	327	1333
Grp Volume(v), veh/h	42	2017	1008	248	1127	557	277	0	337	35	0	61
Grp Sat Flow(s),veh/h/ln	1810	1900	1778	1810	1900	1877	1810	0	1610	1810	0	1660
Q Serve(g_s), s	2.7	60.0	60.0	9.9	0.0	0.0	8.5	0.0	0.0	2.2	0.0	4.2
Cycle Q Clear(g_c), s	2.7	60.0	60.0	9.9	0.0	0.0	8.5	0.0	0.0	2.2	0.0	4.2
Prop In Lane	1.00		0.38	1.00		0.07	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	54	1900	889	510	2905	1435	543	0	695	151	0	138
V/C Ratio(X)	0.78	1.06	1.13	0.49	0.39	0.39	0.51	0.00	0.48	0.23	0.00	0.44
Avail Cap(c_a), veh/h	128	1900	889	510	2905	1435	543	0	695	151	0	138
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.0	0.0	0.0	21.0	0.0	0.0	46.9	0.0	24.5	51.4	0.0	52.3
Incr Delay (d2), s/veh	20.7	39.2	74.2	0.7	0.4	0.8	3.3	0.0	2.4	3.6	0.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	10.3	18.3	3.4	0.2	0.3	4.1	0.0	7.3	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.7	39.2	74.2	21.7	0.4	0.8	50.3	0.0	26.9	55.0	0.0	62.2
LnGrp LOS	E	F	F	C	A	A	D	A	C	D	A	E
Approach Vol, veh/h	3067			1932			614			96		
Approach Delay, s/veh	51.2			3.2			37.4			59.6		
Approach LOS	D			A			D			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.8	65.0		15.0	7.1	96.7		23.0				
Change Period (Y+Rc), s	5.0	* 5		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	13.5	* 60		10.0	8.5	65.0		18.0				
Max Q Clear Time (g_c+I1), s	11.9	62.0		6.2	4.7	2.0		10.5				
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	16.9		1.5				
Intersection Summary												
HCM 6th Ctrl Delay	33.6											
HCM 6th LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

IY (2022) With Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	1	361	3	1	1	247	333	1	1	587	85
Future Volume (vph)	112	1	361	3	1	1	247	333	1	1	587	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	32.0	61.0		8.0	37.0	37.0
Total Split (%)	31.0%	31.0%	31.0%	31.0%	31.0%	31.0%	32.0%	61.0%		8.0%	37.0%	37.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

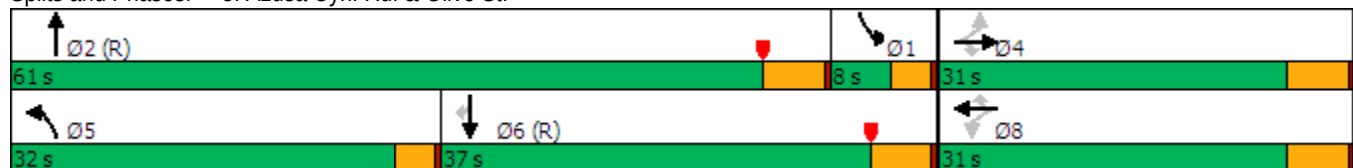
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary 5: Azusa Cyn. Rd. & Olive St.

IY (2022) With Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	1	361	3	1	1	247	333	1	1	587	85
Future Volume (veh/h)	112	1	361	3	1	1	247	333	1	1	587	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	119	1	384	3	1	1	263	354	1	1	624	90
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	438	484	410	330	484	410	296	2068	6	64	1611	719
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.33	1.00	1.00	0.04	0.45	0.45
Sat Flow, veh/h	1437	1900	1610	1014	1900	1610	1810	3693	10	1810	3610	1610
Grp Volume(v), veh/h	119	1	384	3	1	1	263	173	182	1	624	90
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	1014	1900	1610	1810	1805	1898	1810	1805	1610
Q Serve(g_s), s	6.7	0.0	23.3	0.2	0.0	0.0	13.8	0.0	0.0	0.1	11.6	3.3
Cycle Q Clear(g_c), s	6.8	0.0	23.3	0.3	0.0	0.0	13.8	0.0	0.0	0.1	11.6	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	438	484	410	330	484	410	296	1011	1063	64	1611	719
V/C Ratio(X)	0.27	0.00	0.94	0.01	0.00	0.00	0.89	0.17	0.17	0.02	0.39	0.13
Avail Cap(c_a), veh/h	445	494	419	335	494	419	516	1011	1063	81	1611	719
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.77	0.77	0.77	0.25	0.25	0.25
Uniform Delay (d), s/veh	30.3	27.8	36.5	27.9	27.8	27.8	32.7	0.0	0.0	46.6	18.5	16.2
Incr Delay (d2), s/veh	0.3	0.0	28.2	0.0	0.0	0.0	7.4	0.3	0.3	0.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	12.2	0.1	0.0	0.0	5.5	0.1	0.1	0.0	4.8	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	27.8	64.6	27.9	27.8	27.8	40.2	0.3	0.3	46.6	18.7	16.3
LnGrp LOS	C	C	E	C	C	C	D	A	A	D	B	B
Approach Vol, veh/h	504			5			618			715		
Approach Delay, s/veh	56.5			27.8			17.3			18.4		
Approach LOS	E			C			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	61.0		30.5	19.9	49.6		30.5				
Change Period (Y+Rc), s	5.0	* 5		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	4.5	* 56		26.0	28.5	32.0		26.0				
Max Q Clear Time (g_c+I1), s	2.1	2.0		25.3	15.8	13.6		2.3				
Green Ext Time (p_c), s	0.0	2.3		0.1	0.6	4.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	28.5											
HCM 6th LOS	C											
Notes												

Lanes, Volumes, Timings
6: Azusa Cyn. Rd. & Dwy. 1

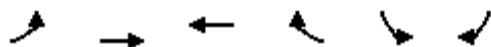
IY (2022) With Project PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	15	877	0	6	678
Future Volume (vph)	0	15	877	0	6	678
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	208		299			985
Travel Time (s)	4.7		6.8			22.4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	15	877	0	6	678
Future Vol, veh/h	0	15	877	0	6	678
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	923	0	6	714
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	462	0	0	923	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	552	-	-	748	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	552	-	-	748	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.7	0		0.2		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	552	748	-	
HCM Lane V/C Ratio	-	-	0.029	0.008	-	
HCM Control Delay (s)	-	-	11.7	9.9	0.1	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Lanes, Volumes, Timings
7: Los Angeles St. & Dwy. 2

IY (2022) With Project PM Peak Hour

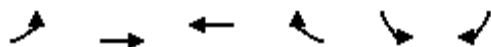


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	29	80	0	0	14
Future Volume (vph)	5	29	80	0	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		160	175		164	
Travel Time (s)		3.6	4.0		3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	29	80	0	0	14
Future Vol, veh/h	5	29	80	0	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	31	84	0	0	15
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	84	0	-	0	125	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	41	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1526	-	-	-	875	981
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	987	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1526	-	-	-	872	981
Mov Cap-2 Maneuver	-	-	-	-	872	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	987	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1526	-	-	-	981	
HCM Lane V/C Ratio	0.003	-	-	-	0.015	
HCM Control Delay (s)	7.4	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
8: Los Angeles St. & Dwy. 3

IY (2022) With Project PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	27	75	0	0	5
Future Volume (vph)	2	27	75	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		175	247		166	
Travel Time (s)		4.0	5.6		3.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	27	75	0	0	5
Future Vol, veh/h	2	27	75	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	28	79	0	0	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	79	0	-	0	111	79
Stage 1	-	-	-	-	79	-
Stage 2	-	-	-	-	32	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1532	-	-	-	891	987
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	996	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1532	-	-	-	890	987
Mov Cap-2 Maneuver	-	-	-	-	890	-
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	996	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1532	-	-	-	987	
HCM Lane V/C Ratio	0.001	-	-	-	0.005	
HCM Control Delay (s)	7.4	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM Signalized Intersection Capacity Analysis

1: Azusa Cyn. Rd. & Cypress St.

IY (2022) With Project AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	243	397	362	171	151	249
Future Volume (vph)	243	397	362	171	151	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.93	0.85	0.95		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3349	1470	3436		1805	3610
Flt Permitted	0.97	1.00	1.00		0.40	1.00
Satd. Flow (perm)	3349	1470	3436		754	3610
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	270	441	402	190	168	277
RTOR Reduction (vph)	176	196	41	0	0	0
Lane Group Flow (vph)	306	33	552	0	168	277
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	14.5	14.5	55.0		78.5	77.0
Effective Green, g (s)	14.5	14.5	55.0		78.5	77.0
Actuated g/C Ratio	0.14	0.14	0.55		0.78	0.77
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	485	213	1889		786	2779
v/s Ratio Prot	c0.09		c0.16		c0.04	0.08
v/s Ratio Perm		0.02			0.13	
v/c Ratio	0.63	0.16	0.29		0.21	0.10
Uniform Delay, d1	40.2	37.4	12.1		4.2	2.9
Progression Factor	1.00	1.00	1.00		1.10	0.92
Incremental Delay, d2	2.7	0.3	0.4		0.1	0.1
Delay (s)	42.9	37.7	12.5		4.8	2.7
Level of Service	D	D	B		A	A
Approach Delay (s)	41.2		12.5			3.5
Approach LOS	D		B			A
Intersection Summary						
HCM 2000 Control Delay			21.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.33			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			45.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: Azusa Cyn. Rd. & Los Angeles St.

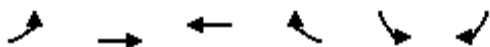
IY (2022) With Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	17	190	8	8	20	231	294	15	17	161	283
Future Volume (vph)	211	17	190	8	8	20	231	294	15	17	161	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.90			1.00			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1715	1805	1900	1805	1700			1900			1900	1900
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.77			0.94	1.00
Satd. Flow (perm)	1715	1805	1900	1805	1700			1472			1787	1900
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	224	18	202	9	9	21	246	313	16	18	171	301
RTOR Reduction (vph)	0	0	177	0	20	0	0	1	0	0	0	86
Lane Group Flow (vph)	121	121	25	9	10	0	0	574	0	0	189	215
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)	12.3	12.3	12.3	4.3	4.3			71.4			71.4	71.4
Effective Green, g (s)	12.3	12.3	12.3	4.3	4.3			71.4			71.4	71.4
Actuated g/C Ratio	0.12	0.12	0.12	0.04	0.04			0.71			0.71	0.71
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	210	222	233	77	73			1051			1275	1356
v/s Ratio Prot	c0.07	0.07		0.00	c0.01							
v/s Ratio Perm			0.01					c0.39			0.11	0.11
v/c Ratio	0.58	0.55	0.11	0.12	0.14			0.55			0.15	0.16
Uniform Delay, d1	41.4	41.2	39.0	46.0	46.1			6.7			4.6	4.6
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.95	6.61
Incremental Delay, d2	3.8	2.7	0.2	0.7	0.8			2.0			0.2	0.2
Delay (s)	45.2	43.9	39.2	46.7	46.9			8.8			9.2	30.7
Level of Service	D	D	D	D	D			A			A	C
Approach Delay (s)		42.1			46.9			8.8			22.4	
Approach LOS		D			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			23.6			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			61.5%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: San Bernardino Rd. & Azusa Cyn. Rd.

IY (2022) With Project AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	91	152	358	463	271	80
Future Volume (vph)	91	152	358	463	271	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3305		1805	1615
Flt Permitted	0.24	1.00	1.00		0.95	1.00
Satd. Flow (perm)	462	3610	3305		1805	1615
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	102	171	402	520	304	90
RTOR Reduction (vph)	0	0	195	0	0	27
Lane Group Flow (vph)	102	171	727	0	304	63
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	69.0	69.0	69.0		43.0	43.0
Effective Green, g (s)	69.0	69.0	69.0		43.0	43.0
Actuated g/C Ratio	0.58	0.58	0.58		0.36	0.36
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	265	2075	1900		646	578
v/s Ratio Prot		0.05	0.22		c0.17	
v/s Ratio Perm	c0.22					0.04
v/c Ratio	0.38	0.08	0.38		0.47	0.11
Uniform Delay, d1	13.9	11.4	13.9		29.7	25.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.2	0.1	0.6		2.5	0.4
Delay (s)	18.1	11.5	14.5		32.2	26.1
Level of Service	B	B	B		C	C
Approach Delay (s)		13.9	14.5		30.8	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay			18.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.42			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			54.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) With Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	1213	305	196	2276	43	458	17	156	20	12	41
Future Volume (vph)	26	1213	305	196	2276	43	458	17	156	20	12	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	29	1333	335	215	2501	47	503	19	171	22	13	45
RTOR Reduction (vph)	0	36	0	0	0	19	0	0	145	0	41	0
Lane Group Flow (vph)	29	1632	0	215	2501	28	262	260	26	22	17	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	2.4	55.3		18.2	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	55.3		18.2	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.46		0.15	0.59	0.59	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2626		288	2251	1125	285	285	285	158	158	
v/s Ratio Prot	0.02	0.29		c0.11	c0.66		c0.14	0.14		c0.01	0.01	
v/s Ratio Perm						0.01			0.01			
v/c Ratio	0.76	0.62		0.75	1.11	0.02	0.92	0.91	0.09	0.14	0.11	
Uniform Delay, d1	58.5	24.4		48.7	24.5	10.1	50.3	50.2	43.9	51.0	50.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	60.7	1.1		10.1	57.0	0.0	36.1	34.9	0.6	1.8	1.3	
Delay (s)	119.2	25.6		58.8	81.4	10.2	86.4	85.1	44.6	52.8	52.2	
Level of Service	F	C		E	F	B	F	F	D	D	D	
Approach Delay (s)		27.2			78.5			75.6			52.4	
Approach LOS		C			E			E			D	
Intersection Summary												
HCM 2000 Control Delay			61.0			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			97.7%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) With Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	1213	305	196	2276	43	458	17	156	20	12	41
Future Volume (vph)	26	1213	305	196	2276	43	458	17	156	20	12	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00		*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	29	1333	335	215	2501	47	503	19	171	22	13	45
RTOR Reduction (vph)	0	35	0	0	2	0	0	0	145	0	41	0
Lane Group Flow (vph)	29	1633	0	215	2546	0	262	260	26	22	17	0
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Actuated Green, G (s)	2.4	55.0		18.5	71.1		18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	55.0		18.5	71.1		18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.46		0.15	0.59		0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2612		292	3377		285	285	285	158	158	
v/s Ratio Prot	0.02	0.29		c0.11	c0.45		c0.14	0.14		c0.01	0.01	
v/s Ratio Perm									0.01			
v/c Ratio	0.76	0.63		0.74	0.75		0.92	0.91	0.09	0.14	0.11	
Uniform Delay, d1	58.5	24.7		48.4	18.0		50.3	50.2	43.9	51.0	50.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	60.7	1.1		9.3	1.6		36.1	34.9	0.6	1.8	1.3	
Delay (s)	119.2	25.8		57.7	19.6		86.4	85.1	44.6	52.8	52.2	
Level of Service	F	C		E	B		F	F	D	D	D	
Approach Delay (s)		27.4			22.6			75.6			52.4	
Approach LOS		C			C			E			D	
Intersection Summary												
HCM 2000 Control Delay			31.6			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			79.7%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Azusa Cyn. Rd. & Olive St.

IY (2022) With Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	2	132	1	1	1	132	613	12	3	267	39
Future Volume (vph)	86	2	132	1	1	1	132	613	12	3	267	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3600		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1437	1900	1615	1805	3600		1805	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	2	143	1	1	1	143	666	13	3	290	42
RTOR Reduction (vph)	0	0	125	0	0	1	0	1	0	0	0	17
Lane Group Flow (vph)	93	2	18	1	1	0	143	678	0	3	290	25
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	12.7	12.7	12.7	12.7	12.7	12.7	13.2	71.9		1.9	60.6	60.6
Effective Green, g (s)	12.7	12.7	12.7	12.7	12.7	12.7	13.2	71.9		1.9	60.6	60.6
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.72		0.02	0.61	0.61
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	182	241	205	182	241	205	238	2588		34	2187	978
v/s Ratio Prot		0.00			0.00		c0.08	c0.19		0.00	c0.08	
v/s Ratio Perm	c0.06		0.01	0.00		0.00						0.02
v/c Ratio	0.51	0.01	0.09	0.01	0.00	0.00	0.60	0.26		0.09	0.13	0.03
Uniform Delay, d1	40.8	38.1	38.5	38.1	38.1	38.1	40.9	4.9		48.2	8.4	7.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.25	0.69		1.00	1.00	1.00
Incremental Delay, d2	2.4	0.0	0.2	0.0	0.0	0.0	4.0	0.2		1.1	0.1	0.0
Delay (s)	43.2	38.2	38.7	38.1	38.1	38.1	55.2	3.6		49.3	8.6	7.9
Level of Service	D	D	D	D	D	D	E	A		D	A	A
Approach Delay (s)		40.5			38.1			12.6			8.9	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			16.5				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			46.5%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: Azusa Cyn. Rd. & Cypress St.

IY (2022) With Project PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	181	208	372	535	463	488
Future Volume (vph)	181	208	372	535	463	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.95	0.85	0.91		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3394	1470	3291		1805	3610
Flt Permitted	0.97	1.00	1.00		0.17	1.00
Satd. Flow (perm)	3394	1470	3291		332	3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	191	219	392	563	487	514
RTOR Reduction (vph)	63	113	235	0	0	0
Lane Group Flow (vph)	218	16	720	0	487	514
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	12.1	12.1	39.4		80.9	79.4
Effective Green, g (s)	12.1	12.1	39.4		80.9	79.4
Actuated g/C Ratio	0.12	0.12	0.39		0.81	0.79
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	410	177	1296		806	2866
v/s Ratio Prot	c0.06		0.22		c0.22	0.14
v/s Ratio Perm		0.01			c0.27	
v/c Ratio	0.53	0.09	0.56		0.60	0.18
Uniform Delay, d1	41.3	39.0	23.5		14.1	2.5
Progression Factor	1.00	1.00	1.00		0.63	0.56
Incremental Delay, d2	1.3	0.2	1.7		1.2	0.1
Delay (s)	42.6	39.3	25.2		10.1	1.5
Level of Service	D	D	C		B	A
Approach Delay (s)	41.6		25.2			5.7
Approach LOS	D		C			A
Intersection Summary						
HCM 2000 Control Delay			19.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.61			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			71.3%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: Azusa Cyn. Rd. & Los Angeles St.

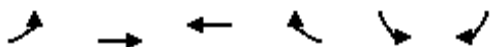
IY (2022) With Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	527	9	405	44	29	20	177	329	14	10	461	207
Future Volume (vph)	527	9	405	44	29	20	177	329	14	10	461	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.94			1.00			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1715	1805	1900	1805	1783			1900			1900	1900
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.58			0.99	1.00
Satd. Flow (perm)	1715	1805	1900	1805	1783			1111			1880	1900
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	543	9	418	45	30	21	182	339	14	10	475	213
RTOR Reduction (vph)	0	0	304	0	20	0	0	1	0	0	0	89
Lane Group Flow (vph)	277	275	114	45	31	0	0	534	0	0	485	124
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)	23.0	23.0	23.0	6.9	6.9			58.1			58.1	58.1
Effective Green, g (s)	23.0	23.0	23.0	6.9	6.9			58.1			58.1	58.1
Actuated g/C Ratio	0.23	0.23	0.23	0.07	0.07			0.58			0.58	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	394	415	437	124	123			645			1092	1103
v/s Ratio Prot	c0.16	0.15		c0.02	0.02							
v/s Ratio Perm			0.06					c0.48			0.26	0.07
v/c Ratio	0.70	0.66	0.26	0.36	0.26			0.83			0.44	0.11
Uniform Delay, d1	35.4	35.0	31.5	44.5	44.1			16.9			11.8	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			0.89	1.05
Incremental Delay, d2	5.6	4.0	0.3	1.8	1.1			11.7			1.3	0.2
Delay (s)	41.0	38.9	31.9	46.3	45.2			28.6			11.8	10.0
Level of Service	D	D	C	D	D			C			B	B
Approach Delay (s)		36.5			45.7			28.6			11.3	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			27.4									
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			100.0									
Intersection Capacity Utilization			84.3%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: San Bernardino Rd. & Azusa Cyn. Rd.

IY (2022) With Project PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	131	357	362	380	789	165
Future Volume (vph)	131	357	362	380	789	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3333		1805	1615
Flt Permitted	0.24	1.00	1.00		0.95	1.00
Satd. Flow (perm)	450	3610	3333		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	138	376	381	400	831	174
RTOR Reduction (vph)	0	0	158	0	0	19
Lane Group Flow (vph)	138	376	623	0	831	155
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	50.0	50.0	50.0		62.0	62.0
Effective Green, g (s)	50.0	50.0	50.0		62.0	62.0
Actuated g/C Ratio	0.42	0.42	0.42		0.52	0.52
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	187	1504	1388		932	834
v/s Ratio Prot		0.10	0.19		0.46	
v/s Ratio Perm	0.31					0.10
v/c Ratio	0.74	0.25	0.45		0.89	0.19
Uniform Delay, d1	29.5	22.8	25.1		26.0	15.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	22.7	0.4	1.1		12.6	0.5
Delay (s)	52.2	23.2	26.2		38.6	16.0
Level of Service	D	C	C		D	B
Approach Delay (s)		31.0	26.2		34.7	
Approach LOS		C	C		C	
Intersection Summary						
HCM 2000 Control Delay			31.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.82			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			83.2%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) With Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	2510	364	236	1564	36	253	14	320	33	11	47
Future Volume (vph)	40	2510	364	236	1564	36	253	14	320	33	11	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	2642	383	248	1646	38	266	15	337	35	12	49
RTOR Reduction (vph)	0	18	0	0	0	16	0	0	196	0	45	0
Lane Group Flow (vph)	42	3007	0	248	1646	22	141	140	142	35	16	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	4.1	59.0		14.5	69.4	69.4	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	4.1	59.0		14.5	69.4	69.4	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.03	0.49		0.12	0.58	0.58	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	64	2802		229	2197	1098	285	285	285	158	158	
v/s Ratio Prot	0.02	c0.53		c0.13	0.43		0.07	0.07		c0.02	0.01	
v/s Ratio Perm						0.01			c0.07			
v/c Ratio	0.66	1.07		1.08	0.75	0.02	0.49	0.49	0.50	0.22	0.10	
Uniform Delay, d1	57.3	30.5		52.8	18.8	10.8	46.8	46.8	46.8	51.4	50.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	21.7	40.5		83.3	2.4	0.0	6.0	5.9	6.1	3.2	1.3	
Delay (s)	78.9	71.0		136.1	21.2	10.8	52.8	52.7	52.9	54.6	52.1	
Level of Service	E	E		F	C	B	D	D	D	D	D	
Approach Delay (s)		71.1			35.8			52.9			53.0	
Approach LOS		E			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			56.9			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			97.3%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

IY (2022) With Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 				
Traffic Volume (vph)	40	2510	364	236	1564	36	253	14	320	33	11	47
Future Volume (vph)	40	2510	364	236	1564	36	253	14	320	33	11	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00		*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	2642	383	248	1646	38	266	15	337	35	12	49
RTOR Reduction (vph)	0	19	0	0	2	0	0	0	70	0	45	0
Lane Group Flow (vph)	42	3006	0	248	1682	0	141	140	267	35	16	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Actuated Green, G (s)	6.4	59.3		14.2	67.1		18.0	18.0	32.2	10.0	10.0	
Effective Green, g (s)	6.4	59.3		14.2	67.1		18.0	18.0	32.2	10.0	10.0	
Actuated g/C Ratio	0.05	0.49		0.12	0.56		0.15	0.15	0.27	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	101	2816		224	3187		285	285	509	158	158	
v/s Ratio Prot	0.02	c0.53		c0.13	0.30		0.07	0.07	c0.06	c0.02	0.01	
v/s Ratio Perm									0.08			
v/c Ratio	0.42	1.07		1.11	0.53		0.49	0.49	0.52	0.22	0.10	
Uniform Delay, d1	55.0	30.4		52.9	16.5		46.8	46.8	37.4	51.4	50.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	38.4		91.8	0.6		6.0	5.9	1.0	3.2	1.3	
Delay (s)	57.8	68.8		144.7	17.2		52.8	52.7	38.4	54.6	52.1	
Level of Service	E	E		F	B		D	D	D	D	D	
Approach Delay (s)		68.6			33.5			44.9			53.0	
Approach LOS		E			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			53.9			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			96.4%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Azusa Cyn. Rd. & Olive St.

IY (2022) With Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	1	361	3	1	1	247	333	1	1	587	85
Future Volume (vph)	112	1	361	3	1	1	247	333	1	1	587	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3608		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1439	1900	1615	1805	3608		1805	3610	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	119	1	384	3	1	1	263	354	1	1	624	90
RTOR Reduction (vph)	0	0	328	0	0	1	0	0	0	0	0	29
Lane Group Flow (vph)	119	1	56	3	1	0	263	355	0	1	624	61
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	14.5	14.5	14.5	14.5	14.5	14.5	19.8	71.1		0.9	52.2	52.2
Effective Green, g (s)	14.5	14.5	14.5	14.5	14.5	14.5	19.8	71.1		0.9	52.2	52.2
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14	0.14	0.20	0.71		0.01	0.52	0.52
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	208	275	234	208	275	234	357	2565		16	1884	843
v/s Ratio Prot		0.00			0.00		c0.15	0.10		c0.00	c0.17	
v/s Ratio Perm	c0.08		0.03	0.00		0.00						0.04
v/c Ratio	0.57	0.00	0.24	0.01	0.00	0.00	0.74	0.14		0.06	0.33	0.07
Uniform Delay, d1	39.9	36.6	37.9	36.6	36.6	36.6	37.7	4.6		49.1	13.8	11.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.12	1.33		1.00	1.00	1.00
Incremental Delay, d2	3.8	0.0	0.5	0.0	0.0	0.0	6.7	0.1		1.6	0.5	0.2
Delay (s)	43.6	36.6	38.4	36.7	36.6	36.6	48.8	6.3		50.8	14.3	12.0
Level of Service	D	D	D	D	D	D	D	A		D	B	B
Approach Delay (s)		39.6			36.6			24.4			14.1	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			24.6				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)				13.5	
Intersection Capacity Utilization			59.4%				ICU Level of Service				B	
Analysis Period (min)			15									
c Critical Lane Group												

APPENDIX 7.1:

**2040 PLUS SITE BASELINE LAND USE CONDITIONS INTERSECTION OPERATIONS
ANALYSIS**

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Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

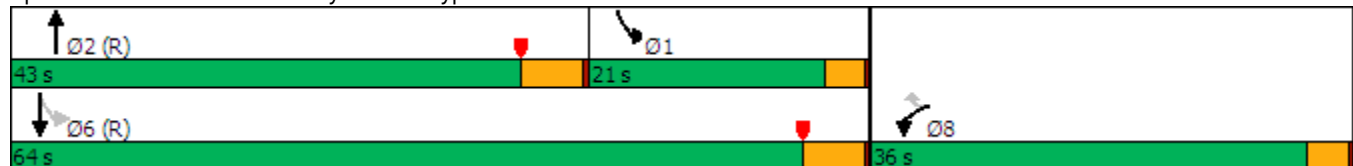
2040 Without Project AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	262	419	359	186	161	247
Future Volume (vph)	262	419	359	186	161	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		48%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	36.0	36.0	43.0		21.0	64.0
Total Split (%)	36.0%	36.0%	43.0%		21.0%	64.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary

1: Azusa Cyn. Rd. & Cypress St.

2040 Without Project AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	262	419	359	186	161	247
Future Volume (veh/h)	262	419	359	186	161	247
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	252	507	399	207	179	274
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	355	632	877	450	783	2595
Arrive On Green	0.20	0.20	0.38	0.38	0.58	1.00
Sat Flow, veh/h	1810	3220	2404	1183	1810	3705
Grp Volume(v), veh/h	252	507	311	295	179	274
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1687	1810	1805
Q Serve(g_s), s	13.0	15.0	12.9	13.1	0.0	0.0
Cycle Q Clear(g_c), s	13.0	15.0	12.9	13.1	0.0	0.0
Prop In Lane	1.00	1.00		0.70	1.00	
Lane Grp Cap(c), veh/h	355	632	686	641	783	2595
V/C Ratio(X)	0.71	0.80	0.45	0.46	0.23	0.11
Avail Cap(c_a), veh/h	588	1047	686	641	783	2595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.98	0.98
Uniform Delay (d), s/veh	37.5	38.3	23.2	23.3	7.9	0.0
Incr Delay (d2), s/veh	2.6	2.4	2.2	2.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	6.0	5.8	5.5	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.1	40.8	25.4	25.7	8.1	0.1
LnGrp LOS	D	D	C	C	A	A
Approach Vol, veh/h	759		606			453
Approach Delay, s/veh	40.6		25.5			3.2
Approach LOS	D		C			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	33.9	43.0			76.9	23.1
Change Period (Y+Rc), s	5.0	* 5			5.0	3.5
Max Green Setting (Gmax), s	17.5	* 38			59.0	32.5
Max Q Clear Time (g_c+I1), s	2.0	15.1			2.0	17.0
Green Ext Time (p_c), s	0.4	3.9			2.0	2.6

Intersection Summary

HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

2040 Without Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	13	206	8	7	23	249	294	12	18	167	303
Future Volume (vph)	215	13	206	8	7	23	249	294	12	18	167	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th AWSC
2: Azusa Cyn. Rd. & Los Angeles St.

2040 Without Project AM Peak Hour

Intersection	
Intersection Delay, s/veh	52
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱		↱			↱	↱
Traffic Vol, veh/h	215	13	206	8	7	23	249	294	12	18	167	303
Future Vol, veh/h	215	13	206	8	7	23	249	294	12	18	167	303
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	229	14	219	9	7	24	265	313	13	19	178	322
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	17.6	12	112.7	16.8
HCM LOS	C	B	F	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	45%	94%	0%	53%	0%	10%	0%
Vol Thru, %	53%	6%	0%	47%	0%	90%	0%
Vol Right, %	2%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	555	228	206	15	23	185	303
LT Vol	249	215	0	8	0	18	0
Through Vol	294	13	0	7	0	167	0
RT Vol	12	0	206	0	23	0	303
Lane Flow Rate	590	243	219	16	24	197	322
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	1.149	0.536	0.411	0.039	0.054	0.391	0.573
Departure Headway (Hd)	7.006	8.336	7.123	9.456	8.442	7.455	6.685
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	520	437	508	381	427	486	545
Service Time	5.055	6.036	4.823	7.156	6.142	5.155	4.385
HCM Lane V/C Ratio	1.135	0.556	0.431	0.042	0.056	0.405	0.591
HCM Control Delay	112.7	20.3	14.7	12.5	11.6	14.9	18
HCM Lane LOS	F	C	B	B	B	B	C
HCM 95th-tile Q	20.3	3.1	2	0.1	0.2	1.8	3.6

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

2040 Without Project AM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	13	206	8	7	23	249	294	12	18	167	303
Future Volume (vph)	215	13	206	8	7	23	249	294	12	18	167	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		50	0		0	0		400
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	60			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)	47%											
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0		60.0	60.0		60.0	60.0	60.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%		60.0%	60.0%		60.0%	60.0%	60.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	C-Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.

 Ø2 (R)	 Ø4	 Ø8
60 s	20 s	20 s
 Ø6 (R)		
60 s		

HCM 6th Signalized Intersection Summary

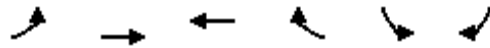
2: Azusa Cyn. Rd. & Los Angeles St.

2040 Without Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	13	206	8	7	23	249	294	12	18	167	303
Future Volume (veh/h)	215	13	206	8	7	23	249	294	12	18	167	303
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	239	0	219	9	7	24	265	313	13	19	178	322
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	559	0	249	49	10	35	432	475	19	127	1170	1125
Arrive On Green	0.15	0.00	0.15	0.03	0.03	0.03	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	3619	0	1610	1810	377	1291	543	679	28	126	1675	1610
Grp Volume(v), veh/h	239	0	219	9	0	31	591	0	0	197	0	322
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1668	1250	0	0	1801	0	1610
Q Serve(g_s), s	6.0	0.0	13.3	0.5	0.0	1.8	25.1	0.0	0.0	0.0	0.0	7.5
Cycle Q Clear(g_c), s	6.0	0.0	13.3	0.5	0.0	1.8	28.6	0.0	0.0	3.5	0.0	7.5
Prop In Lane	1.00		1.00	1.00		0.77	0.45		0.02	0.10		1.00
Lane Grp Cap(c), veh/h	559	0	249	49	0	45	926	0	0	1298	0	1125
V/C Ratio(X)	0.43	0.00	0.88	0.19	0.00	0.69	0.64	0.00	0.00	0.15	0.00	0.29
Avail Cap(c_a), veh/h	579	0	258	290	0	267	926	0	0	1298	0	1125
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.92	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	41.4	47.6	0.0	48.2	9.2	0.0	0.0	5.1	0.0	5.7
Incr Delay (d2), s/veh	0.5	0.0	27.1	1.8	0.0	17.4	3.1	0.0	0.0	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	6.9	0.2	0.0	1.0	7.3	0.0	0.0	1.3	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	0.0	68.5	49.4	0.0	65.7	12.3	0.0	0.0	5.3	0.0	6.3
LnGrp LOS	D	A	E	D	A	E	B	A	A	A	A	A
Approach Vol, veh/h	458			40			591			519		
Approach Delay, s/veh	53.0			62.0			12.3			5.9		
Approach LOS	D			E			B			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	73.9			19.4			73.9			6.7		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	56.0			16.0			56.0			16.0		
Max Q Clear Time (g_c+I1), s	30.6			15.3			9.5			3.8		
Green Ext Time (p_c), s	5.4			0.1			2.5			0.1		
Intersection Summary												
HCM 6th Ctrl Delay	23.1											
HCM 6th LOS	C											
Notes												

Lanes, Volumes, Timings
3: San Bernardino Rd. & Azusa Cyn. Rd.

2040 Without Project AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	160	377	474	287	84
Future Volume (vph)	90	160	377	474	287	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	73.0	73.0	73.0		47.0	47.0
Total Split (%)	60.8%	60.8%	60.8%		39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

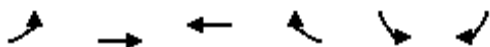
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary 3: San Bernardino Rd. & Azusa Cyn. Rd.

2040 Without Project AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	90	160	377	474	287	84
Future Volume (veh/h)	90	160	377	474	287	84
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	101	180	424	533	322	94
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	277	2076	1038	926	648	577
Arrive On Green	0.57	0.57	0.57	0.57	0.36	0.36
Sat Flow, veh/h	596	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	101	180	424	533	322	94
Grp Sat Flow(s),veh/h/ln	596	1805	1805	1610	1810	1610
Q Serve(g_s), s	15.6	2.7	15.7	25.2	16.7	4.8
Cycle Q Clear(g_c), s	40.8	2.7	15.7	25.2	16.7	4.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	277	2076	1038	926	648	577
V/C Ratio(X)	0.36	0.09	0.41	0.58	0.50	0.16
Avail Cap(c_a), veh/h	277	2076	1038	926	648	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.2	11.4	14.2	16.2	30.1	26.2
Incr Delay (d2), s/veh	3.7	0.1	1.2	2.6	2.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	1.0	6.3	9.3	7.7	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.8	11.5	15.4	18.8	32.8	26.8
LnGrp LOS	C	B	B	B	C	C
Approach Vol, veh/h		281	957		416	
Approach Delay, s/veh		19.2	17.3		31.4	
Approach LOS		B	B		C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		73.0		47.0		73.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		69.0		43.0		69.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			21.2			
HCM 6th LOS			C			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

2040 Without Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	1213	301	191	2409	46	479	19	154	22	13	44
Future Volume (vph)	28	1213	301	191	2409	46	479	19	154	22	13	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	55.2		26.8	74.5	74.5	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	46.0%		22.3%	62.1%	62.1%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

Ø1	Ø2 (R)	Ø4	Ø8
26.8 s	55.2 s	15 s	23 s
Ø5	Ø6 (R)		
7.5 s	74.5 s		

HCM 6th Signalized Intersection Summary 4: Azusa Cyn. Rd. & Arrow Hwy.

2040 Without Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	1213	301	191	2409	46	479	19	154	22	13	44
Future Volume (veh/h)	28	1213	301	191	2409	46	479	19	154	22	13	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	31	1333	331	210	2647	51	541	0	169	24	14	48
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	39	2114	524	241	2245	951	543	0	242	151	31	108
Arrive On Green	0.02	0.48	0.48	0.13	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4410	1093	1810	3800	1610	3619	0	1610	1810	377	1291
Grp Volume(v), veh/h	31	1148	516	210	2647	51	541	0	169	24	0	62
Grp Sat Flow(s),veh/h/ln	1810	1900	1703	1810	1900	1610	1810	0	1610	1810	0	1668
Q Serve(g_s), s	2.0	27.1	27.1	13.7	70.9	1.6	17.9	0.0	12.0	1.5	0.0	4.2
Cycle Q Clear(g_c), s	2.0	27.1	27.1	13.7	70.9	1.6	17.9	0.0	12.0	1.5	0.0	4.2
Prop In Lane	1.00		0.64	1.00		1.00	1.00		1.00	1.00		0.77
Lane Grp Cap(c), veh/h	39	1822	817	241	2245	951	543	0	242	151	0	139
V/C Ratio(X)	0.79	0.63	0.63	0.87	1.18	0.05	1.00	0.00	0.70	0.16	0.00	0.45
Avail Cap(c_a), veh/h	60	1822	817	351	2245	951	543	0	242	151	0	139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.4	23.3	23.3	51.0	24.6	10.4	51.0	0.0	48.4	51.1	0.0	52.4
Incr Delay (d2), s/veh	30.7	1.7	3.7	14.9	85.6	0.1	37.2	0.0	15.1	2.2	0.0	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	11.8	11.0	7.0	54.4	0.6	10.9	0.0	5.8	0.8	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.2	25.0	27.0	66.0	110.1	10.5	88.2	0.0	63.6	53.3	0.0	62.4
LnGrp LOS	F	C	C	E	F	B	F	A	E	D	A	E
Approach Vol, veh/h	1695			2908			710			86		
Approach Delay, s/veh	26.8			105.2			82.3			59.9		
Approach LOS	C			F			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.5	62.5		15.0	6.1	75.9		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	23.3	50.2		10.0	4.0	69.5		18.0				
Max Q Clear Time (g_c+I1), s	15.7	29.1		6.2	4.0	72.9		19.9				
Green Ext Time (p_c), s	0.3	11.4		0.1	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	76.8											
HCM 6th LOS	E											
Notes												

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

2040 Without Project AM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	1213	301	191	2409	46	479	19	154	22	13	44
Future Volume (vph)	28	1213	301	191	2409	46	479	19	154	22	13	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0		23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	55.4		26.6	74.5		23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	46.2%		22.2%	62.1%		19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

Ø1	Ø2 (R)	Ø4	Ø8
26.6 s	55.4 s	15 s	23 s
Ø5	Ø6 (R)		
7.5 s	74.5 s		

HCM 6th Signalized Intersection Summary 4: Azusa Cyn. Rd. & Arrow Hwy.

2040 Without Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	28	1213	301	191	2409	46	479	19	154	22	13	44
Future Volume (veh/h)	28	1213	301	191	2409	46	479	19	154	22	13	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	31	1333	331	210	2647	51	541	0	169	24	14	48
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	39	2115	524	241	3293	63	543	0	242	151	31	108
Arrive On Green	0.02	0.48	0.48	0.13	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4410	1093	1810	5574	107	3619	0	1610	1810	377	1291
Grp Volume(v), veh/h	31	1148	516	210	1800	898	541	0	169	24	0	62
Grp Sat Flow(s),veh/h/ln	1810	1900	1703	1810	1900	1881	1810	0	1610	1810	0	1668
Q Serve(g_s), s	2.0	27.0	27.1	13.7	44.2	44.8	17.9	0.0	12.0	1.5	0.0	4.2
Cycle Q Clear(g_c), s	2.0	27.0	27.1	13.7	44.2	44.8	17.9	0.0	12.0	1.5	0.0	4.2
Prop In Lane	1.00		0.64	1.00		0.06	1.00		1.00	1.00		0.77
Lane Grp Cap(c), veh/h	39	1822	817	241	2245	1111	543	0	242	151	0	139
V/C Ratio(X)	0.79	0.63	0.63	0.87	0.80	0.81	1.00	0.00	0.70	0.16	0.00	0.45
Avail Cap(c_a), veh/h	60	1822	817	348	2245	1111	543	0	242	151	0	139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.4	23.3	23.3	51.0	19.1	19.2	51.0	0.0	48.4	51.1	0.0	52.4
Incr Delay (d2), s/veh	30.7	1.7	3.7	15.2	3.1	6.3	37.2	0.0	15.1	2.2	0.0	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	11.8	11.0	7.0	18.3	19.3	10.9	0.0	5.8	0.8	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.2	25.0	27.0	66.3	22.2	25.6	88.2	0.0	63.6	53.3	0.0	62.4
LnGrp LOS	F	C	C	E	C	C	F	A	E	D	A	E
Approach Vol, veh/h	1695			2908			710			86		
Approach Delay, s/veh	26.8			26.4			82.3			59.9		
Approach LOS	C			C			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.5	62.5		15.0	6.1	75.9		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	23.1	50.4		10.0	4.0	69.5		18.0				
Max Q Clear Time (g_c+I1), s	15.7	29.1		6.2	4.0	46.8		19.9				
Green Ext Time (p_c), s	0.3	11.5		0.1	0.0	19.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	34.4											
HCM 6th LOS	C											
Notes												

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

2040 Without Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	2	136	1	1	1	135	611	13	3	271	39
Future Volume (vph)	86	2	136	1	1	1	135	611	13	3	271	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	33.0	33.0	33.0	33.0	33.0	33.0	31.0	54.0		13.0	36.0	36.0
Total Split (%)	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	31.0%	54.0%		13.0%	36.0%	36.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

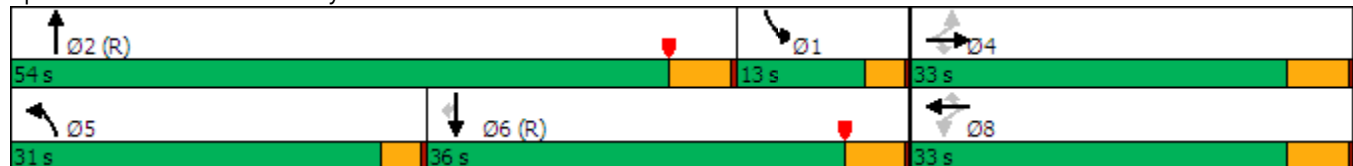
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary
5: Azusa Cyn. Rd. & Olive St.

2040 Without Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	2	136	1	1	1	135	611	13	3	271	39
Future Volume (veh/h)	86	2	136	1	1	1	135	611	13	3	271	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	93	2	148	1	1	1	147	664	14	3	295	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	238	220	186	216	220	186	180	1771	37	442	2346	1046
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.20	0.98	0.98	0.24	0.65	0.65
Sat Flow, veh/h	1437	1900	1610	1257	1900	1610	1810	3615	76	1810	3610	1610
Grp Volume(v), veh/h	93	2	148	1	1	1	147	331	347	3	295	42
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	1257	1900	1610	1810	1805	1886	1810	1805	1610
Q Serve(g_s), s	6.1	0.1	9.0	0.1	0.0	0.1	7.8	0.6	0.6	0.1	3.1	0.9
Cycle Q Clear(g_c), s	6.2	0.1	9.0	0.2	0.0	0.1	7.8	0.6	0.6	0.1	3.1	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	238	220	186	216	220	186	180	884	924	442	2346	1046
V/C Ratio(X)	0.39	0.01	0.79	0.00	0.00	0.01	0.82	0.37	0.37	0.01	0.13	0.04
Avail Cap(c_a), veh/h	474	532	451	423	532	451	498	884	924	442	2346	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.73	0.73	0.73
Uniform Delay (d), s/veh	41.8	39.1	43.1	39.2	39.1	39.1	39.2	0.5	0.5	28.6	6.7	6.3
Incr Delay (d2), s/veh	1.0	0.0	7.5	0.0	0.0	0.0	8.2	1.1	1.1	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	3.9	0.0	0.0	0.0	3.5	0.4	0.4	0.1	1.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.9	39.2	50.5	39.2	39.1	39.1	47.4	1.6	1.6	28.6	6.8	6.3
LnGrp LOS	D	D	D	D	D	D	D	A	A	C	A	A
Approach Vol, veh/h	243			3			825			340		
Approach Delay, s/veh	47.5			39.2			9.8			6.9		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	29.4	54.0	16.6		13.4	70.0	16.6					
Change Period (Y+Rc), s	5.0	* 5	5.0		3.5	5.0	5.0					
Max Green Setting (Gmax), s	9.5	* 49	28.0		27.5	31.0	28.0					
Max Q Clear Time (g_c+I1), s	2.1	2.6	11.0		9.8	5.1	2.2					
Green Ext Time (p_c), s	0.0	4.8	0.6		0.3	2.1	0.0					

Intersection Summary

HCM 6th Ctrl Delay 15.6

HCM 6th LOS B

Notes

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

Lanes, Volumes, Timings
6: Azusa Cyn. Rd. & Dwy. 1

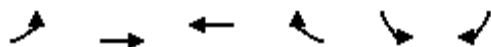
2040 Without Project AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	2	532	0	6	488
Future Volume (vph)	0	2	532	0	6	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	208		299			985
Travel Time (s)	4.7		6.8			22.4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	532	0	6	488
Future Vol, veh/h	0	2	532	0	6	488
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2	560	0	6	514
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	280	0	0	560	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	723	-	-	1021	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	723	-	-	1021	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10	0		0.1		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	723	1021	-	
HCM Lane V/C Ratio	-	-	0.003	0.006	-	
HCM Control Delay (s)	-	-	10	8.5	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Lanes, Volumes, Timings
7: Los Angeles St. & Dwy. 2

2040 Without Project AM Peak Hour

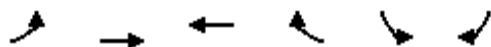


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	38	36	0	0	2
Future Volume (vph)	5	38	36	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		160	175		164	
Travel Time (s)		3.6	4.0		3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	38	36	0	0	2
Future Vol, veh/h	5	38	36	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	40	38	0	0	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	38	0	-	0	88	38
Stage 1	-	-	-	-	38	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1585	-	-	-	918	1040
Stage 1	-	-	-	-	990	-
Stage 2	-	-	-	-	978	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1585	-	-	-	915	1040
Mov Cap-2 Maneuver	-	-	-	-	915	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	978	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.8	0		8.5		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1585	-	-	-	1040	
HCM Lane V/C Ratio	0.003	-	-	-	0.002	
HCM Control Delay (s)	7.3	0	-	-	8.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile O(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
8: Los Angeles St. & Dwy. 3

2040 Without Project AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	36	35	0	0	1
Future Volume (vph)	2	36	35	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		175	247		166	
Travel Time (s)		4.0	5.6		3.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	36	35	0	0	1
Future Vol, veh/h	2	36	35	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	38	37	0	0	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	37	0	-	0	79	37
Stage 1	-	-	-	-	37	-
Stage 2	-	-	-	-	42	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1587	-	-	-	929	1041
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	986	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1587	-	-	-	928	1041
Mov Cap-2 Maneuver	-	-	-	-	928	-
Stage 1	-	-	-	-	990	-
Stage 2	-	-	-	-	986	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		8.5		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1587	-	-	-	1041	
HCM Lane V/C Ratio	0.001	-	-	-	0.001	
HCM Control Delay (s)	7.3	0	-	-	8.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile O(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

2040 Without Project PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	196	223	379	579	492	484
Future Volume (vph)	196	223	379	579	492	484
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)		41%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	21.8	21.8	38.2		40.0	78.2
Total Split (%)	21.8%	21.8%	38.2%		40.0%	78.2%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

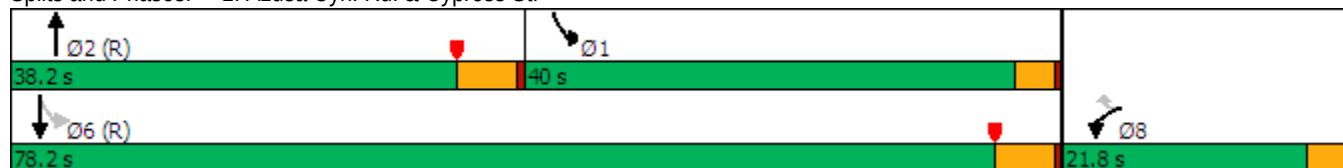
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary

1: Azusa Cyn. Rd. & Cypress St.

2040 Without Project PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	196	223	379	579	492	484
Future Volume (veh/h)	196	223	379	579	492	484
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	288	147	399	609	518	509
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	427	190	599	535	823	2877
Arrive On Green	0.12	0.12	0.33	0.33	0.69	1.00
Sat Flow, veh/h	3619	1610	1900	1610	1810	3705
Grp Volume(v), veh/h	288	147	399	609	518	509
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	7.6	8.9	19.0	33.2	9.2	0.0
Cycle Q Clear(g_c), s	7.6	8.9	19.0	33.2	9.2	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	427	190	599	535	823	2877
V/C Ratio(X)	0.67	0.77	0.67	1.14	0.63	0.18
Avail Cap(c_a), veh/h	662	295	599	535	823	2877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.87	0.87
Uniform Delay (d), s/veh	42.3	42.8	28.6	33.4	9.8	0.0
Incr Delay (d2), s/veh	1.9	6.6	5.8	83.4	1.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	3.8	9.0	24.9	4.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.1	49.4	34.4	116.8	11.1	0.1
LnGrp LOS	D	D	C	F	B	A
Approach Vol, veh/h	435		1008			1027
Approach Delay, s/veh	45.9		84.2			5.7
Approach LOS	D		F			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	46.5	38.2			84.7	15.3
Change Period (Y+Rc), s	5.0	* 5			5.0	3.5
Max Green Setting (Gmax), s	36.5	* 33			73.2	18.3
Max Q Clear Time (g_c+I1), s	11.2	35.2			2.0	10.9
Green Ext Time (p_c), s	1.7	0.0			3.9	0.9

Intersection Summary

HCM 6th Ctrl Delay	44.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

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

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

2040 Without Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	8	438	43	25	22	191	349	13	12	469	210
Future Volume (vph)	566	8	438	43	25	22	191	349	13	12	469	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th AWSC
2: Azusa Cyn. Rd. & Los Angeles St.

2040 Without Project PM Peak Hour

Intersection												
Intersection Delay, s/veh	135.3											
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱		↱			↱	↱
Traffic Vol, veh/h	566	8	438	43	25	22	191	349	13	12	469	210
Future Vol, veh/h	566	8	438	43	25	22	191	349	13	12	469	210
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	584	8	452	44	26	23	197	360	13	12	484	216
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1
Approach	EB	WB		NB		SB						
Opposing Approach	WB	EB		SB		NB						
Opposing Lanes	2	2		2		1						
Conflicting Approach Left	SB	NB		EB		WB						
Conflicting Lanes Left	2	1		2		2						
Conflicting Approach Right	NB	SB		WB		EB						
Conflicting Lanes Right	1	2		2		2						
HCM Control Delay	155	15.8		180.3		85.9						
HCM LOS	F	C		F		F						
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2					
Vol Left, %	35%	99%	0%	63%	0%	2%	0%					
Vol Thru, %	63%	1%	0%	37%	0%	98%	0%					
Vol Right, %	2%	0%	100%	0%	100%	0%	100%					
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane	553	574	438	68	22	481	210					
LT Vol	191	566	0	43	0	12	0					
Through Vol	349	8	0	25	0	469	0					
RT Vol	13	0	438	0	22	0	210					
Lane Flow Rate	570	592	452	70	23	496	216					
Geometry Grp	6	7	7	7	7	7	7					
Degree of Util (X)	1.308	1.423	0.936	0.197	0.057	1.136	0.453					
Departure Headway (Hd)	8.63	9.372	8.122	11.16	10.077	8.825	8.082					
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Cap	428	391	452	324	358	417	448					
Service Time	6.63	7.072	5.822	8.86	7.777	6.525	5.782					
HCM Lane V/C Ratio	1.332	1.514	1	0.216	0.064	1.189	0.482					
HCM Control Delay	180.3	230	56.7	16.6	13.4	115.9	17.3					
HCM Lane LOS	F	F	F	C	B	F	C					
HCM 95th-tile Q	24.4	27.7	10.8	0.7	0.2	17.1	2.3					

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

2040 Without Project PM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	8	438	43	25	22	191	349	13	12	469	210
Future Volume (vph)	566	8	438	43	25	22	191	349	13	12	469	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		50	0		0	0		400
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	60			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)	49%											
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	33.0	33.0	33.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	33.0	33.0	33.0	20.0	20.0		47.0	47.0		47.0	47.0	47.0
Total Split (%)	33.0%	33.0%	33.0%	20.0%	20.0%		47.0%	47.0%		47.0%	47.0%	47.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	C-Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.

 Ø2 (R)	 Ø4	 Ø8
47 s	33 s	20 s
 Ø6 (R)		
47 s		

HCM 6th Signalized Intersection Summary

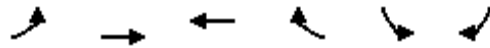
2: Azusa Cyn. Rd. & Los Angeles St.

2040 Without Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	566	8	438	43	25	22	191	349	13	12	469	210
Future Volume (veh/h)	566	8	438	43	25	22	191	349	13	12	469	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	590	0	452	44	26	23	197	360	13	12	484	216
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	1050	0	467	83	43	38	272	454	16	46	1018	876
Arrive On Green	0.29	0.00	0.29	0.05	0.05	0.05	0.54	0.54	0.54	1.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610	1810	930	822	411	835	29	17	1870	1610
Grp Volume(v), veh/h	590	0	452	44	0	49	570	0	0	496	0	216
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1752	1275	0	0	1887	0	1610
Q Serve(g_s), s	13.8	0.0	27.7	2.4	0.0	2.7	33.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.8	0.0	27.7	2.4	0.0	2.7	36.1	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.47	0.35		0.02	0.02		1.00
Lane Grp Cap(c), veh/h	1050	0	467	83	0	80	742	0	0	1064	0	876
V/C Ratio(X)	0.56	0.00	0.97	0.53	0.00	0.61	0.77	0.00	0.00	0.47	0.00	0.25
Avail Cap(c_a), veh/h	1050	0	467	290	0	280	742	0	0	1064	0	876
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.44	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	35.0	46.7	0.0	46.8	18.1	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	33.4	5.2	0.0	7.3	3.4	0.0	0.0	1.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	14.5	1.2	0.0	1.4	10.6	0.0	0.0	0.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	0.0	68.4	51.8	0.0	54.1	21.6	0.0	0.0	1.5	0.0	0.7
LnGrp LOS	C	A	E	D	A	D	C	A	A	A	A	A
Approach Vol, veh/h	1042			93			570			712		
Approach Delay, s/veh	47.1			53.0			21.6			1.2		
Approach LOS	D			D			C			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	58.4			33.0			58.4			8.6		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	43.0			29.0			43.0			16.0		
Max Q Clear Time (g_c+I1), s	38.1			29.7			2.0			4.7		
Green Ext Time (p_c), s	2.0			0.0			4.5			0.2		
Intersection Summary												
HCM 6th Ctrl Delay			27.8									
HCM 6th LOS			C									
Notes												

Lanes, Volumes, Timings
3: San Bernardino Rd. & Azusa Cyn. Rd.

2040 Without Project PM Peak Hour

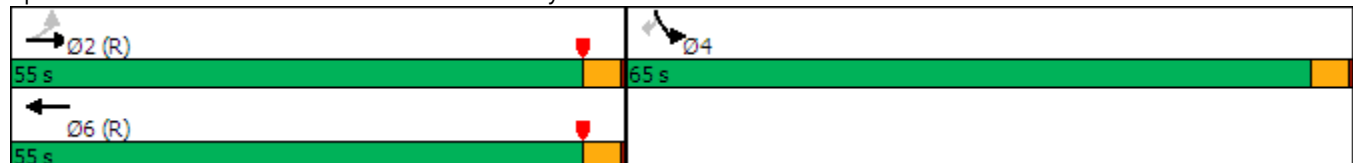


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	139	375	385	405	829	168
Future Volume (vph)	139	375	385	405	829	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	55.0	55.0	55.0		65.0	65.0
Total Split (%)	45.8%	45.8%	45.8%		54.2%	54.2%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

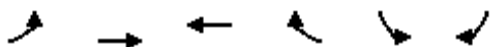
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary 3: San Bernardino Rd. & Azusa Cyn. Rd.

2040 Without Project PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	139	375	385	405	829	168
Future Volume (veh/h)	139	375	385	405	829	168
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	146	395	405	426	873	177
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	206	1534	767	684	920	819
Arrive On Green	0.43	0.43	0.43	0.43	0.51	0.51
Sat Flow, veh/h	671	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	146	395	405	426	873	177
Grp Sat Flow(s),veh/h/ln	671	1805	1805	1610	1810	1610
Q Serve(g_s), s	26.1	8.5	20.0	24.8	55.0	7.3
Cycle Q Clear(g_c), s	50.9	8.5	20.0	24.8	55.0	7.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	206	1534	767	684	920	819
V/C Ratio(X)	0.71	0.26	0.53	0.62	0.95	0.22
Avail Cap(c_a), veh/h	206	1534	767	684	920	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	22.3	25.6	27.0	28.0	16.3
Incr Delay (d2), s/veh	18.5	0.4	2.6	4.2	19.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	3.6	8.8	10.0	27.8	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	65.4	22.7	28.2	31.2	47.7	16.9
LnGrp LOS	E	C	C	C	D	B
Approach Vol, veh/h		541	831		1050	
Approach Delay, s/veh		34.2	29.7		42.5	
Approach LOS		C	C		D	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		55.0		65.0		55.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		51.0		61.0		51.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			36.3			
HCM 6th LOS			D			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

2040 Without Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 						 	
Traffic Volume (vph)	43	2663	376	241	1564	39	249	15	314	35	12	51
Future Volume (vph)	43	2663	376	241	1564	39	249	15	314	35	12	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)							47%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	10.8	65.0		17.0	71.2	71.2	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	9.0%	54.2%		14.2%	59.3%	59.3%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 18 (15%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

 Ø1	 Ø2 (R)	 Ø4	 Ø8
17 s	65 s	15 s	23 s
 Ø5	 Ø6 (R)		
10.8 s	71.2 s		

HCM 6th Signalized Intersection Summary 4: Azusa Cyn. Rd. & Arrow Hwy.

2040 Without Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	2663	376	241	1564	39	249	15	314	35	12	51
Future Volume (veh/h)	43	2663	376	241	1564	39	249	15	314	35	12	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	46	2833	400	256	1664	41	276	0	334	37	13	54
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	60	2460	331	204	2202	933	543	0	242	151	27	111
Arrive On Green	0.03	0.50	0.50	0.11	0.58	0.58	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4920	661	1810	3800	1610	3619	0	1610	1810	322	1337
Grp Volume(v), veh/h	46	2155	1078	256	1664	41	276	0	334	37	0	67
Grp Sat Flow(s),veh/h/ln	1810	1900	1781	1810	1900	1610	1810	0	1610	1810	0	1659
Q Serve(g_s), s	3.0	60.0	60.0	13.5	39.3	1.3	8.4	0.0	18.0	2.3	0.0	4.6
Cycle Q Clear(g_c), s	3.0	60.0	60.0	13.5	39.3	1.3	8.4	0.0	18.0	2.3	0.0	4.6
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.81
Lane Grp Cap(c), veh/h	60	1900	891	204	2202	933	543	0	242	151	0	138
V/C Ratio(X)	0.77	1.13	1.21	1.26	0.76	0.04	0.51	0.00	1.38	0.25	0.00	0.48
Avail Cap(c_a), veh/h	110	1900	891	204	2202	933	543	0	242	151	0	138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.6	30.0	30.0	53.3	18.9	10.9	46.9	0.0	51.0	51.5	0.0	52.5
Incr Delay (d2), s/veh	18.7	67.6	105.1	149.4	2.5	0.1	3.3	0.0	195.5	3.8	0.0	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	42.7	49.3	14.4	16.2	0.5	4.0	0.0	20.3	1.2	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.3	97.6	135.1	202.6	21.3	11.0	50.2	0.0	246.5	55.3	0.0	64.2
LnGrp LOS	E	F	F	F	C	B	D	A	F	E	A	E
Approach Vol, veh/h	3279			1961			610			104		
Approach Delay, s/veh	109.6			44.8			157.7			61.0		
Approach LOS	F			D			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	65.0		15.0	7.5	74.5		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	13.5	60.0		10.0	7.3	66.2		18.0				
Max Q Clear Time (g_c+I1), s	15.5	62.0		6.6	5.0	41.3		20.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	13.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	92.4											
HCM 6th LOS	F											
Notes												

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

2040 Without Project PM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	43	2663	376	241	1564	39	249	15	314	35	12	51
Future Volume (vph)	43	2663	376	241	1564	39	249	15	314	35	12	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour 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
Shared Lane Traffic (%)							47%					
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0		10.0	10.0	4.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0		23.0	23.0	7.5	15.0	15.0	
Total Split (s)	11.6	67.0		15.0	70.4		23.0	23.0	15.0	15.0	15.0	
Total Split (%)	9.7%	55.8%		12.5%	58.7%		19.2%	19.2%	12.5%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5	3.0	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag				Lag			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	C-Max		None	C-Max		Max	Max	None	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 17 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

 Ø2 (R)	 Ø1	 Ø4	 Ø8
67 s	15 s	15 s	23 s
 Ø5	 Ø6 (R)		
11.6 s	70.4 s		

HCM 6th Signalized Intersection Summary 4: Azusa Cyn. Rd. & Arrow Hwy.

2040 Without Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	2663	376	241	1564	39	249	15	314	35	12	51
Future Volume (veh/h)	43	2663	376	241	1564	39	249	15	314	35	12	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	2663	376	241	1564	39	260	0	314	35	12	51
Peak Hour 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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	56	2542	342	726	4983	124	543	0	888	151	26	112
Arrive On Green	0.05	0.77	0.77	0.60	1.00	1.00	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4920	661	1810	5537	138	3619	0	1610	1810	316	1342
Grp Volume(v), veh/h	43	2026	1013	241	1073	530	260	0	314	35	0	63
Grp Sat Flow(s),veh/h/ln	1810	1900	1781	1810	1900	1875	1810	0	1610	1810	0	1658
Q Serve(g_s), s	2.8	62.0	62.0	7.9	0.0	0.0	7.9	0.0	0.0	2.2	0.0	4.3
Cycle Q Clear(g_c), s	2.8	62.0	62.0	7.9	0.0	0.0	7.9	0.0	0.0	2.2	0.0	4.3
Prop In Lane	1.00		0.37	1.00		0.07	1.00		1.00	1.00		0.81
Lane Grp Cap(c), veh/h	56	1963	920	726	3420	1687	543	0	888	151	0	138
V/C Ratio(X)	0.77	1.03	1.10	0.33	0.31	0.31	0.48	0.00	0.35	0.23	0.00	0.46
Avail Cap(c_a), veh/h	122	1963	920	726	3420	1687	543	0	888	151	0	138
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.8	13.5	13.5	15.9	0.0	0.0	46.7	0.0	15.0	51.4	0.0	52.4
Incr Delay (d2), s/veh	20.1	29.0	61.2	0.3	0.2	0.5	2.9	0.0	1.1	3.6	0.0	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	17.4	24.5	2.9	0.1	0.2	3.8	0.0	5.0	1.1	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.9	42.5	74.7	16.1	0.2	0.5	49.7	0.0	16.1	55.0	0.0	62.9
LnGrp LOS	E	F	F	B	A	A	D	A	B	D	A	E
Approach Vol, veh/h	3082			1844			574			98		
Approach Delay, s/veh	53.6			2.4			31.3			60.1		
Approach LOS	D			A			C			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	53.2	67.0		15.0	7.2	113.0		23.0				
Change Period (Y+Rc), s	5.0	* 5		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	11.5	* 62		10.0	8.1	65.4		18.0				
Max Q Clear Time (g_c+I1), s	9.9	64.0		6.3	4.8	2.0		9.9				
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	15.5		1.4				

Intersection Summary

HCM 6th Ctrl Delay 34.6
HCM 6th LOS C

Notes

User approved volume balancing among the lanes for turning movement.

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

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

2040 Without Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	1	380	3	1	1	259	342	1	1	587	85
Future Volume (vph)	116	1	380	3	1	1	259	342	1	1	587	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	33.0	33.0	33.0	33.0	33.0	33.0	32.0	59.0		8.0	35.0	35.0
Total Split (%)	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	32.0%	59.0%		8.0%	35.0%	35.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lag	Lead		Lag	Lead	Lead
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

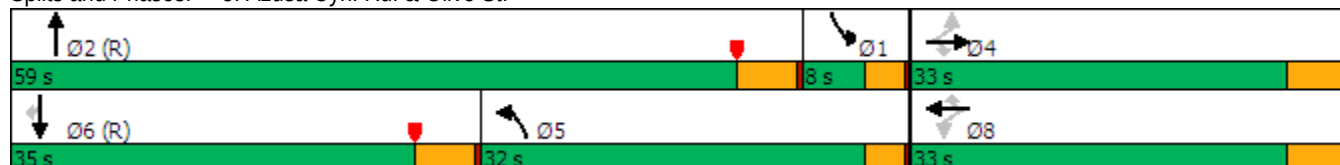
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary
5: Azusa Cyn. Rd. & Olive St.

2040 Without Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	1	380	3	1	1	259	342	1	1	587	85
Future Volume (veh/h)	116	1	380	3	1	1	259	342	1	1	587	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	123	1	404	3	1	1	276	364	1	1	624	90
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	457	510	432	339	510	432	537	1994	5	102	1083	483
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.59	1.00	1.00	0.06	0.30	0.30
Sat Flow, veh/h	1437	1900	1610	996	1900	1610	1810	3693	10	1810	3610	1610
Grp Volume(v), veh/h	123	1	404	3	1	1	276	178	187	1	624	90
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	996	1900	1610	1810	1805	1898	1810	1805	1610
Q Serve(g_s), s	6.8	0.0	24.5	0.2	0.0	0.0	8.9	0.0	0.0	0.1	14.6	4.1
Cycle Q Clear(g_c), s	6.9	0.0	24.5	0.3	0.0	0.0	8.9	0.0	0.0	0.1	14.6	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	457	510	432	339	510	432	537	975	1025	102	1083	483
V/C Ratio(X)	0.27	0.00	0.93	0.01	0.00	0.00	0.51	0.18	0.18	0.01	0.58	0.19
Avail Cap(c_a), veh/h	474	532	451	350	532	451	537	975	1025	102	1083	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.73	0.73	0.73	0.09	0.09	0.09
Uniform Delay (d), s/veh	29.3	26.8	35.7	26.9	26.8	26.8	16.1	0.0	0.0	44.5	29.6	26.0
Incr Delay (d2), s/veh	0.3	0.0	26.3	0.0	0.0	0.0	0.6	0.3	0.3	0.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	12.6	0.1	0.0	0.0	3.0	0.1	0.1	0.0	6.3	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.6	26.8	62.1	26.9	26.8	26.8	16.7	0.3	0.3	44.5	29.8	26.0
LnGrp LOS	C	C	E	C	C	C	B	A	A	D	C	C
Approach Vol, veh/h	528			5			641			715		
Approach Delay, s/veh	54.4			26.8			7.4			29.4		
Approach LOS	D			C			A			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	59.0		31.8	33.2	35.0		31.8				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	4.5	54.0		28.0	28.5	30.0		28.0				
Max Q Clear Time (g_c+I1), s	2.1	2.0		26.5	10.9	16.6		2.3				
Green Ext Time (p_c), s	0.0	2.3		0.3	0.7	3.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	28.9											
HCM 6th LOS	C											

Lanes, Volumes, Timings
6: Azusa Cyn. Rd. & Dwy. 1

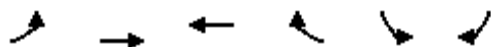
2040 Without Project PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	5	937	0	2	691
Future Volume (vph)	0	5	937	0	2	691
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	208		299			985
Travel Time (s)	4.7		6.8			22.4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	937	0	2	691
Future Vol, veh/h	0	5	937	0	2	691
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	5	986	0	2	727
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	493	0	0	986	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	527	-	-	709	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	527	-	-	709	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.9	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	527	709	-	
HCM Lane V/C Ratio	-	-	0.01	0.003	-	
HCM Control Delay (s)	-	-	11.9	10.1	0	
HCM Lane LOS	-	-	B	B	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Lanes, Volumes, Timings
7: Los Angeles St. & Dwy. 2

2040 Without Project PM Peak Hour

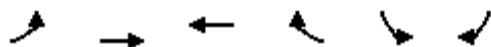


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	32	86	0	0	5
Future Volume (vph)	2	32	86	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		160	175		164	
Travel Time (s)		3.6	4.0		3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	32	86	0	0	5
Future Vol, veh/h	2	32	86	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	34	91	0	0	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	91	0	-	0	129	91
Stage 1	-	-	-	-	91	-
Stage 2	-	-	-	-	38	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1517	-	-	-	870	972
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	990	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1517	-	-	-	869	972
Mov Cap-2 Maneuver	-	-	-	-	869	-
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	990	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1517	-	-	-	972	
HCM Lane V/C Ratio	0.001	-	-	-	0.005	
HCM Control Delay (s)	7.4	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
8: Los Angeles St. & Dwy. 3

2040 Without Project PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	31	84	0	0	2
Future Volume (vph)	1	31	84	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		175	247		166	
Travel Time (s)		4.0	5.6		3.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	31	84	0	0	2
Future Vol, veh/h	1	31	84	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	33	88	0	0	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	88	0	-	0	123	88
Stage 1	-	-	-	-	88	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1520	-	-	-	877	976
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	993	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1520	-	-	-	876	976
Mov Cap-2 Maneuver	-	-	-	-	876	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	993	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		8.7		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1520	-	-	-	976	
HCM Lane V/C Ratio	0.001	-	-	-	0.002	
HCM Control Delay (s)	7.4	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile O(veh)	0	-	-	-	0	

HCM Signalized Intersection Capacity Analysis

1: Azusa Cyn. Rd. & Cypress St.

2040 Without Project AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	262	419	359	186	161	247
Future Volume (vph)	262	419	359	186	161	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.93	0.85	0.95		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3351	1470	3425		1805	3610
Flt Permitted	0.97	1.00	1.00		0.39	1.00
Satd. Flow (perm)	3351	1470	3425		739	3610
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	291	466	399	207	179	274
RTOR Reduction (vph)	173	204	49	0	0	0
Lane Group Flow (vph)	342	38	557	0	179	274
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	15.9	15.9	54.6		77.1	75.6
Effective Green, g (s)	15.9	15.9	54.6		77.1	75.6
Actuated g/C Ratio	0.16	0.16	0.55		0.77	0.76
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	532	233	1870		756	2729
v/s Ratio Prot	c0.10		c0.16		c0.04	0.08
v/s Ratio Perm		0.03			0.14	
v/c Ratio	0.64	0.17	0.30		0.24	0.10
Uniform Delay, d1	39.4	36.3	12.3		4.9	3.2
Progression Factor	1.00	1.00	1.00		1.08	0.92
Incremental Delay, d2	2.7	0.3	0.4		0.2	0.1
Delay (s)	42.0	36.7	12.7		5.5	3.0
Level of Service	D	D	B		A	A
Approach Delay (s)	40.3		12.7			4.0
Approach LOS	D		B			A
Intersection Summary						
HCM 2000 Control Delay			22.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.35			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			47.5%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: Azusa Cyn. Rd. & Los Angeles St.

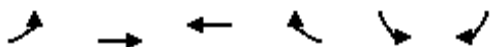
2040 Without Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	13	206	8	7	23	249	294	12	18	167	303
Future Volume (vph)	215	13	206	8	7	23	249	294	12	18	167	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.88			1.00			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1715	1805	1900	1805	1679			1900			1900	1900
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.76			0.94	1.00
Satd. Flow (perm)	1715	1805	1900	1805	1679			1450			1780	1900
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	229	14	219	9	7	24	265	313	13	19	178	322
RTOR Reduction (vph)	0	0	192	0	23	0	0	1	0	0	0	92
Lane Group Flow (vph)	121	122	27	9	8	0	0	590	0	0	197	230
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)	12.3	12.3	12.3	4.2	4.2			71.5			71.5	71.5
Effective Green, g (s)	12.3	12.3	12.3	4.2	4.2			71.5			71.5	71.5
Actuated g/C Ratio	0.12	0.12	0.12	0.04	0.04			0.72			0.72	0.72
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	210	222	233	75	70			1036			1272	1358
v/s Ratio Prot	c0.07	0.07		c0.00	0.00							
v/s Ratio Perm			0.01					c0.41			0.11	0.12
v/c Ratio	0.58	0.55	0.12	0.12	0.11			0.57			0.15	0.17
Uniform Delay, d1	41.4	41.2	39.0	46.1	46.1			6.9			4.6	4.6
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			2.08	7.28
Incremental Delay, d2	3.8	2.8	0.2	0.7	0.7			2.3			0.3	0.3
Delay (s)	45.2	44.0	39.2	46.8	46.8			9.1			9.7	33.9
Level of Service	D	D	D	D	D			A			A	C
Approach Delay (s)		42.1			46.8			9.1			24.7	
Approach LOS		D			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			24.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			62.7%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: San Bernardino Rd. & Azusa Cyn. Rd.

2040 Without Project AM Peak Hour



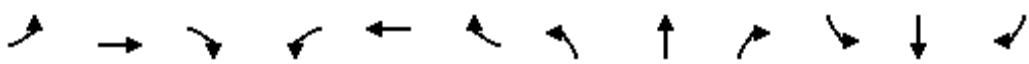
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	160	377	474	287	84
Future Volume (vph)	90	160	377	474	287	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3308		1805	1615
Flt Permitted	0.23	1.00	1.00		0.95	1.00
Satd. Flow (perm)	438	3610	3308		1805	1615
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	101	180	424	533	322	94
RTOR Reduction (vph)	0	0	190	0	0	26
Lane Group Flow (vph)	101	180	767	0	322	68
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	69.0	69.0	69.0		43.0	43.0
Effective Green, g (s)	69.0	69.0	69.0		43.0	43.0
Actuated g/C Ratio	0.58	0.58	0.58		0.36	0.36
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	251	2075	1902		646	578
v/s Ratio Prot		0.05	c0.23		c0.18	
v/s Ratio Perm	0.23					0.04
v/c Ratio	0.40	0.09	0.40		0.50	0.12
Uniform Delay, d1	14.1	11.4	14.1		30.1	25.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.7	0.1	0.6		2.7	0.4
Delay (s)	18.8	11.5	14.7		32.8	26.2
Level of Service	B	B	B		C	C
Approach Delay (s)		14.1	14.7		31.3	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay			18.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.44			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			56.6%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

2040 Without Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	1213	301	191	2409	46	479	19	154	22	13	44
Future Volume (vph)	28	1213	301	191	2409	46	479	19	154	22	13	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	31	1333	331	210	2647	51	526	21	169	24	14	48
RTOR Reduction (vph)	0	35	0	0	0	21	0	0	144	0	44	0
Lane Group Flow (vph)	31	1629	0	210	2647	30	274	273	25	24	18	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	2.4	55.3		18.2	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	55.3		18.2	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.46		0.15	0.59	0.59	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2626		288	2251	1125	285	285	285	158	158	
v/s Ratio Prot	0.02	0.29		c0.11	c0.70		c0.14	0.14		c0.01	0.01	
v/s Ratio Perm						0.02			0.01			
v/c Ratio	0.82	0.62		0.73	1.18	0.03	0.96	0.96	0.09	0.15	0.11	
Uniform Delay, d1	58.6	24.4		48.5	24.5	10.1	50.7	50.6	43.9	51.1	50.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	76.1	1.1		8.9	84.2	0.0	44.3	43.6	0.6	2.0	1.5	
Delay (s)	134.7	25.5		57.5	108.6	10.2	95.0	94.2	44.6	53.1	52.4	
Level of Service	F	C		E	F	B	F	F	D	D	D	
Approach Delay (s)		27.5			103.2			82.8			52.6	
Approach LOS		C			F			F			D	
Intersection Summary												
HCM 2000 Control Delay			76.0									HCM 2000 Level of Service E
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			120.0									Sum of lost time (s) 18.5
Intersection Capacity Utilization			102.0%									ICU Level of Service G
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2040 Without Project AM Peak Hour

4: Azusa Cyn. Rd. & Arrow Hwy.

WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	28	1213	301	191	2409	46	479	19	154	22	13	44
Future Volume (vph)	28	1213	301	191	2409	46	479	19	154	22	13	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00		*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	31	1333	331	210	2647	51	526	21	169	24	14	48
RTOR Reduction (vph)	0	34	0	0	2	0	0	0	144	0	44	0
Lane Group Flow (vph)	31	1630	0	210	2696	0	274	273	25	24	18	0
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Actuated Green, G (s)	2.4	55.4		18.1	71.1		18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	55.4		18.1	71.1		18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.46		0.15	0.59		0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2631		286	3377		285	285	285	158	158	
v/s Ratio Prot	0.02	0.29		c0.11	c0.47		c0.14	0.14		c0.01	0.01	
v/s Ratio Perm									0.01			
v/c Ratio	0.82	0.62		0.73	0.80		0.96	0.96	0.09	0.15	0.11	
Uniform Delay, d1	58.6	24.4		48.7	18.9		50.7	50.6	43.9	51.1	50.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	76.1	1.1		9.4	2.1		44.3	43.6	0.6	2.0	1.5	
Delay (s)	134.7	25.5		58.0	21.0		95.0	94.2	44.6	53.1	52.4	
Level of Service	F	C		E	C		F	F	D	D	D	
Approach Delay (s)		27.5			23.7			82.8			52.6	
Approach LOS		C			C			F			D	
Intersection Summary												
HCM 2000 Control Delay			33.1			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			83.0%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Azusa Cyn. Rd. & Olive St.

2040 Without Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	2	136	1	1	1	135	611	13	3	271	39
Future Volume (vph)	86	2	136	1	1	1	135	611	13	3	271	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3599		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1437	1900	1615	1805	3599		1805	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	2	148	1	1	1	147	664	14	3	295	42
RTOR Reduction (vph)	0	0	129	0	0	1	0	1	0	0	0	17
Lane Group Flow (vph)	93	2	19	1	1	0	147	677	0	3	295	25
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	12.7	12.7	12.7	12.7	12.7	12.7	13.5	71.9		1.9	60.3	60.3
Effective Green, g (s)	12.7	12.7	12.7	12.7	12.7	12.7	13.5	71.9		1.9	60.3	60.3
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.72		0.02	0.60	0.60
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	182	241	205	182	241	205	243	2587		34	2176	973
v/s Ratio Prot		0.00			0.00		c0.08	c0.19		0.00	c0.08	
v/s Ratio Perm	c0.06		0.01	0.00		0.00						0.02
v/c Ratio	0.51	0.01	0.09	0.01	0.00	0.00	0.60	0.26		0.09	0.14	0.03
Uniform Delay, d1	40.8	38.1	38.6	38.1	38.1	38.1	40.7	4.9		48.2	8.6	8.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.23	0.67		1.00	1.00	1.00
Incremental Delay, d2	2.4	0.0	0.2	0.0	0.0	0.0	4.0	0.2		1.1	0.1	0.0
Delay (s)	43.2	38.2	38.8	38.1	38.1	38.1	54.3	3.5		49.3	8.7	8.1
Level of Service	D	D	D	D	D	D	D	A		D	A	A
Approach Delay (s)		40.4			38.1			12.6			9.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			16.6				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			46.5%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: Azusa Cyn. Rd. & Cypress St.

2040 Without Project PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	196	223	379	579	492	484
Future Volume (vph)	196	223	379	579	492	484
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.95	0.85	0.91		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3394	1470	3283		1805	3610
Flt Permitted	0.97	1.00	1.00		0.15	1.00
Satd. Flow (perm)	3394	1470	3283		288	3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	206	235	399	609	518	509
RTOR Reduction (vph)	62	121	254	0	0	0
Lane Group Flow (vph)	240	18	754	0	518	509
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	12.6	12.6	38.9		80.4	78.9
Effective Green, g (s)	12.6	12.6	38.9		80.4	78.9
Actuated g/C Ratio	0.13	0.13	0.39		0.80	0.79
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	427	185	1277		785	2848
v/s Ratio Prot	c0.07		0.23		c0.24	0.14
v/s Ratio Perm		0.01			c0.29	
v/c Ratio	0.56	0.09	0.59		0.66	0.18
Uniform Delay, d1	41.1	38.7	24.2		15.9	2.6
Progression Factor	1.00	1.00	1.00		0.80	0.30
Incremental Delay, d2	1.7	0.2	2.0		1.9	0.1
Delay (s)	42.8	38.9	26.2		14.7	0.9
Level of Service	D	D	C		B	A
Approach Delay (s)	41.6		26.2			7.8
Approach LOS	D		C			A
Intersection Summary						
HCM 2000 Control Delay			21.3		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			75.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: Azusa Cyn. Rd. & Los Angeles St.

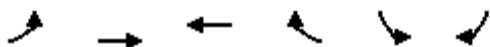
2040 Without Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	8	438	43	25	22	191	349	13	12	469	210
Future Volume (vph)	566	8	438	43	25	22	191	349	13	12	469	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.93			1.00			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1715	1805	1900	1805	1766			1900			1900	1900
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.55			0.99	1.00
Satd. Flow (perm)	1715	1805	1900	1805	1766			1036			1873	1900
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	584	8	452	44	26	23	197	360	13	12	484	216
RTOR Reduction (vph)	0	0	297	0	21	0	0	0	0	0	0	95
Lane Group Flow (vph)	298	294	155	44	28	0	0	570	0	0	496	121
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)	24.0	24.0	24.0	7.9	7.9			56.1			56.1	56.1
Effective Green, g (s)	24.0	24.0	24.0	7.9	7.9			56.1			56.1	56.1
Actuated g/C Ratio	0.24	0.24	0.24	0.08	0.08			0.56			0.56	0.56
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	411	433	456	142	139			581			1050	1065
v/s Ratio Prot	c0.17	0.16		c0.02	0.02							
v/s Ratio Perm			0.08					c0.55			0.26	0.06
v/c Ratio	0.73	0.68	0.34	0.31	0.20			0.98			0.47	0.11
Uniform Delay, d1	35.0	34.5	31.4	43.5	43.1			21.4			13.1	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			0.73	0.82
Incremental Delay, d2	6.2	4.2	0.4	1.2	0.7			32.8			1.5	0.2
Delay (s)	41.2	38.7	31.9	44.7	43.8			54.2			11.0	8.6
Level of Service	D	D	C	D	D			D			B	A
Approach Delay (s)		36.5			44.2			54.2			10.3	
Approach LOS		D			D			D			B	
Intersection Summary												
HCM 2000 Control Delay			33.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			87.6%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: San Bernardino Rd. & Azusa Cyn. Rd.

2040 Without Project PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	139	375	385	405	829	168
Future Volume (vph)	139	375	385	405	829	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3332		1805	1615
Flt Permitted	0.22	1.00	1.00		0.95	1.00
Satd. Flow (perm)	415	3610	3332		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	146	395	405	426	873	177
RTOR Reduction (vph)	0	0	158	0	0	18
Lane Group Flow (vph)	146	395	673	0	873	159
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	51.0	51.0	51.0		61.0	61.0
Effective Green, g (s)	51.0	51.0	51.0		61.0	61.0
Actuated g/C Ratio	0.42	0.42	0.42		0.51	0.51
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	176	1534	1416		917	820
v/s Ratio Prot		0.11	0.20		c0.48	
v/s Ratio Perm	c0.35					0.10
v/c Ratio	0.83	0.26	0.48		0.95	0.19
Uniform Delay, d1	30.6	22.3	24.9		28.1	16.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	34.4	0.4	1.1		20.1	0.5
Delay (s)	65.0	22.7	26.0		48.3	16.6
Level of Service	E	C	C		D	B
Approach Delay (s)		34.1	26.0		42.9	
Approach LOS		C	C		D	
Intersection Summary						
HCM 2000 Control Delay			35.1		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.90			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			87.3%		ICU Level of Service	E
Analysis Period (min)			15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

2040 Without Project PM Peak Hour

4: Azusa Cyn. Rd. & Arrow Hwy.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 			 	
Traffic Volume (vph)	43	2663	376	241	1564	39	249	15	314	35	12	51
Future Volume (vph)	43	2663	376	241	1564	39	249	15	314	35	12	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	46	2833	400	256	1664	41	265	16	334	37	13	54
RTOR Reduction (vph)	0	18	0	0	0	18	0	0	182	0	50	0
Lane Group Flow (vph)	46	3216	0	256	1664	23	140	141	152	37	18	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	5.8	60.0		13.5	67.7	67.7	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	5.8	60.0		13.5	67.7	67.7	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.05	0.50		0.11	0.56	0.56	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	91	2850		213	2143	1071	285	285	285	158	158	
v/s Ratio Prot	0.02	c0.56		c0.13	0.44		0.07	0.07		c0.02	0.01	
v/s Ratio Perm						0.01			c0.08			
v/c Ratio	0.51	1.13		1.20	0.78	0.02	0.49	0.49	0.53	0.23	0.11	
Uniform Delay, d1	55.7	30.0		53.2	20.3	11.5	46.8	46.8	47.1	51.4	50.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.4	62.8		126.9	2.8	0.0	5.9	6.0	7.0	3.4	1.4	
Delay (s)	60.1	92.8		180.1	23.1	11.6	52.7	52.8	54.1	54.9	52.3	
Level of Service	E	F		F	C	B	D	D	D	D	D	
Approach Delay (s)		92.4			43.4			53.5			53.2	
Approach LOS		F			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			71.5			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			100.1%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2040 Without Project PM Peak Hour

4: Azusa Cyn. Rd. & Arrow Hwy.

WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	2663	376	241	1564	39	249	15	314	35	12	51
Future Volume (vph)	43	2663	376	241	1564	39	249	15	314	35	12	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00		*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	43	2663	376	241	1564	39	249	15	314	35	12	51
RTOR Reduction (vph)	0	18	0	0	2	0	0	0	71	0	47	0
Lane Group Flow (vph)	43	3021	0	241	1601	0	132	132	243	35	16	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Actuated Green, G (s)	6.2	61.3		12.2	67.3		18.0	18.0	30.2	10.0	10.0	
Effective Green, g (s)	6.2	61.3		12.2	67.3		18.0	18.0	30.2	10.0	10.0	
Actuated g/C Ratio	0.05	0.51		0.10	0.56		0.15	0.15	0.25	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	98	2911		193	3196		285	285	478	158	158	
v/s Ratio Prot	0.02	c0.53		c0.13	0.28		0.07	0.07	c0.05	c0.02	0.01	
v/s Ratio Perm									0.08			
v/c Ratio	0.44	1.04		1.25	0.50		0.46	0.46	0.51	0.22	0.10	
Uniform Delay, d1	55.2	29.4		53.9	16.1		46.6	46.6	38.5	51.4	50.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	27.5		147.5	0.6		5.3	5.3	0.9	3.2	1.3	
Delay (s)	58.3	56.8		201.4	16.7		51.9	51.9	39.4	54.6	52.2	
Level of Service	E	E		F	B		D	D	D	D	D	
Approach Delay (s)		56.9			40.8			45.1			53.0	
Approach LOS		E			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			50.3			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			99.3%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Azusa Cyn. Rd. & Olive St.

2040 Without Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	1	380	3	1	1	259	342	1	1	587	85
Future Volume (vph)	116	1	380	3	1	1	259	342	1	1	587	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3609		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1439	1900	1615	1805	3609		1805	3610	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	123	1	404	3	1	1	276	364	1	1	624	90
RTOR Reduction (vph)	0	0	343	0	0	1	0	0	0	0	0	49
Lane Group Flow (vph)	123	1	61	3	1	0	276	365	0	1	624	41
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	15.0	15.0	15.0	15.0	15.0	15.0	25.4	70.6		0.9	46.1	46.1
Effective Green, g (s)	15.0	15.0	15.0	15.0	15.0	15.0	25.4	70.6		0.9	46.1	46.1
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15	0.15	0.25	0.71		0.01	0.46	0.46
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	215	285	242	215	285	242	458	2547		16	1664	744
v/s Ratio Prot		0.00			0.00		c0.15	0.10		0.00	c0.17	
v/s Ratio Perm	c0.09		0.04	0.00		0.00						0.03
v/c Ratio	0.57	0.00	0.25	0.01	0.00	0.00	0.60	0.14		0.06	0.38	0.06
Uniform Delay, d1	39.5	36.1	37.5	36.2	36.1	36.1	32.9	4.8		49.1	17.6	14.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.53		1.00	1.00	1.00
Incremental Delay, d2	3.6	0.0	0.5	0.0	0.0	0.0	1.9	0.1		1.6	0.6	0.1
Delay (s)	43.2	36.1	38.1	36.2	36.1	36.1	26.2	2.7		50.8	18.2	15.1
Level of Service	D	D	D	D	D	D	C	A		D	B	B
Approach Delay (s)		39.3			36.2			12.8			17.9	
Approach LOS		D			D			B			B	
Intersection Summary												
HCM 2000 Control Delay			22.2				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			60.6%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

APPENDIX 7.2:

2040 PLUS SITE BASELINE LAND USE WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS

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Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

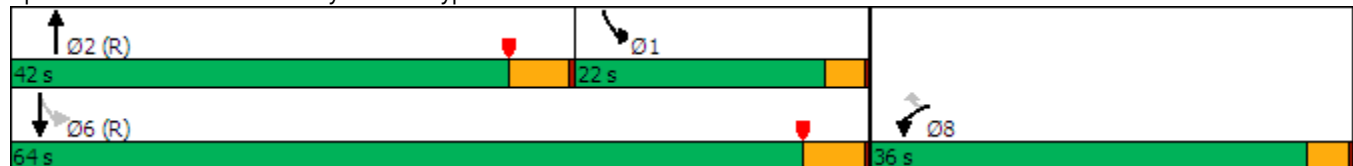
2040 With Project AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	263	419	362	186	161	258
Future Volume (vph)	263	419	362	186	161	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		48%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	36.0	36.0	42.0		22.0	64.0
Total Split (%)	36.0%	36.0%	42.0%		22.0%	64.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 61 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary

1: Azusa Cyn. Rd. & Cypress St.

2040 With Project AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	263	419	362	186	161	258
Future Volume (veh/h)	263	419	362	186	161	258
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	253	508	402	207	179	287
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	356	633	857	436	790	2593
Arrive On Green	0.20	0.20	0.37	0.37	0.60	1.00
Sat Flow, veh/h	1810	3220	2410	1178	1810	3705
Grp Volume(v), veh/h	253	508	312	297	179	287
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1688	1810	1805
Q Serve(g_s), s	13.1	15.0	13.2	13.4	0.0	0.0
Cycle Q Clear(g_c), s	13.1	15.0	13.2	13.4	0.0	0.0
Prop In Lane	1.00	1.00		0.70	1.00	
Lane Grp Cap(c), veh/h	356	633	668	625	790	2593
V/C Ratio(X)	0.71	0.80	0.47	0.48	0.23	0.11
Avail Cap(c_a), veh/h	588	1047	668	625	790	2593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.98	0.98
Uniform Delay (d), s/veh	37.5	38.3	24.0	24.1	7.8	0.0
Incr Delay (d2), s/veh	2.6	2.4	2.3	2.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	6.0	6.0	5.7	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.2	40.7	26.3	26.7	7.9	0.1
LnGrp LOS	D	D	C	C	A	A
Approach Vol, veh/h	761		609			466
Approach Delay, s/veh	40.5		26.5			3.1
Approach LOS	D		C			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	34.8	42.0			76.8	23.2
Change Period (Y+Rc), s	5.0	* 5			5.0	3.5
Max Green Setting (Gmax), s	18.5	* 37			59.0	32.5
Max Q Clear Time (g_c+I1), s	2.0	15.4			2.0	17.0
Green Ext Time (p_c), s	0.4	3.9			2.1	2.6

Intersection Summary

HCM 6th Ctrl Delay	26.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

2040 With Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	18	206	9	9	24	249	294	16	20	167	303
Future Volume (vph)	215	18	206	9	9	24	249	294	16	20	167	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th AWSC
2: Azusa Cyn. Rd. & Los Angeles St.

2040 With Project AM Peak Hour

Intersection	
Intersection Delay, s/veh	54.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱		↱↲			↱	↱
Traffic Vol, veh/h	215	18	206	9	9	24	249	294	16	20	167	303
Future Vol, veh/h	215	18	206	9	9	24	249	294	16	20	167	303
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	229	19	219	10	10	26	265	313	17	21	178	322
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	18	12.1	118.6	17
HCM LOS	C	B	F	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	45%	92%	0%	50%	0%	11%	0%
Vol Thru, %	53%	8%	0%	50%	0%	89%	0%
Vol Right, %	3%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	559	233	206	18	24	187	303
LT Vol	249	215	0	9	0	20	0
Through Vol	294	18	0	9	0	167	0
RT Vol	16	0	206	0	24	0	303
Lane Flow Rate	595	248	219	19	26	199	322
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	1.165	0.549	0.413	0.047	0.056	0.398	0.577
Departure Headway (Hd)	7.052	8.376	7.173	9.498	8.501	7.525	6.749
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	517	434	506	379	424	481	538
Service Time	5.098	6.076	4.873	7.198	6.201	5.225	4.449
HCM Lane V/C Ratio	1.151	0.571	0.433	0.05	0.061	0.414	0.599
HCM Control Delay	118.6	20.8	14.8	12.7	11.7	15.1	18.2
HCM Lane LOS	F	C	B	B	B	C	C
HCM 95th-tile Q	21	3.2	2	0.1	0.2	1.9	3.6

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

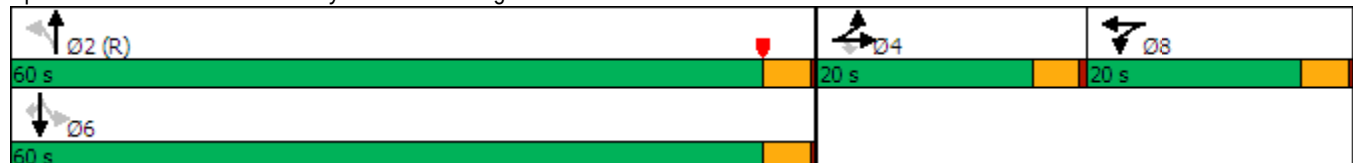
2040 With Project AM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	18	206	9	9	24	249	294	16	20	167	303
Future Volume (vph)	215	18	206	9	9	24	249	294	16	20	167	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		50	0		0	0		400
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	60			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)	46%											
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0		60.0	60.0		60.0	60.0	60.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	20.0%		60.0%	60.0%		60.0%	60.0%	60.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		C-Max	C-Max		Max	Max	Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.



HCM 6th Signalized Intersection Summary

2: Azusa Cyn. Rd. & Los Angeles St.

2040 With Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	18	206	9	9	24	249	294	16	20	167	303
Future Volume (veh/h)	215	18	206	9	9	24	249	294	16	20	167	303
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	243	0	219	10	10	26	265	313	17	21	178	322
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	559	0	249	55	14	37	427	469	25	137	1143	1119
Arrive On Green	0.15	0.00	0.15	0.03	0.03	0.03	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	3619	0	1610	1810	467	1214	540	674	36	140	1644	1610
Grp Volume(v), veh/h	243	0	219	10	0	36	595	0	0	199	0	322
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1681	1250	0	0	1784	0	1610
Q Serve(g_s), s	6.1	0.0	13.3	0.5	0.0	2.1	25.8	0.0	0.0	0.0	0.0	7.6
Cycle Q Clear(g_c), s	6.1	0.0	13.3	0.5	0.0	2.1	29.4	0.0	0.0	3.6	0.0	7.6
Prop In Lane	1.00		1.00	1.00		0.72	0.45		0.03	0.11		1.00
Lane Grp Cap(c), veh/h	559	0	249	55	0	51	921	0	0	1280	0	1119
V/C Ratio(X)	0.43	0.00	0.88	0.18	0.00	0.70	0.65	0.00	0.00	0.16	0.00	0.29
Avail Cap(c_a), veh/h	579	0	258	290	0	269	921	0	0	1280	0	1119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.91	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	41.4	47.3	0.0	48.0	9.5	0.0	0.0	5.2	0.0	5.8
Incr Delay (d2), s/veh	0.5	0.0	27.1	1.6	0.0	16.2	3.2	0.0	0.0	0.3	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	6.9	0.3	0.0	1.1	7.5	0.0	0.0	1.3	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	0.0	68.5	48.8	0.0	64.2	12.7	0.0	0.0	5.4	0.0	6.5
LnGrp LOS	D	A	E	D	A	E	B	A	A	A	A	A
Approach Vol, veh/h	462			46			595			521		
Approach Delay, s/veh	52.9			60.9			12.7			6.1		
Approach LOS	D			E			B			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	73.5			19.4			73.5			7.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	56.0			16.0			56.0			16.0		
Max Q Clear Time (g_c+I1), s	31.4			15.3			9.6			4.1		
Green Ext Time (p_c), s	5.4			0.1			2.5			0.1		

Intersection Summary

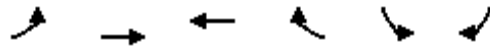
HCM 6th Ctrl Delay 23.4
HCM 6th LOS C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
3: San Bernardino Rd. & Azusa Cyn. Rd.

2040 With Project AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	91	160	377	477	288	84
Future Volume (vph)	91	160	377	477	288	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	73.0	73.0	73.0		47.0	47.0
Total Split (%)	60.8%	60.8%	60.8%		39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

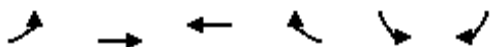
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary 3: San Bernardino Rd. & Azusa Cyn. Rd.

2040 With Project AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	91	160	377	477	288	84
Future Volume (veh/h)	91	160	377	477	288	84
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	102	180	424	536	324	94
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	276	2076	1038	926	648	577
Arrive On Green	0.57	0.57	0.57	0.57	0.36	0.36
Sat Flow, veh/h	594	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	102	180	424	536	324	94
Grp Sat Flow(s),veh/h/ln	594	1805	1805	1610	1810	1610
Q Serve(g_s), s	15.8	2.7	15.7	25.4	16.8	4.8
Cycle Q Clear(g_c), s	41.3	2.7	15.7	25.4	16.8	4.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	276	2076	1038	926	648	577
V/C Ratio(X)	0.37	0.09	0.41	0.58	0.50	0.16
Avail Cap(c_a), veh/h	276	2076	1038	926	648	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	11.4	14.2	16.2	30.1	26.2
Incr Delay (d2), s/veh	3.8	0.1	1.2	2.6	2.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	1.0	6.3	9.4	7.8	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.2	11.5	15.4	18.9	32.8	26.8
LnGrp LOS	C	B	B	B	C	C
Approach Vol, veh/h		282	960		418	
Approach Delay, s/veh		19.3	17.3		31.5	
Approach LOS		B	B		C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		73.0		47.0		73.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		69.0		43.0		69.0
Max Q Clear Time (g_c+I1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			21.2			
HCM 6th LOS			C			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

2040 With Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	1213	305	196	2409	46	480	19	156	22	13	44
Future Volume (vph)	28	1213	305	196	2409	46	480	19	156	22	13	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	54.9		27.1	74.5	74.5	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	45.8%		22.6%	62.1%	62.1%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

Ø1	Ø2 (R)	Ø4	Ø8
27.1 s	54.9 s	15 s	23 s
Ø5	Ø6 (R)		
7.5 s	74.5 s		

HCM 6th Signalized Intersection Summary 4: Azusa Cyn. Rd. & Arrow Hwy.

2040 With Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	1213	305	196	2409	46	480	19	156	22	13	44
Future Volume (veh/h)	28	1213	305	196	2409	46	480	19	156	22	13	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	31	1333	335	215	2647	51	542	0	171	24	14	48
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	39	2096	526	246	2245	951	543	0	242	151	31	108
Arrive On Green	0.02	0.48	0.48	0.14	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4398	1103	1810	3800	1610	3619	0	1610	1810	377	1291
Grp Volume(v), veh/h	31	1151	517	215	2647	51	542	0	171	24	0	62
Grp Sat Flow(s),veh/h/ln	1810	1900	1701	1810	1900	1610	1810	0	1610	1810	0	1668
Q Serve(g_s), s	2.0	27.3	27.4	14.0	70.9	1.6	18.0	0.0	12.1	1.5	0.0	4.2
Cycle Q Clear(g_c), s	2.0	27.3	27.4	14.0	70.9	1.6	18.0	0.0	12.1	1.5	0.0	4.2
Prop In Lane	1.00		0.65	1.00		1.00	1.00		1.00	1.00		0.77
Lane Grp Cap(c), veh/h	39	1811	811	246	2245	951	543	0	242	151	0	139
V/C Ratio(X)	0.79	0.64	0.64	0.87	1.18	0.05	1.00	0.00	0.71	0.16	0.00	0.45
Avail Cap(c_a), veh/h	60	1811	811	356	2245	951	543	0	242	151	0	139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.4	23.6	23.6	50.8	24.6	10.4	51.0	0.0	48.5	51.1	0.0	52.4
Incr Delay (d2), s/veh	30.7	1.7	3.8	15.2	85.6	0.1	37.7	0.0	15.7	2.2	0.0	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	11.9	11.2	7.2	54.4	0.6	10.9	0.0	5.9	0.8	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.2	25.3	27.4	66.1	110.1	10.5	88.6	0.0	64.2	53.3	0.0	62.4
LnGrp LOS	F	C	C	E	F	B	F	A	E	D	A	E
Approach Vol, veh/h	1699			2913			713			86		
Approach Delay, s/veh	27.1			105.1			82.8			59.9		
Approach LOS	C			F			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.8	62.2		15.0	6.1	75.9		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	23.6	49.9		10.0	4.0	69.5		18.0				
Max Q Clear Time (g_c+I1), s	16.0	29.4		6.2	4.0	72.9		20.0				
Green Ext Time (p_c), s	0.3	11.3		0.1	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	77.0											
HCM 6th LOS	E											
Notes												

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

2040 With Project AM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	1213	305	196	2409	46	480	19	156	22	13	44
Future Volume (vph)	28	1213	305	196	2409	46	480	19	156	22	13	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							48%					
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0		23.0	23.0	23.0	15.0	15.0	
Total Split (s)	7.5	55.0		27.0	74.5		23.0	23.0	23.0	15.0	15.0	
Total Split (%)	6.3%	45.8%		22.5%	62.1%		19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

 Ø1	 Ø2 (R)	 Ø4	 Ø8
27 s	55 s	15 s	23 s
 Ø5	 Ø6 (R)		
7.5 s	74.5 s		

HCM 6th Signalized Intersection Summary

4: Azusa Cyn. Rd. & Arrow Hwy.

2040 With Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 				
Traffic Volume (veh/h)	28	1213	305	196	2409	46	480	19	156	22	13	44
Future Volume (veh/h)	28	1213	305	196	2409	46	480	19	156	22	13	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	31	1333	335	215	2647	51	542	0	171	24	14	48
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	39	2096	526	246	3293	63	543	0	242	151	31	108
Arrive On Green	0.02	0.48	0.48	0.14	0.59	0.59	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4398	1103	1810	5574	107	3619	0	1610	1810	377	1291
Grp Volume(v), veh/h	31	1151	517	215	1800	898	542	0	171	24	0	62
Grp Sat Flow(s),veh/h/ln	1810	1900	1701	1810	1900	1881	1810	0	1610	1810	0	1668
Q Serve(g_s), s	2.0	27.3	27.4	14.0	44.2	44.8	18.0	0.0	12.1	1.5	0.0	4.2
Cycle Q Clear(g_c), s	2.0	27.3	27.4	14.0	44.2	44.8	18.0	0.0	12.1	1.5	0.0	4.2
Prop In Lane	1.00		0.65	1.00		0.06	1.00		1.00	1.00		0.77
Lane Grp Cap(c), veh/h	39	1811	811	246	2245	1111	543	0	242	151	0	139
V/C Ratio(X)	0.79	0.64	0.64	0.87	0.80	0.81	1.00	0.00	0.71	0.16	0.00	0.45
Avail Cap(c_a), veh/h	60	1811	811	354	2245	1111	543	0	242	151	0	139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.4	23.6	23.6	50.8	19.1	19.2	51.0	0.0	48.5	51.1	0.0	52.4
Incr Delay (d2), s/veh	30.7	1.7	3.8	15.4	3.1	6.3	37.7	0.0	15.7	2.2	0.0	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	11.9	11.2	7.2	18.3	19.3	10.9	0.0	5.9	0.8	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.2	25.3	27.4	66.2	22.2	25.6	88.6	0.0	64.2	53.3	0.0	62.4
LnGrp LOS	F	C	C	E	C	C	F	A	E	D	A	E
Approach Vol, veh/h	1699			2913			713			86		
Approach Delay, s/veh	27.1			26.5			82.8			59.9		
Approach LOS	C			C			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.8	62.2		15.0	6.1	75.9		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	23.5	50.0		10.0	4.0	69.5		18.0				
Max Q Clear Time (g_c+I1), s	16.0	29.4		6.2	4.0	46.8		20.0				
Green Ext Time (p_c), s	0.3	11.3		0.1	0.0	19.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay 34.6

HCM 6th LOS C

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

2040 With Project AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	2	137	1	1	1	135	614	13	3	280	39
Future Volume (vph)	86	2	137	1	1	1	135	614	13	3	280	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	33.0	33.0	33.0	33.0	33.0	33.0	31.0	54.0		13.0	36.0	36.0
Total Split (%)	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	31.0%	54.0%		13.0%	36.0%	36.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

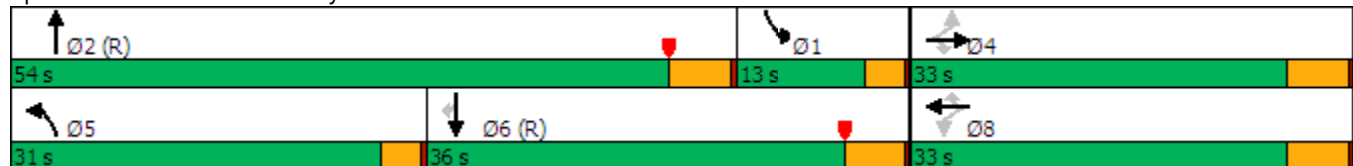
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary 5: Azusa Cyn. Rd. & Olive St.

2040 With Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	2	137	1	1	1	135	614	13	3	280	39
Future Volume (veh/h)	86	2	137	1	1	1	135	614	13	3	280	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	93	2	149	1	1	1	147	667	14	3	304	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	239	221	187	217	221	187	180	1772	37	441	2344	1045
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.20	0.98	0.98	0.24	0.65	0.65
Sat Flow, veh/h	1437	1900	1610	1256	1900	1610	1810	3615	76	1810	3610	1610
Grp Volume(v), veh/h	93	2	149	1	1	1	147	333	348	3	304	42
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	1256	1900	1610	1810	1805	1886	1810	1805	1610
Q Serve(g_s), s	6.1	0.1	9.0	0.1	0.0	0.1	7.8	0.6	0.6	0.1	3.2	0.9
Cycle Q Clear(g_c), s	6.2	0.1	9.0	0.2	0.0	0.1	7.8	0.6	0.6	0.1	3.2	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	239	221	187	217	221	187	180	884	924	441	2344	1045
V/C Ratio(X)	0.39	0.01	0.80	0.00	0.00	0.01	0.82	0.38	0.38	0.01	0.13	0.04
Avail Cap(c_a), veh/h	474	532	451	422	532	451	498	884	924	441	2344	1045
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.72	0.72	0.72
Uniform Delay (d), s/veh	41.8	39.1	43.0	39.2	39.1	39.1	39.2	0.5	0.5	28.7	6.7	6.3
Incr Delay (d2), s/veh	1.0	0.0	7.5	0.0	0.0	0.0	8.2	1.1	1.1	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	3.9	0.0	0.0	0.0	3.5	0.4	0.4	0.1	1.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.8	39.1	50.5	39.2	39.1	39.1	47.4	1.7	1.6	28.7	6.8	6.4
LnGrp LOS	D	D	D	D	D	D	D	A	A	C	A	A
Approach Vol, veh/h	244					3	828			349		
Approach Delay, s/veh	47.5					39.1	9.8			6.9		
Approach LOS	D					D	A			A		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	29.4	54.0	16.6		13.4	69.9	16.6					
Change Period (Y+Rc), s	5.0	* 5	5.0		3.5	5.0	5.0					
Max Green Setting (Gmax), s	9.5	* 49	28.0		27.5	31.0	28.0					
Max Q Clear Time (g_c+I1), s	2.1	2.6	11.0		9.8	5.2	2.2					
Green Ext Time (p_c), s	0.0	4.8	0.6		0.3	2.1	0.0					
Intersection Summary												
HCM 6th Ctrl Delay			15.6									
HCM 6th LOS			B									
Notes												

Lanes, Volumes, Timings
6: Azusa Cyn. Rd. & Dwy. 1

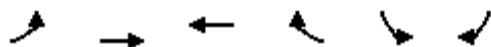
2040 With Project AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	5	533	0	15	490
Future Volume (vph)	0	5	533	0	15	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	208		299			985
Travel Time (s)	4.7		6.8			22.4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	533	0	15	490
Future Vol, veh/h	0	5	533	0	15	490
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	5	561	0	16	516
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	281	0	0	561	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	722	-	-	1020	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	722	-	-	1020	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10	0		0.4		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	722	1020	-	
HCM Lane V/C Ratio	-	-	0.007	0.015	-	
HCM Control Delay (s)	-	-	10	8.6	0.1	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Lanes, Volumes, Timings
7: Los Angeles St. & Dwy. 2

2040 With Project AM Peak Hour

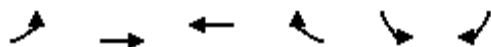


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	41	37	0	0	4
Future Volume (vph)	13	41	37	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		160	175		164	
Travel Time (s)		3.6	4.0		3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	41	37	0	0	4
Future Vol, veh/h	13	41	37	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	14	43	39	0	0	4
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	39	0	-	0	110	39
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	71	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1584	-	-	-	892	1038
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	957	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1584	-	-	-	884	1038
Mov Cap-2 Maneuver	-	-	-	-	884	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	957	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.8	0		8.5		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1584	-	-	-	1038	
HCM Lane V/C Ratio	0.009	-	-	-	0.004	
HCM Control Delay (s)	7.3	0	-	-	8.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
8: Los Angeles St. & Dwy. 3

2040 With Project AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	36	35	0	0	2
Future Volume (vph)	5	36	35	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		175	247		166	
Travel Time (s)		4.0	5.6		3.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
8: Los Angeles St. & Dwy. 3

2040 With Project AM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	36	35	0	0	2
Future Vol, veh/h	5	36	35	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	38	37	0	0	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	37	0	-	0	85	37
Stage 1	-	-	-	-	37	-
Stage 2	-	-	-	-	48	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1587	-	-	-	921	1041
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	980	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1587	-	-	-	918	1041
Mov Cap-2 Maneuver	-	-	-	-	918	-
Stage 1	-	-	-	-	988	-
Stage 2	-	-	-	-	980	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.9	0		8.5		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1587	-	-	-	1041	
HCM Lane V/C Ratio	0.003	-	-	-	0.002	
HCM Control Delay (s)	7.3	0	-	-	8.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile O(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
1: Azusa Cyn. Rd. & Cypress St.

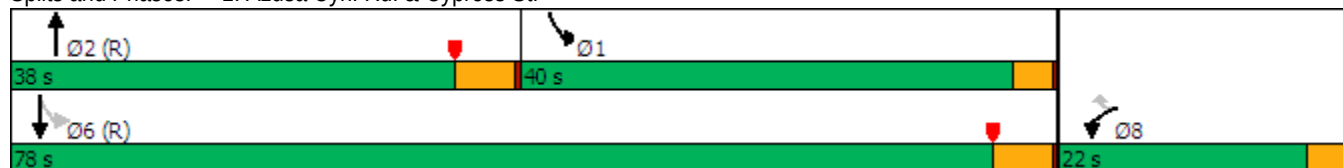
2040 With Project PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W<W<W	W<W	W<W<W	W<W<W	W<W	W<W<W
Traffic Volume (vph)	196	223	390	580	492	488
Future Volume (vph)	196	223	390	580	492	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		30			30
Link Distance (ft)	581		985			1333
Travel Time (s)	11.3		22.4			30.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)		41%				
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	10.0		4.0	10.0
Minimum Split (s)	21.5	21.5	23.0		7.5	15.0
Total Split (s)	22.0	22.0	38.0		40.0	78.0
Total Split (%)	22.0%	22.0%	38.0%		40.0%	78.0%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.5	3.5	5.0		3.5	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 61 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Azusa Cyn. Rd. & Cypress St.



HCM 6th Signalized Intersection Summary

1: Azusa Cyn. Rd. & Cypress St.

2040 With Project PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	196	223	390	580	492	488
Future Volume (veh/h)	196	223	390	580	492	488
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	288	147	411	611	518	514
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	428	190	596	531	826	2877
Arrive On Green	0.12	0.12	0.33	0.33	0.70	1.00
Sat Flow, veh/h	3619	1610	1900	1610	1810	3705
Grp Volume(v), veh/h	288	147	411	611	518	514
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	7.6	8.9	19.8	33.0	9.0	0.0
Cycle Q Clear(g_c), s	7.6	8.9	19.8	33.0	9.0	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	428	190	596	531	826	2877
V/C Ratio(X)	0.67	0.77	0.69	1.15	0.63	0.18
Avail Cap(c_a), veh/h	670	298	596	531	826	2877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.87	0.87
Uniform Delay (d), s/veh	42.2	42.8	29.1	33.5	9.6	0.0
Incr Delay (d2), s/veh	1.9	6.5	6.4	87.5	1.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	3.8	9.4	25.4	4.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.1	49.3	35.5	121.0	10.9	0.1
LnGrp LOS	D	D	D	F	B	A
Approach Vol, veh/h	435		1022			1032
Approach Delay, s/veh	45.9		86.6			5.5
Approach LOS	D		F			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	46.7	38.0			84.7	15.3
Change Period (Y+Rc), s	5.0	* 5			5.0	3.5
Max Green Setting (Gmax), s	36.5	* 33			73.0	18.5
Max Q Clear Time (g_c+I1), s	11.0	35.0			2.0	10.9
Green Ext Time (p_c), s	1.7	0.0			4.0	1.0
Intersection Summary						
HCM 6th Ctrl Delay			45.9			
HCM 6th LOS			D			
Notes						
User approved pedestrian interval to be less than phase max green.						
User approved volume balancing among the lanes for turning movement.						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

2040 With Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	10	438	47	31	24	191	349	15	13	469	210
Future Volume (vph)	566	10	438	47	31	24	191	349	15	13	469	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		400
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

Intersection												
Intersection Delay, s/veh	139.4											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱	↱		↱	↱		↱			↱	↱
Traffic Vol, veh/h	566	10	438	47	31	24	191	349	15	13	469	210
Future Vol, veh/h	566	10	438	47	31	24	191	349	15	13	469	210
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	584	10	452	48	32	25	197	360	15	13	484	216
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	159.8	16.3	187.5	89
HCM LOS	F	C	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	34%	98%	0%	60%	0%	3%	0%
Vol Thru, %	63%	2%	0%	40%	0%	97%	0%
Vol Right, %	3%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	555	576	438	78	24	482	210
LT Vol	191	566	0	47	0	13	0
Through Vol	349	10	0	31	0	469	0
RT Vol	15	0	438	0	24	0	210
Lane Flow Rate	572	594	452	80	25	497	216
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	1.325	1.438	0.944	0.226	0.063	1.147	0.457
Departure Headway (Hd)	8.721	9.481	8.23	11.173	10.106	8.91	8.165
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	423	386	443	323	357	412	444
Service Time	6.721	7.181	5.93	8.873	7.806	6.61	5.865
HCM Lane V/C Ratio	1.352	1.539	1.02	0.248	0.07	1.206	0.486
HCM Control Delay	187.5	236.6	58.8	17.1	13.5	120.1	17.6
HCM Lane LOS	F	F	F	C	B	F	C
HCM 95th-tile Q	25	28.1	11	0.9	0.2	17.4	2.3

Lanes, Volumes, Timings
2: Azusa Cyn. Rd. & Los Angeles St.

2040 With Project PM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	10	438	47	31	24	191	349	15	13	469	210
Future Volume (vph)	566	10	438	47	31	24	191	349	15	13	469	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		50	0		0	0		400
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	60			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		1174			160			887			299	
Travel Time (s)		17.8			3.6			20.2			6.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)	49%											
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	33.0	33.0	33.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	33.0	33.0	33.0	20.0	20.0		47.0	47.0		47.0	47.0	47.0
Total Split (%)	33.0%	33.0%	33.0%	20.0%	20.0%		47.0%	47.0%		47.0%	47.0%	47.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		C-Max	C-Max		Max	Max	Max

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 10 (10%), Referenced to phase 2:NBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.

					
Ø2 (R)			Ø4		Ø8
47 s			33 s		20 s
					
Ø6					
47 s					

HCM 6th Signalized Intersection Summary

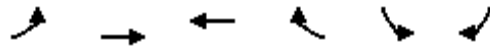
2: Azusa Cyn. Rd. & Los Angeles St.

2040 With Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	566	10	438	47	31	24	191	349	15	13	469	210
Future Volume (veh/h)	566	10	438	47	31	24	191	349	15	13	469	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	591	0	452	48	32	25	197	360	15	13	484	216
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	1050	0	467	93	51	40	269	448	18	47	1006	867
Arrive On Green	0.29	0.00	0.29	0.05	0.05	0.05	0.54	0.54	0.54	1.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610	1810	989	772	410	832	33	19	1868	1610
Grp Volume(v), veh/h	591	0	452	48	0	57	572	0	0	497	0	216
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1761	1276	0	0	1887	0	1610
Q Serve(g_s), s	13.9	0.0	27.7	2.6	0.0	3.2	34.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.9	0.0	27.7	2.6	0.0	3.2	36.8	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.44	0.34		0.03	0.03		1.00
Lane Grp Cap(c), veh/h	1050	0	467	93	0	90	736	0	0	1053	0	867
V/C Ratio(X)	0.56	0.00	0.97	0.52	0.00	0.63	0.78	0.00	0.00	0.47	0.00	0.25
Avail Cap(c_a), veh/h	1050	0	467	290	0	282	736	0	0	1053	0	867
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.44	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	35.0	46.2	0.0	46.5	18.7	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	33.4	4.4	0.0	7.1	3.6	0.0	0.0	1.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	14.5	1.3	0.0	1.6	10.9	0.0	0.0	0.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	0.0	68.4	50.6	0.0	53.6	22.3	0.0	0.0	1.5	0.0	0.7
LnGrp LOS	C	A	E	D	A	D	C	A	A	A	A	A
Approach Vol, veh/h	1043			105			572			713		
Approach Delay, s/veh	47.1			52.3			22.3			1.3		
Approach LOS	D			D			C			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	57.9			33.0			57.9			9.1		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	43.0			29.0			43.0			16.0		
Max Q Clear Time (g_c+I1), s	38.8			29.7			2.0			5.2		
Green Ext Time (p_c), s	1.7			0.0			4.5			0.2		
Intersection Summary												
HCM 6th Ctrl Delay	28.1											
HCM 6th LOS	C											
Notes												

Lanes, Volumes, Timings
3: San Bernardino Rd. & Azusa Cyn. Rd.

2040 With Project PM Peak Hour

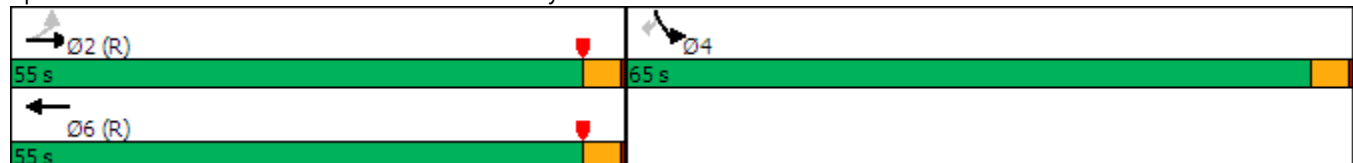


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	139	375	385	406	832	169
Future Volume (vph)	139	375	385	406	832	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	50
Storage Lanes	1			0	1	1
Taper Length (ft)	60				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		656	805		887	
Travel Time (s)		11.2	13.7		20.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	55.0	55.0	55.0		65.0	65.0
Total Split (%)	45.8%	45.8%	45.8%		54.2%	54.2%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		Max	Max

Intersection Summary

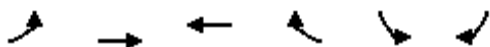
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 3: San Bernardino Rd. & Azusa Cyn. Rd.



HCM 6th Signalized Intersection Summary 3: San Bernardino Rd. & Azusa Cyn. Rd.

2040 With Project PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	139	375	385	406	832	169
Future Volume (veh/h)	139	375	385	406	832	169
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	146	395	405	427	876	178
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	206	1534	767	684	920	819
Arrive On Green	0.43	0.43	0.43	0.43	0.51	0.51
Sat Flow, veh/h	670	3705	1900	1610	1810	1610
Grp Volume(v), veh/h	146	395	405	427	876	178
Grp Sat Flow(s),veh/h/ln	670	1805	1805	1610	1810	1610
Q Serve(g_s), s	26.1	8.5	20.0	24.9	55.4	7.3
Cycle Q Clear(g_c), s	51.0	8.5	20.0	24.9	55.4	7.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	206	1534	767	684	920	819
V/C Ratio(X)	0.71	0.26	0.53	0.62	0.95	0.22
Avail Cap(c_a), veh/h	206	1534	767	684	920	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	22.3	25.6	27.0	28.1	16.3
Incr Delay (d2), s/veh	18.7	0.4	2.6	4.3	20.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	3.6	8.8	10.0	28.1	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	65.7	22.7	28.2	31.3	48.3	16.9
LnGrp LOS	E	C	C	C	D	B
Approach Vol, veh/h		541	832		1054	
Approach Delay, s/veh		34.3	29.8		43.0	
Approach LOS		C	C		D	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		55.0		65.0		55.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		51.0		61.0		51.0
Max Q Clear Time (g_c+l1), s		0.0		0.0		0.0
Green Ext Time (p_c), s		0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			36.5			
HCM 6th LOS			D			

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

2040 With Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	2663	378	243	1564	39	253	15	320	35	12	51
Future Volume (vph)	43	2663	378	243	1564	39	253	15	320	35	12	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)							47%					
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0	23.0	23.0	23.0	23.0	15.0	15.0	
Total Split (s)	9.2	65.0		17.0	72.8	72.8	23.0	23.0	23.0	15.0	15.0	
Total Split (%)	7.7%	54.2%		14.2%	60.7%	60.7%	19.2%	19.2%	19.2%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

 Ø1	 Ø2 (R)	 Ø4	 Ø8
17 s	65 s	15 s	23 s
 Ø5	 Ø6 (R)		
9.2 s	72.8 s		

HCM 6th Signalized Intersection Summary

4: Azusa Cyn. Rd. & Arrow Hwy.

2040 With Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 						 	
Traffic Volume (veh/h)	43	2663	378	243	1564	39	253	15	320	35	12	51
Future Volume (veh/h)	43	2663	378	243	1564	39	253	15	320	35	12	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	46	2833	402	259	1664	41	280	0	340	37	13	54
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	59	2458	332	204	2203	933	543	0	242	151	27	111
Arrive On Green	0.03	0.50	0.50	0.11	0.58	0.58	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4917	664	1810	3800	1610	3619	0	1610	1810	322	1337
Grp Volume(v), veh/h	46	2157	1078	259	1664	41	280	0	340	37	0	67
Grp Sat Flow(s),veh/h/ln	1810	1900	1781	1810	1900	1610	1810	0	1610	1810	0	1659
Q Serve(g_s), s	3.0	60.0	60.0	13.5	39.3	1.3	8.6	0.0	18.0	2.3	0.0	4.6
Cycle Q Clear(g_c), s	3.0	60.0	60.0	13.5	39.3	1.3	8.6	0.0	18.0	2.3	0.0	4.6
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.81
Lane Grp Cap(c), veh/h	59	1900	890	204	2203	933	543	0	242	151	0	138
V/C Ratio(X)	0.77	1.14	1.21	1.27	0.76	0.04	0.52	0.00	1.41	0.25	0.00	0.48
Avail Cap(c_a), veh/h	86	1900	890	204	2203	933	543	0	242	151	0	138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.6	30.0	30.0	53.3	18.9	10.9	47.0	0.0	51.0	51.5	0.0	52.5
Incr Delay (d2), s/veh	22.9	67.9	105.5	155.2	2.5	0.1	3.4	0.0	205.9	3.8	0.0	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	42.8	49.4	14.7	16.2	0.5	4.1	0.0	21.0	1.2	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.4	97.9	135.5	208.4	21.3	11.0	50.4	0.0	256.9	55.3	0.0	64.2
LnGrp LOS	F	F	F	F	C	B	D	A	F	E	A	E
Approach Vol, veh/h	3281			1964			620			104		
Approach Delay, s/veh	110.0			45.8			163.7			61.0		
Approach LOS	F			D			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	65.0		15.0	7.4	74.6		23.0				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	13.5	60.0		10.0	5.7	67.8		18.0				
Max Q Clear Time (g_c+I1), s	15.5	62.0		6.6	5.0	41.3		20.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	14.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	93.6											
HCM 6th LOS	F											
Notes												

Lanes, Volumes, Timings
4: Azusa Cyn. Rd. & Arrow Hwy.

2040 With Project PM Peak Hour
WITH IMPROVEMENTS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	2663	378	243	1564	39	253	15	320	35	12	51
Future Volume (vph)	43	2663	378	243	1564	39	253	15	320	35	12	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		50	180		100	200		0	0		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	80			80			120			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		958			726			2673			374	
Travel Time (s)		14.5			11.0			60.8			8.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)							47%					
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	4.0	10.0		4.0	10.0		10.0	10.0	4.0	10.0	10.0	
Minimum Split (s)	7.5	23.0		7.5	23.0		23.0	23.0	7.5	15.0	15.0	
Total Split (s)	10.5	67.0		15.0	71.5		23.0	23.0	15.0	15.0	15.0	
Total Split (%)	8.8%	55.8%		12.5%	59.6%		19.2%	19.2%	12.5%	12.5%	12.5%	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5	3.0	4.5	4.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag				Lag			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	C-Max		None	C-Max		Max	Max	None	Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 6.7 (6%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Azusa Cyn. Rd. & Arrow Hwy.

			
Q2 (R)	Q1	Q4	Q8
67 s	15 s	15 s	23 s
			
Q5	Q6 (R)		
10.5 s	71.5 s		

HCM 6th Signalized Intersection Summary

4: Azusa Cyn. Rd. & Arrow Hwy.

2040 With Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 				
Traffic Volume (veh/h)	43	2663	378	243	1564	39	253	15	320	35	12	51
Future Volume (veh/h)	43	2663	378	243	1564	39	253	15	320	35	12	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	46	2833	402	259	1664	41	280	0	340	37	13	54
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	59	2540	343	768	5099	126	543	0	925	151	27	111
Arrive On Green	0.05	0.77	0.77	0.64	1.00	1.00	0.15	0.00	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1810	4917	664	1810	5539	136	3619	0	1610	1810	322	1337
Grp Volume(v), veh/h	46	2157	1078	259	1141	564	280	0	340	37	0	67
Grp Sat Flow(s),veh/h/ln	1810	1900	1781	1810	1900	1875	1810	0	1610	1810	0	1659
Q Serve(g_s), s	3.0	62.0	62.0	8.0	0.0	0.0	8.6	0.0	0.0	2.3	0.0	4.6
Cycle Q Clear(g_c), s	3.0	62.0	62.0	8.0	0.0	0.0	8.6	0.0	0.0	2.3	0.0	4.6
Prop In Lane	1.00		0.37	1.00		0.07	1.00		1.00	1.00		0.81
Lane Grp Cap(c), veh/h	59	1963	920	768	3498	1727	543	0	925	151	0	138
V/C Ratio(X)	0.77	1.10	1.17	0.34	0.33	0.33	0.52	0.00	0.37	0.25	0.00	0.48
Avail Cap(c_a), veh/h	106	1963	920	768	3498	1727	543	0	925	151	0	138
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.6	13.5	13.5	14.0	0.0	0.0	47.0	0.0	13.8	51.5	0.0	52.5
Incr Delay (d2), s/veh	18.9	52.9	89.1	0.3	0.2	0.5	3.4	0.0	1.1	3.8	0.0	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	23.9	31.6	2.9	0.1	0.2	4.1	0.0	5.1	1.2	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.5	66.4	102.6	14.3	0.2	0.5	50.4	0.0	14.9	55.3	0.0	64.2
LnGrp LOS	E	F	F	B	A	A	D	A	B	E	A	E
Approach Vol, veh/h	3281			1964			620			104		
Approach Delay, s/veh	78.4			2.2			30.9			61.0		
Approach LOS	E			A			C			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	56.0	67.0		15.0	7.4	115.5		23.0				
Change Period (Y+Rc), s	5.0	* 5		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	11.5	* 62		10.0	7.0	66.5		18.0				
Max Q Clear Time (g_c+I1), s	10.0	64.0		6.6	5.0	2.0		10.6				
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	17.4		1.5				

Intersection Summary

HCM 6th Ctrl Delay 48.1

HCM 6th LOS D

Notes

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

User approved volume balancing among the lanes for turning movement.

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

Lanes, Volumes, Timings
5: Azusa Cyn. Rd. & Olive St.

2040 With Project PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	1	380	3	1	1	260	352	1	1	591	85
Future Volume (vph)	116	1	380	3	1	1	260	352	1	1	591	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	30		30	195		0	170		50
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	80			0			110			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			30			30			30	
Link Distance (ft)		685			218			1333			2673	
Travel Time (s)		13.3			5.0			30.3			60.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Detector Phase	4	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	10.0		4.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	7.5	23.0		7.5	23.0	23.0
Total Split (s)	32.0	32.0	32.0	32.0	32.0	32.0	32.0	60.0		8.0	36.0	36.0
Total Split (%)	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	60.0%		8.0%	36.0%	36.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lead/Lag							Lag	Lead		Lag	Lead	Lead
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary

Area Type: Other

Cycle Length: 100

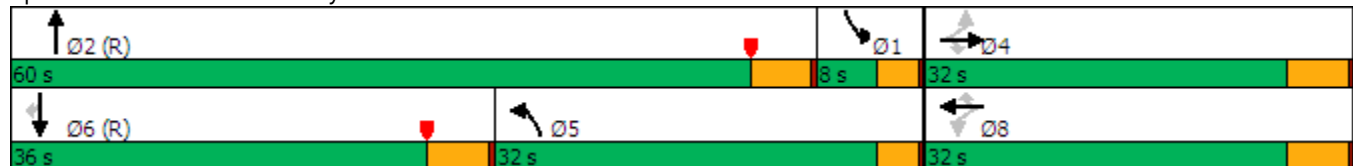
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 5: Azusa Cyn. Rd. & Olive St.



HCM 6th Signalized Intersection Summary
5: Azusa Cyn. Rd. & Olive St.

2040 With Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	1	380	3	1	1	260	352	1	1	591	85
Future Volume (veh/h)	116	1	380	3	1	1	260	352	1	1	591	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	123	1	404	3	1	1	277	374	1	1	629	90
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	455	507	429	337	507	429	522	2031	5	87	1119	499
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.38	0.73	0.73	0.05	0.31	0.31
Sat Flow, veh/h	1437	1900	1610	996	1900	1610	1810	3693	10	1810	3610	1610
Grp Volume(v), veh/h	123	1	404	3	1	1	277	183	192	1	629	90
Grp Sat Flow(s),veh/h/ln	1437	1900	1610	996	1900	1610	1810	1805	1898	1810	1805	1610
Q Serve(g_s), s	6.9	0.0	24.6	0.2	0.0	0.0	11.9	3.1	3.1	0.1	14.6	4.1
Cycle Q Clear(g_c), s	6.9	0.0	24.6	0.3	0.0	0.0	11.9	3.1	3.1	0.1	14.6	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	455	507	429	337	507	429	522	993	1044	87	1119	499
V/C Ratio(X)	0.27	0.00	0.94	0.01	0.00	0.00	0.53	0.18	0.18	0.01	0.56	0.18
Avail Cap(c_a), veh/h	460	513	435	340	513	435	522	993	1044	87	1119	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72	0.09	0.09	0.09
Uniform Delay (d), s/veh	29.4	26.9	35.9	27.0	26.9	26.9	25.6	6.5	6.5	45.3	28.8	25.2
Incr Delay (d2), s/veh	0.3	0.0	28.6	0.0	0.0	0.0	0.7	0.3	0.3	0.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	12.8	0.1	0.0	0.0	4.8	1.2	1.3	0.0	6.2	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	26.9	64.5	27.0	26.9	26.9	26.3	6.8	6.7	45.3	29.0	25.3
LnGrp LOS	C	C	E	C	C	C	C	A	A	D	C	C
Approach Vol, veh/h	528			5			652			720		
Approach Delay, s/veh	56.3			27.0			15.1			28.6		
Approach LOS	E			C			B			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	60.0		31.7	32.3	36.0		31.7				
Change Period (Y+Rc), s	3.5	5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	4.5	55.0		27.0	28.5	31.0		27.0				
Max Q Clear Time (g_c+I1), s	2.1	5.1		26.6	13.9	16.6		2.3				
Green Ext Time (p_c), s	0.0	2.4		0.1	0.7	4.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	31.6											
HCM 6th LOS	C											

Lanes, Volumes, Timings
6: Azusa Cyn. Rd. & Dwy. 1

2040 With Project PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	15	939	0	6	692
Future Volume (vph)	0	15	939	0	6	692
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	208		299			985
Travel Time (s)	4.7		6.8			22.4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection

Int Delay, s/veh 0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	15	939	0	6	692
Future Vol, veh/h	0	15	939	0	6	692
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	988	0	6	728

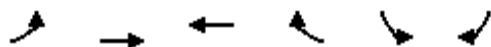
Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	494	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.9	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.3	-
Pot Cap-1 Maneuver	0	526	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	526	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	526	708
HCM Lane V/C Ratio	-	-	0.03	0.009
HCM Control Delay (s)	-	-	12.1	10.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Lanes, Volumes, Timings
7: Los Angeles St. & Dwy. 2

2040 With Project PM Peak Hour

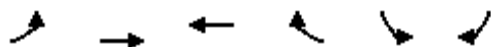


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	33	89	0	0	14
Future Volume (vph)	5	33	89	0	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		160	175		164	
Travel Time (s)		3.6	4.0		3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	33	89	0	0	14
Future Vol, veh/h	5	33	89	0	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	35	94	0	0	15
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	94	0	-	0	139	94
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1513	-	-	-	859	968
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	983	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1513	-	-	-	856	968
Mov Cap-2 Maneuver	-	-	-	-	856	-
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	983	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		8.8		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1513	-	-	-	968	
HCM Lane V/C Ratio	0.003	-	-	-	0.015	
HCM Control Delay (s)	7.4	0	-	-	8.8	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Lanes, Volumes, Timings
8: Los Angeles St. & Dwy. 3

2040 With Project PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	31	84	0	0	5
Future Volume (vph)	2	31	84	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		175	247		166	
Travel Time (s)		4.0	5.6		3.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	31	84	0	0	5
Future Vol, veh/h	2	31	84	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	33	88	0	0	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	88	0	-	0	125	88
Stage 1	-	-	-	-	88	-
Stage 2	-	-	-	-	37	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1520	-	-	-	875	976
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	991	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1520	-	-	-	874	976
Mov Cap-2 Maneuver	-	-	-	-	874	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	991	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		8.7		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1520	-	-	-	976	
HCM Lane V/C Ratio	0.001	-	-	-	0.005	
HCM Control Delay (s)	7.4	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile O(veh)	0	-	-	-	0	

HCM Signalized Intersection Capacity Analysis

1: Azusa Cyn. Rd. & Cypress St.

2040 With Project AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	263	419	362	186	161	258
Future Volume (vph)	263	419	362	186	161	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.93	0.85	0.95		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3351	1470	3426		1805	3610
Flt Permitted	0.97	1.00	1.00		0.39	1.00
Satd. Flow (perm)	3351	1470	3426		732	3610
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	292	466	402	207	179	287
RTOR Reduction (vph)	173	204	48	0	0	0
Lane Group Flow (vph)	343	38	561	0	179	287
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	15.9	15.9	53.6		77.1	75.6
Effective Green, g (s)	15.9	15.9	53.6		77.1	75.6
Actuated g/C Ratio	0.16	0.16	0.54		0.77	0.76
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	532	233	1836		762	2729
v/s Ratio Prot	c0.10		c0.16		c0.04	0.08
v/s Ratio Perm		0.03			0.14	
v/c Ratio	0.64	0.17	0.31		0.23	0.11
Uniform Delay, d1	39.4	36.3	12.9		5.0	3.2
Progression Factor	1.00	1.00	1.00		2.25	1.99
Incremental Delay, d2	2.7	0.3	0.4		0.2	0.1
Delay (s)	42.1	36.7	13.3		11.5	6.5
Level of Service	D	D	B		B	A
Approach Delay (s)	40.3		13.3			8.4
Approach LOS	D		B			A
Intersection Summary						
HCM 2000 Control Delay			23.2		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.35			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			47.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: Azusa Cyn. Rd. & Los Angeles St.

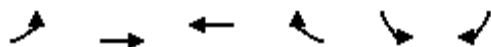
2040 With Project AM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	18	206	9	9	24	249	294	16	20	167	303
Future Volume (vph)	215	18	206	9	9	24	249	294	16	20	167	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.89			1.00			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1715	1805	1900	1805	1694			1900			1900	1900
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.76			0.93	1.00
Satd. Flow (perm)	1715	1805	1900	1805	1694			1450			1764	1900
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	229	19	219	10	10	26	265	313	17	21	178	322
RTOR Reduction (vph)	0	0	192	0	24	0	0	1	0	0	0	97
Lane Group Flow (vph)	124	124	27	10	12	0	0	594	0	0	199	225
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)	12.4	12.4	12.4	5.8	5.8			69.8			69.8	69.8
Effective Green, g (s)	12.4	12.4	12.4	5.8	5.8			69.8			69.8	69.8
Actuated g/C Ratio	0.12	0.12	0.12	0.06	0.06			0.70			0.70	0.70
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	212	223	235	104	98			1012			1231	1326
v/s Ratio Prot	c0.07	0.07		0.01	c0.01							
v/s Ratio Perm			0.01					c0.41			0.11	0.12
v/c Ratio	0.58	0.56	0.12	0.10	0.12			0.59			0.16	0.17
Uniform Delay, d1	41.4	41.2	38.9	44.6	44.7			7.7			5.1	5.2
Progression Factor	1.00	1.00	1.00	1.00	1.00			0.72			0.87	2.27
Incremental Delay, d2	4.1	3.0	0.2	0.4	0.5			2.3			0.3	0.3
Delay (s)	45.4	44.2	39.1	45.0	45.2			7.8			4.8	12.0
Level of Service	D	D	D	D	D			A			A	B
Approach Delay (s)		42.2			45.2			7.8			9.2	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			19.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			63.2%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: San Bernardino Rd. & Azusa Cyn. Rd.

2040 With Project AM Peak Hour

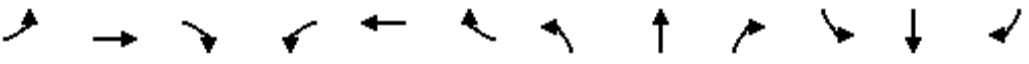


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	91	160	377	477	288	84
Future Volume (vph)	91	160	377	477	288	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3308		1805	1615
Flt Permitted	0.23	1.00	1.00		0.95	1.00
Satd. Flow (perm)	436	3610	3308		1805	1615
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	102	180	424	536	324	94
RTOR Reduction (vph)	0	0	191	0	0	26
Lane Group Flow (vph)	102	180	769	0	324	68
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	69.0	69.0	69.0		43.0	43.0
Effective Green, g (s)	69.0	69.0	69.0		43.0	43.0
Actuated g/C Ratio	0.58	0.58	0.58		0.36	0.36
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	250	2075	1902		646	578
v/s Ratio Prot		0.05	0.23		c0.18	
v/s Ratio Perm	c0.23					0.04
v/c Ratio	0.41	0.09	0.40		0.50	0.12
Uniform Delay, d1	14.2	11.4	14.1		30.1	25.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.9	0.1	0.6		2.8	0.4
Delay (s)	19.0	11.5	14.8		32.9	26.2
Level of Service	B	B	B		C	C
Approach Delay (s)		14.2	14.8		31.4	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay			18.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.44			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			56.8%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

2040 With Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	1213	305	196	2409	46	480	19	156	22	13	44
Future Volume (vph)	28	1213	305	196	2409	46	480	19	156	22	13	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	31	1333	335	215	2647	51	527	21	171	24	14	48
RTOR Reduction (vph)	0	35	0	0	0	21	0	0	145	0	44	0
Lane Group Flow (vph)	31	1633	0	215	2647	30	274	274	26	24	18	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	2.4	55.0		18.5	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	55.0		18.5	71.1	71.1	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.46		0.15	0.59	0.59	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2612		292	2251	1125	285	285	285	158	158	
v/s Ratio Prot	0.02	0.29		c0.11	c0.70		c0.14	0.14		c0.01	0.01	
v/s Ratio Perm						0.02			0.01			
v/c Ratio	0.82	0.63		0.74	1.18	0.03	0.96	0.96	0.09	0.15	0.11	
Uniform Delay, d1	58.6	24.7		48.4	24.5	10.1	50.7	50.7	43.9	51.1	50.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	76.1	1.1		9.3	84.2	0.0	44.3	44.3	0.6	2.0	1.5	
Delay (s)	134.7	25.8		57.7	108.6	10.2	95.0	95.0	44.6	53.1	52.4	
Level of Service	F	C		E	F	B	F	F	D	D	D	
Approach Delay (s)		27.8			103.2			83.0			52.6	
Approach LOS		C			F			F			D	
Intersection Summary												
HCM 2000 Control Delay			76.0									HCM 2000 Level of Service E
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			120.0									Sum of lost time (s) 18.5
Intersection Capacity Utilization			102.1%									ICU Level of Service G
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2040 With Project AM Peak Hour

4: Azusa Cyn. Rd. & Arrow Hwy.

WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	1213	305	196	2409	46	480	19	156	22	13	44
Future Volume (vph)	28	1213	305	196	2409	46	480	19	156	22	13	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00		*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	31	1333	335	215	2647	51	527	21	171	24	14	48
RTOR Reduction (vph)	0	35	0	0	2	0	0	0	145	0	44	0
Lane Group Flow (vph)	31	1633	0	215	2696	0	274	274	26	24	18	0
Turn Type	Prot	NA		Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Actuated Green, G (s)	2.4	55.1		18.4	71.1		18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	2.4	55.1		18.4	71.1		18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.02	0.46		0.15	0.59		0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2617		291	3377		285	285	285	158	158	
v/s Ratio Prot	0.02	0.29		c0.11	c0.47		c0.14	0.14		c0.01	0.01	
v/s Ratio Perm									0.01			
v/c Ratio	0.82	0.62		0.74	0.80		0.96	0.96	0.09	0.15	0.11	
Uniform Delay, d1	58.6	24.6		48.5	18.9		50.7	50.7	43.9	51.1	50.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	76.1	1.1		9.4	2.1		44.3	44.3	0.6	2.0	1.5	
Delay (s)	134.7	25.7		57.9	21.0		95.0	95.0	44.6	53.1	52.4	
Level of Service	F	C		E	C		F	F	D	D	D	
Approach Delay (s)		27.7			23.7			83.0			52.6	
Approach LOS		C			C			F			D	
Intersection Summary												
HCM 2000 Control Delay			33.3			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			83.0%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Azusa Cyn. Rd. & Olive St.

2040 With Project AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	2	137	1	1	1	135	614	13	3	280	39
Future Volume (vph)	86	2	137	1	1	1	135	614	13	3	280	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3599		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1437	1900	1615	1805	3599		1805	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	2	149	1	1	1	147	667	14	3	304	42
RTOR Reduction (vph)	0	0	130	0	0	1	0	1	0	0	0	17
Lane Group Flow (vph)	93	2	19	1	1	0	147	680	0	3	304	25
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	12.7	12.7	12.7	12.7	12.7	12.7	13.5	71.9		1.9	60.3	60.3
Effective Green, g (s)	12.7	12.7	12.7	12.7	12.7	12.7	13.5	71.9		1.9	60.3	60.3
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.72		0.02	0.60	0.60
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	182	241	205	182	241	205	243	2587		34	2176	973
v/s Ratio Prot		0.00			0.00		c0.08	c0.19		0.00	c0.08	
v/s Ratio Perm	c0.06		0.01	0.00		0.00						0.02
v/c Ratio	0.51	0.01	0.09	0.01	0.00	0.00	0.60	0.26		0.09	0.14	0.03
Uniform Delay, d1	40.8	38.1	38.6	38.1	38.1	38.1	40.7	4.9		48.2	8.6	8.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.76	1.11		1.00	1.00	1.00
Incremental Delay, d2	2.4	0.0	0.2	0.0	0.0	0.0	4.0	0.2		1.1	0.1	0.0
Delay (s)	43.2	38.2	38.8	38.1	38.1	38.1	35.1	5.7		49.3	8.7	8.1
Level of Service	D	D	D	D	D	D	D	A		D	A	A
Approach Delay (s)		40.4			38.1			10.9			9.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay	15.5			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.35											
Actuated Cycle Length (s)	100.0			Sum of lost time (s)			13.5					
Intersection Capacity Utilization	46.6%			ICU Level of Service			A					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: Azusa Cyn. Rd. & Cypress St.

2040 With Project PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	196	223	390	580	492	488
Future Volume (vph)	196	223	390	580	492	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0		3.5	5.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frt	0.95	0.85	0.91		1.00	1.00
Flt Protected	0.97	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3394	1470	3286		1805	3610
Flt Permitted	0.97	1.00	1.00		0.15	1.00
Satd. Flow (perm)	3394	1470	3286		277	3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	206	235	411	611	518	514
RTOR Reduction (vph)	62	121	244	0	0	0
Lane Group Flow (vph)	240	18	778	0	518	514
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	12.6	12.6	38.9		80.4	78.9
Effective Green, g (s)	12.6	12.6	38.9		80.4	78.9
Actuated g/C Ratio	0.13	0.13	0.39		0.80	0.79
Clearance Time (s)	3.5	3.5	5.0		3.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	427	185	1278		780	2848
v/s Ratio Prot	c0.07		0.24		c0.24	0.14
v/s Ratio Perm		0.01			c0.29	
v/c Ratio	0.56	0.09	0.61		0.66	0.18
Uniform Delay, d1	41.1	38.7	24.5		16.2	2.6
Progression Factor	1.00	1.00	1.00		0.85	1.55
Incremental Delay, d2	1.7	0.2	2.2		2.0	0.1
Delay (s)	42.8	38.9	26.6		15.7	4.1
Level of Service	D	D	C		B	A
Approach Delay (s)	41.6		26.6			9.9
Approach LOS	D		C			A
Intersection Summary						
HCM 2000 Control Delay			22.4		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			75.5%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: Azusa Cyn. Rd. & Los Angeles St.

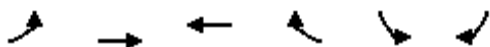
2040 With Project PM Peak Hour
WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	10	438	47	31	24	191	349	15	13	469	210
Future Volume (vph)	566	10	438	47	31	24	191	349	15	13	469	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.93			1.00			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1715	1805	1900	1805	1775			1900			1900	1900
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.54			0.98	1.00
Satd. Flow (perm)	1715	1805	1900	1805	1775			1034			1869	1900
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	584	10	452	48	32	25	197	360	15	13	484	216
RTOR Reduction (vph)	0	0	293	0	23	0	0	1	0	0	0	95
Lane Group Flow (vph)	298	296	159	48	34	0	0	571	0	0	497	121
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)	24.0	24.0	24.0	8.0	8.0			56.0			56.0	56.0
Effective Green, g (s)	24.0	24.0	24.0	8.0	8.0			56.0			56.0	56.0
Actuated g/C Ratio	0.24	0.24	0.24	0.08	0.08			0.56			0.56	0.56
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	411	433	456	144	142			579			1046	1064
v/s Ratio Prot	c0.17	0.16		c0.03	0.02							
v/s Ratio Perm			0.08					c0.55			0.27	0.06
v/c Ratio	0.73	0.68	0.35	0.33	0.24			0.99			0.48	0.11
Uniform Delay, d1	35.0	34.5	31.5	43.5	43.1			21.6			13.2	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.47	3.37
Incremental Delay, d2	6.2	4.4	0.5	1.4	0.9			34.2			1.5	0.2
Delay (s)	41.2	39.0	32.0	44.8	44.0			55.8			20.9	35.0
Level of Service	D	D	C	D	D			E			C	D
Approach Delay (s)		36.6			44.4			55.8			25.2	
Approach LOS		D			D			E			C	
Intersection Summary												
HCM 2000 Control Delay			38.1				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			87.9%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: San Bernardino Rd. & Azusa Cyn. Rd.

2040 With Project PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	139	375	385	406	832	169
Future Volume (vph)	139	375	385	406	832	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.92		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3610	3332		1805	1615
Flt Permitted	0.22	1.00	1.00		0.95	1.00
Satd. Flow (perm)	414	3610	3332		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	146	395	405	427	876	178
RTOR Reduction (vph)	0	0	158	0	0	18
Lane Group Flow (vph)	146	395	674	0	876	160
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	51.0	51.0	51.0		61.0	61.0
Effective Green, g (s)	51.0	51.0	51.0		61.0	61.0
Actuated g/C Ratio	0.42	0.42	0.42		0.51	0.51
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	175	1534	1416		917	820
v/s Ratio Prot		0.11	0.20		c0.49	
v/s Ratio Perm	c0.35					0.10
v/c Ratio	0.83	0.26	0.48		0.96	0.19
Uniform Delay, d1	30.7	22.3	24.9		28.2	16.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	35.2	0.4	1.1		20.7	0.5
Delay (s)	65.9	22.7	26.0		48.9	16.6
Level of Service	E	C	C		D	B
Approach Delay (s)		34.4	26.0		43.4	
Approach LOS		C	C		D	
Intersection Summary						
HCM 2000 Control Delay			35.4		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.90			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			87.5%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

4: Azusa Cyn. Rd. & Arrow Hwy.

2040 With Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	2663	378	243	1564	39	253	15	320	35	12	51
Future Volume (vph)	43	2663	378	243	1564	39	253	15	320	35	12	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	3800	1900	1900	1900	1900	1900	1900	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	46	2833	402	259	1664	41	269	16	340	37	13	54
RTOR Reduction (vph)	0	18	0	0	0	17	0	0	182	0	50	0
Lane Group Flow (vph)	46	3217	0	259	1664	24	143	142	158	37	18	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	4.6	60.0		13.5	68.9	68.9	18.0	18.0	18.0	10.0	10.0	
Effective Green, g (s)	4.6	60.0		13.5	68.9	68.9	18.0	18.0	18.0	10.0	10.0	
Actuated g/C Ratio	0.04	0.50		0.11	0.57	0.57	0.15	0.15	0.15	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	72	2850		213	2181	1090	285	285	285	158	158	
v/s Ratio Prot	0.02	c0.56		c0.14	0.44		0.08	0.07		c0.02	0.01	
v/s Ratio Perm						0.01			c0.08			
v/c Ratio	0.64	1.13		1.22	0.76	0.02	0.50	0.50	0.55	0.23	0.11	
Uniform Delay, d1	56.9	30.0		53.2	19.4	11.0	46.9	46.9	47.3	51.4	50.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	17.1	63.0		132.2	2.6	0.0	6.2	6.1	7.6	3.4	1.4	
Delay (s)	74.0	93.0		185.4	22.0	11.1	53.1	53.0	54.9	54.9	52.3	
Level of Service	E	F		F	C	B	D	D	D	D	D	
Approach Delay (s)		92.8			43.3			54.0			53.2	
Approach LOS		F			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			71.8			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			100.5%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2040 With Project PM Peak Hour

4: Azusa Cyn. Rd. & Arrow Hwy.

WITH IMPROVEMENTS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	2663	378	243	1564	39	253	15	320	35	12	51
Future Volume (vph)	43	2663	378	243	1564	39	253	15	320	35	12	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	5.0	5.0	
Lane Util. Factor	1.00	*1.00		1.00	*1.00		*1.00	*1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Flt Permitted	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	1900	5700		1900	5700		1900	1900	1900	1900	1900	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	43	2663	378	243	1564	39	253	15	320	35	12	51
RTOR Reduction (vph)	0	18	0	0	2	0	0	0	71	0	47	0
Lane Group Flow (vph)	43	3023	0	243	1601	0	134	134	249	35	16	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			
Actuated Green, G (s)	5.6	61.3		12.2	67.9		18.0	18.0	30.2	10.0	10.0	
Effective Green, g (s)	5.6	61.3		12.2	67.9		18.0	18.0	30.2	10.0	10.0	
Actuated g/C Ratio	0.05	0.51		0.10	0.57		0.15	0.15	0.25	0.08	0.08	
Clearance Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	88	2911		193	3225		285	285	478	158	158	
v/s Ratio Prot	0.02	c0.53		c0.13	0.28		0.07	0.07	c0.05	c0.02	0.01	
v/s Ratio Perm									0.08			
v/c Ratio	0.49	1.04		1.26	0.50		0.47	0.47	0.52	0.22	0.10	
Uniform Delay, d1	55.8	29.4		53.9	15.7		46.6	46.6	38.7	51.4	50.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.2	27.7		151.5	0.5		5.5	5.5	1.0	3.2	1.3	
Delay (s)	60.0	57.1		205.4	16.3		52.1	52.1	39.7	54.6	52.2	
Level of Service	E	E		F	B		D	D	D	D	D	
Approach Delay (s)		57.1			41.2			45.4			53.0	
Approach LOS		E			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			50.6			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			99.7%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Azusa Cyn. Rd. & Olive St.

2040 With Project PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	1	380	3	1	1	260	352	1	1	591	85
Future Volume (vph)	116	1	380	3	1	1	260	352	1	1	591	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1900	1615	1805	3609		1805	3610	1615
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1439	1900	1615	1439	1900	1615	1805	3609		1805	3610	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	123	1	404	3	1	1	277	374	1	1	629	90
RTOR Reduction (vph)	0	0	343	0	0	1	0	0	0	0	0	49
Lane Group Flow (vph)	123	1	61	3	1	0	277	375	0	1	629	41
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						6
Actuated Green, G (s)	15.0	15.0	15.0	15.0	15.0	15.0	25.5	70.6		0.9	46.0	46.0
Effective Green, g (s)	15.0	15.0	15.0	15.0	15.0	15.0	25.5	70.6		0.9	46.0	46.0
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15	0.15	0.26	0.71		0.01	0.46	0.46
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0		3.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	215	285	242	215	285	242	460	2547		16	1660	742
v/s Ratio Prot		0.00			0.00		c0.15	0.10		0.00	c0.17	
v/s Ratio Perm	c0.09		0.04	0.00		0.00						0.03
v/c Ratio	0.57	0.00	0.25	0.01	0.00	0.00	0.60	0.15		0.06	0.38	0.06
Uniform Delay, d1	39.5	36.1	37.5	36.2	36.1	36.1	32.8	4.8		49.1	17.7	15.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.29	0.99		1.00	1.00	1.00
Incremental Delay, d2	3.6	0.0	0.5	0.0	0.0	0.0	1.9	0.1		1.6	0.7	0.1
Delay (s)	43.2	36.1	38.1	36.2	36.1	36.1	44.2	4.9		50.8	18.3	15.1
Level of Service	D	D	D	D	D	D	D	A		D	B	B
Approach Delay (s)		39.3			36.2			21.6			18.0	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			25.2				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			60.7%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												