December 2021 | Initial Study

4416 AZUSA CANYON ROAD

City of Irwindale

APPENDICES VOLUME III: F – I

Prepared for:

City of Irwindale
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PLACEWORKS

APPENDICES: Volume III

Appendices

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Appendix F LID Report and Hydrology and Detention Report

Appendix

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LOW IMPACT DEVELOPMENT PLAN

CITY OF IRWINDALE, CA.

PROJECT:

INDUSTRIAL BUILDING
4416 Azusa Canyon Road
Azusa, CA

PREPARED FOR:

Rexford Industrial Realty
6222 Wilshire Blvd. Suite 270
Los Angeles, CA 90048
Project Contact Person: Paul Mino
(213) 624-4040

Prepared by:

THE G4 GROUP INC. Consulting Engineers

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(805) 523-0010
Contact: Kevin P. Garrity

May 17, 202
Revised October 4, 2021

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I. INTRODUCTION

The proposed development site is located at 4416 Azusa Canyon Road in the city of Irwindale, California. (See Vicinity Map in Appendix 1). The site is currently fully developed with an existing Pepsi bottling and distribution facility with related trucking and office facilities. The project proposes to raise the existing onsite facilities and construct one new, approximately 125,470 square foot commercial/industrial building. In addition to the commercial/industrial building, the project proposes to construct paved drive lanes with associated paved parking and adjacent ornamental landscape areas. The overall property size is approximately 5.82 acres of which will encompass the new development.

I.1 PROJECT APPLICABILITY

This project falls under the jurisdiction of the City of Irwindale, located in the County of Los Angeles. The County of Los Angeles Low Impact Development Standards Manual (LID), 2014 methodology and calculations are adopted by the City of Irwindale. This manual was prepared to meet the requirements contained in Los Angeles Regional Water Quality Control Boards Municipal County of Los Angeles Separate Storm Sewer Systems 2012 (MS4) Permit (Order R4-2012-0175).

As a new development project that will create more than 5,000 square feet of new Impervious surface with more than 25 new parking spaces, it is subject to implementation of post-construction stormwater management control measures that infiltrate/treat the Stormwater Quality Design Volume (SWQDv) part of the proposed development.

Per the LID, all projects that are required meet these measures address the following requirements:

- Conduct a site assessment and identify design considerations, including determining the feasibility of on-site infiltration.
- Apply site design principles and techniques.
- Apply source control measures.
- Implement alternative compliance measures, (Not required for this project).
- Apply treatment control measures.
- Implement hydromodification requirements.
- Develop a Maintenance Plan.

It is the intention of this report to provide detailed information to address all of the applicable requirements identified above.

II. PROJECT SITE ASSESSMENT

The property is 5.82 acres in size and contains an existing Pepsi bottling and distribution facility with related trucking, vehicle parking and office facilities. The site is located on the northeast corner of Azusa Canyon Road and Los Angeles Street.

Currently, the site drains to the south via surface and subsurface drainage facilities to an existing City maintained 36" diameter storm drain system located in Los Angeles Street.

The proposed development will demolish all existing site facilities and reconstructing one new approximately 125,470 square foot commercial/industrial building. The existing drainage pattern will be maintained in the proposed development with the runoff being ultimately directed into the existing 36" diameter drain through new onsite surface and subsurface storm drain facilities. These new facilities are reflected in the Civil construction documents for the project. The new developed drainage areas are reflected on the attached SWQDv & Q100 Volume Map contained in Appendix 4.

No Environmentally Sensitive Areas exist within the proposed development site.

To determine the feasibility of the use of stormwater infiltration BMP's, a Report of Percolation Testing has been performed on the proposed development by Southern California Geotechnical. The results of this report indicate that infiltration of stormwater is feasible and recommended for this project. The percolation test performed on the property indicate that a tested percolation rate of 10 inches per hour with an applied factor of safety of 3 for a final design rate of 3.33 which has been used in the analysis and works well for the infiltration BMP's proposed for this project. The Report of Percolation Testing is included in Appendix 2.

III. APPLY SITE DESIGN PRINCIPLES AND TECHNIQUES

Site design principles and techniques were used early in the development of this project.

The Project Architect, working with the City of Irwindale Planning Department in the entitlement stage of this project, developed a site plan that not only satisfied the Clients need for more staff parking but also provided the minimum amount of impermeable coverage possible while maximizing the amount of permeable landscape area.

Once the site plan was finalized and the determination was made that a portion of the site was suitable for the use of Infiltration BMP's, it was up to the Design Civil Engineer to develop an efficient and environmentally sound drainage design for the proposed development.

With the favorable infiltration rates established by the Project Soils Engineer, we were able to retain the total SWQDv onsite and infiltrate it into the subsurface soils. This will be done through the utilization of infiltration BMP's.

Pollutants of Concerns (POC) for parking lot developments consist of the following:

- Bacteria, Nutrients, Metals, Pesticides, Toxic Organic Compounds, Sediments, Trash & Debris, Oil and Grease.

This project proposes to mitigate these POC's to the most practicable extend possible by the use of a treatment train design of Source and Treatment Control, Permanente Best Management Practices (BMP's) .

For pre-treatment of stormwater runoff, the design will utilize Bio-Clean In-Catch Basin Filters and Contech Engineered Solutions LLC, CDS separator units for project. The catch basin filters are installed in the proposed onsite curb opening and grated type catch basins and are capable of treating the SWQDf and Full Capture requirement for flows from a 1-year, 1-hour storm event as directed in the California State Water Resources Control Board Trash Policy, Resolution No. 2015-0019. Once the initial flows pass through the filters, the total site flows are directed into the proposed CDS units prior to being directed to the infiltration trenches. The final treatment of the SQVD will be accomplished with the proposed Infiltration Trench facilities. This treatment train system exists in both drainage areas of the site. These BMP's are explained in depth with supporting calculations later in this report.

To verify the performance of the infiltration system, follow up field infiltration tests are to be performed by the geotechnical engineer after grading at a minimum of 2 locations within the excavated infiltration trench locations to verify that the infiltration area has been properly protected and performs as designed. Test results are to be provided to the G4 Group Inc. for verification of design prior to construction of the facility.

IV. APPLY SOURCE CONTROL MEASURES

Source control measures are designed to prevent pollutants from contacting stormwater runoff or prevent discharge of contaminated stormwater runoff to the storm drain system and/or receiving water.

The following is a list of potential site specific source control measures that could be used for the proposed parking lot expansion, based on the matrix contained in Appendix 3.

STORM DRAIN MESSAGE AND SIGNAGE:

- Yes, all proposed storm drain inlets will be provided with appropriate No Dumping signage.

OUTDOOR MATERIAL STORAGE AREA DESIGN:

- No, outdoor material storage is not proposed as part of this development.

OUTDOOR TRASH STORAGE AREA DESIGN:

- Yes, appropriate outdoor trash storage and waste areas are designed as part of this development.

OUTDOOR LOADING/UNLOADING DOCK AREA DESIGN:

- Yes, appropriate loading docks are designed as part of this development.

OUTDOOR REPAIR/MAINTENANCE BAY DESIGN:

- No, vehicle equipment repair or maintenance is not proposed as part of this development.

OUTDOOR VEHICLE/EQUIPMENT/ACCESSORY WASH AREA:

- No, vehicle washing is not proposed as part of this development.

FUELING AREA DESIGN:

- No, fuel dispensing is not proposed as part of this development.

PROOF OF CONTROL MEASURE MAINTENANCE:

- Yes, the onsite stormwater control measures will be maintained by the property owner as outlined in the separate Operations & Maintenance document.

V. IMPLEMENT ALTERNATIVE COMPLIANCE MEASURES

This project will infiltrate the total SWQDv onsite, consequently Alternative Compliance Measures are not required.

VI. APPLY TREATMENT CONTROL MEASURES

The primary SWQDv BMP treatment controls for this project consist of two infiltration trenches, one located at the westerly drainage subarea confluence and the other at the southerly confluence. Per the drainage report prepared by NextGen Engineering dated October 1, 2021, the total site SWQDv is 18,511 cubic feet. This is divided by the two drainage areas of the site with 8,941 cubic feet being directed to the westerly outlet and 9,570 cubic feet draining to the southerly outlet. The proposed westerly trench is 30 foot wide by 121 by 6 foot deep with the southerly trench being 35 foot wide by 116 foot long by 6 foot deep Infiltration trench.

Pretreatment of the SWQDv is accomplished in each catch basin with the installation of Bio-Clean filter inserts and CDS units. The breakdown of the required SWQDf and SWQDv is reflected on the attached maps in Appendix 4.0 and 5.0 respectively.

The following table lists the required and provided treatment capacities of the proposed development BMP's.

Proposed Development Infiltration BMP			
Treatment Control BMP	Required SWQDv	Provided SWQDv	Provided Infiltration Area
Western Infiltration Trench	8,941 cubic feet	13,044 cubic feet	3,725 square feet
Southern Infiltration Trench	9,570 cubic feet	13,377 cubic feet	4,060 square feet

Pretreatment BMP Check by Largest Drainage Subarea		
Treatment Control BMP	Required SWQDf (cfs) by Drainage Area	Provided Treatment Design Capacity (cfs) per
Bio-Clean Filter Inserts Model BC-CURB-FC-24	Area B-6 – 0.469 cfs	2.85 cfs
Bio-Clean Filter Inserts Model BC-GRATE-FC-48-48-18	Area A-4 – 0.352 cfs	2.85 cfs
CDS Unit Model BC-GRATE-FC-12-12-12-	Area A – 0.82 cfs	1.1 cfs

Detailed calculations for the proposed BMP's are located in Appendix 6.3

VII. IMPLEMENT HYDROMODIFICATION REQUIREMENTS

To reduce the impact of development on existing downstream storm drain infrastructure, the City of Irwindale and the County of Los Angeles require new developments to restrict flows leaving the site such that the 100-year proposed peak flow does not exceed the existing 50-year peak flow condition. This project proposes to accomplish this requirement with the installation of stormwater detention storage galleys located in each of the two drainage areas that will restrict the developed flows to below the existing 50-year peaks flows.

Calculations and discussion for the proposed stormwater detention system are contained under separate cover in the Hydrology and Detention Storage Report prepared by NextGen Engineering report dated October 1, 2021. Design details for the proposed detentions systems are contained in the project civil engineering construction documents.

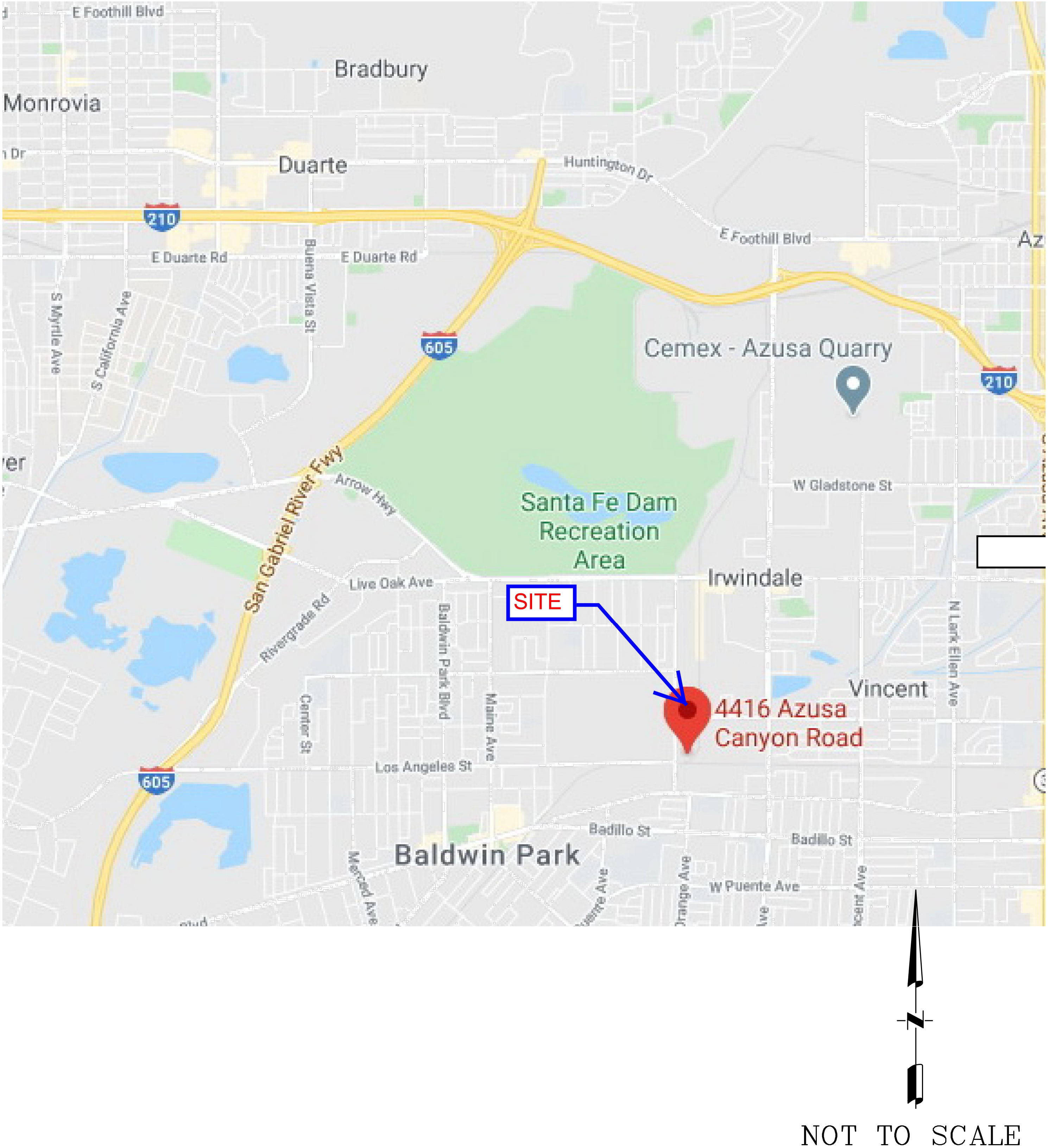
VIII. DEVELOP AN OPERATION & MAINTENANCE PLAN

A separate Operation & Maintenance Plan has been prepared for the project, a copy of which shall remain onsite and in the possession of the designated responsible maintenance individual.

IX. 100 YEAR FLOOD PROTECTION

The finished floor elevations for the proposed building will be set at 4.2’ above the existing top of curb elevation at the existing catch basin at the northeast corner Azusa Canyon Road and Los Angeles Street.

The Federal Emergency Management Agency (FEMA) has identified this property to be in the unshaded flood Zone X, defined as, “Area of Minimal Flood Hazard” and determined it to be outside the 0.2% annual floodplain with no base flood elevation established. Since the project is outside of the 0.2% or 500 year floodplain, by default the project is outside the 100-year floodplain. A copy of the FIRMette Map for this property is contained in Appendix 6.6



VICINITY MAP

4416 AZUSA CANYON ROAD
IRWINDALE, CA

APPENDIX 2

February 13, 2020

Rexford Industrial
11620 Wilshire Boulevard, 10th floor
Los Angeles, California 90025

Attention: Mr. Ricardo Rivas
Construction Manager

Project No.: **20G105-2**

Subject: **Results of Infiltration Testing**
Proposed Warehouse - Infiltration
4416 Azusa Canyon Road
Irwindale, California

Reference: Geotechnical Investigation and Infiltration Testing, Proposed Warehouse, 4416 Azusa Canyon Road, Irwindale, California, prepared for Rexford Industrial, by Southern California Geotechnical, Inc. (SCG), SCG Project No. 20G105-1.

Dear Mr. Rivas:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Proposal No. 19P370, dated September 25, 2019. The scope of services included site reconnaissance, subsurface exploration, obtaining representative soil samples, laboratory testing, review of relevant geological literature, analysis to determine the infiltration rates of the onsite soils, and preparation of a geotechnical report documenting our findings. The infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer.

Site and Project Description

The subject site is located at the northeast corner of Azusa Canyon Road and Los Angeles Street in Irwindale, California. The site is bounded to the north by the Big Dalton Wash, to the west by Azusa Canyon Road, to the south by Los Angeles Street, and to the southeast and east by an existing railroad easement. The general location of the site is illustrated on the Site Location Map, included as Plate 1 of this report.

The site consists of an irregular-shaped parcel, 5.89± acres in size. The site is presently developed with one warehouse, 64,535± ft² in size, in the western half of the site. The warehouse is currently occupied by Pepsi Bottling Group. The building is a single-story structure of concrete tilt-up construction and is assumed to be supported on conventional shallow foundations with a concrete slab-on-grade floor. A loading dock is located along a portion of the northeast building

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wall. A modular building, about 1,000 ± ft² in size is present in the east-central portion of the site. This modular building appears to be supported directly on the pavements. The buildings are surrounded by asphaltic concrete pavements in the parking and drive areas, Portland cement concrete pavements in the loading dock areas, and concrete flatwork in limited areas throughout the site. The southeastern area of the site is vacant and undeveloped. The ground surface cover in this area consists of exposed soil with moderate to extensive native grass and weed growth.

Detailed topographic information was not available at the time of this report. Based on visual observations made at the time of the subsurface investigation and from elevation data obtained from Google Earth, the overall site topography generally slopes downward to the southwest at a gradient of 1 to 2± percent.

Proposed Development

A site plan, prepared by GAA Architects, has been provided to our office by the client. Based on this plan, a new warehouse, 130,540± ft² in size, will be constructed in the central area of the site. Dock-high doors will be constructed along a portion of the south building wall. The building will be surrounded by asphaltic concrete pavements in the parking and drive lanes, Portland cement concrete pavements in the loading dock areas, concrete flatwork and landscape planters throughout.

Detailed structural information has not been provided. It is assumed that the new building will be a single-story structure of tilt-up concrete construction, typically supported on conventional shallow foundations with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 3 to 5 kips per linear foot, respectively.

Grading plans for the proposed development were not available at the time of this report. The proposed development is not expected to include any significant amounts of below-grade construction such as basements or crawl spaces. Based on the existing topography, and assuming a relatively balanced site, cuts and fills of 2 to 3± feet are expected to be necessary to achieve the proposed site grades.

Concurrent Study

Southern California Geotechnical, Inc. (SCG) concurrently conducted a geotechnical investigation at the subject site. As part of this study, four (4) trenches were excavated to depths of 6 to 9± feet below the existing site grades. Artificial fill soils were encountered beneath the pavements at all trench locations, extending to depths of 3 to 7½± feet below the existing site grades. At Trench Nos. T-1 and T-4, the fill soils contain occasional clay nodules. The artificial fill soils generally consist of medium dense fine sands, silty sands with varying fine to coarse gravel content and occasional Cobbles. The fill soils possess a disturbed appearance and some samples contain debris, such as glass fragments, resulting in their classification as artificial fill. Native alluvial soils were encountered at all of the trench locations, extending to at least the maximum depth explored of 9± feet below the existing site grades. The native alluvial soils generally consist of gravelly well-graded sands, with some cobbles and occasional boulders.

Groundwater

Free water was not encountered during the drilling of any of the trench locations. Based on the lack of any water within the trenches, and the moisture contents of the recovered soil samples, the static groundwater is considered to have existed at a depth in excess of 10± feet at the time of the subsurface exploration.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level for the site. The primary reference used to determine the groundwater depths in this area is the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring well in this database is located approximately 300 feet West of the site. Water level readings within this monitoring well indicate groundwater levels of 194± feet below the ground surface in April 2017.

Subsurface Exploration

Scope of Exploration

The subsurface exploration conducted for this project consisted of two (2) backhoe-excavated infiltration trenches to depths of 9 to 10± feet below existing site grades. The trenches were logged during excavation by a member of our staff. The approximate locations of the infiltration trenches (identified as I-1 and I-2) are included in this report as Plate 2.

Geotechnical Conditions

Artificial fill soils were encountered at the two (2) infiltration test locations and extend to depths of 4 to 6± feet. At Infiltration No. I-1, the fill extends to 6 feet below the existing site grades. The fill soils at this location consist of loose and dry silty fine sands with trace to occasional medium to coarse sand and trace gravel. These soils are underlain by a 1-foot-thick soft and damp silty clay layer between 3 and 4 feet below ground surface. At Infiltration No. I-2, the fill consists of loose and damp silty fine sand with trace gravel. At 1½± feet, little to some soft and damp clay was encountered to the maximum fill depth of 4± feet. The artificial fill soils possess a disturbed appearance and metal fragments were observed within the fill at Infiltration No. I-1.

Native alluvium was encountered beneath the artificial fill soils at all of the infiltration locations, extending to at least the maximum depth explored of 10± feet below existing site grades. The alluvial soils beneath the artificial fill consist of loose and damp gravelly fine to coarse sand with some cobble content at both infiltration test locations. At Infiltration Trench No. I-2, cobble content varies within the alluvium, with extensive cobble content between 5 and 7 feet, and occasional cobbles between 9½ and 10± feet. The Trench Logs, which illustrate the conditions encountered at the infiltration test locations, are presented on plates B-1 and B-2 of this report.

Infiltration Testing

We understand that the results of the testing will be used to prepare a preliminary design for the storm water infiltration systems that will be used at the subject site. As previously mentioned, the infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer.

Two stainless steel infiltration rings were used for the infiltration testing. The outer infiltration ring is 2 feet in diameter and 20 inches in height. The inner infiltration ring is 1 foot in diameter and 20 inches in height. At each test location, a trench was excavated to the proposed depth of the infiltration system and the outer ring was driven 3± inches into the soil at the base of each trench. The inner ring was centered inside the outer ring and subsequently driven 3± inches into the soil at the base of the trench. The rings were driven into the soil using a ten-pound sledge hammer. The soil surrounding the wall of the infiltration rings was only slightly disturbed during the driving process.

Infiltration Testing Procedure

Infiltration testing was performed at both of the infiltration trench locations. The infiltration testing consisted of filling the inner ring and the annular space (the space between the inner and outer rings) with water, approximately 3 to 4 inches above the soil. To prevent the flow of water from one ring to the other, the water level in both the inner ring and the annular space between the rings was maintained using constant-head float valves. The volume of water that was added to maintain a constant head in the inner ring and the annular space during each time interval was determined and recorded. A cap was placed over the rings to minimize the evaporation of water during the tests.

The schedule for readings was determined based on the observed soil type at the base of each backhoe-excavated trench. Based on the existing soils at the trench locations, the volumetric measurements were made at 1-minute increments at I-1, and 4-minute increments at I-2. The water volume measurements are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on these spreadsheets.

The infiltration rates for the infiltration tests are calculated in centimeters per hour and then converted to inches per hour. The rates are summarized below:

Infiltration Test No.	**Depth (feet)**	**Soil Description**	**Infiltration Rate (inches/hour)**
I-1	9	Light Gray Sandy fine to coarse Gravel, some Cobble content, trace Silt	19.4
I-2	10	Light Gray Gravelly fine to coarse Sand, occasional Cobble content, trace Silt	10.5

Laboratory Testing

Moisture Content

The moisture contents for selected soil samples within the trenches were determined in accordance with ASTM D-2216 and are expressed as a percentage of the dry weight. These test results are presented on the Trench Logs.

Grain Size Analysis

The grain size distribution of selected soils collected from the base of each infiltration test trench has been determined using a range of wire mesh screens. These tests were performed in general accordance with ASTM D-422 and/or ASTM D-1140. The weight of the portion of the sample retained on each screen is recorded and the percentage finer or coarser of the total weight is calculated. The results of the grainsize analysis are presented on Plates C-1 and C-2 of this report.

Design Recommendations

Two (2) infiltration tests were performed at the subject site. As noted above, the calculated infiltration rates at the infiltration test locations are 19.1 and 10.5 inches per hour. **Based on the results of Infiltration Test Nos. I-1 and I-2, we recommend an infiltration rate of 10 inches per hour be used for the design of the proposed below-grade chamber system located in the east-central region and for the proposed chamber system located in the southwestern region of the site.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of each chamber system. It should be confirmed that the soils at the base of the proposed infiltration systems correspond with those presented in this report to ensure that the performance of the systems will be consistent with the rates reported herein.

The design of the proposed storm water infiltration systems should be performed by the project civil engineer, in accordance with the City of Irwindale and/or County of Los Angeles guidelines. However, it is recommended that the systems be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the system. The presence of such materials would decrease the effective infiltration rates. **It is recommended that the project civil engineer apply an appropriate factor of safety. The infiltration rates recommended above are based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rates.** It should be noted that the recommended infiltration rates are based on infiltration testing at two (2) discrete locations, and the overall infiltration rates of the storm water infiltration systems could vary considerably.

Construction Considerations

The infiltration rates presented in this report are specific to the tested locations and tested depths. Infiltration rates can be significantly reduced if the soils are exposed to excessive disturbance or compaction during construction. Therefore, the subgrade soils within proposed infiltration system areas should not be over-excavated, undercut or compacted in any significant manner. **It is recommended that a note to this effect be added to the project plans and/or specifications.**

Infiltration versus Permeability

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. The infiltration rates presented herein were determined in accordance with the ASTM Test Method D-3385-03 standard and are considered valid for the time and place of the actual test. Changes in soil moisture content will affect these infiltration rates. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration areas could potentially be damaged due to saturation of subgrade soils. **The proposed infiltration systems for this site should be located at least 25 feet away from any structures, including retaining walls.** Even with this provision of locating the infiltration systems at least 25 feet from the buildings, it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rates contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party’s sole risk, and we accept no responsibility for damage or loss which may occur. The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between trench locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

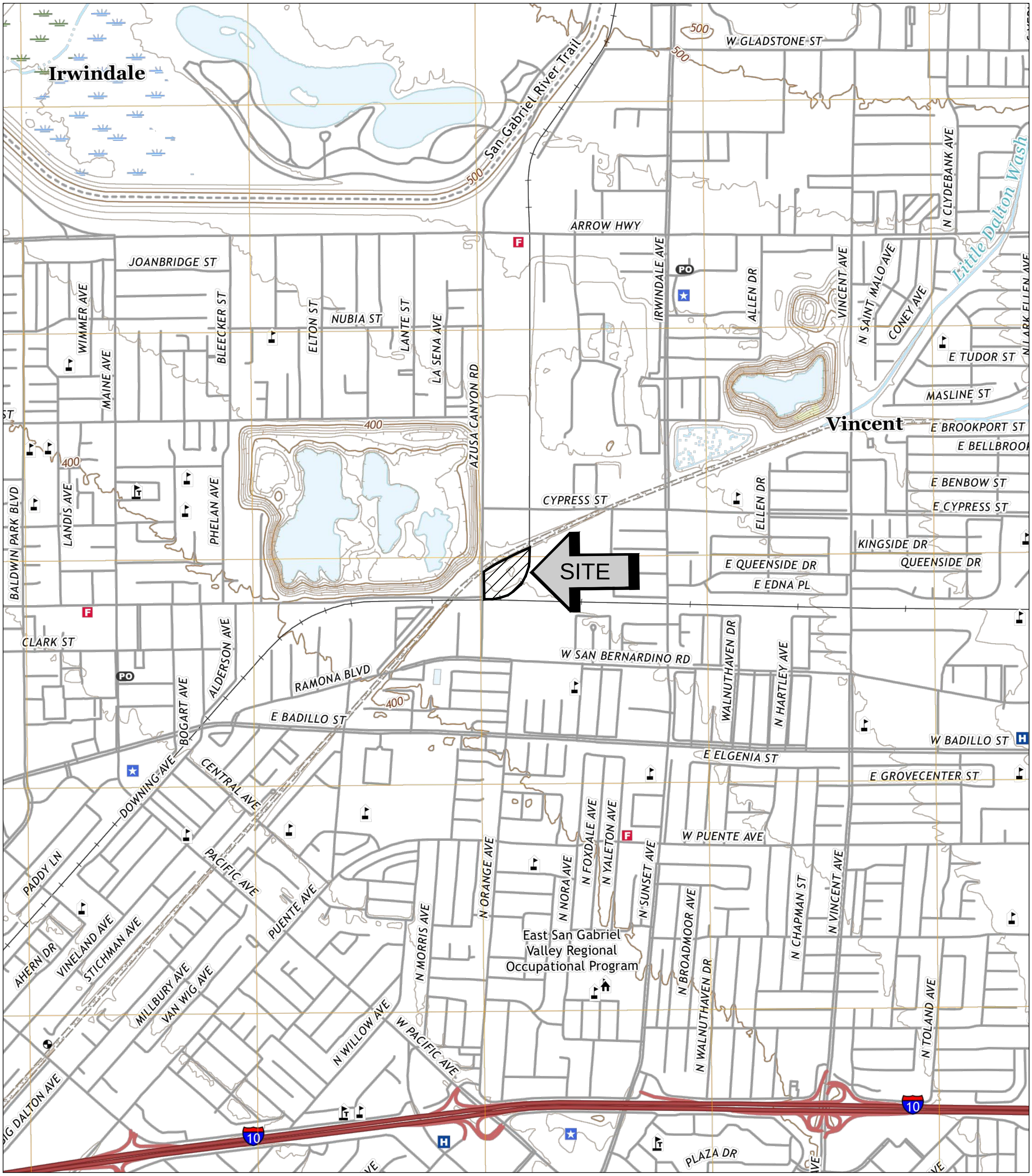
Ryan Bremer
Staff Geologist

Robert G. Trazo, GE 2655
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
ROBERT TRAZO
No. 2655
GEOTECHNICAL
STATE OF CALIFORNIA

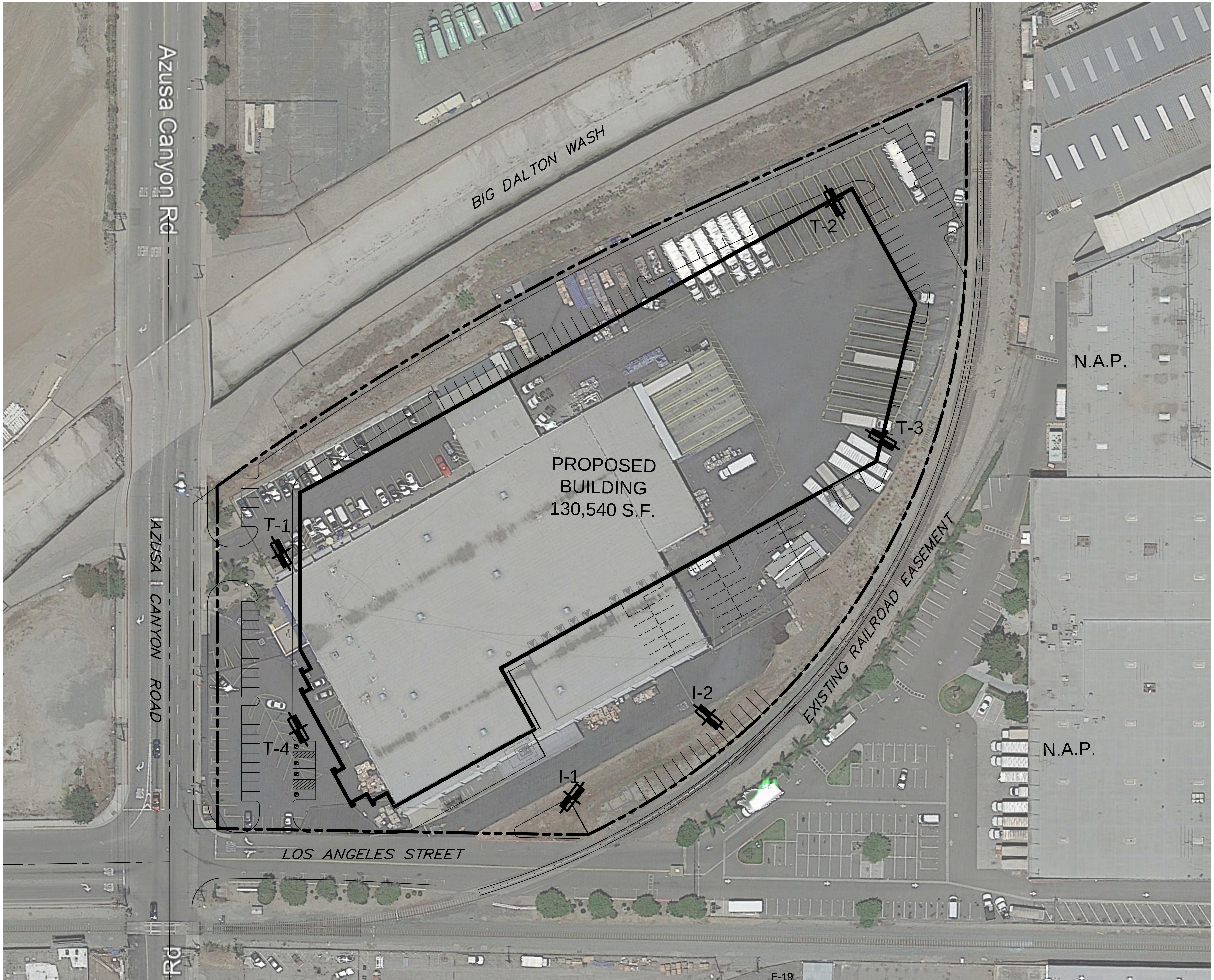
Distribution: (1) Addressee

Enclosures: Plate 1 - Site Location Map
Plate 2 - Infiltration Test Location Plan
Trench Logs (2 pages)
Infiltration Test Results Spreadsheets (2 pages)
Grain Size Distribution Graphs (2 pages)



SOURCE: USGS TOPOGRAPHIC MAP OF THE BALDWIN PARK QUADRANGLE, LOS ANGELES COUNTY, CALIFORNIA, 2018.

SITE LOCATION MAP	
PROPOSED WAREHOUSE	
IRWINDALE, CALIFORNIA	
SCALE: 1" = 2000'	SOUTHERN CALIFORNIA GEOTECHNICAL
DRAWN: RB CHKD: RGT	
SCG PROJECT 20G105-2	
PLATE 1	



NORTH
SoCalGeo

GEOTECHNICAL LEGEND

APPROXIMATE TRENCH LOCATION

NOTE: CONCEPTUAL SITE PLAN PREPARED BY GAA ARCHITECTS.

TRENCH AND INFILTRATION LOCATION PLAN

PROPOSED WAREHOUSE

IRWINDALE, CALIFORNIA

SCALE: 1" = 80'

DRAWN: RB
CHKD: RGT

SCG PROJECT
20G105-2

PLATE 2

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO.
I-1

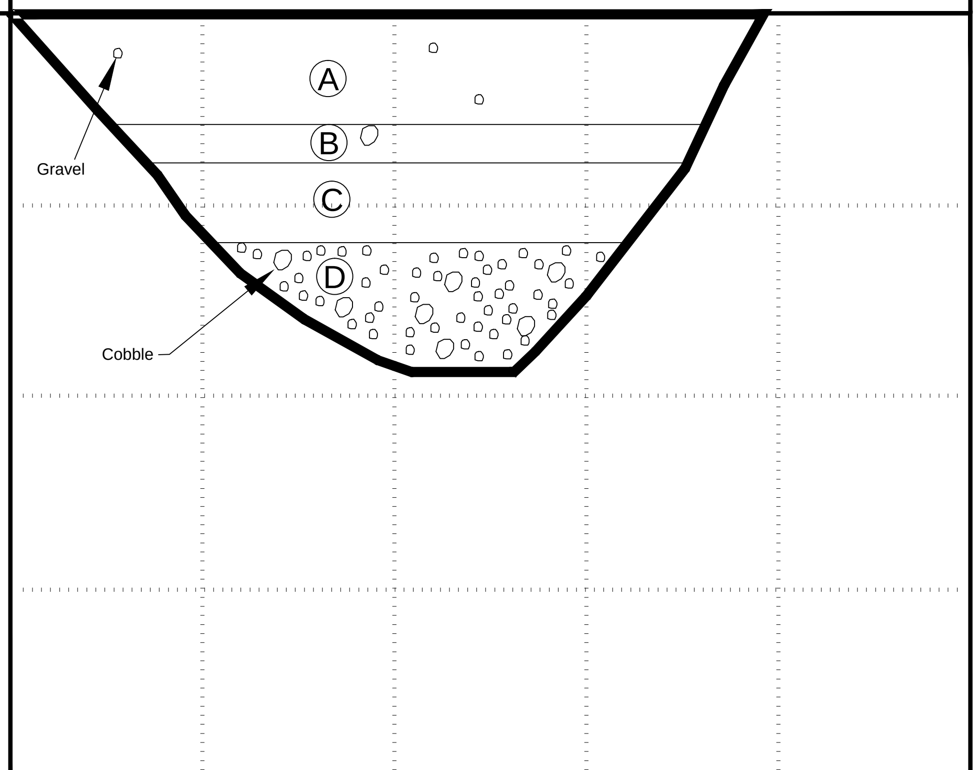
JOB NO.: 20G105-2	EQUIPMENT USED: Backhoe	WATER DEPTH: Dry
PROJECT: Proposed Warehouse	LOGGED BY: Ryan Bremer	SEEPAGE DEPTH: Dry
LOCATION: Irwindale, CA	ORIENTATION: S 55 W	READINGS TAKEN: At Completion
DATE: 1/31/20		

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: FILL: Brown Silty fine Sand, trace medium to coarse Sand, trace fine to coarse Gravel, abundant fine root fibers, mottled, loose-dry
				B: FILL: Dark brown Silty Clay, occasional fine Sand, trace fine root fibers, soft-damp
5				C: FILL: Brown Silty fine Sand, some medium to coarse Sand, some fine root fibers, loose-damp
				D: ALLUVIUM: Light gray Sandy fine to coarse Gravel, some Cobble content, trace Silt, loose-damp
	b		3	
				Trench Terminated @ 9 feet
10				
15				

GRAPHIC REPRESENTATION

S 55 W

SCALE: 1" = 5'



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER
(RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-1

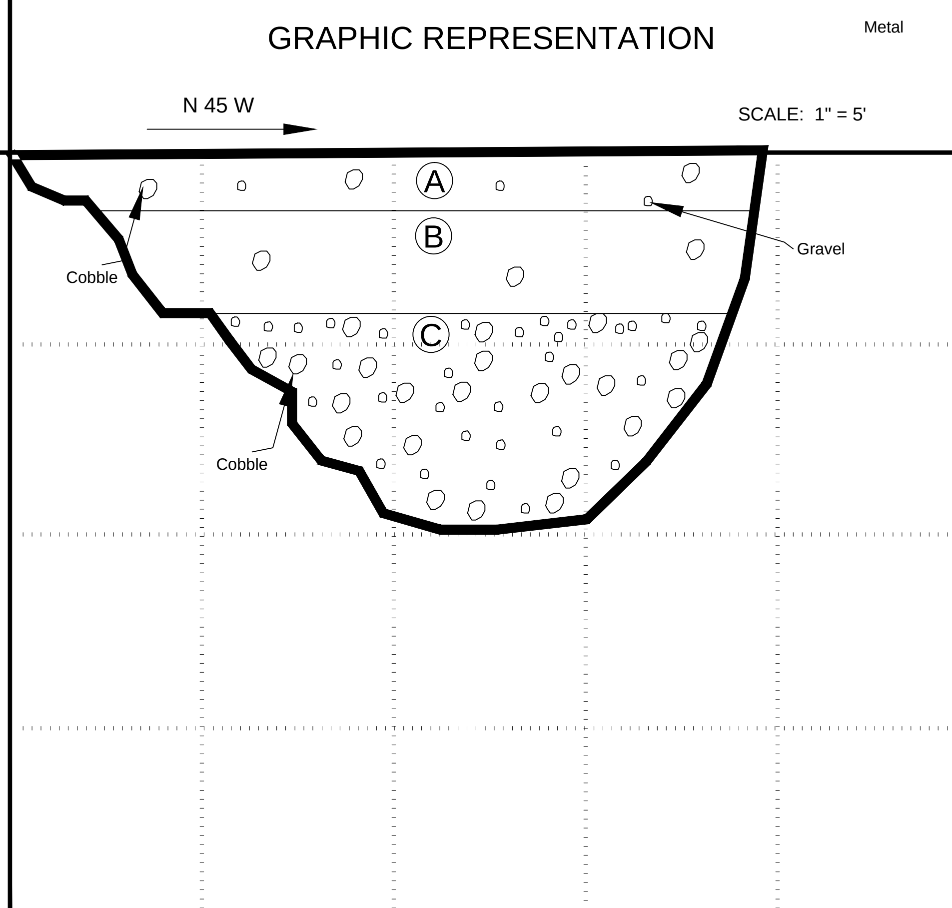
SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-2

JOB NO.: 20G105-2	EQUIPMENT USED: Backhoe	WATER DEPTH: Dry
PROJECT: Proposed Warehouse	LOGGED BY: Ryan Bremer	SEEPAGE DEPTH: Dry
LOCATION: Irwindale, CA	ORIENTATION: N 45 W	READINGS TAKEN: At Completion
DATE: 1/28/20		

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: FILL: Brown Silty fine Sand, trace fine to coarse Gravel, trace Cobble content, some fine root fragments, trace metal, loose-damp B: FILL: @ 1.5 feet little to some Clay
5				C: ALLUVIUM: Light gray Gravelly fine to coarse Sand, some Cobble content, trace Silt, loose-damp @ 5 to 7 feet Cobbly fine to coarse Sand, some fine to coarse Gravel
	b		5	
	b		4	@ 9.5 feet occasional Cobble content
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-2

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Irwindale, CA
Project Number	20G105-2
Engineer	Ryan Bremer

Infiltration Test No: I-1

Constants	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
1	Initial	9:30 AM	0	0	700	0	5500	140.02	366.71	55.13	144.38
	Final	9:31 AM	**1**	700		5500					
2	Initial	9:33 AM	1	0	600	0	5400	49.34	148.02	19.43	58.28
	Final	9:34 AM	**4**	600		5400					
3	Initial	9:37 AM	1	0	600	0	4400	49.34	120.61	19.43	47.48
	Final	9:38 AM	**8**	600		4400					
4	Initial	9:40 AM	1	0	600	0	4600	49.34	126.09	19.43	49.64
	Final	9:41 AM	**11**	600		4600					
5	Initial	9:43 AM	1	0	550	0	4500	45.23	123.35	17.81	48.56
	Final	9:44 AM	**14**	550		4500					
6	Initial	9:46 AM	1	0	600	0	4400	49.34	120.61	19.43	47.48
	Final	9:47 AM	**17**	600		4400					
7	Initial	9:49 AM	1	0	600	0	4500	49.34	123.35	19.43	48.56
	Final	9:50 AM	**20**	600		4500					
8	Initial	9:51 AM	1	0	600	0	4600	49.34	126.09	19.43	49.64
	Final	9:52 AM	**22**	600		4600					
9	Initial	9:54 AM	1	0	550	0	4600	45.23	126.09	17.81	49.64
	Final	9:55 AM	**25**	550		4600					
10	Initial	9:56 AM	1	0	600	0	4400	49.34	120.61	19.43	47.48
	Final	9:57 AM	**27**	600		4400					

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Irwindale, CA
Project Number	20G105-2
Engineer	Ryan Bremer

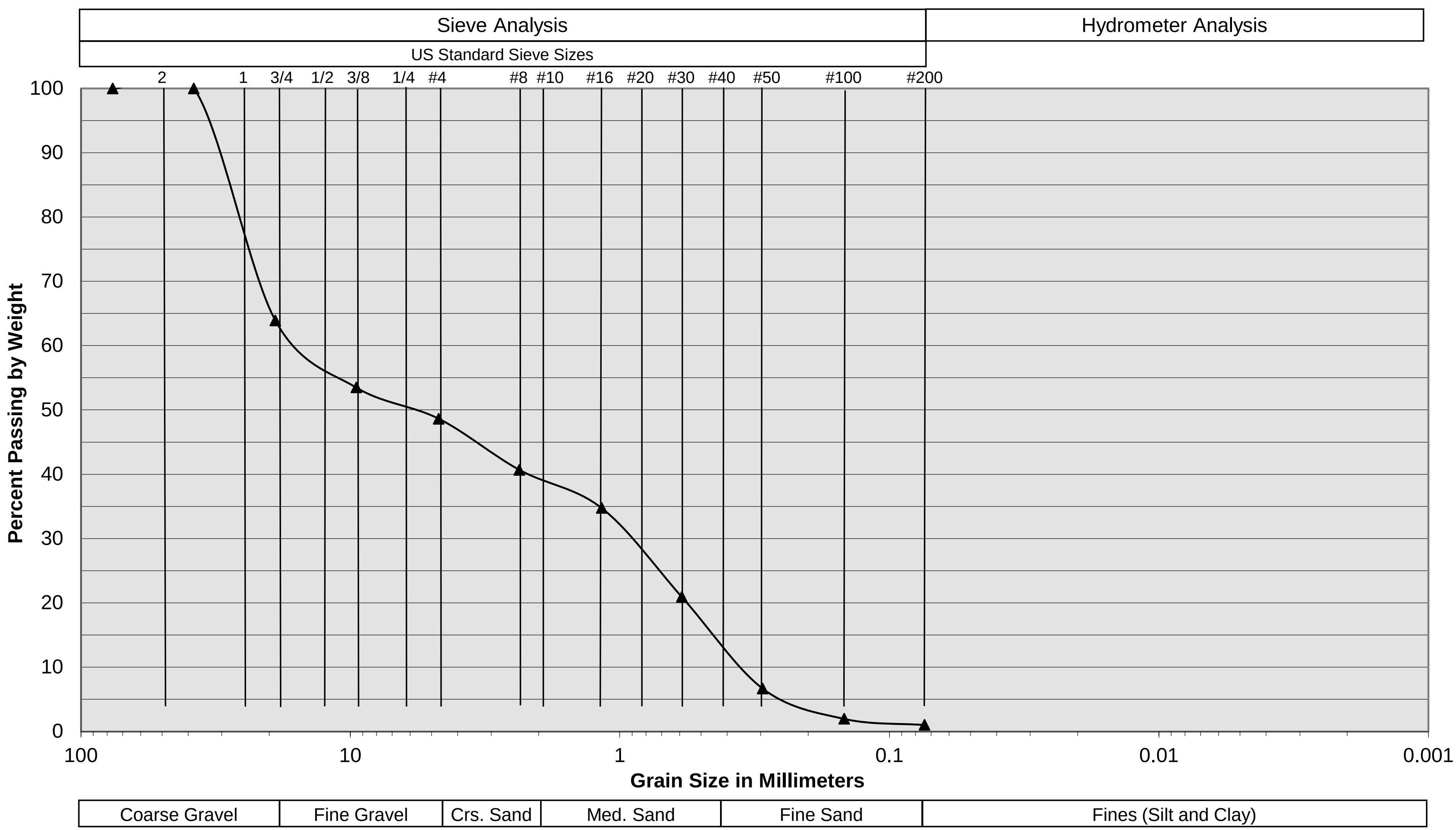
Infiltration Test No: I-2

Constants	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
1	Initial	9:52 AM	0	0	1050	0	8000	210.03	533.40	82.69	210.00
	Final	9:56 AM	**4**	1050		8000					
2	Initial	9:57 AM	4	0	1200	0	6500	24.67	44.54	9.71	17.54
	Final	10:01 AM	**9**	1200		6500					
3	Initial	10:02 AM	4	0	1300	0	6300	26.73	43.17	10.52	17.00
	Final	10:06 AM	**14**	1300		6300					
4	Initial	10:07 AM	4	0	1300	0	6400	26.73	43.86	10.52	17.27
	Final	10:11 AM	**19**	1300		6400					
5	Initial	10:12 AM	4	0	1300	0	6300	26.73	43.17	10.52	17.00
	Final	10:16 AM	**24**	1300		6300					
6	Initial	10:17 AM	4	0	1300	0	6500	26.73	44.54	10.52	17.54
	Final	10:21 AM	**29**	1300		6500					
7	Initial	10:22 AM	4	0	1300	0	6500	26.73	44.54	10.52	17.54
	Final	10:26 AM	**34**	1300		6500					
8	Initial	10:28 AM	4	0	1300	0	6400	26.73	43.86	10.52	17.27
	Final	10:32 AM	**40**	1300		6400					
9	Initial	10:33 AM	4	0	1350	0	6400	27.75	43.86	10.93	17.27
	Final	10:37 AM	**45**	1350		6400					
10	Initial	10:39 AM	4	0	1300	0	6500	26.73	44.54	10.52	17.54
	Final	10:43 AM	**51**	1300		6500					

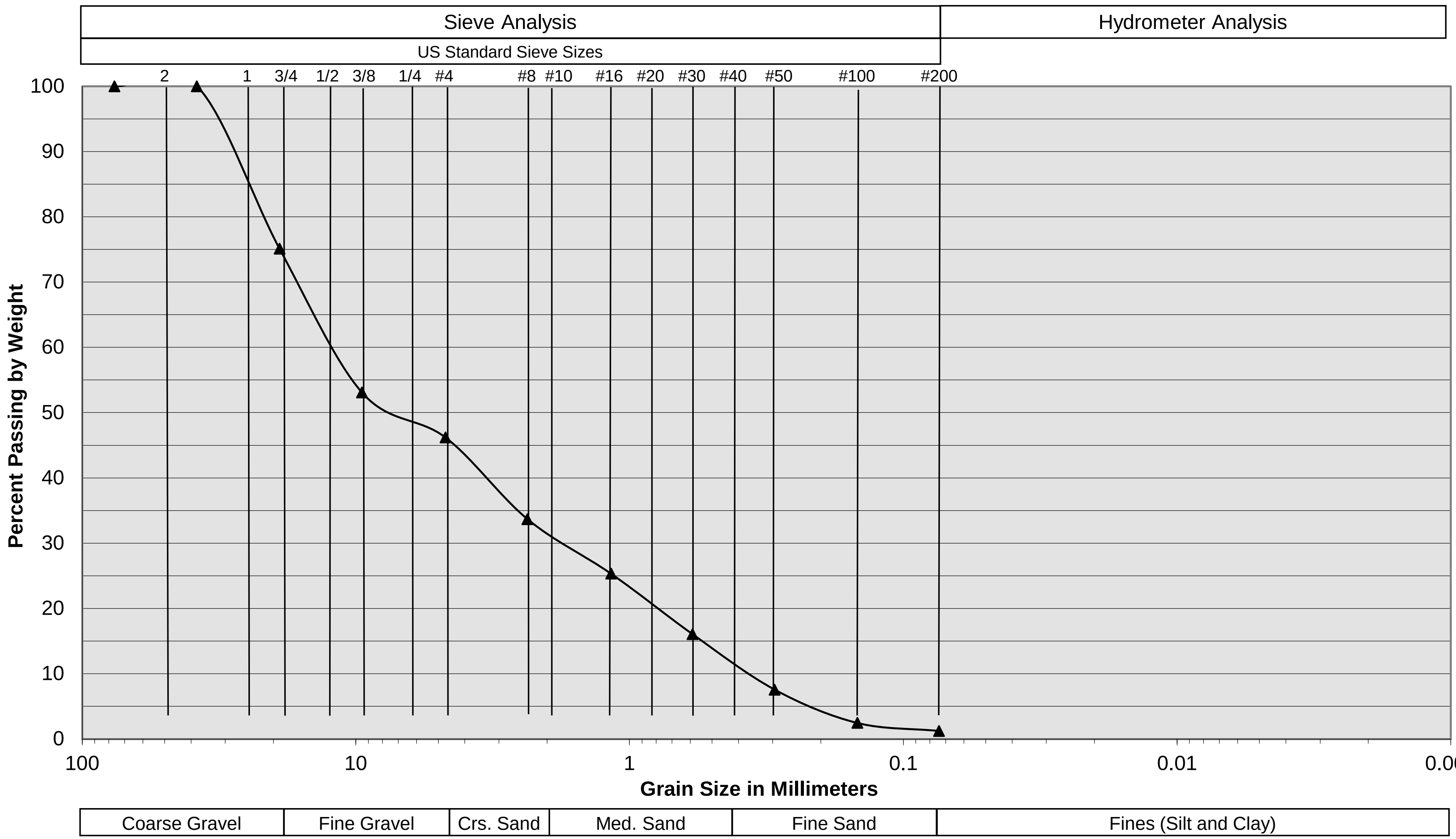
Grain Size Distribution



Sample Description	I-1 @ 9 feet
Soil Classification	Light Gray Sandy fine to coarse Gravel, occasional coarse Sand, trace Silt

Proposed Warehouse Irwindale, California Project No. 20G105-2 **PLATE C-1**	F-24	SoCalGeo SOUTHERN CALIFORNIA GEOTECHNICAL A California Corporation

Grain Size Distribution



Sample Description	I-2 @ 9.5 feet
Soil Classification	Light Gray Sandy fine to coarse Gravel, occasional fine Sand

Proposed Warehouse Irwindale, California Project No. 20G105-2 **PLATE C-2**		SoCalGeo SOUTHERN CALIFORNIA GEOTECHNICAL A California Corporation

APPENDIX 3

Table 5-1. Source Control Measures Selection Matrix

Project Type	Source Control Measure										
	Storm Drain Message and Signage (S-1)	Outdoor Material Storage Area (S-2)	Outdoor Trash Storage/ Waste Handling Area (S-3)	Outdoor Loading/Unloading Dock Area (S-4)	Outdoor Vehicle/Equipment Repair/Maintenance Area (S-5)	Outdoor Vehicle/ Equipment/ Accessory Wash Area (S-6)	Fuel & Maintenance Area (S-7)	Landscape Irrigation Practices (S-8)	Building Materials (S-9)	Animal Care and Handling Facilities (S-10)	Outdoor Horticulture Areas (S-11)
Designated Projects – New Development											
Development ≥1 acre and ≥10,000 ft^2 new impervious area	R	R^1	R^1	R^1	R^1	R^1	R^1	R	R	R^1	R^1
Industrial parks (≥10,000 ft^2)	R	R^1	R^1	R^1	R^1	R^1	R^1	R	R	–	–
Commercial malls (≥10,000 ft^2)	R	R^1	R^1	R^1	R^1	R^1	–	R	R	R^1	R^1
Retail gasoline outlets (≥5,000 ft^2)	R	R^1	R^1	R^1	R^1	R^1	R^1	R	R	–	–
Restaurants (≥5,000 ft^2)	R	R^1	R^1	R^1	–	–	–	R	R	–	–
Parking lots (≥5,000 ft^2 or ≥25 parking spaces)	R	R^1	R^1	R^1	–	–	–	R	R	R^1	R^1
Automotive service facilities (5,000 ft^2)	R	R^1	R^1	R^1	R^1	R^1	R^1	R	R	–	–
Projects in/around Significant Ecologic Areas	R	R^1	R^1	R^1	R^1	R^1	R^1	R	R	R^1	R^1
Projects potentially impacting sensitive biological species or habitats	R	R^1	R^1	R^1	R^1	R^1	R^1	R	R	R^1	R^1
Projects adding ≥2,500 ft^2 of impervious area	R	R^1	R^1	R^1	R^1	R^1	R^1	R	R	R^1	R^1

R = required; R^1 = required if outdoor activity area is included in project; R^2 = required for multi-family dwellings

APPENDIX 4

SWQDf AND Q100 SUBAREA TABULATION

SUBAREA	ACRES (Ac)	SWQDf (cfs)	Q100 (cfs)
AREA - A-1	0.17	0.064	0.71
AREA - A-2	0.22	0.066	0.91
AREA - A-3	1.25	0.333	4.81
AREA - A-4	1.27	0.352	4.91
AREA - B-4	0.43	0.142	1.79
AREA - B-5	0.79	0.204	2.79
AREA - B-6	1.50	0.469	6.49

MAP LEGEND

A-1 / 0.17 — DRAINAGE AREA DESIGNATION / DRAINAGE AREA ACREAGE

SWQDf & Q100 DRAINAGE AREA BOUNDARY

DIRECTION OF FLOW

GRAPHIC SCALE

60 0 15 30 60

(IN FEET)
1 inch = 30 ft.

Underground Service Alert

Call: TOLL FREE
1-800-227-2600

TWO WORKING DAYS BEFORE YOU DIG

CIVIL ENGINEER:

MARK ROGERS | 42848 R.C.E. NO. | DATE

REGISTERED PROFESSIONAL ENGINEER MARK ROGERS No. 42848 Exp. 03/22 CIVIL STATE OF CALIFORNIA

PREPARED BY:

THE G4 GROUP INC. Consulting Engineers

5301 NORTH COMMERCE AVE., SUITE H
MOORPARK, CA 93021
PHONE: (805) 523-0010 FAX: (805) 553-0626

PREPARED FOR:

REXFORD INDUSTRIAL REALTY, INC.
11620 WILSHIRE BLVD., 10TH FLR.
LOS ANGELES, CA
CONTACT: MARK SALEH
424-281-7361

F-29

DESCRIPTION OF REVISION	DATE	NO.

SWQDf AND Q100 VOLUME MAP

4416 AZUSA CANYON ROAD, IRWINDALE

PORTION OF LOTS 9 AND 10, ORANGE BELT TRACT, MR 37-67
IN THE CITY OF IRWINDALE, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

1 of 1

JOB NO. 1946
OCTOBER 4, 2021

APPENDIX 5

Underground Service Alert

Call: TOLL FREE
1-800-227-2600

TWO WORKING DAYS BEFORE YOU DIG

CIVIL ENGINEER:

MARK ROGERS 42848 R.C.E. NO. DATE

REGISTERED PROFESSIONAL ENGINEER MARK ROGERS No. 42848 Exp. 03/22 CIVIL STATE OF CALIFORNIA

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LOS ANGELES, CA
CONTACT: MARK SALEH
424-281-7361

F-31

DESCRIPTION OF REVISION	DATE	NO.

OVERALL SWQDv INFILTRATION MAP

4416 AZUSA CANYON ROAD, IRWINDALE

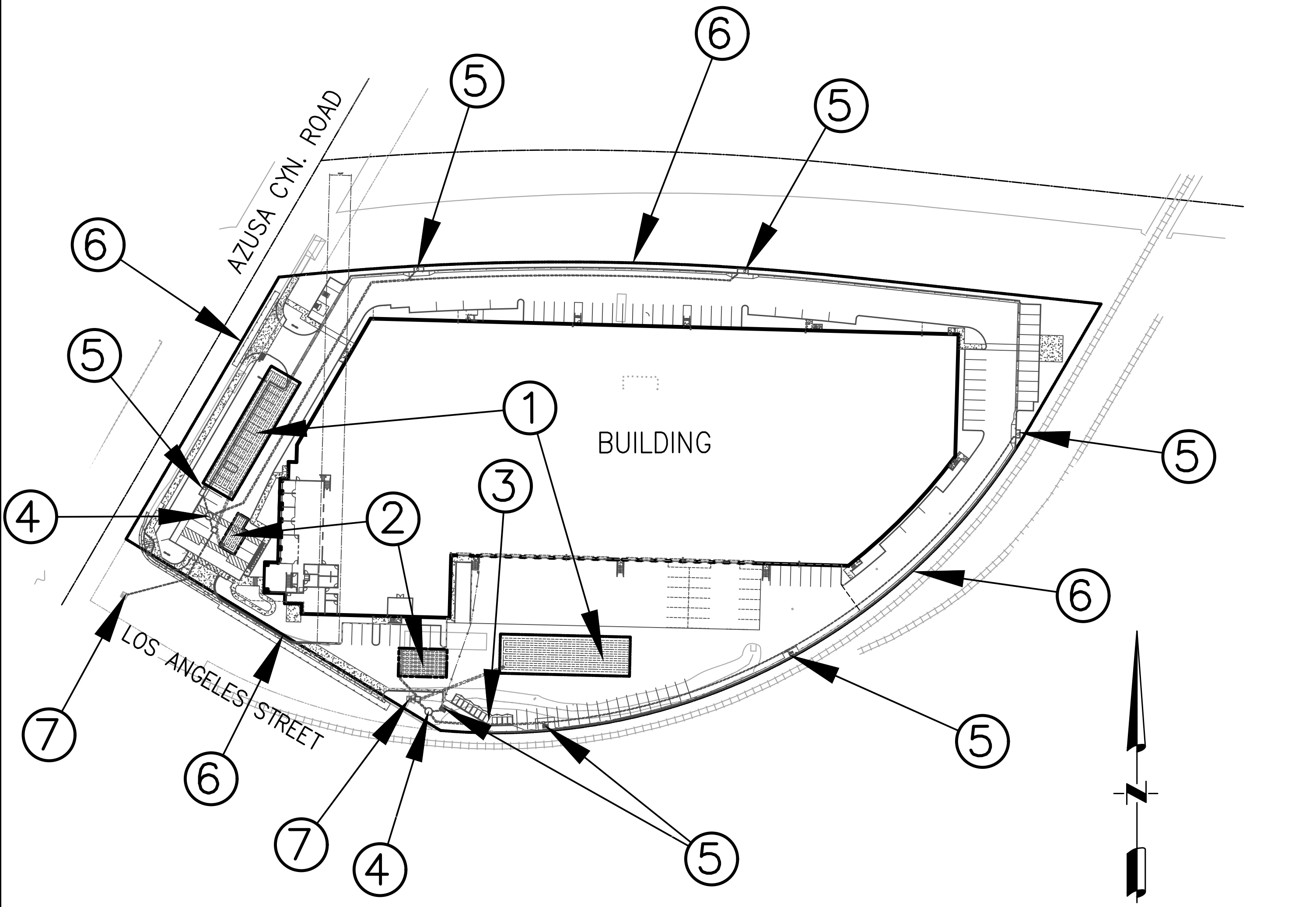
PORTION OF LOTS 9 AND 10, ORANGE BELT TRACT, MR 37-67
IN THE CITY OF IRWINDALE, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

1 of 1

JOB NO. 1946
OCTOBER 4, 2021

APPENDIX 6

APPENDIX 6.1



SCALE 1" = 150'

LEGEND

1 — UNDERGROUND INFILTRATION TRENCH BMP

2 — UNDERGROUND DETENTION STORAGE SYSTEM

3 — TRASH ENCLOSURE

4 — PT-1: CONTECH ENGINEERING SOLUTIONS CDS MODEL NO. CDS2020-5-C

5 — STORMWATER INLET WITH BIO-CLEAN FULL CAPTURE CATCH BASIN FILTER INSERTS

6 — EXISTING PROPERTY LINE

7 — STORMWATER DISCHARGE CONNECTION POINT TO PUBLIC STORM DRAIN SYSTEM

STROMWATER QUALITY BMP LOCATION SITE PLAN

4416 AZUSA CANYON ROAD
IRWINDALE, CA

APPENDIX 6.2

SWQDv INFILTRATION TRECH DESIGN CALCULATIONS

DESIGN DATA:

SWQDv per NextGen Engineering Report Dated Feb. 22, 2021

Total Site SWQDv for Subarea A (Southern Outlet) = 9,570 cubic feet

Total Site SWQDv for Subarea B (Western Outlet) = 8,941 cubic feet

Tested Infiltration Rate per Geotechnical Engineer = 10in/hr

Safety Factor Applied = 3

f design= 3.33 in/hr

t = 96 hours

dt = 6 feet

nt = 40%

Subarea A (Southern Outlet) Design

Determine Minimum Required Infiltration Trench Surface Area

Determine Trench Depth:

d max = {f design / 12} x t

3.33 / 12 x 96 = 26.7 feet

dt = 6 < 26.7
Use 6' trench depth.

Min. Trench Area:

$$A\ min = \frac{SWQD}{dt \times nt}$$

- $\frac{9{,}570}{6 \times 0.40}$

- Amin = 3,987.5 square feet

Check Proposed Corrugated Pipe Storage Volume for 9,5705 cubic feet

Use 48 inch dia. C.M.P. pipe = 12.6 cubic feet / linear foot

- Use 5 rows of 48 inch dia. pipe x 112 linear feet long
- Use ½ header end section of 48 inch dia. pipe x 28 linear feet long
- 5 x 112 l.f. x 12.6 = 7,056 cubic feet.
- Header end section – 28 L.F. x 12.6 / 2 = 176.4 cubic feet.
- Total Provided Storage In pipes = 7,232.4 cubic feet.

Check Proposed Trench Rock Storage Volume

- T R V = 116 feet long. x 35 feet wide x 6 feet high = 24,360 cubic feet
- T R V – Pipe V = 24,360 – 7,232.4 = 17,036.6
- 17,036.6 x 40% rock voids = 6,144.6 cubic feet
- Total Storage (Rock + Pipe) = 13,377 cubic feet
- 13,377 > 9,570 **Pipes OK**

Check Proposed Infiltration Trench Surface Area

Proposed Infiltration Trench Footprint = 116 feet long. x 35 feet wide = 4,060 SQFT

- 4,060 > 3,987.5 **Use Proposed Layout**

Subarea B (Western Outlet) Design

Determine Minimum Required Infiltration Trench Surface Area

Determine Trench Depth:

d max = {f design / 12} x t

3.33 / 12 x 96 = 26.7 feet

dt = 6 < 26.7
Use 6' trench depth.

Min. Trench Area:

$$A\ min = \frac{SWQD}{dt \times nt}$$

- $\frac{8,941}{6 \times 0.40}$
- Amin = 3,725.4 square feet

Check Proposed Corrugated Pipe Storage Volume for 8,941 cubic feet

Use 48 inch dia. C.M.P. pipe = 12.6 cubic feet / linear foot

- Use 5 rows of 48 inch dia. pipe x 112 linear feet long
- Use ½ header end section of 42 inch dia. pipe x 26 linear feet long
- 5 x 112 l.f. x 12.6 = 7,056 cubic feet.
- Header end section – 26 L.F. x 12.6 / 2 = 163.8 cubic feet.
- Total Provided Storage In pipes = 7,219.8 cubic feet.

Check Proposed Trench Rock Storage Volume

- T R V = 121 feet long. x 30 feet wide x 6 feet high = 21,780 cubic feet
- T R V – Pipe V = 21,780 – 7,219.8 = 14,560.2
- 14,560.2 x 40% rock voids = 5,824.1 cubic feet
- Total Storage (Rock + Pipe) = 13,043.9 cubic feet
- 13,043.9 > 8,941 **Pipes OK**

Check Proposed Infiltration Trench Surface Area

Proposed Infiltration Trench Footprint = 121 feet long. x 31 feet wide = 3,751 SQFT

- 3,751 > 3,725.4 **Use Proposed Layout**

APPENDIX 6.3

FULL CAPTURE / SWQDf DESIGN CALCULATIONS

Full Capture Design

Subarea Sizes Reflected on Attached SWQDf & Q100 Volume Map Contained in Appendix 4

Subarea A-1 – 0.17 acres
Subarea A-2 – 0.22 acres
Subarea A-3 – 1.25 acres
Subarea A-4 – 1.27 acres

Subarea B-4 – 0.43 acres
Subarea B-5 – 0.79 acres
Subarea B-6 – 1.50 acres

Q = CIA

Runoff Coefficient

C = 0.90

1-year, 1-hour Rainfall Intensity Per NOAA Atlas 14 (see attached)

= 0.504

Full Capture Calculations

For Subarea A-1
1-Y,1-H = (0.90) (0.504) (0.17) = 0.08 cfs

For Subarea A-2
1-Y,1-H = (0.90) (0.504) (0.22) = 0.10 cfs

For Subarea A-3
1-Y,1-H = (0.90) (0.504) (1.25) = 0.57 cfs

For Subarea A-4
1-Y,1-H = (0.90) (0.504) (1.27) = 0.58 cfs

For Subarea B-4
1-Y,1-H = (0.90) (0.504) (0.43) = 0.20 cfs

For Subarea B-5
1-Y,1-H = (0.90) (0.504) (0.79) = 0.36 cfs

For Subarea B-6
1-Y,1-H = (0.90) (0.504) (1.50) = 0.68 cfs

CHECK FILTER INSERTS FOR FULL CAPTURE 1-YEAR, 1-HOUR FLOW

Check Bio-Clean Model BC-CURB-FC-24 Catch Basin Filter Insert for Subarea B-6 (Largest Tributary Area)

Manufacturers Treatment Flow filter capacity = 2.85 cfs

Subarea B-6
2.85cfs > 0.68cfs
Filter Unit is OK

Check Bio-Clean Model BC-GRATE-FC-48-48-18 Catch Basin Filter Insert for Subarea A-4 (Largest Tributary Area)

Manufacturers Treatment Flow filter capacity = 25.59 cfs

Subarea A-3
25.59cfs > 0.58cfs
Filter Unit is OK

CHECK FILTER INSERTS FOR HIGH FLOW BYPASS

Check Bio-Clean Model BC-CURB-FC-24 Catch Basin Filter Insert for Subarea B-6 (Largest Area)

Subarea B-6, Q100 flow per NextGen Report = 6.24cfs

Manufacturers High Flow Bypass filter capacity = Unlimited cfs

Subarea B-6
Unlimited cfs > 6.24cfs
Filter Unit is OK

Check Bio-Clean Model BC-GRATE-FC-48-48-18 Catch Basin Filter Insert for Subarea A-3

Subarea A-3, Q100 flow per NextGen Report = 9.08cfs

Manufacturers High Flow Bypass filter capacity = 10.13cfs

Subarea A-3
10.13cfs > 9.08cfs
Filter Unit is OK

SWQDf Design

Subarea SWQDf flows per NextGen Engineering Report Dated 10-1-21
also reflected on Attached SWQDf & Q100 Volume Map Contained in Appendix 4

Subarea A-1 – 0.064cfs
Subarea A-2 – 0.066cfs
Subarea A-3 – 0.333cfs
Subarea A-4 – 0.352cfs

Subarea B-4 – 0.142cfs
Subarea B-5 – 0.204cfs
Subarea B-6 – 0.469cfs

CHECK FILTER INSERTS FOR SWQDf

Check Bio-Clean Model BC-CURB-FC-24 Catch Basin Filter Insert for Subarea B-6 (Largest Tributary Area)

Manufacturers Treatment Flow filter capacity = 2.85 cfs

Subarea B-6
2.85cfs > 0.469cfs
Filter Unit is OK

Check Bio-Clean Model BC-GRATE-FC-48-48-18 Catch Basin Filter Insert for Subarea A-3 (Largest Tributary Area)

Manufacturers Treatment Flow filter capacity = 25.59 cfs

Subarea A-4
25.59cfs > 0.352cfs
Filter Unit is OK

CHECK CDS UNITS FOR TOTAL SWQDf

Check CDS Model 2020-5-0 Filter for Total Subarea a (Largest Tributary Areas)

Manufacturers Treatment Flow filter capacity = 1.1 cfs

Total SWQDf for Subareas A = 0.82cfs

1.1>0.82
CDS Unit OK

NOAA Atlas 14, Volume 6, Version 2
Location name: Baldwin Park, California, USA*
Latitude: 34.0934°, Longitude: -117.9419°
Elevation: 421.59 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**1.78** (1.49-2.15)	**2.27** (1.90-2.75)	**2.94** (2.45-3.58)	**3.50** (2.89-4.30)	**4.32** (3.43-5.47)	**4.97** (3.86-6.43)	**5.64** (4.28-7.51)	**6.37** (4.69-8.74)	**7.40** (5.22-10.6)	**8.24** (5.60-12.2)
10-min	**1.28** (1.07-1.54)	**1.63** (1.36-1.97)	**2.11** (1.75-2.56)	**2.51** (2.08-3.08)	**3.09** (2.46-3.92)	**3.56** (2.77-4.61)	**4.04** (3.07-5.38)	**4.57** (3.37-6.26)	**5.31** (3.74-7.60)	**5.90** (4.02-8.77)
15-min	**1.03** (0.860-1.24)	**1.31** (1.10-1.59)	**1.70** (1.41-2.06)	**2.03** (1.67-2.48)	**2.49** (1.98-3.16)	**2.87** (2.23-3.72)	**3.26** (2.48-4.34)	**3.68** (2.71-5.05)	**4.28** (3.02-6.13)	**4.76** (3.24-7.07)
30-min	**0.706** (0.590-0.854)	**0.900** (0.752-1.09)	**1.17** (0.970-1.42)	**1.39** (1.15-1.71)	**1.71** (1.36-2.17)	**1.97** (1.53-2.55)	**2.24** (1.70-2.98)	**2.53** (1.86-3.47)	**2.94** (2.07-4.21)	**3.27** (2.22-4.85)
60-min	**0.504** (0.421-0.610)	**0.643** (0.536-0.779)	**0.833** (0.693-1.01)	**0.994** (0.820-1.22)	**1.22** (0.973-1.55)	**1.41** (1.09-1.82)	**1.60** (1.21-2.13)	**1.81** (1.33-2.48)	**2.10** (1.48-3.00)	**2.33** (1.59-3.47)
2-hr	**0.372** (0.310-0.450)	**0.470** (0.392-0.570)	**0.605** (0.503-0.735)	**0.719** (0.593-0.881)	**0.882** (0.702-1.12)	**1.01** (0.788-1.31)	**1.15** (0.873-1.53)	**1.30** (0.956-1.78)	**1.51** (1.06-2.16)	**1.68** (1.14-2.49)
3-hr	**0.313** (0.261-0.378)	**0.394** (0.328-0.477)	**0.505** (0.420-0.613)	**0.599** (0.494-0.734)	**0.734** (0.584-0.931)	**0.842** (0.656-1.09)	**0.956** (0.726-1.27)	**1.08** (0.795-1.48)	**1.25** (0.884-1.79)	**1.39** (0.949-2.07)
6-hr	**0.226** (0.189-0.273)	**0.284** (0.237-0.344)	**0.364** (0.303-0.442)	**0.432** (0.356-0.529)	**0.529** (0.421-0.671)	**0.607** (0.472-0.787)	**0.689** (0.523-0.917)	**0.777** (0.573-1.07)	**0.903** (0.637-1.29)	**1.01** (0.684-1.49)
12-hr	**0.148** (0.124-0.180)	**0.189** (0.158-0.229)	**0.245** (0.203-0.297)	**0.292** (0.241-0.358)	**0.359** (0.286-0.456)	**0.413** (0.322-0.536)	**0.471** (0.357-0.627)	**0.532** (0.392-0.729)	**0.620** (0.437-0.887)	**0.691** (0.470-1.02)
24-hr	**0.097** (0.086-0.112)	**0.127** (0.112-0.146)	**0.167** (0.147-0.193)	**0.201** (0.176-0.235)	**0.249** (0.211-0.301)	**0.288** (0.239-0.355)	**0.330** (0.267-0.415)	**0.374** (0.294-0.484)	**0.436** (0.330-0.589)	**0.487** (0.356-0.680)
2-day	**0.059** (0.052-0.068)	**0.079** (0.070-0.091)	**0.106** (0.093-0.123)	**0.129** (0.113-0.150)	**0.161** (0.136-0.194)	**0.187** (0.155-0.230)	**0.215** (0.174-0.271)	**0.244** (0.192-0.316)	**0.286** (0.216-0.385)	**0.319** (0.233-0.446)
3-day	**0.044** (0.039-0.050)	**0.059** (0.052-0.068)	**0.080** (0.071-0.093)	**0.098** (0.086-0.115)	**0.124** (0.105-0.149)	**0.144** (0.119-0.177)	**0.166** (0.134-0.209)	**0.189** (0.148-0.244)	**0.221** (0.167-0.298)	**0.248** (0.181-0.346)
4-day	**0.036** (0.031-0.041)	**0.048** (0.043-0.056)	**0.066** (0.058-0.077)	**0.081** (0.071-0.095)	**0.102** (0.087-0.124)	**0.120** (0.099-0.147)	**0.138** (0.111-0.174)	**0.157** (0.124-0.204)	**0.185** (0.140-0.249)	**0.207** (0.151-0.289)
7-day	**0.023** (0.021-0.027)	**0.032** (0.028-0.037)	**0.044** (0.039-0.051)	**0.054** (0.047-0.063)	**0.068** (0.058-0.082)	**0.080** (0.066-0.099)	**0.093** (0.075-0.117)	**0.106** (0.084-0.138)	**0.125** (0.095-0.169)	**0.141** (0.103-0.197)
10-day	**0.018** (0.016-0.020)	**0.024** (0.021-0.028)	**0.033** (0.029-0.038)	**0.041** (0.036-0.048)	**0.052** (0.044-0.063)	**0.061** (0.051-0.076)	**0.071** (0.058-0.090)	**0.082** (0.064-0.106)	**0.097** (0.073-0.131)	**0.110** (0.080-0.153)
20-day	**0.010** (0.009-0.012)	**0.014** (0.013-0.017)	**0.020** (0.018-0.023)	**0.025** (0.022-0.029)	**0.032** (0.027-0.038)	**0.038** (0.031-0.046)	**0.044** (0.035-0.055)	**0.050** (0.040-0.065)	**0.060** (0.045-0.081)	**0.068** (0.050-0.095)
30-day	**0.008** (0.007-0.009)	**0.011** (0.010-0.013)	**0.016** (0.014-0.018)	**0.020** (0.017-0.023)	**0.025** (0.021-0.030)	**0.030** (0.025-0.037)	**0.035** (0.028-0.044)	**0.040** (0.032-0.052)	**0.048** (0.036-0.065)	**0.055** (0.040-0.076)
45-day	**0.006** (0.006-0.007)	**0.009** (0.008-0.010)	**0.012** (0.011-0.014)	**0.015** (0.013-0.018)	**0.020** (0.017-0.024)	**0.023** (0.019-0.029)	**0.027** (0.022-0.034)	**0.031** (0.025-0.041)	**0.038** (0.028-0.051)	**0.043** (0.031-0.060)
60-day	**0.006** (0.005-0.006)	**0.008** (0.007-0.009)	**0.010** (0.009-0.012)	**0.013** (0.011-0.015)	**0.017** (0.014-0.020)	**0.020** (0.016-0.024)	**0.023** (0.019-0.029)	**0.026** (0.021-0.034)	**0.032** (0.024-0.043)	**0.036** (0.026-0.050)

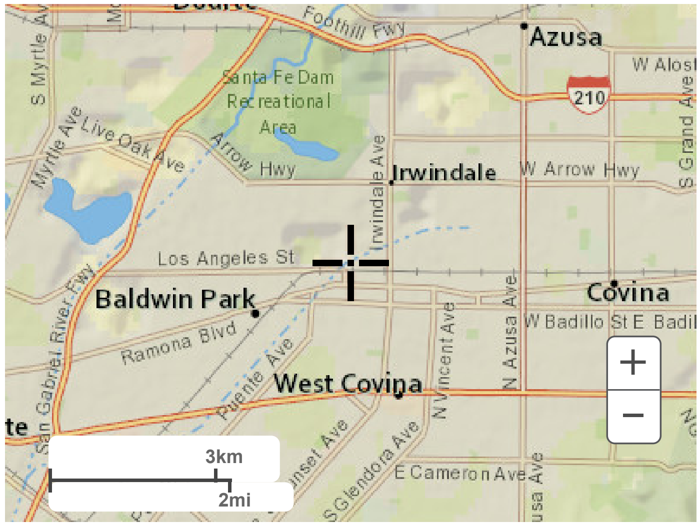
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

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

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



Large scale terrain

Large scale map

Large scale aerial

APPENDIX 6.4

BIO CLEAN FULL CAPTURE FILTER WITH TROUGH SYSTEM

FOR USE IN CURB INLETS

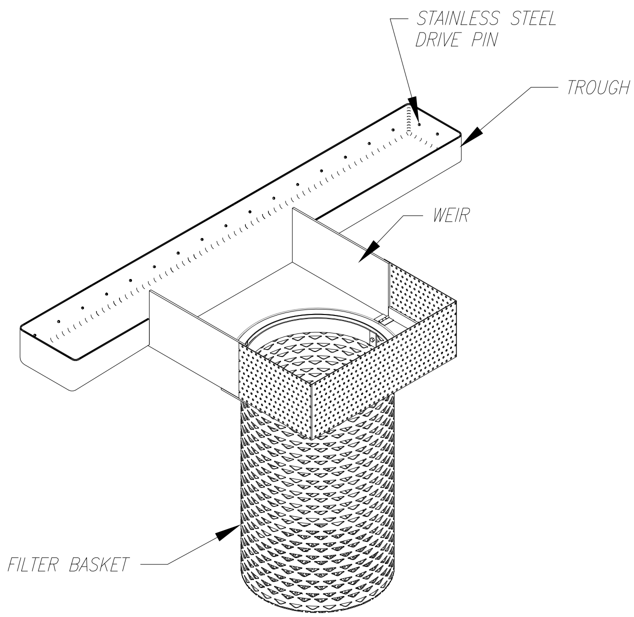


FIGURE 1:
DETAIL OF PARTS

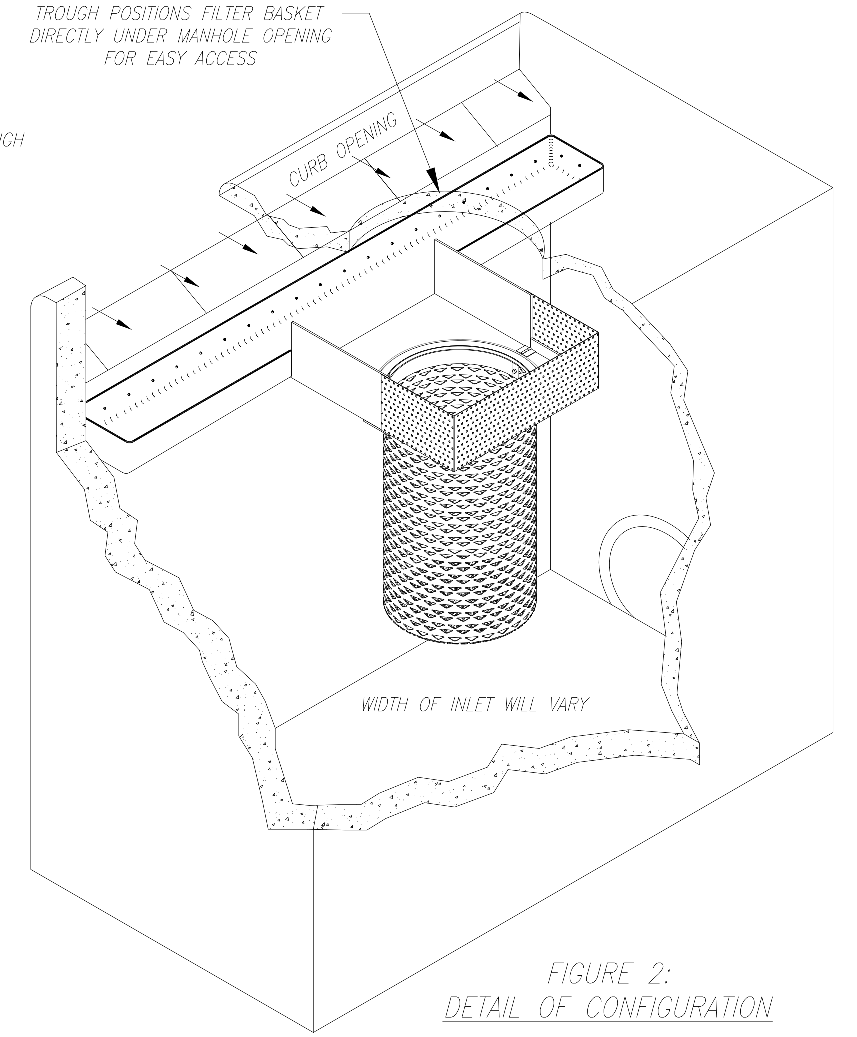


FIGURE 2:
DETAIL OF CONFIGURATION

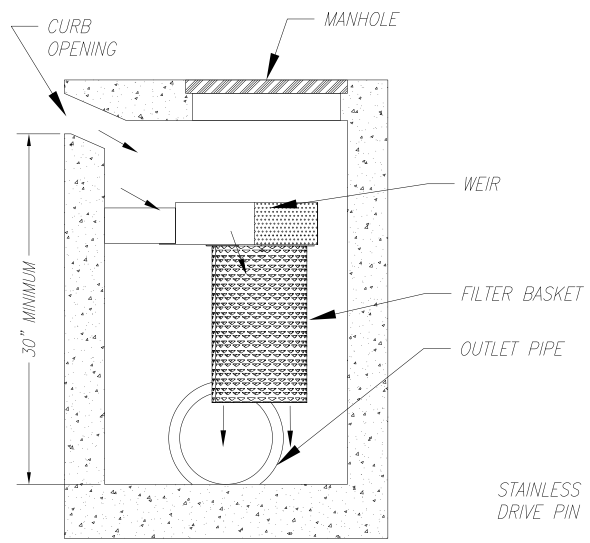


FIGURE 4:
DETAIL OF PROFILE

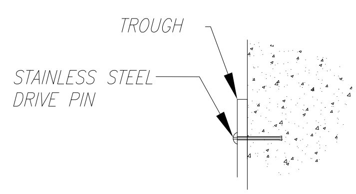


FIGURE 3:
DETAIL OF MOUNTING

NOTES:

1. TROUGH SYSTEM PROVIDES FOR ENTIRE COVERAGE OF INLET OPENING SO TO DIVERT ALL FLOW TO FILTER.
2. TROUGH SYSTEM MANUFACTURED FROM MARINE GRADE FIBERGLASS, GEL COATED FOR UV PROTECTION.
3. SYSTEM ATTACHED TO THE CATCH BASIN WITH NON-CORROSIVE HARDWARE.
4. FILTER MANUFACTURED OF 100% STAINLESS STEEL.
5. FILTER MADE OF NON-CLOGGIN SCREEN WITH 4.7 MM OPENINGS AND MEETS FULL CAPTURE REQUIREMENTS.
6. FILTER CAN BE FITTED WITH HYDROCARBON ABSORBENT BOOM
7. FILTER IS LOCATED DIRECTLY UNDER THE MANHOLE FOR EASY REMOVAL AND MAINTENANCE.
8. LENGTH OF TROUGH CAN VARY FROM 2' TO 30'
9. OTHER STANDARD AND CUSTOM MODEL SIZES AVAILABLE - CONTACT BIO CLEAN FOR MORE INFORMATION.
10. CONSIDERS A SAFETY FACTOR OF 2.0
11. BYPASS IS FACILITATED VIA OVERFLOW OF THE TROUGH SYSTEM AND IS EQUAL TO THE CAPACITY OF THE CURB OPENING
12. STORAGE CAPACITY BASED ON THE BASKET HALF FULL.
13. ADDITIONAL TREATMENT AND STORAGE CAPACITY CAN BE ACHIEVED BY UTILIZING MULTIPLE FILTER BASKETS.

MODEL NUMBER	TREATMENT FLOW (cfs)*	SOLIDS STORAGE CAPACITY (cu ft)
BC-CURB-FC-30	2.85	2.21
BC-CURB-FC-24	2.85	1.77
BC-CURB-FC-18	2.85	1.33
BC-CURB-FC-12	2.85	0.88

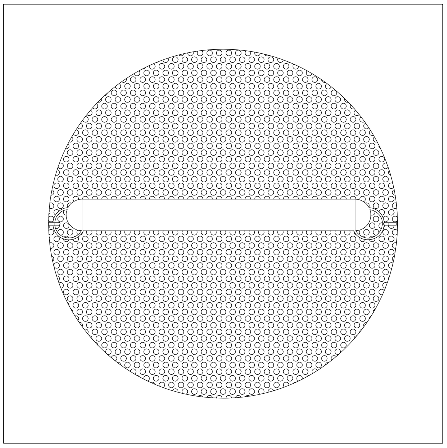
*SEE PAGE 2 FOR EXPLANATION OF FLOW RATES

DRAWING: BIO CLEAN CURB INLET FILTER DETAILS		MEETS FULL CAPTURE REQUIREMENTS	
TREATMENT FLOW RATE: 2.85 cfs		MODEL #: BC-CURB-FC	
WARRANTY: 5 YEAR MANUFACTURERS		PROJECT:	
BIO CLEAN ENVIRONMENTAL SERVICES, INC. 398 VIA EL CENTRO, OCEANSIDE CA 92058 PHONE:760-433-7640 FAX:760-433-3176		REVISIONS:	DATE:
		REVISIONS:	DATE:
DATE: 10/12/2017	SCALE: NTS	REVISIONS:	DATE:
DRAFTER: M.C.P.	UNITS = INCHES	REVISIONS:	DATE:

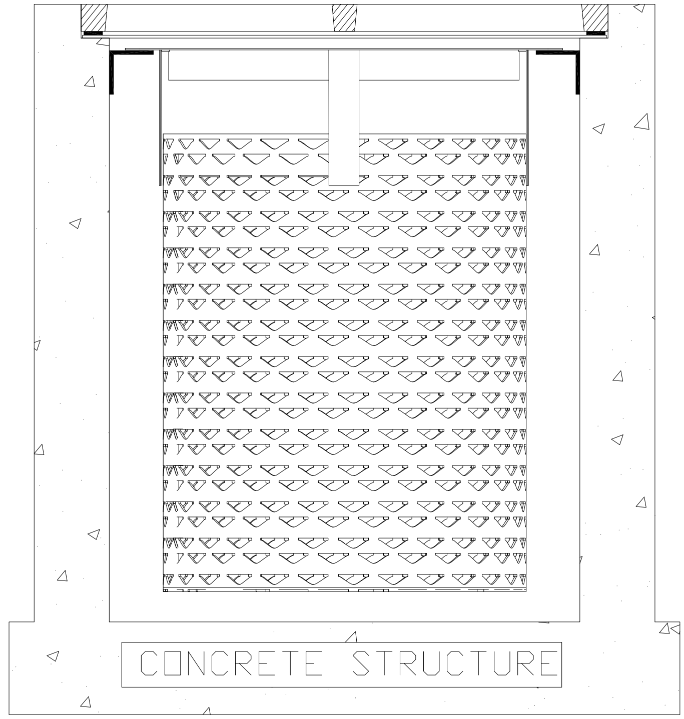
Bio Clean
A Forterra Company

BIO CLEAN FULL CAPTURE FILTER

FOR USE IN GRATE INLETS

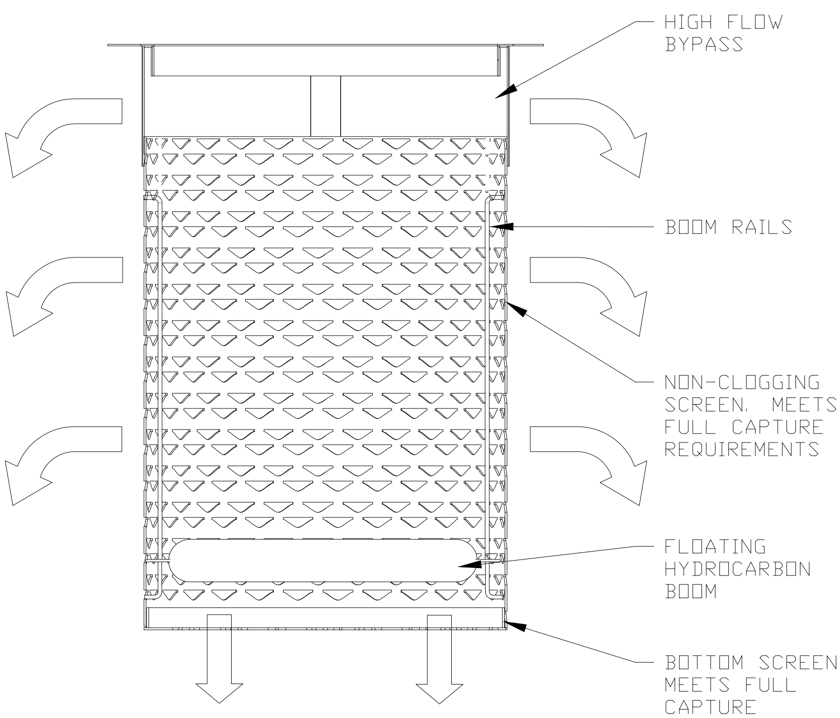


TOP VIEW



NOTES:

1. ALL HARDWARE, FLANGE, FRAME, SCREENS SHALL BE STAINLESS STEEL
2. HYDROCARBON BOOM SHALL BE 2" DIAMETER AND CONNECTED, MECHANICALLY TO THE FILTER FRAME WITH RAILS ALLOWING IT TO FLOAT ON THE WATER SURFACE REGARDLESS OF HEIGHT
3. SEE PERFORMANCE REPORTS IN MANUFACTURES SPECIFICATIONS
4. OTHER STANDARD AND CUSTOM MODEL SIZES AVAILABLE – CONTACT BIO CLEAN FOR MORE INFORMATION.
5. BASED ON 37% OPEN AREA.
6. CONSIDERS A SAFETY FACTOR OF 2.0.
7. CONSIDERS A LOCAL DEPRESSION PONDIING DEPTH OF 6 INCHES.
8. STORAGE CAPACITY BASED ON THE BASKET HALF FULL.



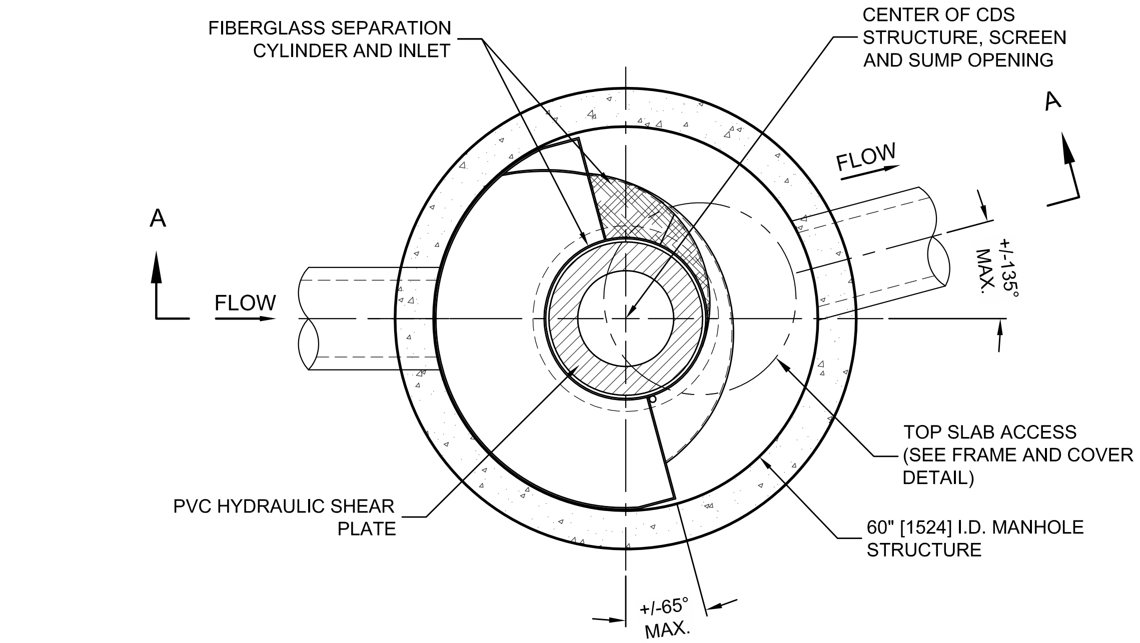
FLOW SCHEMATIC

MODEL #	TREATMENT FLOW (CFS)	BYPASS FLOW (CFS)	SOLIDS STORAGE CAPACITY (CF)
BC-GRATE-FC 12-12-12	1.55	1.55	0.27
BC-GRATE-FC 18-18-18	4.32	3.68	1.05
BC-GRATE-FC 24-24-24	7.67	4.83	2.41
BC-GRATE-FC 30-30-24	12.97	6.21	3.98
BC-GRATE-FC 25-38-24	13.53	6.59	4.16
BC-GRATE-FC 36-36-24	19.64	7.60	5.94
BC-GRATE-FC 48-48-18	25.59	10.13	7.92

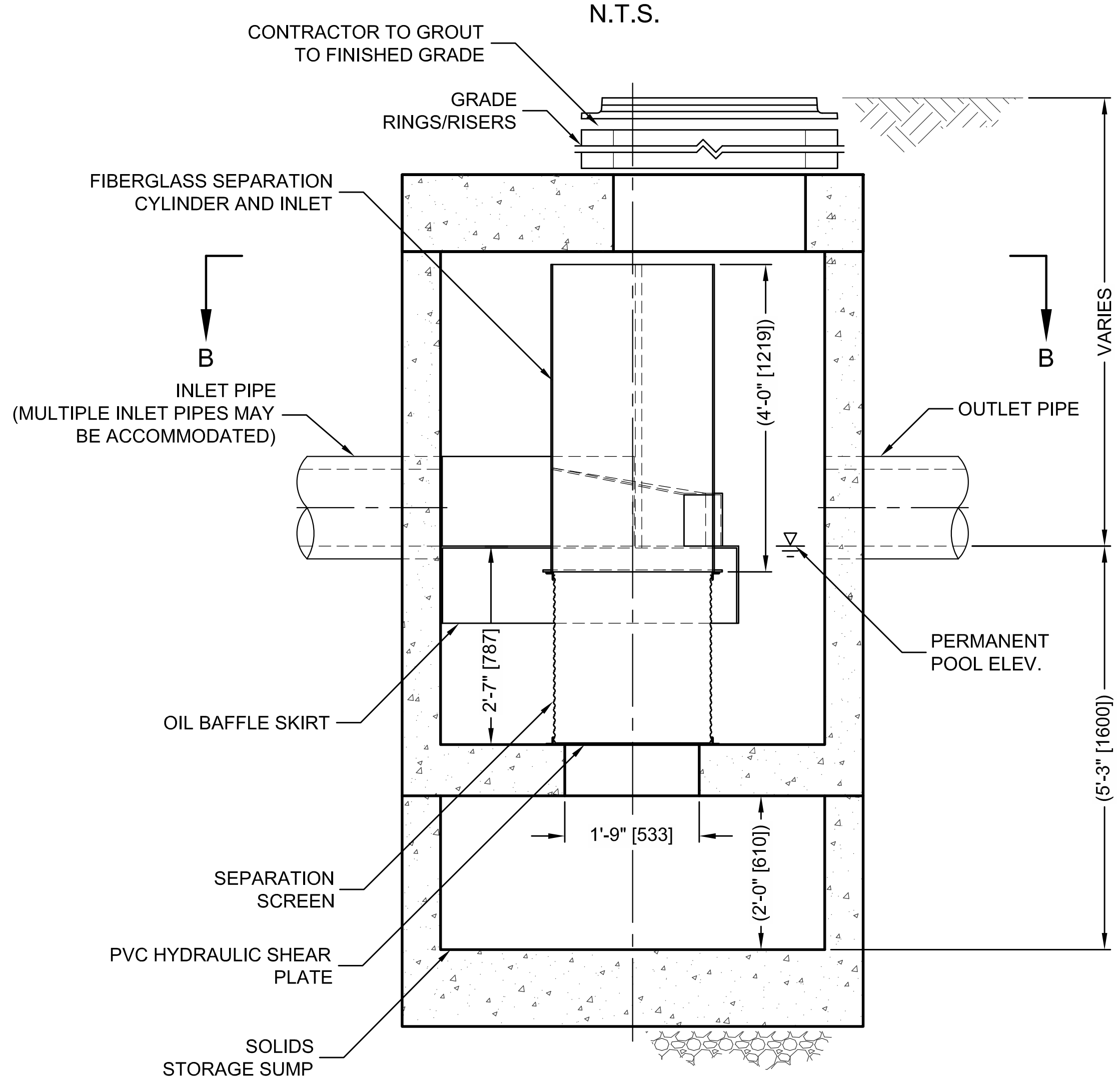
DRAWING: BIO CLEAN GRATE INLET FILTER DETAILS		MEETS FULL CAPTURE REQUIREMENTS	
TYPICAL MODEL DETAIL			
WARRANTY: 5 YEAR MANUFACTURERS		PROJECT:	
BIO CLEAN ENVIRONMENTAL SERVICES, INC. 398 VIA EL CENTRO, OCEANSIDE CA 92058 PHONE: 760-433-7640 FAX: 760-433-3176		REVISIONS:	DATE:
		REVISIONS:	DATE:
DATE: 10/12/17	SCALE: SF = 15	REVISIONS:	DATE:
DRAFTER: M.C.P.	UNITS = INCHES	REVISIONS:	DATE:

Bio Clean
A Forterra Company

APPENDIX 6.5



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.

CDS®

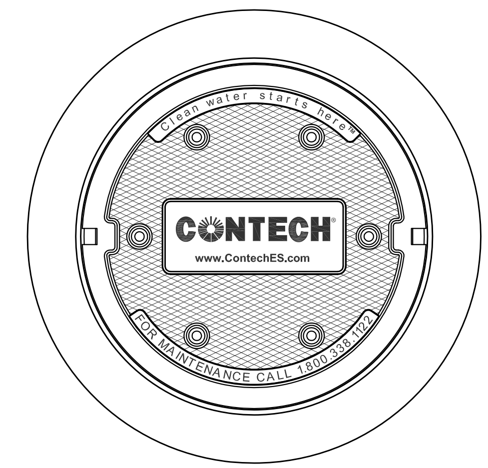
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,788,848; 6,641,720; 6,511,595; 6,581,783; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CDS2020-5-C DESIGN NOTES

CDS2020-5-C RATED TREATMENT CAPACITY IS 1.1 CFS [31.2 L/s], OR PER LOCAL REGULATIONS. MAXIMUM HYDRAULIC INTERNAL BYPASS CAPACITY IS 14.0 CFS [396 L/s]. IF THE SITE CONDITIONS EXCEED 14.0 CFS [396 L/s], AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

THE STANDARD CDS2020-5-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (CFS OR L/s)	*
PEAK FLOW RATE (CFS OR L/s)	*
RETURN PERIOD OF PEAK FLOW (YRS)	*
SCREEN APERTURE (2400 OR 4700)	*

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*

RIM ELEVATION	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH®
ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2020-5-C
INLINE CDS
STANDARD DETAIL

APPENDIX 6.6

National Flood Hazard Layer FIRMette

FEMA

Legend

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

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/27/2020 at 7:01:39 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

NextGen ENGINEERING

MEMORANDUM

To: The G4 Group
From: Bill O'Brien, PE; Tariq Tariq, EIT - NextGen Engineering
Date: October 1, 2021
Subject: Hydrology and Detention for 4416 Azusa Canyon Rd.
Irwindale, CA 91706
APN 8414004006

REGISTERED PROFESSIONAL ENGINEER
WILLIAM D. O'BRIEN
NO. 42711
EXP. 3-31-22
CIVIL
STATE OF CALIFORNIA

Executive Summary

In response to the California Environmental Quality Act (CEQA) comments, this technical memorandum revises the previous technical memo (dated 5-17-21) and summarizes the hydrologic analysis, water quality requirements, and detention volume calculations for the re-development at the subject property (see Figure 1), located in Irwindale (City), in Los Angeles County (County).

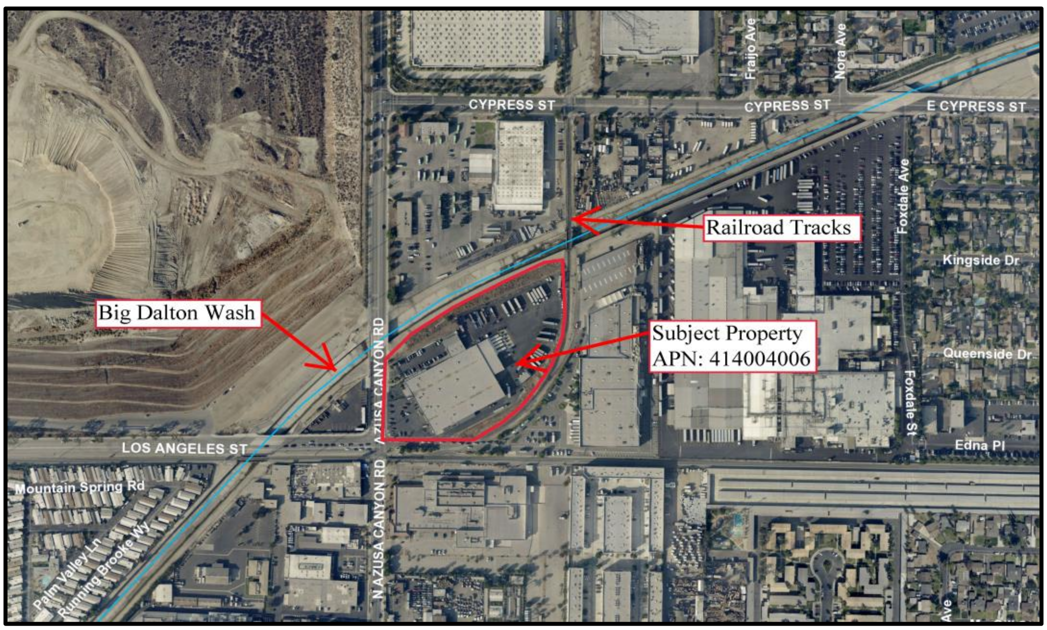


Figure 1. Location Map (with subject parcel in red)

A hydrologic analysis was performed for the subject property under two conditions: existing and proposed. The property was divided into sub-areas that were defined by topographical and drainage features, then measurements and sub-basin characteristics were taken utilizing AutoCAD. After the contributing sub-basin were hydrologically characterized, LA County's HydroCalc model was run for each sub-area. The HydroCalc-generated hydrographs for individual sub-areas were then combined into an equivalent outflow hydrograph (simple addition without routing), which served as the basis for detention volume calculations. Utilizing the hydrologic characterization of the sub-basins, separate HydroCalc runs were performed to obtain the stormwater quality design volumes and flows (SWQDV-F).

The hydrologic analysis determined that the most extreme condition for detention volume corresponds to mitigating the 100-year proposed conditions peak flow (22.97 cfs) to the 50-year existing conditions peak flow (16.01 cfs); which corresponds to a detention volume of 1,702 cubic feet. This detention volume ensures that the 100-year proposed conditions peak flow is outlet at the 50-year existing condition peak flow.

In addition to the detention requirements, HydroCalc was utilized for obtaining the SWQDV, which was determined to correspond to the 85th percentile rainfall event, with a corresponding SWQDV of 18,511 cubic feet. This volume is provided in underground infiltration chambers at two locations on the site (see Proposed Conditions Hydrology Map in Attachment 1).

Project Background

The property is 5.82 acres in size and is currently used for a Pepsi bottling facility. The existing lot is mostly impervious and is composed of the main facility building (70,595 sq. ft.) in addition to parking spaces, and truck loading/unloading docks.

The proposed development constitutes re-grading the lot, increasing the building footprint and additional parking spaces.

The site is situated on the northeast corner of the intersection of Azusa Canyon Road and Los Angeles Street. The site is spanned by railroad tracks on the southeast side and sits on the southern overbank of Big Dalton wash, a major drainage canal in the area.

For both existing and proposed conditions drainage, the site utilizes both surface and subsurface drainage for handling stormwater. This memo focuses on the surface drainage component of the site, with assumption about sub-surface drainage.

For hydrology, County's Hydrology Manual (2006) was referenced and their public hydrology software, HydroCalc, was utilized (see Hydrology sections).

It is understood that the County's mitigation criteria for the re-development project limits the proposed conditions 100-year peak discharge (Q100) to the existing conditions 50-year peak discharge (Q50).

Existing Conditions Hydrology

The natural topography of the area and field investigation confirm that the existing developed watershed is confined to the subject property boundary, without any run-on flows. Onsite-generated stormwater is handled by surface and subsurface drainage mechanisms. An existing conditions hydrology map (see Exhibit 1 in Attachment 1) was prepared to visually demonstrate how the site drains. As shown on the map, a small portion on the north side of the property (Sub-area A-1) drains to Big Dalton wash through overland sheet flow. The remaining portion of the property concentrates at two locations, and ultimately discharge to the existing, half-filled 36" RCP storm drainpipe under Los Angeles Street through underground storm drainpipes. This area was subdivided into two sub-areas (Sub-areas B-2 and B-3), each discharging to unique onsite points of concentration, as shown on Exhibit 1 in Attachment 1.

County's online hydrology GIS map was utilized to get an average rainfall depth for the entire property. The 50-year, 24-hr rainfall depth was estimated as 6.9 inches for the property (see Figure 2). For determining the soil properties of each sub-area, the County's soil shapefiles were imported into AutoCAD and overlaid on top of the property boundary, as shown in Figure 3.

The remaining HydroCalc inputs were obtained by taking measurements from the AutoCAD file that created the hydrology map. Table 1 summarizes the HydroCalc inputs for each sub-area.

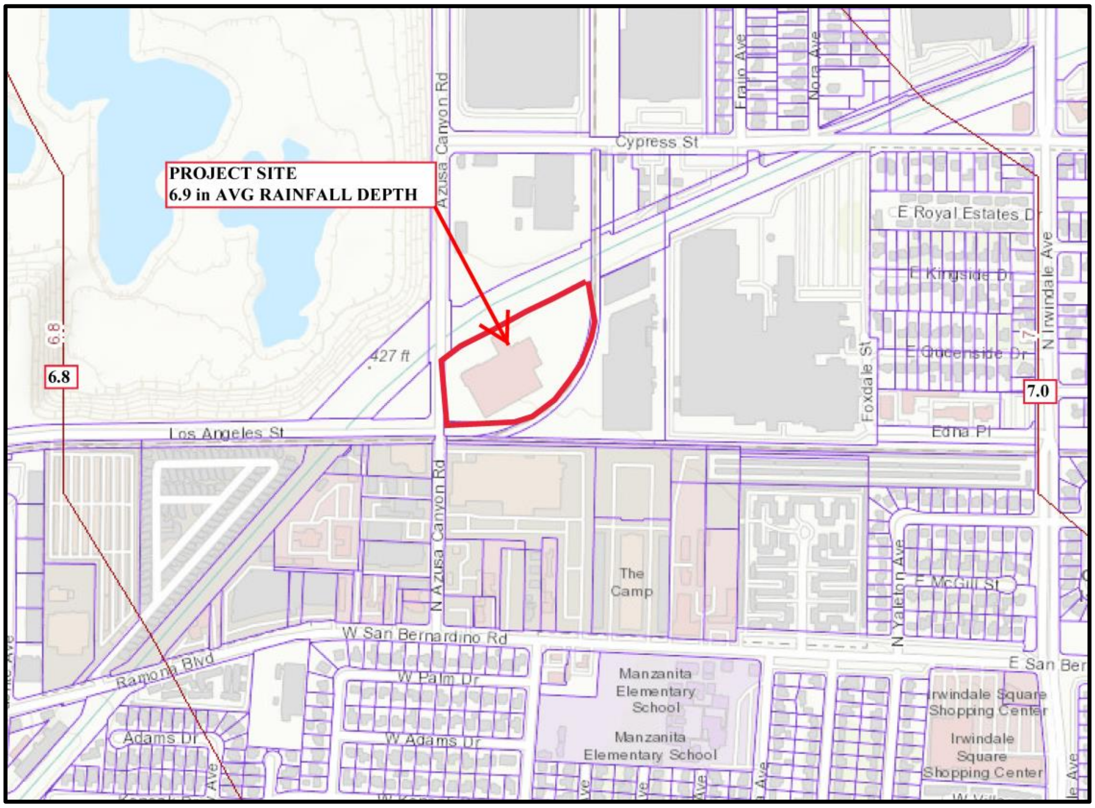


Figure 2. 50-yr, 24-hr Rainfall Contours Map (with subject parcel in red)

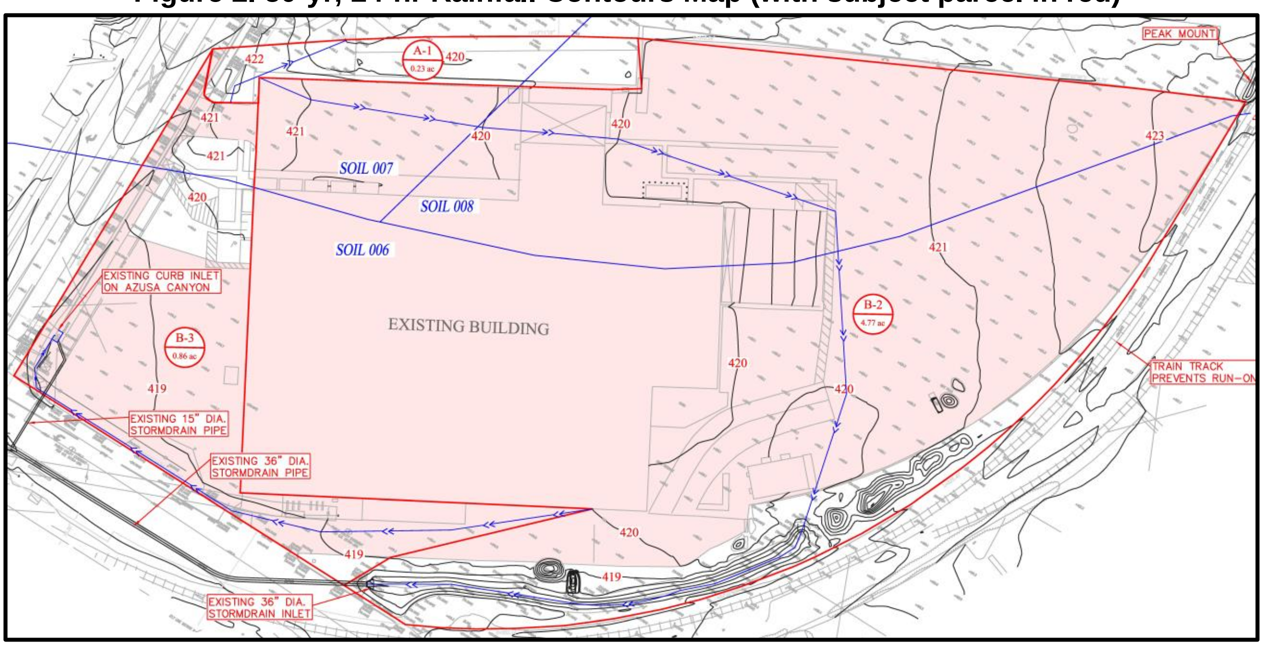


Figure 3. Existing Conditions Soil-Type Map (with sub-areas shown in red)

Table 1. HydroCalc Inputs for Existing Conditions Hydrology

Subarea (ID)	Area (ac)	Flow Path (ft)	Flow Path Slope (vft/hft)	Impervious Area (dec. %)	Soil Type	Fire Factor	24-hr, 50 -yr Rainfall Depth (in)
A-1	0.23	98	0.0347	0.02	007		
B-2	4.77	978	0.0108	0.91	006	0.71	6.9
B-3	0.86	465	0.0043	0.82	006		

*The fire factor was determined from Table 6.3.3 in the County's Hydrology Manual (2006), recognizing that the property is part of the San Gabriel River Watershed.
*HydroCalc automatically calculates the 100-year rainfall depth from the 50-year, 24-hr rainfall depth.

HydroCalc run was performed twice for each sub-area to obtain the 50-year and 100-year hydrographs at the outlet of each sub-area. Given that sub-area A-1 discharges into Dalton Wash through overland sheet flow, the hydrograph obtained for A-1 demonstrates the outflow hydrograph for the north portion of the site (see Figure 4). For the remaining portion of the property, the hydrographs for the two sub-areas were simply combined into an equivalent outflow hydrograph (Figure 4), representing the flow rates discharged into the existing storm drain system.

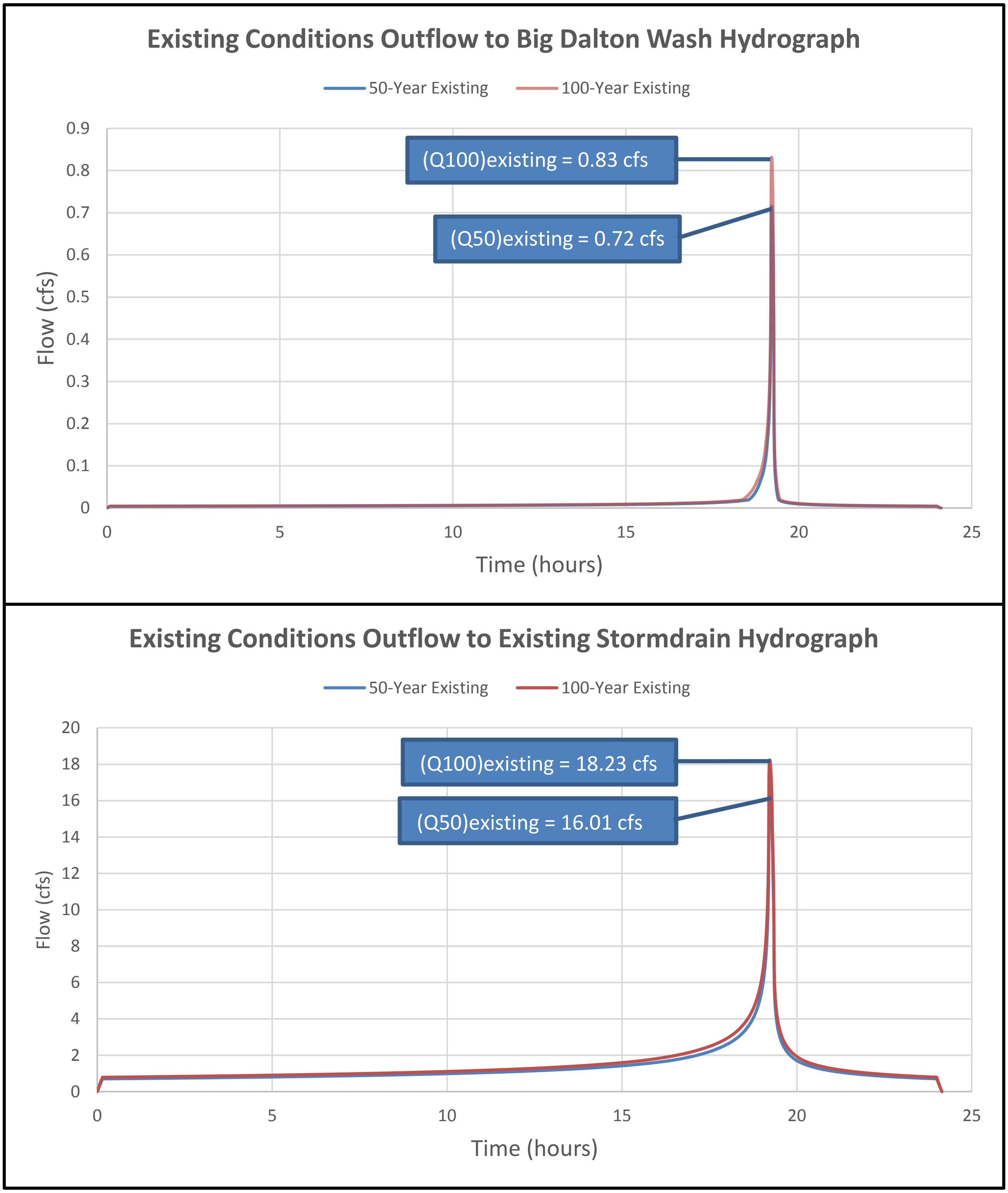


Figure 4. Existing Conditions Outflow Hydrographs to Big Dalton Wash (top) and to Existing Storm Drain on Los Angeles Street (bottom)

As shown on Figure 4, the existing conditions peak Q50 is 0.72 cfs to Big Dalton Wash and 16.01 cfs to the existing storm drain system under Los Angeles Street. The existing conditions peak Q100 is 0.83 cfs to Big Dalton Wash and 18.23 cfs to the existing storm drain system under Los Angeles Street.

Proposed Conditions Hydrology

The re-development project proposes to make further use of subsurface storm drainage, adding seven (7) new onsite stormdrain inlets that collect all of the onsite stormwater and re-directs it to the existing, half-filled 36" RCP storm drainpipe under Los Angeles Street through subsurface drainage pipes. A proposed conditions hydrology map was prepared to visually demonstrate how stormwater drains for the proposed site conditions (see Exhibit 2 in Attachment 1). The property was subdivided into eight sub-areas using proposed topography, terminating each sub-area at the location where water concentrates at a proposed catch basin/grated inlet.

Rainfall depth map remains unchanged from the existing conditions hydrology. Figure 5 shows the soil type map for proposed conditions hydrology.

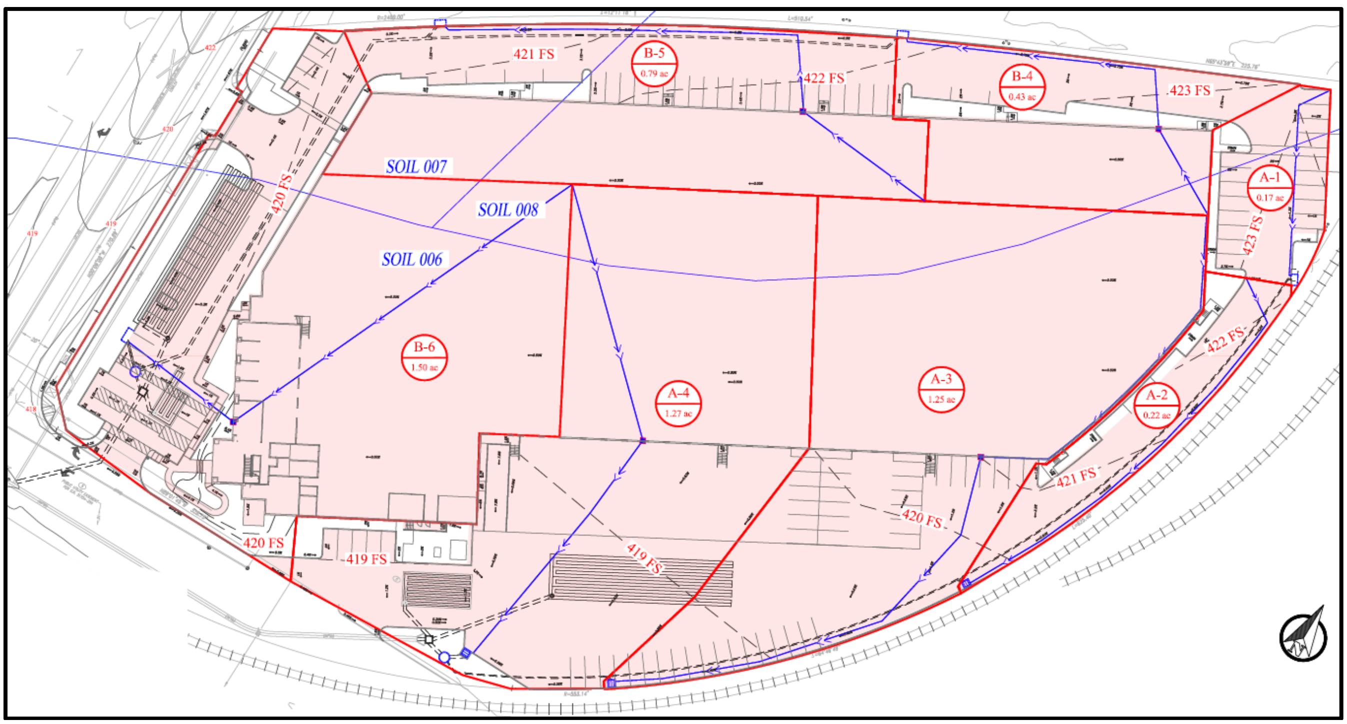


Figure 5. Proposed Conditions Soils Type Map (with sub-areas shown in red)

Following similar methodology as described in the Existing Conditions Hydrology section of the memo, Table 2 was prepared, summarizing the characteristics of each sub-area under proposed conditions.

Table 2. HydroCalc Inputs for Proposed Conditions Hydrology

Subarea (ID)	Area (ac)	Flow Path (ft)	Flow Path Slope (vft/hft)	Impervious Area (decimal)	Soil Type	Fire Factor	24-hr, 50 -yr Rainfall Depth (in)
A-1	0.17	130	0.0102	0.892	006	0.71	6.9
A-2	0.22	280	0.0119	0.916	006		
A-3	1.25	531	0.0144	1.000	006		
A-4	1.27	336	0.0135	0.943	006		
B-4	0.43	257	0.0069	0.893	008		
B-5	0.79	363	0.0067	0.959	008		
B-6	1.50	340	0.0062	0.952	006		

Following similar procedure as used for modelling existing conditions hydrology, two HydroCalc runs were performed for each sub-area, representing the 50-year and 100-year design frequency events. The proposed grading plan for the re-development project eliminates onsite drainage to Big Dalton wash; hence, the entire property drains to the existing storm drain system under Los Angeles Street under proposed conditions.

For determining the detention storage needed to achieve the mitigation criteria, equivalent outflow hydrographs were prepared (Figure 6) by combining the hydrographs of the individual sub-areas.

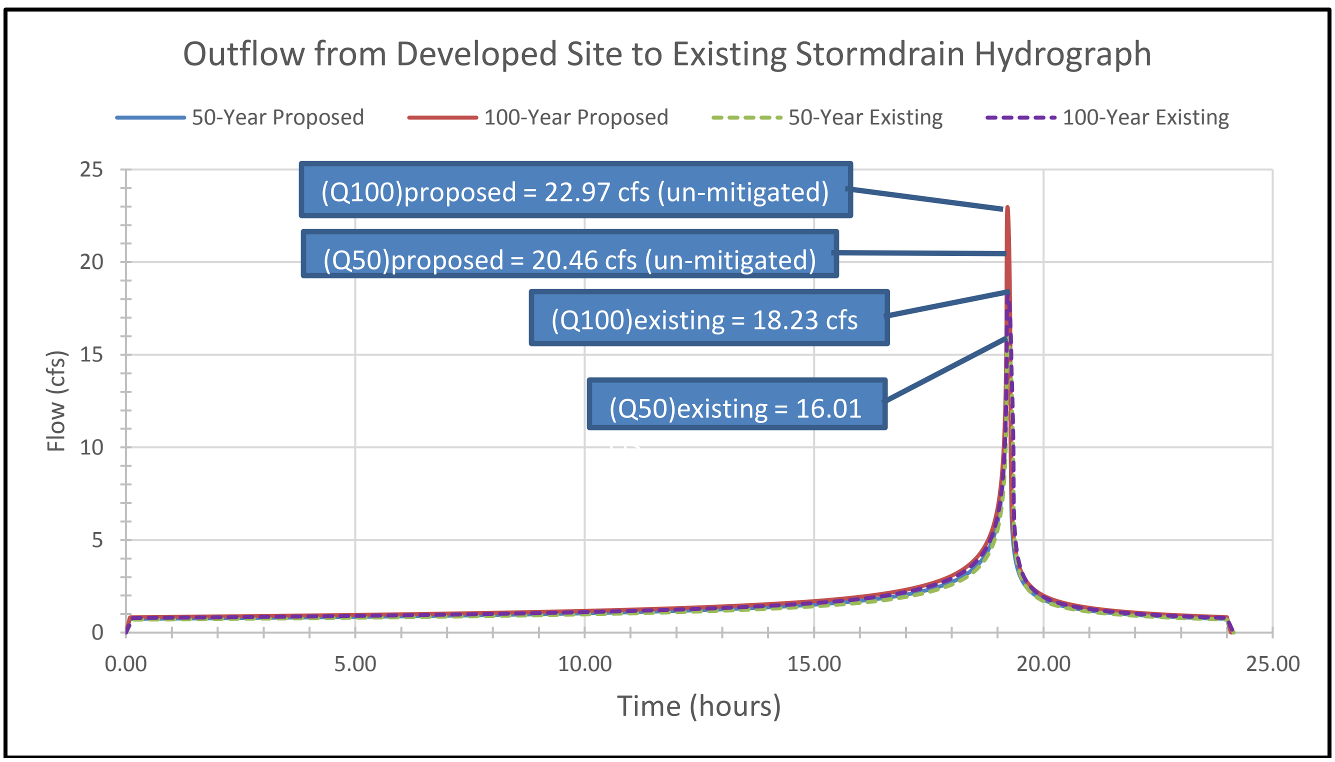


Figure 6. Existing vs. Proposed Conditions Outflow from Site (Un-mitigated)

Table 3 summarizes the peak flows entering the existing storm drain system under Los Angeles Street for existing and proposed conditions hydrology.

Table 3. Peak Flow Results

Condition	Peak Q50 (cfs)	Peak Q100 (cfs)
Existing	16.01	18.23
Proposed	20.46	22.97

For individual sub-area peak flow rates, see appendix A.

Detention Storage

The following table (Table 4) summarizes the detention volume needed for the four mitigation criteria considered: limiting proposed ("developed") conditions Q100 to existing conditions Q100; limiting proposed conditions Q50 to existing conditions Q50; limiting proposed conditions Q100 to proposed conditions Q50; and limiting proposed conditions Q100 to existing conditions Q50.

Table 4. Detention Volume Results

Mitigation Criteria	Detention Volume (cubic feet)
Q50 proposed to Q50 existing	927
Q100 proposed to Q100 existing	971
Q100 proposed to Q50 proposed	495
Q100 proposed - Q50 existing	**1702**

*For calculations of the detention volumes, refer to Appendix A.

Given that the proposed development provides two drainage paths to the existing storm drain system under Los Angeles Street, two detention chambers at two different locations are proposed. For sizing these detention chambers, a linear scaling of the total detention volume was utilized. Attachment 2 shows how the above detention volume is provided for the development.

Stormwater Quality Design Volume and Flow (SWQDV and SWQDF)

In accordance with the County Public Works Department Low Impact Development Manual (2014), the SWQDV shall be the greater of the runoff volume produced from either ¾" inch or 85th percentile rainfall events.

HydroCalc was utilized for obtaining the runoff volumes, using the previous inputs with the design storm frequency set to the ¾" and 85th percentile rainfall events. Individual HydroCalc runs were performed for each sub-area for the two storm events in consideration and the runoff volumes were obtained. Adding up the runoff volumes for each sub-area, the total SWQDV was determined to be 18,511 cubic feet and the SWQDF was 1.659 cfs. Given that the proposed site provides two drainage paths to the existing storm drain system under Los Angeles Street, the stormwater control is provided at two locations: at the eastern side (A-type sub-areas) and the western side (B-type sub-areas). The SWQDV for the eastern side is 9,570 cubic feet and the SWQDF is 0.87 cfs. The SWQDV for the eastern side is 8,941 cubic feet and the SWQDF is 0.79 cfs.

For individual sub-area runoff volumes, flow, and total SWQDV, see Appendix B.

Proposed stormwater quality control measures will be further addressed by The G4 Group.

Conclusions and Discussion

As shown in Table 4, the most constraining mitigation volume is 1,702 cubic feet, corresponding to limiting the proposed conditions Q100 to the existing conditions Q50. This mitigation volume was obtained assuming that the hydrographs for all sub-areas peaked simultaneously. Hence, this volume is a conservative quantity, leading to a conservative design for detention.

As shown in Attachment 2, the development provides two detention chambers with a total storage capacity of 1,861 cubic feet, approximately 459 cubic feet more than the required detention storage of 1,702 cubic feet.

With the addition of the above detention storage, it is ensured that, for any given storm frequency, the outflow from the site under proposed conditions is less than that of the existing conditions. In addition, the nuisance flow to Big Dalton Wash under existing conditions is eliminated in the proposed conditions.

To ensure that the detention provides the desired flow mitigation, an appropriate outflow control is needed at the outflow locations. As such, flow restriction orifices are provided at the two outflow culverts; designed to limit the proposed Q100 to the existing Q50. Appendix C contains the calculations for the sizing of the orifice and the outflow culverts. It was determined that the required outflow configurations consist of a 17.9” diameter orifice on the existing half-filled 36” diameter culvert for the eastern outflow and a 6.6” diameter orifice on an 8” diameter culvert for the western outflow.

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Appendix A: Detention Volume Calculations and Individual Sub-Area Flow Rates

The following table only shows the outflow rates for the time period where volume mitigation is needed (utilizing the peak flow rates in Table 3 and mitigation goals listein in Table 4).

Time (minutes)	Outflow (cfs)			
	50-Year Proposed	100-Year Proposed	50-yr Existing	100-yr Existing
1151.4	13.616	15.290	11.330	12.869
1151.6	14.394	16.165	11.847	13.462
1151.8	15.490	17.397	12.559	14.280
1152.0	18.417	20.677	14.379	16.391
1152.2	19.754	22.179	15.243	17.389
1152.4	20.127	22.598	15.524	17.709
1152.6	20.325	22.820	15.699	17.908
1152.8	20.426	22.934	15.818	18.041
1153.0	20.461	22.973	15.901	18.132
1153.2	20.446	22.956	15.955	18.190
1153.4	20.390	22.893	15.989	18.223
1153.6	20.297	22.789	16.005	18.234
1153.8	20.173	22.650	16.005	18.228
1154.0	20.018	22.476	15.993	18.207
1154.2	19.835	22.270	15.968	18.171
1154.4	19.623	22.032	15.933	18.121
1154.6	19.383	21.762	15.887	18.060
1154.8	19.113	21.458	15.832	17.986
1155.0	18.811	21.120	15.768	17.901
1155.2	18.477	20.744	15.695	17.806
1155.4	18.105	20.326	15.613	17.699
1155.6	17.692	19.862	15.523	17.581
1155.8	17.229	19.344	15.424	17.453
1156.0	16.707	18.760	15.318	17.313
1156.2	16.112	18.094	15.202	17.161
1156.4	15.418	17.315	15.078	16.996
1156.6	14.575	16.368	14.945	16.818
1156.8	13.460	15.114	14.803	16.623

The following table shows the incremental volume calculations during the time period where mitigation is required (proposed conditions flow rate is greater than the peak existing conditions flow rate for respective rain events) and the corresponding total detention volume. For the full table, see the separate attached excel sheet.

Time (minutes)	Incremental Detention Volume (cubic feet)			
	Q50 prop - Q50 ex	Q100 prop - Q100 ex	Q100 prop - Q50 prop	Q100 prop - Q50 ex
1151.4	0	0	0	0
1151.6	0	0	0	51.818
1151.8	0	0	0	58.061
1152.0	48.448	51.425	27.119	75.566
1152.2	54.122	57.474	29.099	83.222
1152.4	55.244	58.667	29.653	84.897
1152.6	55.509	58.947	29.946	85.455
1152.8	55.289	58.708	30.096	85.384
1153.0	54.724	58.099	30.146	84.870
1153.2	53.885	57.200	30.125	84.010
1153.4	52.807	56.045	30.041	82.848
1153.6	51.512	54.661	29.905	81.416
1153.8	50.010	53.056	29.720	79.730
1154.0	48.307	51.234	29.491	77.798
1154.2	46.401	49.193	29.218	75.620
1154.4	44.285	46.928	28.904	73.189
1154.6	41.946	44.425	28.547	70.494
1154.8	39.367	41.664	28.147	67.514
1155.0	36.524	38.619	27.700	64.225
1155.2	33.385	35.256	27.204	60.589
1155.4	29.907	31.528	0	56.561
1155.6	26.031	27.371	0	52.073
1155.8	21.655	22.696	0	47.035
1156.0	16.678	17.373	0	41.313
1156.2	10.920	0	0	34.705
1156.4	0	0	0	26.839
1156.6	0	0	0	17.069
1156.8	0	0	0	0
Sum ∑ =	**927**	**971**	**495**	**1702**

The following table shows the individual sub-area flow rates for the 100-year proposed conditions rain event to be used for design of on-site stormdrain pipe.

Sub-Area	Proposed Q100 (cfs)
A-1	0.71
A-2	0.91
A-3	4.77
A-4	5.28
B-4	1.79
B-5	3.28
B-6	6.24

Design of on-site stormdrain pipes will be covered by The G4 Group.

Appendix B: SWQDV-F HydroCalc Results

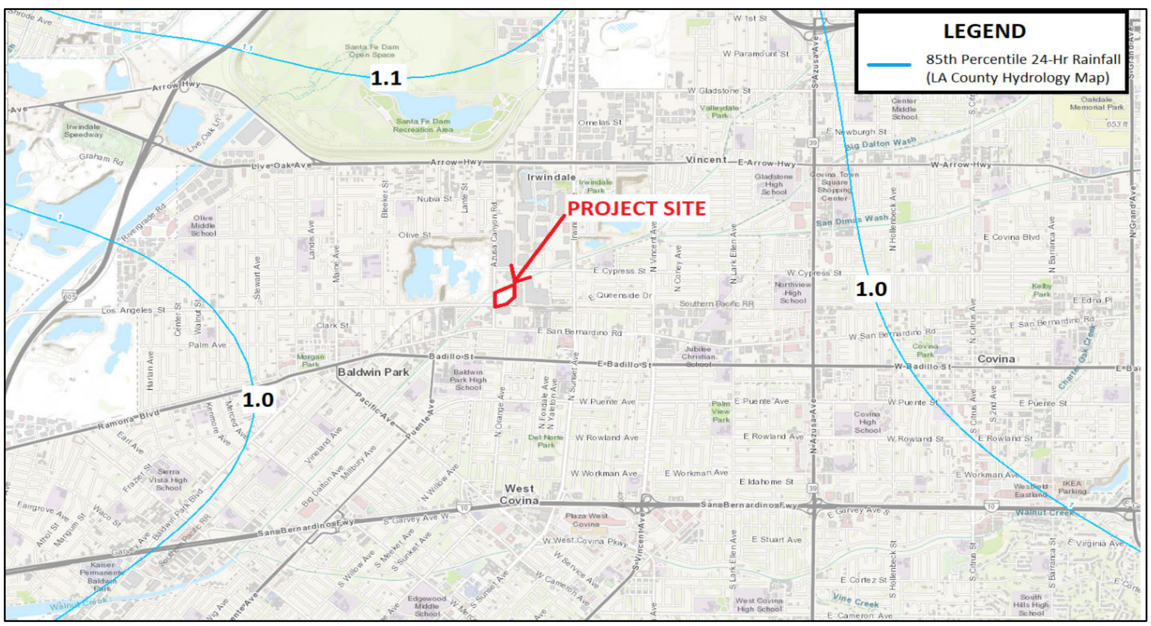
Design Storms for SWQDV

3/4" Storm	0.75	inch	
85th Percentile	1.05	inch	(see Figure below)

HydroCalc Results for Stormwater Quality

Subarea (ID)	3/4" Storm SWQDV (cubic feet)	**85th Precentile SWQDV (cubic feet)**	**85th Precentile SWQDF (cfs)**
A-1	373.4	523.2	0.064
A-2	494.7	692.6	0.066
A-3	3037.5	4252.5	0.358
A-4	2929.8	4101.6	0.382
B-4	1044.9	1462.9	0.140
B-5	1849.8	2593.2	0.227
B-6	3489.5	4885.3	0.422
Sub-Group A	6835	**9570**	**0.870**
Sub-Group B	6384	**8941**	**0.789**
Total	13220	**18511**	**1.659**

In accordance to Los Angeles County Pub Public Works Department Low Impact Development Manual (2014), the greater SWQDV should be used for design. The proposed site is divided into two infiltration areas, sub-group A (east) and sub-group B (west). **The Stormwater Quality Design Volumes is 9,570 cubic feet for sub-group A and 8,941 cubic feet for sub-group B.**



85th Percentile Rainfall Contours

Appendix C: Outflow Culvert and Orifice Restrictor Calculation Sheet

This section describes the design of the flow restriction orifices and outflow culverts provided at the outflow catch basins to ensure that the peak discharge from the proposed conditions site is mitigated adequately.

Basis for Design

The flow restriction orifice will be designed assuming worts-case scenario. This scenario is assumed to correspond to the 100-year event, limiting the proposed conditions Q100 to the existing conditions Q50. The proposed conditions site discharges to the existing stormdrain pipe under Los Angeles street at two locations as shown in Figure 1. Both of these locations will be provided with a flow restriction orifice for controlling the peak discharge from the proposed conditions site.

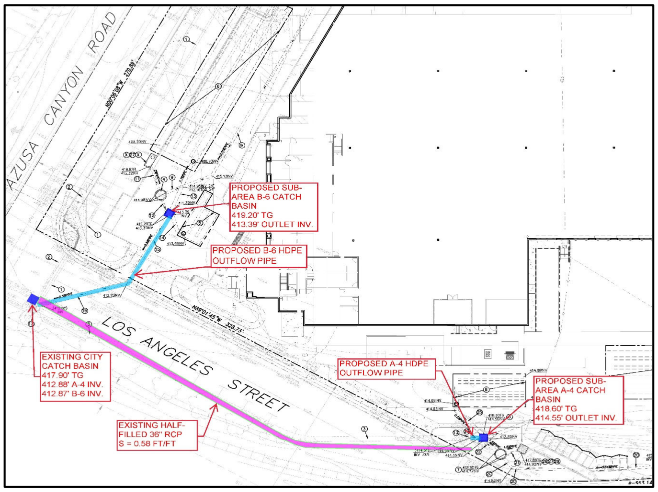


Figure 1. Plan View of Outflow from Developed Site

The following lists the assumptions used for the design of the flow restriction orifices.

1) The basis for design of the outflow restrictor orifice is to restrict the proposed peak Q100 to the existing peak Q50 per CEQA Peer Review Comments.

2) During the worst-case scenario, the proposed on-site catch basins are nearly inundated (water level nearly at top of catch basin, however, gravity-fed flow).

3) Due to lack of data/as-built information on the HGL within the existing City catch basin, it assumed that the City catch basin is nearly inundated (water level nearly at top of catch basin, however, gravity-fed flow).

4) The impact of discharge from sub-area A-4 (east side) does not imact the calculations for discharge from B-6 (west side).

Design

The flow through a circular orifice can be computed as follows using Brater and King Handbook of Hydraulics.

$$Q = Ca(2gh)^{0.5}$$

Where;

C - discharge coefficient (0.60 recommended typical)
a - subermeged area (full circular area given full submergence during wors-case scenario)
g - gravitational constant (32.2 ft/s^2)
h - effective head (ft)

For fully submerged vertical orifice, the effective head is given by:

$$h = H - \max(r, TW)$$

Where;

H - head above invert (ft)
r - radius of orifice (ft)
TW - tailwater depth above outlet invert of orifice (ft)

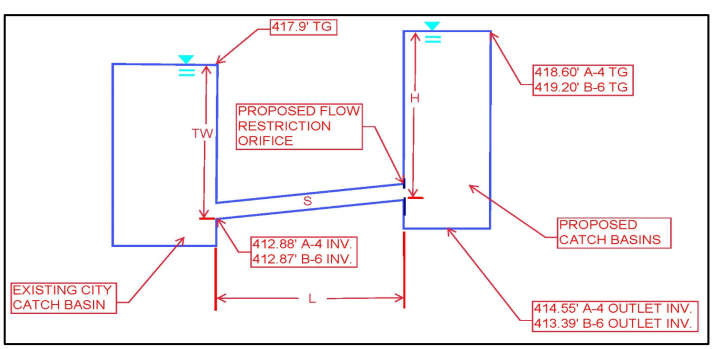


Figure 2. Typical Setup for Outflow from Developed Site

The following lists key variables used in flow calculations.

TW = City Catch Basin TG - Outlet Inv.

Sub-area A-4 (East Outflow)			
TW =	0.7	ft	
H =	4.05	ft	
Orifice:	**r =**	**17.9**	**in**
		1.49	ft
	a =	1.75	ft^2
	h =	2.56	ft

Sub-area B-6 (West Outflow)			
TW =	1.3	ft	
H =	5.81	ft	
Orifice:	**r (in) =**	**6.6**	
	r (ft) =	0.55	
	a (ft^2) =	0.24	
	h (ft) =	4.51	

Using the above parameters, the peak discharge through the orifices are:

Sub-area	Peak Discharge (cfs)	
	Orifice Q_{100}	Existing Q_{50}
A-4 (East Outflow)	13.46	13.56
B-6 (West Outflow)	2.43	2.45

*Existing peak discharges are calculated using pro-ration of the overall existing peak Q50 of 16.01 cfs.

As shown in the table above, the peak outflows from the developed site during the 100-year storm event is lower than the existing conditions peak outflows.

Check Outflow Controls

The orifice is provided as an inlet control for the outflow culvert. The actual peak discharge from the site will be the lesser of the discharges from either the orifice or the outflow culvert. The following provides the required check.

The flow through a circular culvert whose inlet and outlet are submerged (outlet control) can be computed as follows using Culverts - Hydrology and Hydraulics by Jerome Norman:

$$V^2 = \frac{H - D + SL}{\frac{Ke+1}{2g} + \frac{n^2L}{CR^{\frac{4}{3}}}}$$

Where;
- V - velocity (ft/s)
- H - head above inlet inv. (ft)
- D - depth of flow (ft, greater of culvert diameter or TW)
- S - slope (ft/ft)
- L - length (ft)
- Ke - entrance loss coeff (0.2 for recommended typical)
- g - gravitational constant (32.2 ft/s^2)
- n - manning's coefficient
  - n = 0.010 for proposed HDPE
  - n = 0.011 for existing concrete
- C - conversion factor (2.22 for English units)
- R - hydraulic radius (ft)
- A - cross-sectional area (ft^2)

For a fully submerged culvert, the hydraulic radius is given by the following.

$$R = \frac{A}{Wetted\ Perimeter} = \frac{\frac{\pi * Diameter^2}{4}}{\pi * Diameter} = \frac{Diameter}{4}$$

The peak discharge can be computed from the velocity as follows.

$$Q = VA$$

Where;
- Q - peak discharge (cfs)

Parameters	Sub-Area		
	A-4 Proposed Culvert	A-4 Existing Culvert	B-6
H (ft)	Existing culvert will be kept in place	4.05	5.81
Diameter (ft)		**3**	**0.67**
TW (ft)		0.7	1.3
D (ft)		3	1.3
S (ft/ft)		0.0058	0.005
L (ft)		276.4	102.5
n		0.011	0.010
R (ft)		0.75	0.325
A (ft^2)		7.07	1.33
V (ft/s)		8.07	11.31
Q (cfs)		28.52	15.01

*Q for the existing culvert on A-4 consider 50% capacity (half-filled).

The following table summarizes the calculateed flows and compares with existing flows.
.

Sub-area	Peak Discharge (cfs)		
	Culvert Q_{100}	Orifice Q_{100}	Existing Q_{50}
A-4 (East Outflow)	28.52	13.46	15.42
B-6 (West Outflow)	15.01	2.43	2.81

As shown in the table above, the peak discharges in the culverts are greater than the orifice peak discharges. **Hence, orifice controls outflow.**

Summary

For the outflow from the developed site to be adequately mitigated, the outflow system must be composed of the following:

Sub-area A-4 (East Outflow): **36" diameter culvert** (half-filled) @ 0.58% slope with a
17.9" diameter orifice placed at the culvert invert.

Sub-area B-6 (West Outflow): **8" diameter culvert** @ 0.5% slope with a
6.6" diameter orifice placed at the culvert invert.

The above outflow configuration ensures that the proposed Q100 peak discharge is not greater than the existing Q50 peak discharge.

Attachment 1: Hydrology Maps

Exhibit 1. Existing Conditions Hydrology Map

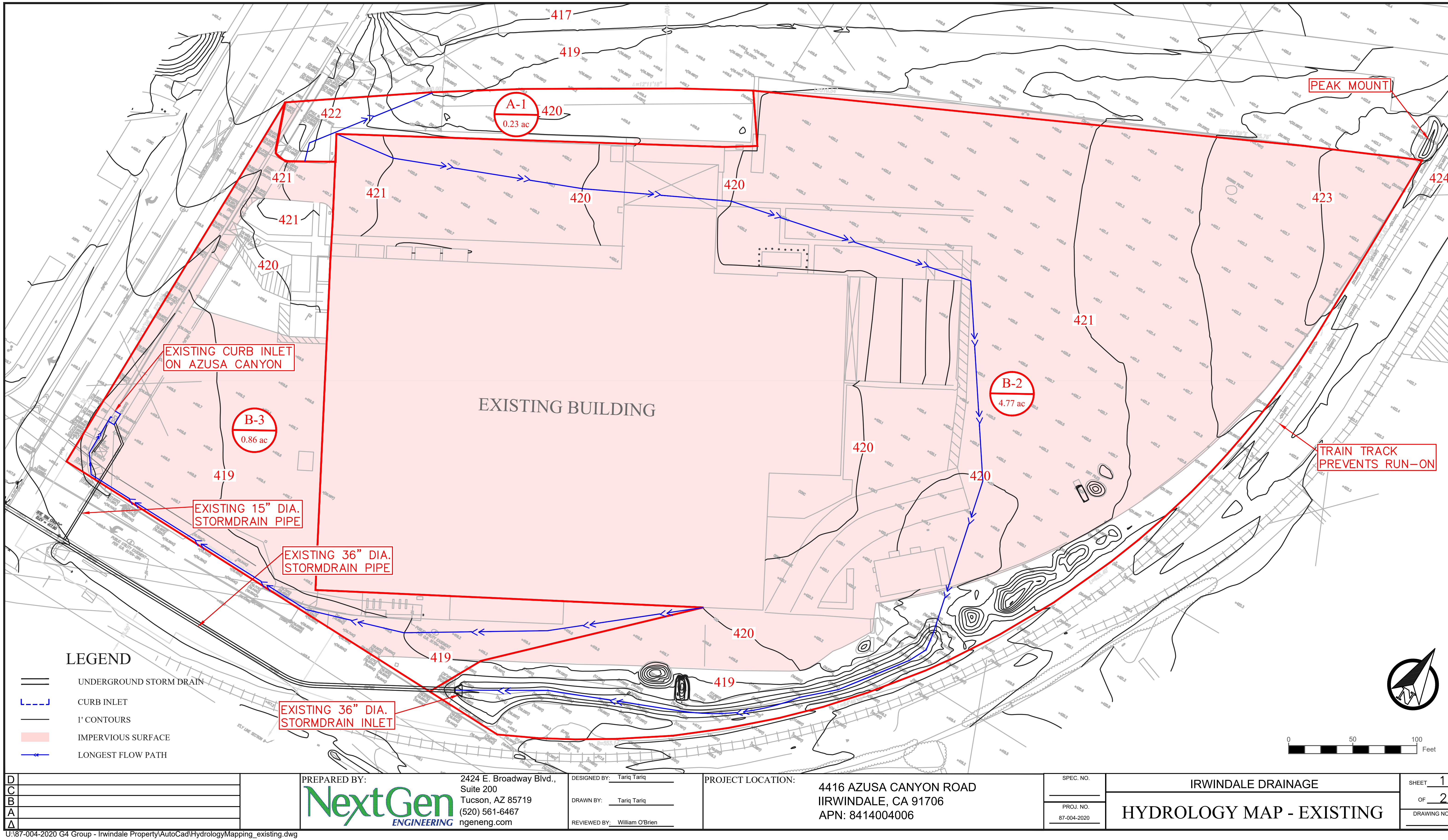
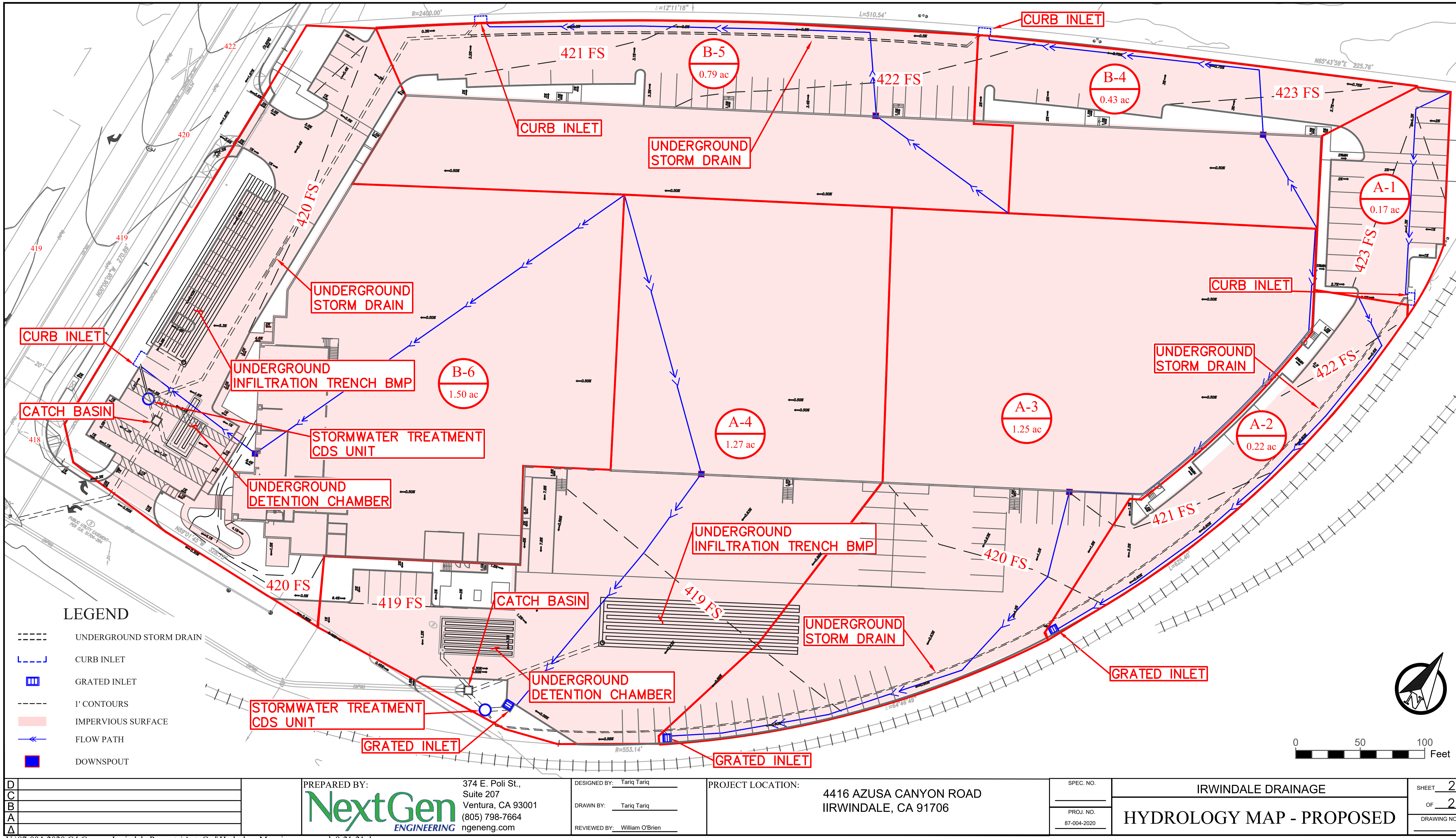


Exhibit 2. Proposed Conditions Hydrology Map



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Attachment 2: Underground Detention Chamber Details

DETENTION STORAGE CAPACITY CALCULATIONS

Total Required Site Storm Water Detention Volume = 1,702 cubic feet

Southern Outlet Detention Storage Design

Percentage of Site Drainage Directed to Southern Outlet = 49%

49% of total required volume = 834 cubic feet.

Use 24” C.M.P. = 3.14 C.F./L.F.

Check Proposed Pipe Capacity:

Use 7 rows of 24” C.M.P. x 40 L.F. = 280 L.F.
With ½ Header Pipe 23 L.F.

280 x 3.14 = 879.2 C.F.
23 x 3.14 / 2 = 36.1 C.F.

Total provided Storage = 915.3 C.F.

915.3 > 834 System OK

Western Outlet Detention Storage Design

Percentage of Site Drainage Directed to Southern Outlet = 51%

51% of total required volume = 868 cubic feet.

Use 42” C.M.P. = 9.6 C.F/L.F.

Check Proposed Pipe Capacity:

Use 2 row of 42” C.M.P. x 30 L.F. + 1 rows of 42” C.M.P. x 20 L.F. = 80 L.F.
With ½ Header Pipe 13.5 L.F.

80 x 9.6 = 768 C.F
13.5 x 9.6 / 2 = 68.8 C.F.

Detention Storage Fill Pipe
34.9 LF od 24” HDPE pipe x 3.14 C.F./L.F. = 109.6 C.F.

Total provided Storage = 946.4 C.F.

946.4 > 868 System OK

Appendix G Noise Background

Appendix

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Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).

- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second (1×10^{-6} in/sec).

- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

- **Maximum Sound Level (L_{max})**. The highest RMS sound level measured during the measurement period.
- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.
- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.
- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

Change in dB	Noise Level

± 3 dB	Barely perceptible increase
± 5 dB	Readily perceptible increase
± 10 dB	Twice or half as loud
± 20 dB	Four times or one-quarter as loud

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2	Typical Noise Levels	
Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of “architectural” (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to “architectural” damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans). 2020, April. *Transportation and Construction Vibration Guidance Manual.* Prepared by ICF International.

LOCAL REGULATIONS AND STANDARDS

165	
160	
155	
150	
145	
140	*sonic boom*
135	
130	
125	*jet take off at 200 ft.*
120	
115	*music in night club interior*
110	*motorcycle at 20 ft.*
105	*power mower*
100	
95	*freight train at 50 ft.*
90	*food blender*
85	*electric mixer, light rail train horn*
80	
75	
70	*portable fan, roadway traffic at 50 ft.*
65	
60	*dishwasher, air conditioner*
55	
50	*normal conversation*
45	*refrigerator, light traffic at 100 ft.*
40	
35	*library interior (quiet study area)*
30	
25	
20	
15	
10	*rustling leaves*
5	
0	

Exhibit 6-5
Typical Noise Levels
City of Irwindale General Plan

Noise and Land Use Compatibility

Guidelines governing land use and noise compatibility have been prepared by a number of Federal and State agencies including the Federal Highway Administration, the Environmental Protection Agency (EPA), the Department of Housing and Urban Development, the American National Standards Institute and the State of California. These guidelines, presented in the following paragraphs, are all based upon cumulative noise criteria such as Leg, LDN or CNEL.

- *Environmental Protection Agency.* In March 1974, the EPA published "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" (EPA 550/9-74-004). This report indicates that 55 LDN is the requisite level with an adequate margin of safety for areas with outdoor uses, including residential and recreational areas. The EPA "levels document" does not constitute a standard, specification or regulation, but identifies safe levels of environmental noise exposure without consideration for economic cost for achieving these levels.

- *Federal Highway Administration (FHWA).* The FHWA has adopted and published noise abatement criteria for highway construction projects. The FHWA noise abatement criterion established an exterior noise goal for residential land uses of 67 Leq and an interior goal for residences of 52 Leq. The noise abatement criterion applies to private yard areas and assumes that typical wood frame homes with windows open provide a 10 dB noise reduction (outdoor to indoor) and 20 dB noise reduction with windows closed.

- *State of California.* The State requires every city and county to adopt noise elements as part of their general plans. Such noise elements must contain a noise/land use compatibility matrix. A recommended (but not mandatory) matrix is presented in the "Guidelines for the Preparation and Content of Noise Elements of the General Plan," (Office of Noise Control, California Department of Health, February 1976).

Ambient Noise Environment in Irwindale

The sources of noise in Irwindale fall into five basic categories. These include freeways, both the Foothill Freeway and the San Gabriel River Freeway; aircraft over flights; major and minor arterial roadways; railroad lines; and stationary sources. Each of these sources and their impacts on the noise environment of Irwindale are summarized in the following paragraphs.

- *Freeways.* The San Gabriel River Freeway (I-605) traverses the westerly boundary of the city in a north/south direction. This freeway is generally below grade with respect to the adjacent areas. Most of the development along the freeway is commercial, along with quarry operations. The Foothill Freeway (I-210) is elevated at least twenty feet above the adjacent areas and no walls exist at the present time.

- *Traffic Noise.* Traffic noise on surface streets is a significant source of noise within the community. Noise levels along roadways are affected by a number of factors. Most important is the average daily traffic (ADT). Roadways in Irwindale have a very high percentage of truck traffic resulting from the mining operations and industrial development in the City.

- *Airports and Heliports.* There are no airports located in Irwindale, nor are there any specific flight corridors that overfly the City. The nearest general aviation airport is located in El Monte. During field surveys conducted in the City, helicopter operations were observed in the vicinity of the Santa Fe Dam.

- *Railroads.* The City of Irwindale has a number of main railroad and spur lines. Major lines located in the city include the BN&SF Railroad, the Los Angeles Junction Railroad Company, Southern Pacific Railroad Company and the Union Pacific Railroad Company. The majority of the railroad traffic consists of freight trains performing switcher operations. A Metrolink commuter line is located in the southern portion of the City.

- *Stationary Sources.* The City of Irwindale contains a large number of stationary noise sources. Commercial areas located near residential areas from adjacent cities result in occasional noise impacts. The primary noises associated with industrial and commercial operations include truck traffic, air compressors, generators, outdoor loudspeakers and gas venting.

The existing traffic noise levels from major roadways in the City were computed using the Highway Noise Model published by the Federal Highway Administration ("FHWA Highway Traffic Noise Prediction Model," FHWA-RD-77-108, December 1978). The FHWA model uses traffic volume, vehicle mix, vehicle speed, and roadway geometry to compute the Leq noise level. The results of this analysis are shown in Table 6-2.

Table 6-2
Traffic Noise Levels Along Major Arterial Roadways Serving the City

Roadway Segment	Distance to CNEL Contour (in feet)				CNEL (dBA) 50' from Centerline
	55 CNEL	60 CNEL	65 CNEL	70 CNEL	
Foothill Freeway (I-210)	2,157	1,930	993	110	72.3
San Gabriel River Freeway (I-605)	2,303	2,120	1,220	125	74.1
Arrow Highway (north of Live Oak)	1,100	750	510	15	63.1
Arrow Highway (between Live Oak & Irwindale	1,215	727	493	27	61.7
Arrow Highway (east of Irwindale)	1,201	693	373	19	61.3
Foothill Boulevard	975	427	210	0	61.0
Irwindale Avenue (north of Arrow)	750	375	163	0	60.7
Irwindale Avenue (south of Arrow)	501	320	110	0	60.5
Live Oak Avenue	275	101	47	0	58.2
Source: FHWA Noise Prediction Model					

The City of Irwindale has three types of noise-sensitive receptors within the city boundaries. Residential areas, the school, and the Santa Fe Dam Recreation Area are currently exposed to several fixed and transient sources of noise. In general, mining operations in the City of Irwindale are not considered significant stationary noise sources. Because noise travels in a line-of-sight manner and attenuates with distance, the depth of the quarries provide significant separation and the pit walls serve as a barrier around the operating equipment. Above-grade sand and gravel mining plant sites and their conveyor systems, however, have been a source of stationary noise for the community.

The Irwindale Speedway is an additional source of noise. Designers have been deliberate about mitigating any potential impact to the City or neighboring communities. The track has been designed so that the major noise contributors located within the pit and paddock areas are located further away from sensitive noise receptors. Noise attenuating bleachers are also used to dampen any noise created by activities and capture it within the Speedway site rather than allowing it to release into neighboring areas. The City has implemented a noise monitoring program with the cooperation of the Speedway operator to ensure this potential noise source remains in compliance with the City codes.

The noise environment in Irwindale was determined through comprehensive noise measurement surveys with nine sites selected for the measurement of the ambient noise levels. The measurement locations were selected based on proximity to major noise sources and noise sensitivity of the land use. Each site was monitored for a minimum of 15 minutes. The quantities measured were the Equivalent Noise Level (Leq) and the Percent Noise Levels (L%). Percent Noise Levels are another method of characterizing ambient noise where, for example, L90 is the noise level exceeded 90% of the time, L50 represents the noise level exceeded 50% of the time, and L10 is the level exceeded 10% of the time. L90 represents the background or minimum noise level, L50 represents the average noise level, and L10 the peak or intrusive noise levels. The results of this measurement survey are summarized below in Table 6-3.

Table 6-3
Noise Measurement Survey Results

Map Reference No. and Location	Measured Noise Levels (in dBA)			Major Source of Noise Affecting the Area
	L10	L50	L90	
1. Foothill/Irwindale	73.3	71.7	69.5	Freeway traffic
2. Irwindale/I 210 Freeway	74.1	73.0	70.1	Freeway traffic
3. Live Oak/I 605 Freeway	71.3	69.7	65.7	Freeway traffic
4. Arrow/Motor	69.1	67.2	64.3	Traffic
5. Arrow/Irwindale	68.5	66.6	63.4	Traffic/machinery
6. Irwindale/Gladstone	67.1	65.3	62.1	Trucks
7. Civic Center	62.3	60.1	58.7	Traffic
8. Vincent/Cypress	61.5	59.3	52.1	Traffic
9. Los Angeles Street	60.7	58.7	54.3	Traffic
Source: Blodgett/Baylosis Associates				

Air Quality

The City of Irwindale is located in the South Coast Air Basin, which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and the San Bernardino Counties. In 1996, the federal standards for ozone and PM-10 were exceeded in this Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAQMD is responsible for monitoring and measuring air quality in the area and maintains a monitoring station in the City of Azusa.

The South Coast Air Basin has been declared a non-attainment area because it has levels of one or more pollutants exceeding national ambient air quality standards. Generally there are five main sources of air pollution emissions in the City of Irwindale: truck traffic; vehicular traffic (including employee work trips); on-site gas/diesel powered equipment operations; stationary emissions from asphalt and cement plants, and particulate matter associated with mining activities.

The area's climate is semi-arid and characterized by moist, mild winters and hot, dry summers accompanied by sea breezes. Wind patterns vary seasonally; westerly winds predominate in the summer months and northeasterly winds in the winter months. Local Southern California weather is affected by winter storms moving along the Pacific Coast, warm tropical air masses, and hot, dry Santa Ana winds caused by high-pressure systems in the Great Basin.

The dominant daily wind pattern consists of a daytime sea breeze blowing inland from the ocean followed by a nighttime land breeze blowing from the inland areas toward the coast. The climate in Irwindale is consistent with the region's temperate weather patterns. The average daily temperatures range from between 40 F. and 90°F. with an average annual temperature of 64.4°F. Annual precipitation averages approximately 15 to 18 inches per year with most of this precipitation occurring during the winter months. During the summer, the air within the high-pressure center over the ocean sinks and warms. Near the ocean's surface, the air cools due to its contact with the cooler water. This forms a shallow, well-mixed layer of marine air approximately 1,000 feet deep capped by a massive layer of warm air. Pollutants emitted near the ground remain trapped within that shallow layer.

As each pollution source adds its contribution to that layer, the air arriving at the eastern portion of the Los Angeles metropolitan area may become highly polluted with visibility-degrading aerosols and with unhealthful, invisible gaseous pollutants. This condition will continue and become more concentrated until either the inversion breaks or surface winds increase to disperse the pollutants horizontally. The primary source of emissions in

Irwindale include the quarry operations and the industries within the City as well as the numerous trucks and cars operating on the city's roadways and on the San Gabriel River and the Foothill Freeways that traverse the city. In addition, air pollution generated by traffic and point sources in the immediate vicinity and in the surrounding region contributes to the overall decline in air quality within the city. The SCAQMD is responsible for the implementation of the protocols of the Federal Clean Air Act. In addition, the SCAQMD is responsible for ensuring that the more stringent California clean air standards are met. The SCAQMD Governing Board adopted the 2003 Air Quality Management Plan (AQMP) on August 1, 2003. The 2003 AQMP replaced the 1997 AQMP and included an update of the attainment demonstration for the federal standards for ozone and particulate matter (PM_{10}), replaced the 1997 attainment demonstration for the Federal carbon monoxide (CO) standard with a maintenance plan for CO for the future; and updated the maintenance plan for the Federal nitrogen dioxide (NO_2) standard that the South Coast Air Basin (SCAB) has met since 1992. The most recent revisions to the AQMP also addressed several State and Federal planning requirements and incorporated significant new scientific data. Pollutants regulated by the Federal and State Clean Air Acts include the following:

- Criteria air pollutants;
- Toxic air contaminants, and
- Global warming and ozone-depleting gases.

Pollutants in each of these categories are monitored and regulated differently. Criteria air pollutants are measured by ambient air sampling. For some criteria pollutants, such as carbon monoxide, there are also secondary standards designed to protect the environment, in addition to human health. Toxic air contaminants are typically measured at the source and their evaluation and control is generally site or project-specific. Finally, global warming and ozone-depleting gases are not monitored though sources of green house gas emissions are subject to Federal and regional policies that call for their eventual elimination.

The EPA has established National Ambient Air Quality Standards (NAAQS) for the following air pollutants: ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), lead (Pb), particulate matter (PM^{10}), and fine particulate matter ($PM^{2.5}$). In May 1999, the Federal Court of Appeals in Washington, D.C. overturned the $PM^{2.5}$ standard. Pending the court decision on the rehearing, the new standard cannot be implemented. It is possible for the EPA to re-promulgate the standard with a more adequate explanation, if the appeal is denied). The EPA recently issued a notice of proposed revisions to the NAAQS) for particulate matter. The EPA will take final action on the proposal by September 27, 2006. This notice provides advance notice of key issues for consideration in the development of potentially new or revised policies and/or regulations to implement revisions to the NAAQS for PM. The EPA's preferred approach is to revoke of the 1997 $PM_{2.5}$ standards once any new 2006 $PM_{2.5}$ standards would be in place, and to revoke the 24-hour PM_{10} standard in areas where it would remain after promulgation of any new $PM_{10-2.5}$ standards. The Federal standards are shown in Table 6-4.

The California Air Resources Board (CARB) has also established ambient air quality standards for six of the aforementioned pollutants regulated by the EPA (CARB has not established standards for $PM^{2.5}$). Some of the California ambient air quality standards are more stringent than the national ambient air quality standards. In addition, California has established ambient air quality standards for the following: sulfates, vinyl chloride, and visibility. Table 6-4 lists the current national and California ambient air quality standards for each criteria pollutant.

Table 6-4
National and California Ambient Air Quality Standards

Pollutants	National Standards	State Standards
Lead (Pb)	1.5 μg/m3(calendar quarter)	1.5 μg/m3 (30-day average)
Sulfur Dioxide (S02)	0.14 ppm (24-hour)	0.25 ppm (1-hour) 0.04 ppm (24-hour)
Carbon Monoxide (CO)	9.0 ppm(8-hour) 35 ppm(1-hour)	9.0 ppm (8-hour) 20 ppm (1-hour)
Nitrogen Dioxide (NO2)	0.053 ppm (annual average)	0.25 ppm (1-hour)

Table 6-4 National and California Ambient Air Quality Standards (continued)		
Pollutants	**National Standards**	**State Standards**
Ozone (O3)	0.12 ppm (1-hour)	0.09 ppm (1-hour)
Fine Particulate Matter (PM10)	150 µg/m3 (24-hour)	50 µg/m3 (24-hour)
Sulfate	None	25 µg/m3 (24-hour)
Visual Range	None	10 miles (8-hour) w/humidity < 70 percent
Source: South Coast Air Quality Management District. 2004		

The criteria pollutants of special concern include the following:

- *Ozone (O_2)* is a nearly colorless gas that irritates the lungs and damages materials and vegetation. O_2 is formed by photochemical reaction (when nitrogen dioxide is broken down by sunlight).
- *Carbon Monoxide (CO),* a colorless, odorless toxic gas that interferes with the transfer of oxygen to the brain, is produced by the incomplete combustion of hydrocarbon fuels.
- *Nitrogen dioxide (NO_2)* is a yellowish-brown gas that, at high levels, can cause breathing difficulties. NO_2 is formed when nitric oxide (a pollutant from burning processes) combines with oxygen. Although NO_2 concentrations have not exceeded Federal standards since 1991 and the State hourly standard since 1993, NO_x emissions remain a concern because of their contribution to the formation of O_3 and particulate matter.
- *Sulfur dioxide* (SO_2) is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms and difficulty in breathing for children.
- *PM* refers to particulate matter less than ten microns in diameter. PM_{10} causes a greater health risk than larger-sized particles, since fine particles can more easily cause respiratory irritation.

The sources and potential health effects of the criteria pollutants are summarized in Table 6-5.

Table 6-5 Primary Sources and Effects of Criteria Pollutants		
Pollutants	**Emissions Source**	**Primary Effects (including health effects)**
Sulfur Dioxide (SO^2)	Combustion of sulfur-containing fossil fuels Smelting of sulfur-bearing metal ores Industrial processes	Plant injury Reduced visibility Deterioration of metals, textiles, leather, & finishes Irritation of eyes Aggravation of respiratory diseases (asthma, emphysema)
Carbon Monoxide (CO)	Incomplete combustion of fuels and other carbon-containing substances, such as motor vehicle exhaust Natural events, such as decomposition of organic matter	Plant injury Reduced visibility Deterioration of metals, textiles, leather, finishes, coatings Irritation of eyes Aggravation of respiratory diseases (asthma, emphysema)
Nitrogen Dioxide (NO^2)	Motor vehicle exhaust High-temperature stationary combustion Atmospheric reactions	Aggravation of respiratory illness Reduced visibility Reduced plant growth Formation of acid rain
Ozone (O^3)	Atmospheric reaction of organic gases with nitrogen oxides in sunlight	Plant leaf injury Irritation of eyes Aggravation of respiratory & cardiovascular diseases Impairment of cardiopulmonary function
Fine Particulate Matter (PM)	Mining of Aggregate Stationary combustion of solid fuels Construction activities Industrial processes Atmospheric chemical reactions	Soiling Reduced visibility Aggravation of the effects of gaseous pollutants Increased cough and chest discomfort Aggravation of respiratory and cardio-respiratory diseases
Source: South Coast Air Quality Management District.		

SAFETY PLAN

Public Safety Element Policies

The policies included in this element focus on the following major issue areas:

- The City's commitment to emergency preparedness as a means to respond to disasters resulting from earthquakes, hazardous materials incidents, and other natural and man-made hazards; and

- The City's commitment to reduce the high levels of noise exposure associated with the existing development and transportation facilities in the City.

Issue Area – Emergency Preparedness. The City of Irwindale will strive to maintain the highest levels of readiness to respond to disasters or local emergencies.

Safety Element Policy 1. The City of Irwindale will continue to review and if necessary, update its comprehensive emergency preparedness plan and hazard mitigation plan.

Safety Element Policy 2. The City of Irwindale, at a minimum, will maintain current emergency response standards.

Safety Element Policy 3. The City of Irwindale will work to reduce potential hazards through conscientious land use planning. The City shall require liquefaction assessment studies as part of development proposals in areas identified by the California Geological Survey as susceptible to liquefaction. The studies shall be conducted in accordance with the California Geological Survey's Special Publication 117; Guidelines for Evaluating and Mitigating Seismic Hazards in California, and the Southern California Earthquake Center's (1999) procedures to implement Special Publication 117 – Liquefaction Hazards (both documents are incorporated herein by reference). On

Chapter 9.28 - NOISE REGULATION

Sections:

Footnotes:

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** For statutory provisions dealing with noise control, see Health and Saf. Code § 46000 et seq. ; for provisions on the requirement of noise element as a guideline for use in land development, see Gov. Code § 65302(G); for provisions on noise limits for motor vehicles, see Vehicle Code § 27200 et seq.*

9.28.010 - Declaration of policy.

It is declared to be the policy of the city to prohibit unnecessary, excessive and annoying noises from all sources subject to its police power and contrary to the public interest. At certain levels noises are detrimental to the health and welfare of the citizenry and in the public interest shall be systematically proscribed.

(Ord. 297 § 1(part), 1976: prior code § 4800).

9.28.020 - Definitions.

As used in this chapter, unless the context otherwise clearly indicates, the words and phrases used in this chapter are defined as follows:

A. "Ambient base noise level" means reasonable and representative ambient noise levels in various land use categories in the city and at various times as established by the planning commission.

B. "Ambient noise level" means the all-encompassing noise associated with a given environment, usually being a composite of sounds with many sources excluding the alleged offensive noise at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

C. "Commercial purpose" means and includes the use, operation, or maintenance of any sound amplifying equipment for the purpose of advertising any business, or any good, or any services, or for the purpose of attracting the attention of the public to, or advertising for, or soliciting patronage or customers to or for any performance, show entertainment, exhibition, or event, or for the purpose of demonstrating any such sound equipment.

D. "Decibel (dB)" means a unit of level which denotes the ratio between two quantities which are proportional to power; the number of decibels corresponding to the ratio of two amounts of power is ten times the logarithm to the base ten of this ratio.

E. "Emergency work" means work made necessary to restore property to a safe condition following a public calamity, or work required to protect persons or property from an imminent exposure to danger, or work performed by public utilities or public agencies and utility companies.

F. "Motor vehicles" includes, but is not limited to, off-road vehicles, minibikes and gocarts.

G. "Noise level" means the "A" weighted sound pressure level in decibels obtained by using a sound level meter at slow response with a reference pressure of twenty micronewtons per square meter. The unit of measure is the dB(A).

H. "Noncommercial purpose" means the use, operation, or maintenance of any sound amplifying equipment for other than a commercial purpose. "Noncommercial purpose" means and includes, but shall not be limited to, philanthropic, political, patriotic and charitable purposes.

I. "Person" means a person, firm, association, copartnership, joint venture, corporation, or any entity, public or private in nature.

J. "Sound amplifying equipment" means any machine or device for the amplification of the human voice, music, or any other sound. "Sound amplifying equipment" does not include standard automobile radios when used and heard only by the occupants of the vehicle in which the automobile radio is installed. "Sound amplifying equipment," as used in this chapter, does not include warning devices on authorized emergency vehicles or horns or other warning devices on any vehicle used only for traffic safety purposes.

K. "Sound level meter" means an instrument meeting American National Standard Institute's Standard S1.4-1971 for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

L. "Sound pressure level," in decibels, of a sound means twenty times the logarithm to the base ten of the ratio of the pressure of this sound to the reference pressure, which reference pressure shall be explicitly stated.

M. "Sound truck" means any motor vehicle, or any other vehicle regardless of motive power, whether in motion or stationary, having mounted thereon, or attached thereto, any sound amplifying equipment.

(Ord. 297 § 1(part), 1976: prior code § 4801).

9.28.030 - Ambient base noise levels designated—Proof of violation.

A. Where the ambient noise level is less than designated in this section, the ambient base noise level in this section shall govern.

Zone	Ambient Base Noise Level

	10 p.m. to 7 a.m.	7 a.m. to 10 p.m.
Residential	45	50
Commercial	50	55
Industrial	60	70

B. Any noise at a level which exceeds the ambient or the ambient base level as set forth in subsection A of this section, whichever is greater, by more than ten dB when measured at any boundary line of the property from which the noise emanates shall constitute sufficient proof of a violation.

(Ord. 297 § 1(part), 1976: prior code § 4803).

9.28.040 - Noise level violation designated.

It is unlawful for any person to wilfully make or continue, or cause to be made or continued any noise at a level which exceeds by more than five dB the ambient or the ambient base level as set forth in Section 9.28.030, whichever is greater, when measured at any boundary line of the property from which the noise emanates.

(Ord. 297 § 1(part), 1976: prior code § 4804).

9.28.050 - Radios, television sets and similar devices.

It is unlawful for any person within any residential zone of the city to use or operate any radio receiving set, musical instrument, phonograph, television set or other machine or device for the producing or reproducing of sound in a manner which would constitute a violation of Section 9.28.040.

(Ord. 297 § 1(part), 1976: prior code § 4820).

9.28.060 - Hawkers and peddlers.

It is unlawful for any person within the city to sell anything by outcry within any area of the city zones for residential uses.

(Ord. 297 § 1 (part), 1976: prior code § 4821).

9.28.070 - Drums.

It is unlawful for any person to use any drum or other instrument or device of any kind for the purpose of attracting attention for commercial purposes by the creation of noise within the city. This section shall not apply to any person who is a participant in a duly authorized parade or who has been otherwise duly authorized to engage in such conduct.

(Ord. 297 § 1(part), 1976: prior code § 4822).

9.28.080 - Schools and churches.

It is unlawful for any person to create any noise on any street, sidewalk or public place adjacent to any school, institution of learning, or church while the same is in use, if such noise unreasonably interferes with the working of such institution or would constitute a violation of Section 9.28.040.

(Ord. 297 § 1(part), 1976: prior code § 4823).

9.28.090 - Animals and fowl.

No person shall keep or maintain, or permit the keeping of, upon any premises owned, occupied or controlled by such person, any animal or fowl otherwise permitted to be kept which, by any sound, cry, or behavior, shall cause noise in any residential neighborhood which would constitute a violation of Section 9.28.040, or otherwise constitute a nuisance.

(Ord. 297 § 1(part), 1976: prior code § 4824).

9.28.100 - Machinery, equipment, fans, and air conditioning.

It is unlawful for any person to operate any machinery, equipment, pump, fan, air-conditioning apparatus, or similar mechanical device in any manner so as to create any noise which would cause the noise level at any boundary line of any property from which such noise emanates to exceed the ambient noise level or the ambient base level as set forth in Section 9.28.030, whichever is greater, by more than ten decibels; provided, however, this section shall not prevent the reasonable operation of customary household gardening equipment or hobby shop equipment during the hours of eight a.m. to nine p.m., Monday through Saturday, and ten a.m. to eight p.m. on Sunday, provided the same may not exceed eighty decibels (as measured from the adjacent property line) for more than three hours from sunup to sundown.

(Ord. 297 § 1(part), 1976: prior code § 4825).

9.28.110 - Construction of building and projects—Times specified.

A. It is unlawful for any person within a residential zone, or within a radius of five hundred feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist or other construction type device on a development requiring a city permit, in such a manner that noise is produced which would constitute a violation of Section 9.28.040, unless beforehand authorization therefor has been duly obtained from the building inspector. Such activity is unlawful without a permit during all hours on Sunday. No permit shall be required to perform emergency work as defined in subsection E of 9.28.020.

B. Construction authorized by subsection A of this section shall be limited to seven a.m. to seven p.m.

(Ord. 297 § 1(part), 1976: prior code § 4830).

9.28.120 - Industry and racetracks.

The noise level from industrial plants, auto wreckers, junkyards, racetracks or other industrial user shall not exceed the levels set forth in Section 9.28.040, except as may be specifically authorized by permit from the city.

(Ord. 297 § 1(part), 1976: prior code § 4860).

9.28.130 - Vehicle repairs.

It is unlawful for any person within any residential area of the city to repair, rebuild or test any motor vehicle thereby producing noise which would constitute a violation of Section 9.28.040.

(Ord. 297 § 1 (part), 1976: prior code § 4840).

9.28.140 - Motor-driven vehicles.

It is unlawful for any person to operate any motor-driven vehicle within the city in such a manner producing noise which would constitute a violation of Section 9.28.040.

(Ord. 297 § 1(part), 1976: prior code § 4841).

9.28.150 - Amplified sound—Purpose of provisions.

The council enacts this legislation for the sole purpose of securing and promoting the public health, comfort, safety and welfare for its citizenry. While recognizing that the use of sound amplifying equipment for certain purposes is protected by the constitutional rights of freedom of speech and assembly, the council nevertheless feels obligated to reasonably regulate the use of sound amplifying equipment in order to protect the correlative constitutional rights of the citizens of this community to privacy and freedom from public nuisance of loud and unnecessary noise.

(Ord. 297 § 1(part), 1976: prior code § 4850).

9.28.160 - Amplified sound—Commercial use prohibited.

It is unlawful for any person to install, use, or operate within the city for commercial purposes, a loudspeaker or sound amplifying equipment in a fixed or movable position or mounted upon an.y sound truck.

(Ord. 297 § 1(part), 1976: prior code § 4851).

9.28.170 - Amplified sound—Registration statement—Required.

It is unlawful for any person, other than personnel of law enforcement or governmental agencies, to install, use or operate within the city for noncommercial purposes a loudspeaker or sound amplifying equipment in a fixed or movable position or mounted upon any sound truck for the purposes of giving instructions, directions, talks, addresses, lectures or transmitting music to any persons or assemblages of persons in or upon any street, alley, sidewalk, park, place or public property without first filing a registration statement and obtaining approval thereof, as set forth in Section 9.28.180.

(Ord. 297 § 1(part), 1976: prior code § 4852).

9.28.180 - Amplified sound—Registration statement—Filing—Approval—Disapproval—Revocation.

A. Filing. Every user of sound amplifying equipment for noncommercial purposes shall file a registration statement with the chief of police ten days prior to the date on which the sound amplifying equipment is intended to be used, which statement shall contain the following information:

1. The name, address and telephone number of both the owner and user of the sound amplifying equipment;
2. The maximum sound producing power of the sound amplifying equipment which shall include the wattage to be used, the volume in decibels of sound which will be produced, and the approximate distance for which sound will be audible from the sound amplifying equipment;
3. The license and motor number if a sound truck is to be used;
4. A general description of the sound amplifying equipment which is to be used; and
5. The nature of the use of the sound amplifying equipment proposed to be used for noncommercial purposes.

B. Approval. The chief of police shall return to the applicant an approved certified copy of the registration statement unless he finds that:

1. The conditions of the motor vehicle movement are such that in the opinion of the chief of police, use of the equipment would constitute a detriment to traffic safety; or
2. The conditions of pedestrian movement are such that use of the equipment would constitute a detriment to traffic safety; or

3. The registration statement required reveals that the applicant would violate the provisions set forth in Section 9.28.150, or any other provisions of this code.

C. Disapproval. In the event the registration statement is disapproved, the chief of police shall endorse upon the statement his reasons for disapproval and return it forthwith to the applicant.

D. Revocation. Any such permit may be revoked for violation of Section 9.28.150.

(Ord. 297 § 1(part), 1976: prior code § 4853).

9.28.190 - Amplified sound—Appeals.

Any person aggrieved by disapproval of a registration statement may file an appeal to the city council within ten days of the date of disapproval. The city council shall decide the appeal at its next meeting.

(Ord. 297 § 1(part), 1976: prior code § 4854).

9.28.200 - Amplified sound—Regulations of noncommercial use.

The noncommercial use of sound amplifying equipment shall be subject to the following regulations:

A. The only sound permitted shall be either music or human speech or both.

B. The operation of sound amplifying equipment shall only occur between the hours of eight a.m. and six p.m. each day except on Sundays and legal holidays. The operation of sound amplifying equipment on Sundays and legal holidays shall only occur between the hours of ten a.m. and six p.m.

C. No sound emanating from sound amplifying equipment shall exceed fifteen dB above the ambient as measured at any property line.

D. Notwithstanding the provisions of subsection C of this section, sound amplifying equipment shall not be operated within two hundred feet of churches, schools, or city or county buildings, except by special permit.

E. In any event, the volume of sound shall be so controlled that it will not be unreasonably loud, raucous, jarring, disturbing or a nuisance to reasonable persons of normal sensitiveness within the area of audibility.

(Ord. 297 § 1(part), 1976: prior code § 4855).

9.28.210 - Excessive noise prohibited.

Notwithstanding any other provision of this chapter, it is unlawful for any person to wilfully make or continue, or cause to be made or continued, any loud, unnecessary, or unusual noise which disturbs the peace or quiet of any neighborhood.

(Ord. 297 § 1(part), 1976: prior code § 4870).

9.28.220 - Standards for determining violation of Section 9.28.210.

The standards which may be considered in determining whether a violation of the provisions of Section 9.28.210 exists shall include, but not be limited to, the following:

A. The loudness of the noise;
B. The intensity of the noise;
C. Whether the nature of the noise is usual or unusual;
D. Whether the origin of the noise is natural or unnatural;
E. The loudness and intensity of the background noise, if any;
F. The proximity of the noise to residential sleeping facilities;
G. The nature and zoning of the area within which the noise emanates;
H. The density of the inhabitation of the area within which the noise emanates;
I. The time of the day or night the noise occurs;
J. The duration of the noise;
K. Whether the noise is recurrent, intermittent, or continuous; and
L. Whether the noise is produced by a commercial or residential activity.

(Ord. 297 § 1(part), 1976: prior code § 4871).

9.28.230 - Exclusions to chapter applicability.

The provisions of this chapter shall not apply to:

A. Sound produced by motor vehicles as regulated by sound limitation provisions of the California Vehicle Code when such vehicle is located or operated on any public street, right-of-way or highway;
B. Aircraft operated in conformity with federal law;
C. Public and private schools, organized activities including sports, carnivals, assemblies and other regular activities;
D. Construction, operation, maintenance and repairs of equipment, apparatus or facilities of park and recreation departments, public works projects or essential public services and facilities, including those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission;
E. Activities of the federal, state or local government;
F. Any noise continuing for less than thirty seconds at intervals greater than once in three hours.

(Ord. 297 § 1(part), 1976: prior code § 4880).

9.28.240 - Effect of chapter.

Nothing in this chapter shall authorize any use otherwise prohibited or regulated by this code.

(Ord. 297 § 1(part), 1976: prior code § 4808).

9.28.250 - Noise level enforcement criteria.

Enforcement of the provisions of this chapter shall be based on a noise level measurement to establish the noise level. The measurement shall be taken in accordance with the city's administrative instruction concerning noise level measurement procedure.

(Ord. 297 § 1(part), 1976: prior code § 4802).

9.28.251 - Residential parties—Publicized commercialism regulated.

A. Definitions. For the purpose of this section:

1. "Major party" means a group of more than fifty persons meeting together for social, recreational or amusement purposes, but excluding meetings for political, charitable or religious purposes.
2. "Residence" means:
   a. any property used for residential use; and
   b. any property situated in any of the residential zones as defined and zoned in the zoning code of this city.
3. "Publicized" means an open invitation circulated by flyer or advertised by publication, posting or distribution in or about public places suggesting unlimited or unreserved attendance.
4. "Commercial" means the suggestion or request of a monetary charge for admission.
5. "Permit" means a permit issued by either the city council, city manager or police chief. Such permit shall be issued upon application unless the issuer finds that such party will (or is likely to) cause problems relating to traffic, overcrowding, noise, hours after eleven p.m. or other matters affecting residential quality of life. Such permits may also contain appropriate conditions.

B. It is unlawful to have or permit a publicized commercial major party in a residence in this city without a permit or other than in compliance with such permit.

C. violation of this section is punishable by a fine not to exceed five hundred dollars or by imprisonment for not to exceed six months, or by both such fine and imprisonment.

(Ord. 408 § 1, 1986: Ord. 366 § 1, 1983).

9.28.260 - Violations—Penalties.

Any person violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be fined in an amount not exceeding five hundred dollars or be imprisoned in the county jail for a period not exceeding six months, or by both such fine and imprisonment. Each day such violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such.

(Ord. 297 § 1(part), 1976: prior code § 4805).

9.28.270 - Violations—Additional remedies—Injunctions.

As an additional remedy, the operation or maintenance of any device, instrument, vehicle, or machinery in violation of any provision of this chapter shall be deemed, and is declared to be, a public nuisance and may be subject to abatement summarily by a restraining order or injunction issued by a court of competent jurisdiction.

(Ord. 297 § 1(part), 1976: prior code § 4806).

Chapter 12.08 - NOISE CONTROL

Parts:

Part 1 - GENERAL PROVISIONS

12.08.010 - Title for citation.

The ordinance codified in this chapter may be cited as the "noise control ordinance of the county of Los Angeles."

(Ord. 11778 § 2 (Art. 1 § 101), 1978: Ord. 11773 § 2 (Art. 1 § 101), 1978.)

12.08.020 - Declaration of policy—Nuisances deemed misdemeanors.

A. In order to control unnecessary, excessive and annoying noise and vibration in the county of Los Angeles, it is declared to be the policy of the county to prohibit such noise and vibration generated from any sources as specified in this chapter. It shall be the policy of the county to maintain quiet in those areas which exhibit low noise levels and to implement programs aimed at reducing noise in those areas within the county where noise levels are above acceptable values.

B. It is determined that certain noise levels and vibration are detrimental to the public health, welfare and safety and contrary to public interest, and therefore the board of supervisors of the county does ordain and declare that creating, maintaining, causing or allowing to be created, caused or maintained any noise or vibration in a manner prohibited by or not in conformity with the provisions of this chapter is a public nuisance and shall be punishable as such.

(Ord. 11778 § 2 (Art. 2 § 201), 1978: Ord. 11773 § 2 (Art. 2 § 201), 1978.)

Part 2 - DEFINITIONS

12.08.030 - Terminology—Conformity with ANSI standards.

All terminology used in this chapter, not defined in this Part 2, shall be in conformance with applicable publications of the American National Standards Institute (ANSI) or its successor body.

(Ord. 11778 § 2 (Art. 3 § 301), 1978: Ord. 11773 § 2 (Art. 3 § 301), 1978.)

12.08.040 - Definitions applicable.

The following words, phrases and terms as used in this chapter shall have the meanings as indicated in this Part 2.

(Ord. 11778 § 2 (Art. 3 § 302 (part)), 1978: Ord. 11773 § 2 (Art. 3 § 302 (part)), 1978.)

12.08.050 - Agricultural property.

"Agricultural property" means a parcel of real property which is undeveloped for any use other than agricultural purposes.

(Ord. 11778 § 2 (Art. 3 § 302(a)), 1978: Ord. 11773 § 2 (Art. 3 § 302(a)), 1978.)

12.08.060 - Ambient noise histogram.

"Ambient noise histogram" means the composite of all noise from sources near and far, excluding the alleged intrusive noise source. In this context, the ambient noise histogram shall constitute the normal or existing level of environmental noise at a given location.

(Ord. 11778 § 2 (Art. 3 § 302(b)), 1978: Ord. 11773 § 2 (Art. 3 § 302(b)), 1978.)

12.08.070 - A-weighted sound level.

"A-weighted sound level" means the sound level in decibels as measured on a soundlevel meter using the A-weighting network. The level so read is designated dB (A) or dBA.

(Ord. 11778 § 2 (Art. 3 § 302(c)), 1978: Ord. 11773 § 2 (Art. 3 § 302(c)), 1978.)

12.08.080 - Commercial property.

"Commercial property" means a parcel of real property which is developed and used either in part or in whole for commercial purposes. In cases of multiple land uses of any property, the county zoning classification of such property pursuant to county Ordinance 1494, as amended, shall be applicable. (See Title 22 of this code.)

(Ord. 11778 § 2 (Art. 3 § 302(d)), 1978: Ord. 11773 § 2 (Art. 3 § 302(d)), 1978.)

12.08.090 - Construction.

"Construction" means any site preparation, assembly, erection, substantial repair, alteration, or similar action, for or of public or private rights-of-way, structures, utilities, or similar property.

(Ord. 11778 § 2 (Art. 3 § 302(e)), 1978: Ord. 11773 § 2 (Art. 3 § 302(e)), 1978.)

12.08.100 - Cumulative period.

"Cumulative period" means an additive period of time composed of individual time segments which may be continuous or interrupted.

(Ord. 11778 § 2 (Art. 3 § 302(f)), 1978: Ord. 11773 § 2 (Art. 3 § 302(f)), 1978.)

12.08.110 - Decibel.

"Decibel" means a unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base of 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals.

(Ord. 11778 § 2 (Art. 3 § 302(g)), 1978: Ord. 11773 § 2 (Art. 3 § 302(g)), 1978.)

12.08.120 - Dwelling unit.

"Dwelling unit" means a single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

(Ord. 11778 § 2 (Art. 3 § 302(h)), 1978: Ord. 11773 § 2 (Art. 3 § 302(h)), 1978.)

12.08.130 - Emergency machinery, vehicle or alarm.

"Emergency machinery, vehicle or alarm" means any machinery, vehicle or alarm used, employed, performed or operated in an effort to protect, provide or restore safe conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

(Ord. 11778 § 2 (Art. 3 § 302(i)), 1978: Ord. 11773 (Art. 3 § 302(i)), 1978.)

12.08.140 - Emergency work.

"Emergency work" means any work performed for the purpose of preventing or alleviating the physical trauma or property damage threatened or caused by an emergency.

(Ord. 11778 § 2 (Art. 3 § 302(j)), 1978: Ord. 11773 (Art. 3 § 302(j)), 1978.)

12.08.150 - Fixed noise source.

"Fixed noise source" means a stationary device which creates sounds while fixed or motionless, including but not limited to residential, agricultural, industrial and commercial machinery and equipment, pumps, fans, compressors, air conditioners and refrigeration equipment.

(Ord. 11778 § 2 (Art. 3 § 302(k)), 1978: Ord. 11773 (Art. 3 § 302(k)), 1978.)

12.08.160 - Grading.

"Grading" means any excavating or filling of earth material or any combination thereof conducted at a site to prepare said site for construction or other improvements thereon.

(Ord. 11778 § 2 (Art. 3 § 302(1)), 1978: Ord. 11773 (Art. 3 § 302(1)), 1978.)

12.08.170 - Health care institution.

"Health care institution" means any hospital, convalescent home, or other similar facilities which provide health care, medical treatment, room, board or other services for the ill, retarded or convalescent.

(Ord. 11778 § 2 (Art. 3 § 302(m)), 1978: Ord. 11773 (Art. 3 § 302(m)), 1978.)

12.08.180 - Health officer.

"Health officer" means the director of the department of public health of the county of Los Angeles, or his duly authorized representative.

(Ord. 2006-0040 § 106, 2006: Ord. 11778 § 2 (Art. 3 § 302(n)), 1978: Ord. 11773 (Art. 3 § 302(n)), 1978.)

12.08.190 - Impulsive noise.

"Impulsive noise" means a sound of short duration, usually less than one second and of high intensity, with an abrupt onset and rapid decay.

(Ord. 11778 § 2 (Art. 3 § 302(o)), 1978: Ord. 11773 (Art. 3 § 302 (o)), 1978.)

12.08.200 - Industrial property.

"Industrial property" means property which is developed and used either in part or in whole for manufacturing purposes. In cases of multiple land uses of any property, the county zoning classification of such property pursuant to county Ordinance 1494, as amended, shall be applicable. (See Title 22 of this code.)

(Ord. 11778 § 2 (Art. 3 § 302(p)), 1978: Ord. 11773 § 2 (Art. 3 § 302(p)), 1978.)

12.08.210 - Intrusive noise.

"Intrusive noise" means that alleged offensive noise which intrudes over and above the existing ambient noise at the receptor property.

(Ord. 11778 § 2 (Art. 3 § 302(q)), 1978: Ord. 11773 § 2 (Art. 3 § 302(q)), 1978.)

12.08.220 - Mobile noise source.

"Mobile noise source" means any noise source other than a fixed noise source.

(Ord. 11778 § 2 (Art. 3 § 302(r)), 1978: Ord. 11773 § 2 (Art. 3 § 302(r)), 1978.)

12.08.230 - Noise disturbance.

"Noise disturbance" means an alleged intrusive noise which violates an applicable noise standard as set forth in this chapter.

(Ord. 11778 § 2 (Art. 3 § 302(s)), 1978: Ord. 11773 § 2 (Art. 3 § 302(s)), 1978.)

12.08.240 - Noise histogram.

"Noise histogram" means a graphical representation of the distribution of frequency of occurrence of all noise levels near and far measured over a given period of time.

(Ord. 11778 § 2 (Art. 3 § 302(u)), 1978: Ord. 11773 § 2 (Art. 3 § 302(u)), 1978.)

12.08.250 - Noise level (L).

"Noise level (L_N)" means that noise level expressed in decibels which exceeds the specified (L_N) value as a percentage of total time measured. For instance, an L_{25} noise level means that noise level which is exceeded 25 percent of the time measured.

(Ord. 11778 § 2 (Art. 3 § 302 (v)), 1978: Ord. 11773 § 2 (Art. 3 § 302(v)), 1978.)

12.08.260 - Noise-sensitive zone.

"Noise-sensitive zone" means any area designated pursuant to Part 4 of this chapter for the purpose of ensuring exceptional quiet.

(Ord. 11778 § 2 (Art. 3 § 302(t)), 1978: Ord. 11773 § 2 (Art. 3 § 302(t)), 1978.)

12.08.270 - Noise zone.

"Noise zone" means any defined area or region of a generally consistent land use, as described in Section

12.08.380.

(Ord. 11778 § 2 (Art. 3 § 302(w)), 1978: Ord. 11773 § 2 (Art. 3 § 302(w)), 1978.)

12.08.280 - Person.

"Person" means any individual, firm, association, partnership, joint venture, or corporation.

(Ord. 11778 § 2 (Art. 3 § 302(x)), 1978: Ord. 11773 § 2 (Art. 3 § 302(x)), 1978.)

12.08.290 - Powered model vehicle.

"Powered model vehicle" means any self-propelled airborne, waterborne or landborne plane, vessel or vehicle which is not designed to carry individuals, including but not limited to any model airplane, boat, car or rocket.

(Ord. 11778 § 2 (Art. 3 § 302(y)), 1978: Ord. 11773 § 2(Art. 3 § 302(y)), 1978.)

12.08.300 - Public right-of-way.

"Public right-of-way" means any street, avenue, boulevard, highway, sidewalk or alley, or similar place, which is owned or controlled by a governmental entity.

(Ord. 11778 § 2 (Art. 3 § 302(z)), 1978: Ord. 11773 § 2 (Art. 3 § 302(z)), 1978.)

12.08.310 - Pure tone noise.

"Pure tone noise" means any sound which can be judged as audible as a single pitch or a set of single pitches by the health officer, for the purposes of this chapter, a pure tone shall exist if the one-third octave band sound-pressure level in the band with the tone exceeds the arithmetic average of the sound-pressure levels of the two contiguous one-third octave bands by 5 dB for center frequencies of 500 Hertz and above, and by 8 dB for center frequencies between 160 and 400 Hertz, and by 15 dB for center frequencies less than or equal to 125 Hertz.

(Ord. 11778 § 2 (Art. 3 § 302(aa)), 1978: Ord. 11773 § 2 (Art. 3 § 302(aa)), 1978.)

12.08.320 - Real property boundary.

"Real property boundary" means an imaginary line along the ground surface, and its vertical extension, which separates the real property owned by one person from that owned by another person, but not including intra-building real property divisions.

(Ord. 11778 § 2 (Art. 3 § 302(bb)), 1978: Ord. 11773 § 2 (Art. 3 § 302(bb)), 1978.)

12.08.330 - Residential property.

"Residential property" means a parcel of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels. In cases of multiple land uses of any property, the county zoning classification of such property pursuant to county Ordinance 1494, as amended, shall be applicable.

(Ord. 11778 § 2 (Art. 3 § 302(cc)), 1978: Ord. 11773 § 2 (Art. 3 § 302(cc)), 1978.)

12.08.340 - Sound level meter.

"Sound level meter" means an instrument, including a microphone, an amplifier, an output meter and frequency weighting network, for the measurement of sound levels, which satisfies the requirements pertinent for Type S2A meters in American National Standards Institute specifications for sound level meters, S1.4-1971, or the most recent revision thereof.

(Ord. 11778 § 2 (Art. 3 § 302(dd)), 1978: Ord. 11773 § 2 (Art. 3 § 302(dd)), 1978.)

12.08.350 - Vibration.

"Vibration" means the minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observations of moving objects. The perception threshold shall be presumed to be a motion velocity of 0.01 in/sec over the range of 1 to 100 Hertz.

(Ord. 11778 § 2 (Art. 3. § 302(ee)), 1978: Ord. 11773 § 2 (Art. 3 § 302(ee)), 1978.)

12.08.360 - Weekday.

"Weekday" means any day, Monday through Friday, which is not a legal holiday.

(Ord. 11778 § 2 (Art. 3 § 302(ff)), 1978: Ord. 11773 § 2 (Art. 3 § 302(ff), 1978.)

Part 3 - COMMUNITY NOISE CRITERIA

12.08.370 - Decibel measurement—Basis.

Any decibel measurement made pursuant to the provisions of this chapter shall be based on a reference sound-pressure of 20 micropascals, as measured with a sound level meter using the A-weighted network (scale) at slow response, or at the fast response when measuring impulsive sound levels and vibrations.

(Ord. 11778 § 2 (Art. 4 § 401), 1978: Ord. 11773 § 2 (Art. 4 § 401), 1978.)

12.08.380 - Noise zones designated.

Receptor properties described hereinafter in this chapter are hereby assigned to the following noise zones:

Noise Zone I—Noise-sensitive area; Noise Zone II—Residential properties; Noise Zone III—Commercial properties; Noise Zone IV—Industrial properties.

(Ord. 11778 § 2 (Art. 4 § 402), 1978: Ord. 11773 § 2 (Art. 4 § 402), 1978.)

12.08.390 - Exterior noise standards—Citations for violations authorized when.

A. Unless otherwise herein provided, the following exterior noise levels shall apply to all receptor properties within a designated noise zone:

Noise Zone	Designated Noise Zone Land Use (Receptor property)	Time Interval	Exterior Noise Level (dB)
I	Noise-sensitive area	Anytime	45
II	Residential properties	10:00 pm to 7:00 am (nighttime)	45
		7:00 am to 10:00 pm (daytime)	50

III	Commercial properties	10:00 pm to 7:00 am (nighttime)	55
		7:00 am to 10:00 pm (daytime)	60
IV	Industrial properties	Anytime	70

B. Unless otherwise herein provided, no person shall operate or cause to be operated, any source of sound at any location within the unincorporated county, or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level, when measured on any other property either incorporated or unincorporated, to exceed any of the following exterior noise standards:

Standard No. 1 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 30 minutes in any hour. Standard No. 1 shall be the applicable noise level from subsection A of this section; or, if the ambient L50 exceeds the foregoing level, then the ambient L50 becomes the exterior noise level for Standard No. 1.

Standard No. 2 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 15 minutes in any hour. Standard No. 2 shall be the applicable noise level from subsection A of this section plus 5dB; or, if the ambient L25 exceeds the foregoing level, then the ambient L25 becomes the exterior noise level for Standard No. 2.

Standard No. 3 shall be the exterior noise level which may not be exceeded for a cumulative period of more than five minutes in any hour. Standard No. 3 shall be the applicable noise level from subsection A of this section plus 20dB; or, if the ambient L8.3 exceeds the foregoing level, then the ambient L8.3 becomes exterior noise level for Standard No. 3.

Standard No. 4 shall be the exterior noise level which may not be exceeded for a cumulative period of more than one minute in any hour. Standard No. 4 shall be the applicable noise level from subsection A of this section plus 15dB; or, if the ambient L1.7 exceeds the foregoing level, then the ambient L1.7 becomes the exterior noise level for Standard No. 4.

Standard No. 5 shall be the exterior noise level which may not be exceeded for any period of time. Standard No. 5 shall be the applicable noise level from subsection A of this section plus 20dB; or, if the ambient L0 exceeds the foregoing level then the ambient L0 becomes the exterior noise level for Standard No. 5.

C. If the measurement location is on a boundary property between two different zones, the exterior noise level utilized in subsection B of this section to determine the exterior standard shall be the arithmetic mean of the exterior noise levels in subsection A of the subject zones. Except as provided for above in this subsection C, when an intruding noise source originates on an industrial property and is impacting another noise zone, the applicable exterior noise level as designated in subsection A shall be the daytime exterior noise level for the subject receptor property.

D. The ambient noise histogram shall be measured at the same location along the property line utilized in subsection B of this section, with the alleged intruding noise source inoperative. If for any reason the alleged intruding noise source cannot be turned off, the ambient noise histogram will be estimated by performing a measurement in the same general area of the alleged intruding noise source but at a sufficient distance such that the noise from the alleged intruding noise source is at least 10dB below the ambient noise histogram in order that only the actual ambient noise histogram be measured. If the difference between the ambient noise histogram and the alleged intruding noise source is 5 to 10dB, then the level of the ambient noise histogram itself can be reasonably determined by subtracting a one-decibel correction to account for the contribution of the alleged intruding noise source.

E. In the event the intrusive exceeds the exterior noise standards as set forth in subsections B and C of this section at a specific receptor property and the health officer has reason to believe that this violation at said specific receptor property was unanticipated and due to abnormal atmospheric conditions, the health officer shall issue an abatement notice in lieu of a citation. If the specific violation is abated, no citation shall be issued therefor. If, however, the specific violation is not abated, the health officer may issue a citation.

(Ord. 11778 § 2 (Art. 4 § 403), 1978: Ord. 11773 § 2 (Art. 4 § 403), 1978.)

12.08.400 - Interior noise standards.

A. No person shall operate or cause to be operated within a dwelling unit, any source of sound, or allow the creation of any noise, which causes the noise level when measured inside a neighboring receiving dwelling unit to exceed the following standards:

Standard No. 1 The applicable interior noise level for cumulative period of more than five minutes in any hour; or

Standard No. 2 The applicable interior noise level plus 5dB for a cumulative period of more than one minute in any hour; or

Standard No. 3 The applicable interior noise level plus 10dB or the maximum measured ambient noise level for any period of time.

B. The following interior noise levels for multifamily residential dwellings shall apply, unless otherwise specifically indicated, within all such dwellings with windows in their normal seasonal configuration.

Noise Zone	Designated Land Use	Time Interval	Allowable Interior Noise Level (dB)
All	Multifamily	10 pm—7 am	40
	Residential	7 am—10 pm	45

C. If the measured ambient noise level reflected by the L50 exceeds that permissible within any of the interior noise standards in subsection A of Section 12.08.390, the allowable interior noise level shall be increased in 5dB increments in each standard as appropriate to reflect said ambient noise level (L50).

(Ord. 11778 § 2(Art. 4 § 404), 1978: Ord. 11773 § 2 (Art. 4 § 404), 1978.)

12.08.410 - Correction for certain types of sounds.

For any source of sound which emits a pure tone or impulsive noise, the noise levels as set forth in Sections 12.08.390 and 12.08.400 shall be reduced by five decibels.

(Ord. 11778 § 2 (Art. 4 § 405), 1978: Ord. 11773 § 2 (Art. 4 § 405), 1978.)

12.08.420 - Measurement methods.

A. Utilizing the A-weighting scale of the sound-level meter and the "slow" meter response (use "fast" response for impulsive type sounds), the noise level shall be measured at a position or positions at any point on the receiver's property.

B. In general, the microphone shall be located four to five feet above the ground; 10 feet or more from the nearest reflective surface, where possible. However, in those cases where another elevation is deemed appropriate, the latter shall be utilized.

C. Interior noise measurements shall be made within the affected residential unit. The measurements shall be made at a point at least four feet from the wall, ceiling or floor nearest the noise source, with windows in the normal seasonal configuration. Calibration of the measurement equipment, utilizing an acoustic calibrator, shall be performed immediately prior to recording any noise data.

(Ord. 11778 § 2 (Art. 4 § 406), 1978: Ord. 11773 § 2 (Art. 4 § 406), 1978.)

Part 4 - SPECIFIC NOISE RESTRICTIONS

12.08.430 - Acts deemed violations when.

Notwithstanding any other provisions of this chapter, the acts set out in this Part 4, and the causing or permitting thereof, are declared to be in violation of this chapter.

(Ord. 11778 § 2 (Art. 5 § 501 (part)), 1978: Ord. 11773 § 2 (Art. 5 § 501 (part)), 1978.)

12.08.440 - Construction noise.

A. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real-property line, except for emergency work of public service utilities or by variance issued by the health officer is prohibited.

B. Noise Restrictions at Affected Structures. The contractor shall conduct construction activities in such a manner that the maximum noise levels at the affected buildings will not exceed those listed in the following schedule:

1. At Residential Structures.

   a. Mobile Equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment:

	Single-family Residential	Multi-family Residential	Semiresidential/ Commercial

Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75dBA	80dBA	85dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	60dBA	64dBA	70dBA

b. Stationary Equipment. Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment:

	Single-family Residential	Multi-family Residential	Semiresidential/ Commercial

Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60dBA	65dBA	70dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50dBA	55dBA	60dBA

2. At Business Structures.

a. Mobile equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:

Daily, including Sunday and legal holidays, all hours: maximum of 85dBA.

C. All mobile or stationary internal-combustion-engine powered equipment or machinery shall be equipped with suitable exhaust and air-intake silencers in proper working order.

D. In case of a conflict between this chapter and any other ordinance regulating construction activities, provisions of any specific ordinance regulating construction activities shall control.

(Ord. 11778 § 2 (Art. 5 § 501(c)), 1978: Ord. 11778 § 2 (Art. 5 § 501(c)), 1978.)

12.08.450 - Forced-air blowers in tunnel car washes.

Operating or permitting the operation of any forced-air blower in a tunnel car wash between the hours of 7:00 a.m. and 8:00 p.m. in such a manner as to exceed any of the following sound levels is prohibited:

	Units Installed	
Measurement Location	Before 1-1-80 dB	On or After 1-1-80 dB
Any point on contiguous receptor property, five feet above grade level, no closer than three feet from any wall		
Residential	70	60
Commercial/Industrial	75	65

(Ord. 11778 § 2 (Art. 5 § 501(m)), 1978: Ord. 11773 § 2 (Art. 5 § 501(m)), 1978.)

12.08.460 - Loading and unloading operations.

Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans or similar objects between the hours of 10:00 p.m. and 6:00 a.m. in such a manner as to cause noise disturbance is prohibited.

(Ord. 11778 § 2 (Art. 5 § 501(b)), 1978: Ord. 11773 § 2 (Art. 5 § 501(b)), 1978.)

12.08.470 - Noise disturbances in noise-sensitive zones.

A. Creating or causing the creation of any noise disturbance within any noise-sensitive zone, as designated by the health officer, is prohibited, provided that conspicuous signs are displayed indicating the presence of the zone.

B. Noise-sensitive zones must be indicated by the display of conspicuous signs in at least three separate locations within 164 meters (one-tenth mile) of the institution or facility.

(Ord. 11778 § 2 (Art. 5 § 501(k)), 1978: Ord. 11773 § 2(Art. 5 § 501(k)), 1978.)

12.08.480 - Places of public entertainment.

Operating, playing or permitting the operation or playing of any radio, television, phonograph, drum, musical instrument, sound amplifier or similar device which produces, reproduces or amplifies sound in any place of public entertainment at a sound level greater than 95dBA, as read by the slow response on a soundlevel meter at any point that is normally occupied by a customer is prohibited, unless a conspicuous and legible sign is located outside such place, near each public entrance, stating "WARNING: SOUND LEVELS WITHIN MAY CAUSE HEARING IMPAIRMENT."

(Ord. 11778 § 2 (Art. 5 § 501(f)), 1978: Ord. 11773 § 2 (Art. 5 § 501(f)), 1978.)

12.08.490 - Powered model vehicles.

Operating or permitting the operation of powered model vehicles so as to create a noise disturbance across a residential real-property boundary, or within a noise-sensitive zone between the hours of 8:00 p.m. and 7:00 a.m. the following day is prohibited.

(Ord. 11778 § 2 (Art. 5 § 501(g)), 1978: Ord. 11773 § 2 (Art. 5 § 501(g)) 1978.)

12.08.500 - Emergency signaling devices.

A. The intentional sounding or permitting the sounding outdoors of any emergency signaling device, including fire, burglar or civil-defense alarm, siren, whistle, or similar stationary emergency signaling device, except for emergency purposes or for testing, as provided in subsection B2 below, is prohibited.

B. 1. Testing of a stationary emergency signaling device shall not occur before 7:00 a.m. or after 7:00 p.m. Any such testing shall use only the minimum cycle test time. In no case shall such test time exceed 60 seconds.

2. Testing of the complete emergency signaling system, including the functioning of the signaling device, and the personnel response to the signaling device, shall not occur more than once in each calendar month. Such testing shall not occur before 7:00

a.m. or after 10:00 p.m. The time limit specified in subsection B1 above shall not apply to such complete-system testing.

C. Sounding or permitting the sounding of any exterior burglar or fire alarm, or any motor-vehicle burglar alarm is prohibited, unless such alarm is terminated within 15 minutes of activation.

(Ord. 11778 § 2 (Art. 5 § 501(i)), 1978: Ord. 11773 § 2 (Art. 5 § 501(i)), 1978.)

12.08.510 - Stationary nonemergency signaling devices.

A. Sounding or permitting the sounding of any electronically amplified signal from any stationary bell, chime, siren, whistle, or similar device intended primarily for nonemergency purposes, from any place, for more than 10 consecutive seconds in any hourly period is prohibited.
B. Houses of religious worship shall be exempt for the operation of this provision.
C. Sound sources covered by this provision and not exempted under subsection B may be exempted by a variance issued by the health officer.

(Ord. 11778 § 2 (Art. 5 § 501(h)), 1978: Ord. 11773 § 2(Art. 5 § 501(h)), 1978.)

12.08.520 - Refuse collection vehicles.

A. On or after three years following August 17, 1978, the effective date of the ordinance codified in this chapter, operating or permitting the operation of the compacting mechanism of any motor vehicle which compacts refuse and which creates, during the compacting cycle, a sound level in excess of 86dBA when measured at 50 feet from any point of the vehicle is prohibited.
B. Operating or permitting the operation of the compacting mechanism of any motor vehicle which compacts refuse between the hours of 10:00 p.m. and 6:00 a.m. the following day in a residential area or noise-sensitive zone, or within 500 feet thereof is prohibited.
C. Collecting refuse with collection vehicle between the hours of 10:00 p.m. and 6:00 a.m. the following day in a residential area or noise-sensitive zone or within 500 feet thereof.
D. In the case of conflict between this chapter and any other ordinance regulating refuse collection, provisions of any specific ordinance regulating refuse collection shall control.

(Ord. 11778 § 2 (Art. 5 § 501(j)), 1978: Ord. 11773 § 2 (Art. 5 § 501(j)), 1978.)

12.08.530 - Residential airconditioning or refrigeration equipment.

Operating or permitting the operation of any airconditioning or refrigeration equipment in such a manner as to exceed any of the following sound levels is prohibited.

Measurement Location	Units Installed Before 1-1-80 dBA	Units Installed On or After 1-1-80 dBA
Any point on neighboring property line, 5 feet above grade level, no closer than 3 feet from any wall.	60	55
Center of neighboring patio, 5 feet above grade level, no closer than 3 feet from any wall.	55	50

Outside the neighboring living area window nearest the equipment location, not more than 3 feet from the window opening, but at least 3 feet from any other surface.	55	50

(Ord. 11778 § 2 (Art. 5 § 501(1)), 1978: Ord. 11773 § 2 (Art. 5 § 501(1)), 1978.)

12.08.540 - Street sales.

Offering for sale, selling anything, or advertising by shouting or outcry within any residential or commercial area or noise-sensitive zone of the unincorporated areas of the county is prohibited except by variance issued by the health officer. The provisions of this section shall not be construed to prohibit the selling by outcry of merchandise, food and beverages at licensed sporting events, parades, fairs, circuses, or other similar licensed public-entertainment events.

(Ord. 11778 § 2 (Art 5 § 501(a)), 1978: Ord. 11773 § 2 (Art. 5 § 501(a)), 1978.)

12.08.541 - Street sales—Restrictions on sound system speakers.

A person offering for sale, selling or advertising anything edible shall not emit music or other sounds from an external speaker affixed to a motor vehicle between the hours of 8:00 p.m. and 6:00 a.m. within any residential, commercial or noise sensitive-zone of the unincorporated area of the County. The provisions of this section shall not be construed to prohibit the selling by outcry of merchandise, food and beverages, at licensed sporting events, parades, fairs, circuses, or other similar licensed-entertainment events.

(Ord. 2002-0028 § 2, 2002)

12.08.550 - Vehicle or motorboat repairs and testing.

Repairing, rebuilding, modifying or testing any motor vehicle, motorcycle or motorboat in such a manner as to cause a noise disturbance across a real-property boundary or within a noisesensitive zone is prohibited.

(Ord. 11778 § 2 (Art. 5 § 501(e)), 1978: Ord. 11773 § 2 (Art. 5 § 501(e)), 1978.)

12.08.560 - Vibration.

Operating or permitting the operation of any device that creates vibration which is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at 150 feet (46 meters) from the source if on a public space or public right-of-way is prohibited. The perception threshold shall be a motion velocity of 0.01 in/sec over the range of 1 to 100 Hertz.

(Ord. 11778 § 2 (Art. 5 § 501(d)), 1978: Ord. 11773 § 2 (Art. 5 § 501(d)), 1978.)

Part 5 - EXEMPTIONS

12.08.570 - Activities exempt from chapter restrictions.

The following activities set out in this chapter shall be exempted from the provisions of this chapter:

A. Emergency Exemption. The emission of sound for the purpose of alerting persons to the existence of an emergency, or the emission of sound in the performance of emergency work;
B. Warning Devices. Warning devices necessary for the protection of public safety, as for example police, fire and ambulance sirens, and train horns;
C. Outdoor Activities. Activities conducted on public playgrounds and public or private school grounds, including but not limited to school athletic and school entertainment events;
D. Exemption from Exterior Noise Standards. The following activities are exclusively regulated by the prohibitions of Part 4 of this chapter:
    1. Construction,
    2. Stationary nonemergency signaling devices,

3. Emergency signaling devices,
4. Refuse collection vehicles,
5. Residential air-conditioning or refrigeration equipment,
6. Forced-air blowers;

E. Motion Picture Production and Related Activities;

F. Railroad Activities. All locomotives and rail cars operated by any railroad which is regulated by the California Public Utilities Commission;

G. Federal or State Preexempted Activities. Any activity, to the extent regulation thereof has been preempted by state or federal law;

H. Public Health and Safety Activities. All transportation, flood control, and utility company maintenance and construction operations at any time on public right-of-way, and those situations which may occur on private real property deemed necessary to serve the best interest of the public and to protect the public's health and well being, including but not limited to street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers, snow removal, house moving, vacuuming catchbasins, removal of damaged poles and vehicles, repair of water hydrants and mains, gas lines, oil lines, sewers, etc.;

I. Motor Vehicles on Private Right-of-way and Private Property. Except as provided in Section 12.08.550, all legal vehicles of transportation operating in a legal manner in accordance with local, state and federal vehicle-noise regulations within the public right-of-way or air space, or on private property;

J. Seismic Surveys Authorized by the State Land Commission;

K. Agricultural Operations. All mechanical devices, apparatus or equivalent associated with agricultural operations conducted on agricultural property, unless if in the vicinity of residential land uses, in which case a variance permit is required to operate noise-producing devices, with the following stipulations:

1. Operations do not take place between 8:00 p.m. and 6:00 a.m., or
2. Such operations and equipment are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions, or
3. Such operations and equipment are associated with agricultural pest-control through pesticide application, provided the application is made in accordance with

permits issued by or regulations enforced by the county agricultural commissioner,

4. Such devices utilized for pest control which incorporate stationary or mobile noise sources (electro-mechanical birdscare devices, etc.) are operated only by permit issued by the health officer. The allowable hours and days for operation of these devices will be specified in the permit,
5. All equipment and machinery powered by internal combustion engines shall be equipped with a proper muffler and air-intake silencer in good working order;

L. Minor Maintenance to Residential Real Property. Noise sources associated with the minor maintenance of residential real property, provided said activities take place as follows:

1. During Pacific Standard Time between the hours of 8:00 a.m. and 6:00 p.m. on any day except Sunday, when such activities may take place between the hours of 9:00 a.m. and 6:00 p.m., and
2. During Daylight Savings Time between the hours of 8:00 a.m. and 7:00 p.m. on any day except Sunday, when such activities may take place between the hours of 9:00 a.m. and 6:00 p.m.;

M. Operation of Oil and Gas Wells.

1. Normal well servicing, remedial or maintenance work performed within an existing well which does not involve drilling or redrilling and which is restricted to the hours between 7:00 a.m. and 10:00 p.m., and
2. Drilling or redrilling work which is done in full compliance with the conditions of permits issued under Chapter 5, Article 1, of the County Zoning Ordinance, as amended, as set out in Title 22 of this code.

(Ord. 97-0007 § 1, 1997: Ord. 11778 § 2(Art. 6 § 601), 1978: Ord. 11773 § 2 (Art. 6 § 601), 1978.)

Part 6 - VARIANCES

12.08.580 - Conditions for granting variances—Health officer authority.

A. Variances from the requirements of this chapter may be granted by the health officer for a period of not to exceed two years, subject to such terms, conditions and requirements as he may deem reasonable. A variance may be granted only if the health officer makes the findings that:

1. Additional time is necessary for the applicant to alter or modify his activity, operation or noise source to comply with this chapter; or
2. The activity, operation or noise source cannot feasibly be done in a manner that

would comply with the provisions of this chapter, and no other reasonable alternative is available to the applicant.

B. In granting a variance, the health officer may prescribe any conditions or requirements he deems necessary to minimize adverse effects upon the community or the surrounding neighborhood.

C. In granting variances, the health officer shall consider the magnitude of nuisance caused by the offensive noise, the uses of property within the area of impingement by the noise, operations carried on under existing nonconforming rights or conditional use permits or zone variances, the time factors related to study, design, financing and construction of remedial work, the economic factors related to age and useful life of the equipment, the general public interest, health and welfare, the feasibility of plans submitted for correction, and the effect on the community if the variance was refused.

(Ord. 11778 § 2 (Art. 7 § 701), 1978: Ord. 11773 § 2 (Art. 7 § 701), 1978.)

12.08.590 - Application—Contents.

Every applicant for a variance shall file with the health officer a written application on a form prescribed by the health officer. The application shall state the name and address of the applicant, the nature of the noise source involved, and such other information as the health officer may require.

(Ord. 11778 § 2 (Art. 7 § 702), 1978: Ord. 11773 § 2 (Art. 7 § 702), 1978.)

12.08.600 - Application—Fee.

Every applicant shall pay a fee of $25.00 for each application for variance.

(Ord. 11778 § 2 (Art. 7 § 703), 1978: Ord. 11773 § 2 (Art. 7 § 703), 1978.)

12.08.610 - Application—Action by health officer.

A. The health officer shall act, within 30 days, if possible, on an application for a variance, and shall notify the applicant of the action taken, namely, approval, conditional approval, or denial. Before acting on an application for a variance, the health officer may require the applicant to furnish further information. Failure of the applicant to provide such further information may be grounds for denial of the variance.

B. In the event of denial of an application for a variance, the health officer shall notify the applicant in writing of the reasons therefor. The health officer shall not accept a further application unless the applicant has complied with the objections specified by the health officer as his reasons for denial.

(Ord. 11778 § 2 (Art. 7 § 704), 1978: Ord. 11773 § 2 (Art. 7 § 704), 1978.)

12.08.620 - Application—Denial conditions.

The applicant may at his option deem the variance denied if the health officer fails to act on the application within 30 days after filing or within 10 days after applicant furnishes the further information requested by the health officer, whichever is later.

(Ord. 11778 § 2 (Art. 7 § 705), 1978: Ord. 11773 § 2 (Art. 7 § 705), 1978.)

12.08.630 - Public hearing—For reconsideration of health officer decision.

Within 10 days after notice by the health officer of the decision on application for variance, any interested party may petition the health officer in writing for a public hearing to reconsider the decision. The health officer shall thereupon appoint a hearing officer to conduct said hearing.

(Ord. 11778 § 2 (Art. 7 § 706), 1978: Ord. 11773 § 2 (Art. 7 § 706), 1978.)

12.08.640 - Public hearing—Decision and findings—Appeals.

A. Based upon the evidence presented at the public hearing, the hearing officer may affirm, modify or reverse the previous determination subject to such terms, conditions and requirements as he may deem necessary. The hearing officer shall be guided by the same considerations as set forth in Section 12.08.580.
B. A decision by the hearing officer to grant a variance may be made only if the hearing officer makes the findings that:
    1. Additional time is necessary for the applicant to alter or modify his activity, operation or noise source to comply with this chapter; or
    2. The activity, operation or noise source cannot feasibly be done in a manner that would comply with the provisions of this chapter, and no other reasonable alternative is available to the applicant.
C. The decision of the hearing officer shall be by written order, and shall be final. Appeals from an adverse decision shall be made to a court of competent jurisdiction.

(Ord. 11778 § 2 (Art. 7 § 707), 1978: Ord. 11773 § 2 (Art. 7 § 707), 1978.)

Part 7 - VIOLATIONS AND ENFORCEMENT

12.08.650 - Enforcement—Health officer powers and duties.

The health officer shall have primary responsibility for the enforcement of the noise regulations contained in this chapter. The health officer shall make all noise-level measurements required for the enforcement of this chapter. Nothing in this chapter shall prevent the health officer from efforts to obtain voluntary compliance by way of warning, notice, or educational means.

(Ord. 11778 § 2 (Art. 8 § 801), 1978: Ord. 11773 § 2 (Art. 8 § 801), 1978.)

12.08.660 - Initial violations.

In the event of an initial violation of the provisions of this chapter a written notice of violation shall be given the alleged violator, specifying the time by which the condition shall be corrected or an application for permit or variance shall be received by the health officer. The health officer shall take no further action in the event the cause of the violation has been removed, the condition abated or fully corrected within the time period specified in the written notice.

(Ord. 11778 § 2 (Art. 8 § 802), 1978: Ord. 11773 § 2 (Art. 8 § 802), 1978.)

12.08.670 - Violation—Penalty.

Any person violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not more than $500.00 or be imprisoned in the County Jail for a period not exceeding six months or by both such fine and imprisonment. Each day such violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such.

(Ord. 11778 § 2 (Art. 8 § 803), 1978: Ord. 11773 § 2 (Art. 8 § 803, 1978.)

12.08.680 - Severability.

If any provision, clause, sentence or paragraph of this chapter or the application thereof to any person or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of the provisions of this chapter which can be given effect without the invalid provisions or application and, to this end, the provisions of this chapter are hereby declared to be severable.

(Ord. 11778 § 2 (Art. 8 § 804), 1978: Ord. 11773 § 2 (Art. 8 § 804), 1978.)

Chapter 12.12 - BUILDING CONSTRUCTION NOISE

12.12.010 - Definitions.

A. "Board" means the board of supervisors of the county of Los Angeles.

B. "Person" means an individual, partnership, firm or corporation.

C. "Section" means a section of the ordinance codified in this chapter.

(Ord. 8594 §§ 1, 2 and 3, 1964.)

12.12.020 - References to provisions.

Whenever any reference is made to the ordinance codified in this chapter or any other ordinance, or to any statute, such reference shall apply to all amendments and additions thereto now or hereafter made.

(Ord. 8594 § 4, 1964.)

12.12.030 - Construction noise prohibited when.

Except as otherwise provided in this chapter, a person, on any Sunday, or at any other time between the hours of 8:00 p.m. and 6:30 a.m. the following day, shall not perform any construction or repair work of any kind upon any building or structure, or perform any earth excavating, filling or moving, where any of the foregoing entails the use of any air compressors; jackhammers; power-driven drill; riveting machine; excavator, diesel-powered truck, tractor or other earth moving equipment; hand hammers on steel or iron, or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in a dwelling, apartment, hotel, mobilehome, or other place of residence.

(Ord. 9818 § 1, 1969: Ord. 8594 § 6, 1964.)

12.12.040 - Exemptions—Certain zoned areas.

The provisions of this chapter do not apply in any territory which is in a zone in which the Zoning Ordinance, codified in Title 22 of this code, prohibits any residential use and which is not less than 500 feet from any territory in any residential zone as defined in Section 201 of Ordinance 1494, or any territory in a residential zone in any city.

(Ord. 8594 § 11, 1964.)

12.12.050 - Exemptions—Work performed with county engineer's permission.

The provisions of Section 12.12.030 do not apply to any person who performs the construction, repair, excavation or earthmoving work involved pursuant to the express written permission of the county engineer to perform such work at times prohibited in Section 12.12.030. Upon receipt of an application in writing therefor, stating the reasons for the request and the facts upon which such reasons are based, the county engineer may grant such permission if he finds that:

A. The work proposed to be done is effected with a public interest; or

B. Hardship or injustice, or unreasonable delay, would result from the interruption thereof during the hours and days specified in Section 12.12.030; or

C. The building or structure involved is devoted or intended to be devoted to a use immediately incident to public defense.

(Ord. 9818 § 2, 1969: Ord. 8594 § 7, 1964.)

12.12.060 - Exemptions—Work by public utilities—Conditions.

The provisions of Section 12.12.030 do not apply to the construction, repair or excavation by a public utility which is subject to the jurisdiction of the Public Utilities Commission as may be necessary for the preservation of life or property, and where such necessity makes it necessary to construct, repair or excavate during the prohibited hours.

(Ord. 8594 § 10, 1964.)

12.12.070 - Exemptions—Emergency work—Permit requirements.

The provisions of Section 12.12.030 do not apply to such construction, repair or excavation during prohibited hours as may be necessary for the preservation of life or property when such necessity arises during such hours as the offices of the county are closed or where such necessity requires immediate action prior to the time at which it would be possible to obtain a permit pursuant to Section 12.12.050, if the person doing such construction, repair or excavation obtains a permit therefor within one day after the offices of the county engineer are first opened subsequent to the making of such construction, repair or excavation.

(Ord. 8594 § 9, 1964.)

12.12.080 - Appeals from county engineer's decision.

Any person dissatisfied with the decision of the county engineer may appeal to the business license commission as provided in Ordinance 5860, on business licenses, set out at Title 7 of this code, including the appointment of and reference to a referee, as in the case of a notification by the tax collector that he intends to deny a license.

(Ord. 9849 § 1, 1969: Ord. 8594 § 8, 1964.)

12.12.090 - Violation—Penalty.

Any person violating any provision of this chapter is guilty of a misdemeanor punishable by a fine of not more than $500.00 or by imprisonment in the County Jail for not more than six months, or by both such fine and imprisonment. Every such person is guilty of a separate offense for every day during any portion of which any violation or any of the provisions of this chapter is committed, continued or permitted by such person, and shall be punished as provided by this chapter.

(Ord. 8594 § 12, 1964.)

12.12.100 - Severability.

If any provision of the ordinance codified in this chapter or the application thereof to any person or circumstance is held invalid, the remainder of the ordinance, and the application of such provision to other persons or circumstances, shall not be affected thereby.

(Ord. 8594 § 5, 1964.)

Sec. 15-95. - Construction and building projects.

(a) *Regulation.* Between the hours of 8:00 p.m. of one day and 7:00 a.m. of the next day, it shall be unlawful for any person within a residential zone, or within a radius of five hundred (500) feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other construction type device in such manner as to create any noise which causes the noise level at the property line to exceed the ambient noise level by more than five (5) decibels unless a permit therefor has been duly obtained in accordance with paragraph (b) of this section. No permit shall be required to perform emergency work as defined in section 15-83 of this article.

(b) *Permit procedure.* A permit may be issued authorizing noises prohibited by this section whenever it is found that the public interest will be served thereby. Applications for permits shall be in writing, shall be accompanied by an application fee in the amount of five dollars ($5.00), and shall set forth in detail facts showing that the public interest will be served by the issuance of such permit. Applications shall be made to the building director; provided, however, that, with respect to work upon or involving the use of a public street, alley, building, or other public place under the jurisdiction of the engineering department, applications shall be made to the city engineer. Anyone dissatisfied with the denial of a permit may appeal to the council.

(c) *Unloading and Loading.* Between the hours of 8:00 p.m. of one day and 6:00 a.m. of the next day, it shall be unlawful for any person within the radius of five hundred (500) feet of generally occupied residences to unload, load or otherwise perform duties preparatory to the commencement of construction or repair work on buildings or structures. Generally occupied residences shall include, but not be limited to, areas in which there is a reasonable probability of occupancy within the area.

(Code 1960, § 4611; Ord. No. 1826, § 2, 11-13-89)

CONSTRUCTION NOISE MODELING

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/23/2021
Case Description: IRW-03

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Equipment Leq	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Spec Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Auger Drill Rig	No	20		84.4	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0
Bar Bender	No	20	80.0		50.0	0.0
Blasting	Yes	1	94.0		50.0	0.0
Boring Jack Power Unit	No	50		83.0	50.0	0.0
Chain Saw	No	20		83.7	50.0	0.0
Clam Shovel (dropping)	Yes	20		87.3	50.0	0.0
Compactor (ground)	No	20		83.2	50.0	0.0
Compressor (air)	No	40		77.7	50.0	0.0
Concrete Batch Plant	No	15	83.0		50.0	0.0
Concrete Mixer Truck	No	40		78.8	50.0	0.0
Concrete Pump Truck	No	20		81.4	50.0	0.0
Concrete Saw	No	20		89.6	50.0	0.0
Crane	No	16		80.6	50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Drill Rig Truck	No	20		79.1	50.0	0.0
Drum Mixer	No	50		80.0	50.0	0.0
Dump Truck	No	40		76.5	50.0	0.0
Excavator	No	40		80.7	50.0	0.0
Flat Bed Truck	No	40		74.3	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Auger Drill Rig	84.4	77.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bar Bender	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

N/A

Blasting	94.0	74.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Boring Jack Power Unit	83.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chain Saw	83.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Clam Shovel (dropping)	87.3	80.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	83.2	76.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Batch Plant	83.0	74.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	78.8	74.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	81.4	74.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drill Rig Truck	79.1	72.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drum Mixer	80.0	77.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	76.5	72.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	74.3	70.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	94.0	89.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/23/2021
Case Description: IRW-03

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Equipment Leq	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	50.0	0.0
Generator	No	50		80.6	50.0	0.0
Gradall	No	40		83.4	50.0	0.0
Grader	No	40	85.0		50.0	0.0
Grapple (on backhoe)	No	40		87.0	50.0	0.0
Horizontal Boring Hydr. Jack	No	25		82.0	50.0	0.0
Hydra Break Ram	Yes	10	90.0		50.0	0.0
Jackhammer	Yes	20		88.9	50.0	0.0
Man Lift	No	20		74.7	50.0	0.0
Mounted Impact Hammer (hoe ram)	Yes	20		90.3	50.0	0.0
Pavement Scarafier	No	20		89.5	50.0	0.0
Paver	No	50		77.2	50.0	0.0
Pickup Truck	No	40		75.0	50.0	0.0
Pneumatic Tools	No	50		85.2	50.0	0.0
Pumps	No	50		80.9	50.0	0.0
Refrigerator Unit	No	100		73.0	50.0	0.0
Rivet Buster/chipping gun	Yes	20		79.1	50.0	0.0
Rock Drill	No	20		81.0	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Scraper	No	40		83.6	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall	83.4	79.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

													N/A	N/A
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grapple (on backhoe)	87.0	83.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Horizontal Boring Hydr. Jack	82.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hydra Break Ram	90.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Jackhammer	88.9	81.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	74.7	67.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mounted Impact Hammer (hoe ram)	90.3	83.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier	89.5	82.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	75.0	71.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pneumatic Tools	85.2	82.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	80.9	77.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Refrigerator Unit	73.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rivet Buster/chipping gun	79.1	72.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rock Drill	81.0	74.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	90.3	92.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/23/2021
Case Description: IRW-03

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Equipment Leq	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Shears (on backhoe)	No	40		96.2	50.0	0.0
Slurry Plant	No	100		78.0	50.0	0.0
Slurry Trenching Machine	No	50		80.4	50.0	0.0
Soil Mix Drill Rig	No	50	80.0		50.0	0.0
Tractor	No	40	84.0		50.0	0.0
Vacuum Excavator (Vac-truck)	No	40		85.3	50.0	0.0
Vacuum Street Sweeper	No	10		81.6	50.0	0.0
Ventilation Fan	No	100		78.9	50.0	0.0
Vibrating Hopper	No	50		87.0	50.0	0.0
Vibratory Concrete Mixer	No	20		80.0	50.0	0.0
Warning Horn	No	5		83.2	50.0	0.0
Welder / Torch	No	40		74.0	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Shears (on backhoe)	96.2	92.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Plant	78.0	78.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machine	80.4	77.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soil Mix Drill Rig	80.0	77.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vacuum Excavator (Vac-truck)	85.3	81.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vacuum Street Sweeper	81.6	71.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

N/A N/A

Ventilation Fan	78.9	78.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vibrating Hopper	87.0	84.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vibratory Concrete Mixer	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Warning Horn	83.2	70.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	74.0	70.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	96.2	93.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

IRW-03 Construction Noise Modeling Attenuation Calculations

Phase	RCNM Reference Noise Level	Residence to southwest
	Levels in dBA Leq	
Distance in feet	*50*	*1250*
Max Leq	84.0	56
Min Leq	68.0	40

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)

IRW-03 Vibration Annoyance Attenuation Calculations

Levels in VdB

Equipment	**Vibration @ 25 ft**	**Residential south**	**Residential east**	**Manzanita Elementary**
Distance in feet		*1,270*	*1,550*	*1450*
Vibratory Roller	94	43	40	41
Large Bulldozer	87	36	33	34
Caisson Drilling	87	36	33	34
Loaded Trucks	86	35	32	33
Jackhammer	79	28	25	26
Small Bulldozer	58	7	4	5

IRW-03 Vibration Damage Attenuation Calculations

		Levels in in/sec PPV		
	Vibration Reference Level	Industrial building to east	Industrial building to south	Residential to south
Distance in feet	at ***25 feet***	*115*	*140*	*550*
Vibratory Roller	0.21	0.021	0.016	0.002
Large Bulldozer	0.089	0.009	0.007	0.001
Caisson Drilling	0.089	0.009	0.007	0.001
Loaded Trucks	0.076	0.008	0.006	0.001
Jackhammer	0.035	0.004	0.003	0.000
Small Bulldozer	0.003	0.000	0.000	0.000
Clam shovel	0.202	0.020	0.015	0.002
Hoe Ram	0.089	0.009	0.007	0.001

TRAFFIC NOISE INCREASE CALCULATIONS

Traffic Noise Calculator: FHWA 77 **Project Title: Existing With Pepsi Baseline**

	Output			Inputs														
	dBA at 50 feet																	
ID	$L_{eq-24hr}$	L_{dn}	CNEL	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever
1	64.1	67.7	68.1	Azusa Canyon Road - north of Cypress Street		16,723	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
2	64.3	67.8	68.2	Azusa Canyon Road - south of Cypress Street		17,181	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
3	65.1	68.7	69.1	Cypress Street - west of Azusa Canyon Road		15,744	35	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	3	Hard	50
4	62.7	66.2	66.7	Azusa Canyon Road - north of Los Angeles Street		12,010	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
5	62.1	65.6	66.0	Azusa Canyon Road - south of Los Angeles Street		10,416	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
6	51.1	54.6	55.0	Los Angeles Street - east of Azusa Canyon Road		1,181	25	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50
7	65.7	69.2	69.7	Los Angeles Street - west of Azusa Canyon Road		10,341	45	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
8	62.0	65.5	65.9	Azusa Canyon Road - north of San Bernardino Road		10,416	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50
9	66.4	69.9	70.4	San Bernardino Road - east of Azusa Canyon Road		20,862	35	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
10	63.7	67.2	67.6	San Bernardino Road - west of Azusa Canyon Road		11,054	35	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
11	55.0	58.5	59.0	Azusa Canyon Road - north of Arrow Highway		2,083	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50
12	62.7	66.2	66.6	Azusa Canyon Road - south of Arrow Highway		11,919	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
13	72.6	76.1	76.6	Arrow Highway - east of Azusa Canyon Road		48,946	45	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	6	Hard	50
14	72.7	76.2	76.6	Arrow Highway - west of Azusa Canyon Road		49,428	45	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	6	Hard	50
15	62.7	66.2	66.6	Azusa Canyon Road - north of Olive Street		11,919	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
16	64.1	67.7	68.1	Azusa Canyon Road - south of Olive Street		16,723	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
17	61.3	64.9	65.3	Olive Street - east of Azusa Canyon Road		8,947	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50

Traffic Noise Calculator: FHWA 77 **Project Title: Existing with Pepsi Baseline Plus Project**

	Output			Inputs														
	dBA at 50 feet																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever
1	64.3	67.8	68.2	Azusa Canyon Road	north of Cypress Street	17,261	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
2	64.4	67.9	68.3	Azusa Canyon Road	south of Cypress Street	17,629	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
3	65.2	68.7	69.1	Cypress Street	west of Azusa Canyon Road	15,832	35	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	3	Hard	50
4	62.9	66.4	66.8	Azusa Canyon Road	north of Los Angeles Street	12,458	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
5	62.2	65.7	66.2	Azusa Canyon Road	south of Los Angeles Street	10,732	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
6	51.1	54.6	55.0	Los Angeles Street	east of Azusa Canyon Road	1,181	25	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50
7	65.8	69.3	69.7	Los Angeles Street	west of Azusa Canyon Road	10,509	45	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
8	62.1	65.7	66.1	Azusa Canyon Road	north of San Bernardino Road	10,732	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50
9	66.5	70.0	70.5	San Bernardino Road	east of Azusa Canyon Road	21,270	35	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
10	63.8	67.3	67.7	San Bernardino Road	west of Azusa Canyon Road	11,322	35	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
11	55.0	58.5	59.0	Azusa Canyon Road	north of Arrow Highway	2,083	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50
12	63.1	66.6	67.1	Azusa Canyon Road	south of Arrow Highway	13,183	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
13	72.9	76.4	76.9	Arrow Highway	east of Azusa Canyon Road	52,270	45	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	6	Hard	50
14	73.0	76.5	76.9	Arrow Highway	west of Azusa Canyon Road	53,060	45	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	6	Hard	50
15	63.1	66.6	67.1	Azusa Canyon Road	north of Olive Street	13,183	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
16	64.3	67.8	68.2	Azusa Canyon Road	south of Olive Street	17,261	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
17	61.5	65.0	65.4	Olive Street	east of Azusa Canyon Road	9,281	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50

Traffic Noise Calculator: FHWA 77 Project Title: Cumulataive with Pepsi Baseline No Project

	Output			Inputs														
	dBA at 50 feet																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever
1	64.5	68.0	68.5	Azusa Canyon Road - north of Cypress Street		18,270	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
2	64.7	68.2	68.6	Azusa Canyon Road - south of Cypress Street		18,957	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
3	65.6	69.1	69.5	Cypress Street - west of Azusa Canyon Road		17,331	35	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	3	Hard	50
4	63.8	67.4	67.8	Azusa Canyon Road - north of Los Angeles Street		15,606	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
5	62.8	66.4	66.8	Azusa Canyon Road - south of Los Angeles Street		12,434	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
6	51.7	55.2	55.7	Los Angeles Street - east of Azusa Canyon Road		1,364	25	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50
7	66.9	70.4	70.8	Los Angeles Street - west of Azusa Canyon Road		13,557	45	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
8	62.8	66.3	66.7	Azusa Canyon Road - north of San Bernardino Road		12,434	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50
9	66.9	70.4	70.8	San Bernardino Road - east of Azusa Canyon Road		23,171	35	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
10	64.2	67.7	68.1	San Bernardino Road - west of Azusa Canyon Road		12,405	35	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
11	55.4	58.9	59.3	Azusa Canyon Road - north of Arrow Highway		2,276	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50
12	63.1	66.6	67.0	Azusa Canyon Road - south of Arrow Highway		13,092	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
13	73.1	76.6	77.1	Arrow Highway - east of Azusa Canyon Road		54,977	45	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	6	Hard	50
14	73.2	76.7	77.1	Arrow Highway - west of Azusa Canyon Road		55,419	45	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	6	Hard	50
15	63.1	66.6	67.0	Azusa Canyon Road - north of Olive Street		13,092	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
16	64.5	68.0	68.5	Azusa Canyon Road - south of Olive Street		18,270	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
17	61.7	65.2	65.7	Olive Street - east of Azusa Canyon Road		9,731	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50

Traffic Noise Calculator: FHWA 77 **Project Title: Cumulataive with Pepsi Baseline Plus Project**

	Output			Inputs														
	dBA at 50 feet																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever
1	64.5	68.1	68.5	Azusa Canyon Road - north of Cypress Street		18,382	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
2	64.7	68.2	68.7	Azusa Canyon Road - south of Cypress Street		19,081	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
3	65.6	69.1	69.5	Cypress Street - west of Azusa Canyon Road		17,343	35	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	3	Hard	50
4	63.8	67.4	67.8	Azusa Canyon Road - north of Los Angeles Street		15,628	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
5	62.9	66.4	66.8	Azusa Canyon Road - south of Los Angeles Street		12,478	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
6	52.1	55.6	56.0	Los Angeles Street - east of Azusa Canyon Road		1,486	25	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50
7	66.9	70.4	70.9	Los Angeles Street - west of Azusa Canyon Road		13,613	45	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
8	62.8	66.3	66.7	Azusa Canyon Road - north of San Bernardino Road		12,480	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50
9	66.9	70.4	70.8	San Bernardino Road - east of Azusa Canyon Road		23,205	35	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
10	64.2	67.7	68.1	San Bernardino Road - west of Azusa Canyon Road		12,417	35	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
11	55.4	58.9	59.3	Azusa Canyon Road - north of Arrow Highway		2,276	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50
12	63.1	66.6	67.1	Azusa Canyon Road - south of Arrow Highway		13,192	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
13	73.1	76.6	77.1	Arrow Highway - east of Azusa Canyon Road		55,033	45	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	6	Hard	50
14	73.2	76.7	77.1	Arrow Highway - west of Azusa Canyon Road		55,463	45	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	6	Hard	50
15	63.1	66.6	67.1	Azusa Canyon Road - north of Olive Street		13,192	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
16	64.5	68.1	68.5	Azusa Canyon Road - south of Olive Street		18,382	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	4	Hard	50
17	61.7	65.2	65.7	Olive Street - east of Azusa Canyon Road		9,743	30	0.0%	95.0%	3.1%	1.9%	75.2%	10.8%	13.9%	2	Hard	50

Tilt Warehouse - IRW-03

Traffic Noise Summary Calculations

Roadway Segment	CNEL dBA Existing No Project	CNEL dBA Existing Plus Project	CNEL dBA Cumulative no Project	CNEL dBA Cumulative Plus Project	dBA CNEL Increae Project Noise Increase	dBA CNEL Increae Cumulative Increase	dBA CNEL Increae Project Cumulative Contribution
Azusa Canyon Road - north of Cypress Street	68.1	68.2	68.5	68.5	0.1	0.4	0.0
Azusa Canyon Road - south of Cypress Street	68.2	68.3	68.6	68.7	0.1	0.5	0.0
Cypress Street - east of Azusa Canyon Road	69.1	69.1	69.5	69.5	0.0	0.4	0.0
Azusa Canyon Road - north of Los Angeles Street	66.7	66.8	67.8	67.8	0.2	1.1	0.0
Azusa Canyon Road - south of Los Angeles Street	66.0	66.2	66.8	66.8	0.1	0.8	0.0
Los Angeles Street - east of Azusa Canyon Road	55.0	55.0	55.7	56.0	-	1.0	0.4
Los Angeles Street - west of Azusa Canyon Road	69.7	69.7	70.8	70.9	0.1	1.2	0.0
Azusa Canyon Road - north of San Bernardino Road	65.9	66.1	66.7	66.7	0.1	0.8	0.0
San Bernardino Road - east of Azusa Canyon Road	70.4	70.5	70.8	70.8	0.1	0.5	0.0
San Bernardino Road - west of Azusa Canyon Road	67.6	67.7	68.1	68.1	0.1	0.5	0.0
Azusa Canyon Road - north of Arrow Highway	59.0	59.0	59.3	59.3	-	0.4	-
Azusa Canyon Road - south of Arrow Highway	66.6	67.1	67.0	67.1	0.4	0.4	0.0
Arrow Highway - east of Azusa Canyon Road	76.6	76.9	77.1	77.1	0.3	0.5	0.0
Arrow Highway - west of Azusa Canyon Road	76.6	76.9	77.1	77.1	0.3	0.5	0.0
Azusa Canyon Road - north of Olive Street	66.6	67.1	67.0	67.1	0.4	0.4	0.0
Azusa Canyon Road - south of Olive Street	68.1	68.2	68.5	68.5	0.1	0.4	0.0
Olive Street - west of Azusa Canyon Road	65.3	65.4	65.7	65.7	0.2	0.4	0.0

STATIONARY NOISE CALCULATIONS

Azusa Canyon Road Warehouse: IRW-03

Receptor: Residences and School

Reference Levels		Reference Adjusted (@ 20 ft)	Distance Attenuation, ft 18 docks			Distance Attenuation, ft 18 docks with partial shielding		
Noise Metric	Ref @ 20 ft	18 trucks	1,350	1,650	650	1,350	1,650	650
Leq	66.0	78.6	42.0	40.2	48.3	39	37	45
L50	65.5	78.1	41.5	39.7	47.8	38	37	45

RCNM Appendix A: Practices for Calculating Estimated Shielding (fwha.dot.gov)

3	If a noise barrier or other obstruction (like a dirt mound) just barely breaks the line-of-sight between the noise source and the receptor
5	If the noise source is in a enclosure and/or barrier that has some gaps in it
5	If a noise source is enclosed or shielded with heavy vinyl noise curtain material (e.g., SoundSeal BBC-13-2" or equivalent)
8	If the noise source is completely enclosed OR completely shielded with a solid barrier located close to the source
10	If the noise source is completely enclosed AND completely shielded with a solid barrier located close to the source

References

Loading dock measurments at Westminster Mall Dock A, conducted by PlaceWorks Staff 2019.

Appendix H Public Services and Utility Provider Responses

Appendix

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Dina El Chammas

From:	Bol, Raymond <RBol@wm.com>
Sent:	Tuesday, June 8, 2021 10:00 AM
To:	Jasmine Osman
Cc:	Teal, John; Costa, Patti; Dina El Chammas
Subject:	RE: 4416 Azusa Canyon Road Project

Jasmine,
I am sorry we have been unable to connect via phone,
You have sent this form to both Azusa and El Sobrante Landfills.
We will be sending you back both forms from the two sites to complete your request.
Unfortunately WM does not handle the Commercial or Residential trash pickup from City of Azusa in the recent years.
The City is franchised to another Company so I cannot speak to where their (Pepsi)
Sent their trash and everyday pickup materials.

We can although handle the material generated from the demo of the building directly from the contractor. Cement, Asphalt , soil can all come to Azusa Land Reclamation and our Azusa transfer station can handle numerous other items from the demo.
This would be your best option from this location with WM. If there is something Azusa cannot accept the next option with WM would be Simi Valley Landfill for El Sobrante in Riverside County has some difficult restrictions and cost are higher than Simi Valley Landfill.
If you have additional questions please email me and or try the phone again….been extremely busy with everyone now returning to work.

RAYMOND BOL
Industrial Account Manager
Manufacturing & Industrial Sales Southern CA.
rbol@wm.com
C: 626-712-1606
1211 West Gladstone St. Azusa, Ca 91702

If urgent, please contact STEPHANIE BERGGREEN at 559.834.2966
sberggre@wm.com and copy me
For BDC please contact 626-224-9128 or 626-224-9129 roberg@wm.com can assist you.
Tonnage reports & manifest/weight ticket copies are available for download via www.wmsolutions.com
Invoices are available for download via www.wm.com
Profile Web site : www.wmsolutions.com

From: Jasmine Osman <josman@placeworks.com>
Sent: Monday, June 7, 2021 1:03 PM
To: Bol, Raymond <RBol@wm.com>
Cc: Teal, John <jteal1@wm.com>; Costa, Patti <pcosta@wm.com>; Dina El Chammas <delchammas@placeworks.com>
Subject: RE: 4416 Azua Canyon Road Project

Hi Raymond,

PLACEWORKS I tried calling the number in your signature but didn't get a response.

We would appreciate getting the questionnaire responses back by June 18, 2021, if possible.

We reached out to the Azusa Reclamation Landfill and are awaiting their response.

Is there a specific landfill you think is appropriate for the site? Do you know which landfill the former Pepsi Plant at the project site sent their waste?

Thank you,

JASMINE A. OSMAN
Project Planner

323.955.5545 **Ext.** 2608 | josman@placeworks.com | placeworks.com

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From: Bol, Raymond <RBol@wm.com>
Sent: Friday, June 4, 2021 4:14 PM
To: Jasmine Osman <josman@placeworks.com>
Cc: Teal, John <jteal1@wm.com>; Costa, Patti <pcosta@wm.com>
Subject: 4416 Azua Canyon Road Project

Jasmine,
Sorry I could not take your call very busy day.
Would like to speak to you about the forms and the project to get clarity on a few items.
First off by when do you need this forms returned to you?
Secondly El Sobrante Landfill is in Riverside County and we feel there would be better options for you and lower cost going to our Simi Valley location.
Or Transfer Stations in LA. And Azusa.
Let me know
Thank you

RAYMOND BOL
Industrial Account Manager
Manufacturing & Industrial Sales Southern CA.
rbol@wm.com
C: 626-712-1606
1211 West Gladstone St. Azusa, Ca 91702

WM WASTE MANAGEMENT

If urgent, please contact STEPHANIE BERGGREEN at 559.834.2966
sberggre@wm.com and copy me
For BDC please contact 626-224-9128 or 626-224-9129 roberg@wm.com can assist you.
Tonnage reports & manifest/weight ticket copies are available for download via www.wmsolutions.com
Invoices are available for download via www.wm.com
Profile Web site : www.wmsolutions.com

Dina El Chammas

From: Jasmine Osman
Sent: Tuesday, June 8, 2021 11:23 AM
To: Dina El Chammas
Subject: FW: Service Request - 4416 Azua Canyon Road Project
Attachments: Mid-Valley_San Timoteo Sanitary Landfill_.pdf

PLACEWORKS Hi Dina,

The County called me and told me they don't accept waste from outside the county unless there's an agreement, and the Board of Supervisors has to approve the agreement.

So the County said they will not be filling out the questionnaire, as waste from the site should be going to a landfill in LA county.

From: Jasmine Osman
Sent: Friday, June 4, 2021 8:26 AM
To: Darren.Meeka@dpw.sbcounty.gov
Subject: Service Request - 4416 Azua Canyon Road Project

Good morning,

PlaceWorks has been retained by the City of Irwindale to prepare an Initial Study/Mitigated Negative Declaration for the proposed 4416 Azusa Canyon Road Project. We are requesting input from the your agency on your ability to accommodate the demands of proposed project. Please see the attachment which contains the project description, a map of the project, a conceptual site plan of the proposed project, and a brief questionnaire.

Please feel free to contact me if you have any questions or require further information.

Thank you,

JASMINE A. OSMAN
Project Planner

323.955.5545 **Ext.** 2608 | josman@placeworks.com | placeworks.com

USA Waste of California, Inc.

10910 Dawson Canyon Road
Corona, CA 92877
(951) 277-1740

June 18, 2021

Ms. Jasmine Osman
Project Planner
Placeworks
(sent via email)

Subject: Responses to Questionnaire
Preparation of an Initial Study/Mitigated Negative Declaration for the Proposed 4416 Azusa Canyon Road Project in the City of Irwindale

Dear Ms. Osman,

Please see below for responses to the items listed in the questionnaire for the subject project received by letter dated June 4, 2021.

1. El Sobrante Landfill is owned and operated by USA Waste of California, Inc.

2.

a. Confirmed for ESL.

3. Waste Management (WM owns and operates facilities throughout the State of California.) Cities, counties and regional agencies use WM services and facilities to meet AB 939 mandates. WM pays AB 939 fees where applicable and is in full compliance with local and state regulations.

   WM's public sector solutions team works alongside city managers, county administrators and public works agencies to implement waste diversion programs, educate the public about source reduction, recycling and composting.

   Adding to an extensive network of material transfer and processing facilities, WM's newest organics processing facility in Southern California, plays a key role in diverting organics from landfills. Rather than land disposal, the organics process produces energy from food and other non-digestible material collected from commercial and residential routes.

   Specific to the subject project, WM's Azusa Landfill provides safe and reliable disposal capacity for debris generated from the demolition, excavation and grading work. If appropriate, these materials can be used for beneficial reuse rather than being landfilled.

4. N/A

5. Yes, El Sobrante Landfill will be able to adequately serve the expected debris volumes as needed.

6. Proper profiling of the material through Waste Management's waste approvals system to be disposed of at the Landfill. May include generator knowledge of material or analytical testing.

7. Yes.

8. El Sobrante Landfill services other projects and developments if the material is profiled through the Waste Management waste approvals process. Scheduling and timing of disposal allows El Sobrante to service multiple projects at the same time.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Stephen Dowaliby
Environmental Protection Specialist
El Sobrante Landfill

Attachment June 4, 2021 Letter from Placeworks

AZUSA LAND RECLAMATION

1211 W. Gladstone Street
Azusa CA, 91702
(626) 224-9123

June 15, 2021

Ms. Jasmine Osman
Project Planner
Placeworks
(sent via email)

Subject: Responses to Questionnaire
Preparation of an Initial Study/Mitigated Negative Declaration for the Proposed 4416 Azusa Canyon Road Project in the City of Irwindale

Dear Ms. Osman,

Please see below for responses to the items listed in the questionnaire for the subject project received by letter dated June 4, 2021.

1. Azusa Land Reclamation Landfill is owned and operated by Waste Management Inc.

2. Azusa Landfill does not accept municipal solid waste, therefore, general household waste from the City of Irwindale cannot be taken to Azusa Landfill.

a. Based on the current average daily waste inflow of 4,074 tons per day, the estimated closure of the site is in 2063.

3. Waste Management (WM owns and operates facilities throughout the State of California. Cities, counties and regional agencies use WM services and facilities to meet AB 939 mandates. WM pays AB 939 fees where applicable and is in full compliance with local and state regulations.

   WM's public sector solutions team works alongside city managers, county administrators and public works agencies to implement waste diversion programs, educate the public about source reduction, recycling and composting.

   Adding to an extensive network of material transfer and processing facilities, WM's newest organics processing facility in Southern California, plays a key role in diverting organics from landfills. Rather than land disposal, the organics process produces energy from food and other non-digestible material collected from commercial and residential routes.

   Specific to the subject project, WM's Azusa Landfill provides safe and reliable disposal capacity for debris generated from the demolition, excavation and grading work. If appropriate, these materials can be used for beneficial reuse rather than being landfilled.

4. N/A

5. Azusa Landfill is an inert disposal facility that can only accept materials specified in site permits. The site's Solid Waste Facility Permit (19-AA-0013) and Waste Discharge Requirements specify the types of materials that can be accepted as well as the maximum daily and weekly tonnage as follows:

   Types of materials allowed to be accepted for disposal:

   - Uncontaminated soil, rock and gravel;
   - Broken concrete;
   - Bricks;

- Glass and ceramics;
- Inert plastics;
- Broken asphalt paving fragments;
- Tires; and,
- Asbestos or asbestos containing waste

The permitted tonnage is as follows:

- Maximum daily tonnage – 8,000 tons/day (tpd)
- Maximum weekly tonnage – 39,000 tons/week (tpw)

Based on the available volume, it is anticipated Azusa Landfill has the capacity to meet the disposal needs of the inert materials (specified above) that will potentially be generated by the subject project.

6. It is recommended an asbestos survey be conducted at the subject property prior to any demolition activity in order to adequately assess the presence, or absence, of asbestos-containing materials.

7. Please see response to #5.

8. The ability of Azusa Landfill to accept demolition materials from projects other than the subject project would need to be primarily determined by the type of materials generated since the landfill can only accept materials specified in site permits. The capacity of the site is provided in response to question #2.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Miriam Cardenas
District Manager
AZUSA LAND RECLAMATION

Attachment June 4, 2021 Letter from Placeworks

1. Please confirm that solid waste collected at the project site would be brought to a landfill operated by Waste Management.

2. Please confirm that the disposal sites used for the City's solid waste is primarily Azusa Land Reclamation Landfill and El Sobrante Landfill (we are contacting this operator separately).

   a. Please confirm or update the information below obtained from the CalRecycle website.

Landfill	Current Remaining Capacity	Max. Daily Disposal Capacity	Estimated Close Date	Ave. Daily Disposal, 2019
Azusa Land Reclamation Landfill 1211 West Gladstone Street Azusa, Ca 91702	51,512,201 tons	8,000 tons	2045	1,172

3. Is Waste Management currently meeting AB 939 goals?

4. What generation rates are used to estimate solid waste generation for the following uses:

   a. Industrial (i.e., warehousing, manufacturing)?

   b. Office use?

5. Demolition of the existing 62,713-square-foot warehouse and other structures (hardscape improvements, open-air asphalt-paved storage/parking area, concrete pads/slabs, chain-link fencing, street curb, landscaping, etc.) would be required. Would the landfill currently serving the City be able to adequately serve the expected debris quantity?

6. What mitigation measures, if any, would you recommend for the proposed project?

7. Would Waste Management be able to serve the estimated project-generated solid waste, or would construction of new or expanded solid waste facilities be required?

8. Will Solid Waste Management be able to serve known cumulative developments in addition to the proposed project?

Response Prepared By:

Name	**Title**
Agency	**Date**

1. Please confirm or correct the following information:

   a) Sanitation Districts of Los Angeles County (LACSD) would provide wastewater services to the project site.

      Please see response to questions 5 and 6.

   b) Wastewater is collected within the City's local sewer collection system which ties into one of LACSD's regional trunk sewers.

      Please see response to question 2.

   c) Wastewater would be treated at the San Jose Creek Water Reclamation Plant (WRP).

      Confirmed.

   d) The WRP provides primary, secondary, and tertiary treatment for a design capacity of 100 million gallons of wastewater per day (MGD).

      San Jose Creek WRP has a capacity of 100 mgd.

   e) The WRP currently processes an average flow of 58.5 mgd.

      San Jose Creek WRP currently processes an average flow of 66.9 mgd.

2. Are there currently any deficiencies in the LACSD's wastewater treatment and collection system?

   The Districts own, operate, and maintain the large trunk sewers that form the backbone of the regional wastewater conveyance system. Local collector and/or lateral sewer lines are the responsibility of the jurisdiction in which they are located. As such, the Districts cannot comment on any deficiencies in the sewerage system in the City of Irwindale except to state that presently no deficiencies exist in Districts' facilities that serve the City. For information on deficiencies in the City sewerage system, please contact the City Department of Public Works and/or the Los Angeles County Department of Public Works.

3. Are there any planned improvements or expansions to LACSD's wastewater facilities?

   None at the moment.

4. Does LACSD have wastewater generation rates (e.g. gallons per square foot) used to estimate future wastewater generation?
   If so, please provide wastewater generation rates for the following uses:

   a) Manufacturing

   b) Office

   c) Warehousing

   In order to estimate the volume of wastewater the project will generate, go to www.lacsd.org, Services, Wastewater & Sewer Systems, click on Will Serve Program, and then click on the Table 1, Loadings for Each Class of Land Use link for a copy of the Districts' average wastewater generation factors.

5. Would the existing LACSD wastewater treatment facility be sufficient to serve the estimated project-generated wastewater, or would construction of new or expanded wastewater treatment facilities be required?

   In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CCA. All expansions of Districts' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the Districts' treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this response does not constitute a guarantee of wastewater service, but is to advise the developer that the Districts intend to provide this service up to the levels that are legally permitted and to inform the developer of the currently existing capacity and any proposed expansion of the Districts' facilities.

6. Please provide any additional comments you may have regarding the proposed project.

   The proposed project may require a Districts' permit for Industrial Wastewater Discharge. Project developers should contact the Districts' Industrial Waste Section at (562) 908 4288, extension 2900, in order to reach a determination on this matter. If this permit is necessary, project developers will be required to forward copies of final plans and supporting information for the proposed project to the Districts for review and approval before beginning project construction. For additional Industrial Wastewater Discharge Permit information, go to http://www.lacsd.org/wastewater/industrial_waste/permit.asp.

   Be advised, this is not a will serve letter and is issued solely for informational purposes. Availability of sewer capacity depends upon project size, description, and timing of connection to the sewerage system. As such, a detailed project description will be required prior to issuing a formal will serve letter. When final plans for the project are available, please forward a copy to this office for review.

Response Prepared By:

Mandy Ng	Environmental Planner
Name	**Title**
Los Angeles County Sanitation Districts	June 28, 2021
Agency	**Date**

Dina El Chammas

From: David Song <dsong@civiltec.com>
Sent: Monday, September 20, 2021 10:48 AM
To: Dina El Chammas; Jasmine Osman; Tom Mortenson
Subject: RE: Service Request - Azusa Canyon Road Warehouse Project

Hi Dina,

The system deficiencies that were listed in the questionnaire point to overall deficiencies as it pertains to a reliable and redundant system. This does not mean the District's system cannot serve the development without the improvements. For example, the system experiences deficiencies in distribution of fire flow in certain areas where mains are undersized and where fire flow requirements were "grandfathered" in at the time of construction long before current standards have been implemented. We have been working with the developer on Azusa Canyon to improve the system so that the property meets fire flow requirements. This work is currently scheduled to begin this year.

Likewise, deficiencies in storage and booster station capacity are related to serving the system in the event of an emergency as a whole. We have developed criteria for the system to offset an emergency and ensure the District's facilities are adequate with a margin of safety. There is no indication the existing system cannot serve the development in its current state.

Typically, a new development may require local improvements for service. In this case it was only the improvement work that was already planned on Azusa Canyon but was coordinated with the developer to better serve their needs.

--
David Song | PE
***CIVILTEC** engineering inc.*

From: Dina El Chammas <delchammas@placeworks.com>
Sent: Monday, September 20, 2021 8:41 AM
To: David Song <dsong@civiltec.com>; Jasmine Osman <josman@placeworks.com>; Tom Mortenson <TMortenson@vcwd.org>
Subject: Service Request - Azusa Canyon Road Warehouse Project

Tom, David

Good morning. I'm writing with regards to the response we received to our water questionnaire for the Azusa Canyon Road warehouse project (initial request and response attached). Thank you for being so responsive to our request and for supplying both water generation rates and responses to our questionnaire. The information you provided is very helpful in preparing the CEQA documentation for the project.

We do need some clarification with regards to the system deficiencies you identified in the questionnaire. Namely deficiencies in storage, booster pump capacity, and distribution for fire flow. In looking at the District's 2019/2020 Capital Improvement and General Operating Budget it looks like the District is undergoing a number of pipe replacement projects and reservoir updates, is in the design phase for the Nixon Storage Facility expansion, is in the construction phase of a new 3MG reservoir, and has completed the new Nixon Booster Pump Station. The District has also budgeted for updating its 2013 Water System Master Plan. Would these measures, along with the District's ongoing planning and CIP mechanisms, be sufficient to adequately manage the district's deficiencies and be able to serve the proposed project?

Please feel free to give me a call if needed.

Regards,
DINA EL CHAMMAS GASS, PE, QSD
Senior Engineer I
she/her

PLACEWORKS
Orange County: 714.966.9220 ext. 2371
delchammas@placeworks.com | placeworks.com

From: David Song <dsong@civiltec.com>
Sent: Monday, June 7, 2021 2:49 PM
To: Jasmine Osman <josman@placeworks.com>; Tom Mortenson <TMortenson@vcwd.org>
Cc: Dina El Chammas <delchammas@placeworks.com>
Subject: RE: Service Request

Hi Jasmin,

We can only provide projected water demand based on land use or zoning. For industrial zoning, water duty factors is as follows:

Water Duty Factor	AFY	gpm	Acre	AFY/ac	gpm/ ac	AFY/ unit	gpm/ unit	unit
Industrial	253	157	940	0.27	0.17	0.006	0.004	1,000 sqft

This is based on the area of the lot and not the buildings. Your lot is about 5.82 acres which is estimated to consume 1.57 AFY. Based on your projected water demand, it is estimated that the property would consume 11.14 AFY. As a comparison, the previous tenant, Pepsi, consumed an average of 1 AFY.

The disparity between the water duty estimate and your estimate is due to the fact that the water duty factor is a ratio of total industrial consumption by total industrial zoned area within the District's service boundary. The new development would be the 4th highest industrial user out of 91 other industrial users.

The additional 10 AFY in water consumption does not offset overall water supplies in the District and the system is adequate to serve the property.

Hope this helps.
--
David Song | PE
CIVILTEC *engineering inc.*

From: Jasmine Osman <josman@placeworks.com>
Sent: Monday, June 7, 2021 1:34 PM
To: Tom Mortenson <TMortenson@vcwd.org>
Cc: David Song <dsong@civiltec.com>; Dina El Chammas <delchammas@placeworks.com>
Subject: RE: Service Request

Hello Tom,

The projected water demand is as follows:

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- Warehouse — 3,095 gpd
- Manufacturing — 3,850 gpd
- Office Use — 2,013 gpd
- Landscaping — 986 gpd

In addition to the questions in the questionnaire, would you be able to provide water consumption rates (e.g. gallons per day per square foot) used to estimate future water demand for:

- Manufacturing
- Office
- Warehousing

Thank you,

JASMINE A. OSMAN
Project Planner

323.955.5545 **Ext.** 2608 | josman@placeworks.com | placeworks.com

---

From: Tom Mortenson <TMortenson@vcwd.org>
Sent: Friday, June 4, 2021 2:49 PM
To: Jasmine Osman <josman@placeworks.com>
Cc: David Song <dsong@civiltec.com>
Subject: Service Request

Jasmine,

Attached is the completed portion of the questionnaire. You will need to let us know your projected water demand for the project to answer the remaining questions,

Tom Mortenson | Operations and Maintenance Manager
Valley County Water District
14521 Ramona Blvd. | Baldwin Park, CA 91706
Phone: 626.962-1915 Cell: 626.483-5770
Email: TMortenson@vcwd.org

1. Please confirm that the Valley County Water District would provide water to the project site.

   Need to understand expected average consumption per day for the development to answer this question.

2. Please confirm or correct the following information:

   a. Groundwater has historically accounted for approximately 93 percent of the VCWD's overall water supplies.

      Groundwater has accounted for 100% of the District's overall supply in the last 5 years.

   b. Imported water from Metropolitan Water District of Southern California (MWD) has historically accounted for approximately 5 percent of overall water supplies.

      MWD import water has not be used in the last 5 years.

   c. Imported water from Covina Irrigating Company (CIC) has accounted for 2 percent.

      CIC import water has not be used in the last 5 years.

   d. VCWD has historically pumped approximately 8,480 AFY of groundwater from its four wells (Maine West, Maine East, Nixon West, and Nixon East) which have a combined capacity of about 7,700 gallons per minute.

      The District has averaged 6,796 AFY of groundwater production in the last 5 years. Combined capacity of the District 4 wells is approximately 7,629 gpm.

3. Are there currently any deficiencies in the water system within the City?

   Deficiencies include storage, booster pump capacity, and distribution for fire flow.

4. Would existing water mains adequately serve the proposed project?

5. Do you anticipate that water supplies will be sufficient to serve this project in addition to anticipated future projects within the City's service area?

6. Do you have any other comments about this project?

Response Prepared By:

Name	**Title**
Agency	**Date**

Proposed 4416 Azusa Canyon Road Project
Police Questionnaire

Please verify/respond to the following:

1. Please confirm the following station responds to calls from the project site:
   a. Irwindale Police Department, 5050 North Irwindale Avenue, Irwindale, CA 91706

   YES, THE IRWINDALE POLICE DEPARTMENT WOULD RESPOND TO CALLS AT THE PROJECT SITE.

2. Please indicate the type of service calls or service demands anticipated by the proposed uses (warehouse/office/manufacturing).

   DUE TO THE SPECULATIVE NATURE OF BUSINESSES OCCUPYING THIS PROJECT SITE, I CANNOT ANTICIPATE DEMANDS.

3. Given the existing level of staffing and equipment, will the police department be able to provide police services to the proposed project? If not, please indicate what will be required to serve the project.

   SERVICE NEEDS ARE UNKNOWN, AS WE DO NOT KNOW THE NATURE OF THE BUSINESSES OCCUPYING THE PROJECT OR THE NUMBER OF EMPLOYEES.

4. What impact will the proposed project, in combination with all the other projects planned in the area, have on the ability of the police department to provide police services in the area?

   SAME RESPONSE AS QUESTION #3.

5. What conditions will the Police Department require or recommended to reduce safety hazards and reduce potential impacts on police service?

SAME RESPONSE AS QUESTION #3 + 4.

6. Please add any comments you may wish to make regarding this matter.

MANY OF THESE QUESTIONS CANNOT BE ADEQUETLY ANSWERED AT THIS TIME, DUE TO THE SPECULATIVE NATURE OF BUSINESSES THAT WILL OCCUPY THE PROJECT.

Response Prepared By:

JOHN FRAIJO	POLICE LIEUTENANT
Name	**Title**
IRWINDALE POLICE DEPARTMENT	06-30-2021
Agency	**Date**

Appendix I Transportation Analysis

Appendix

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Azusa Canyon Road Warehouse

TRANSPORTATION ANALYSIS
CITY OF IRWINDALE, CALIFORNIA

PREPARED BY:

John Kain, AICP
jkain@urbanxroads.com

Marlie Whiteman, PE
mwhiteman@urbanxroads.com

Janette Cachola
jcachola@urbanxroads.com

JULY 24, 2021

13837-04 TA Report

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APPENDICES

LIST OF EXHIBITS

LIST OF TABLES

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

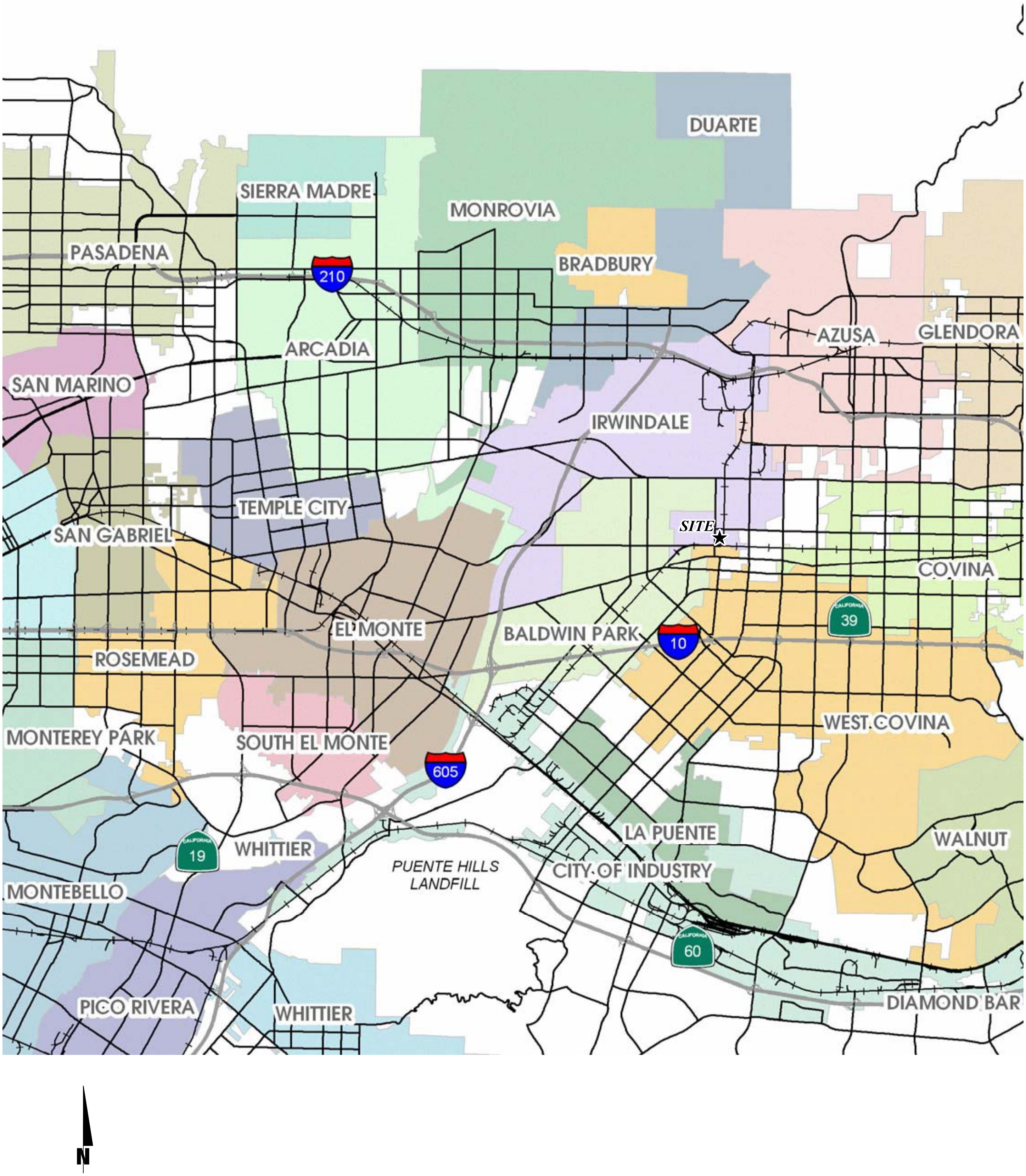
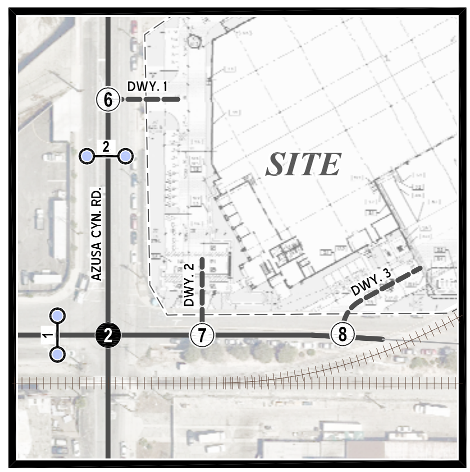


EXHIBIT ES-B: STUDY AREA

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

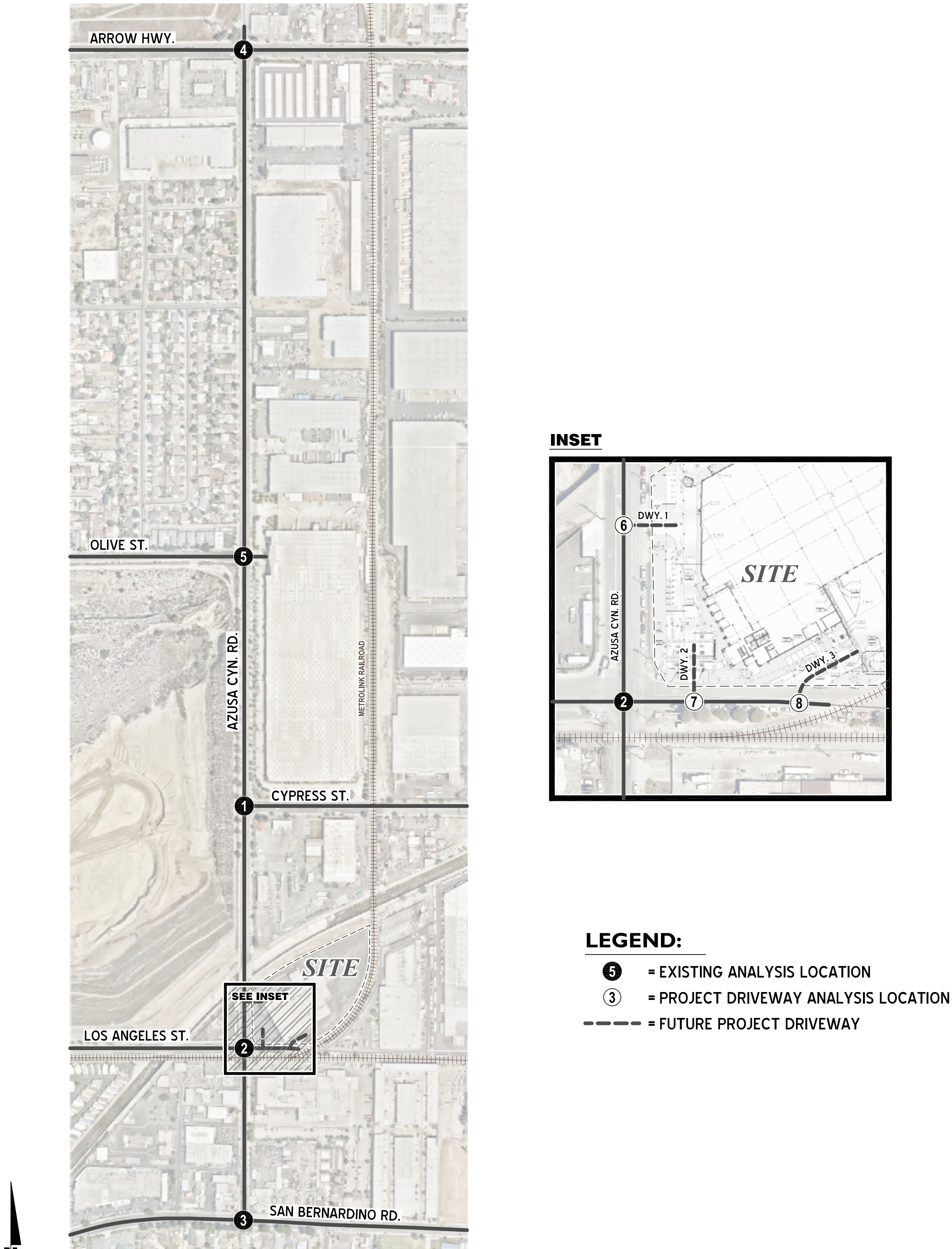
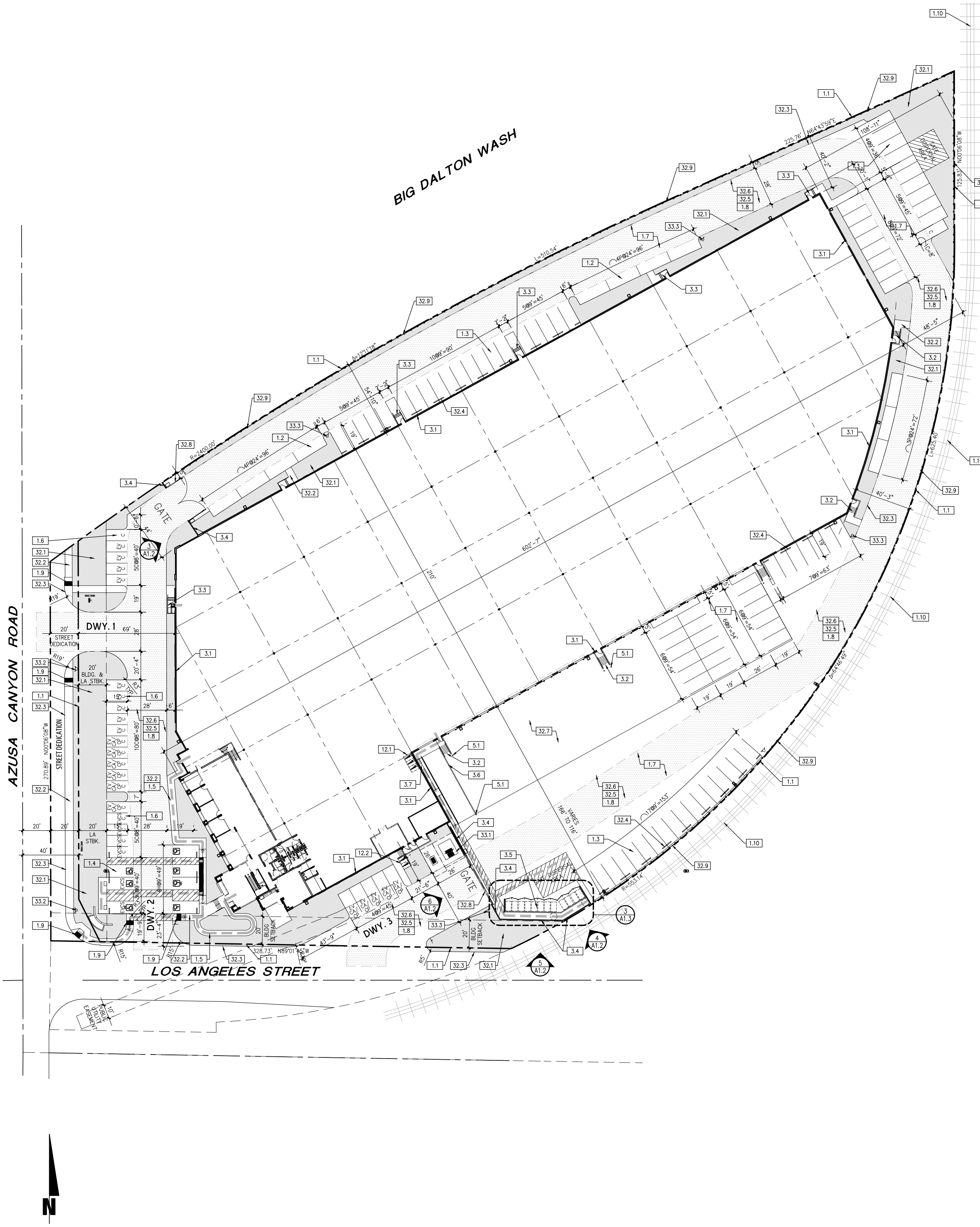


EXHIBIT 1-2: PRELIMINARY SITE PLAN



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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.

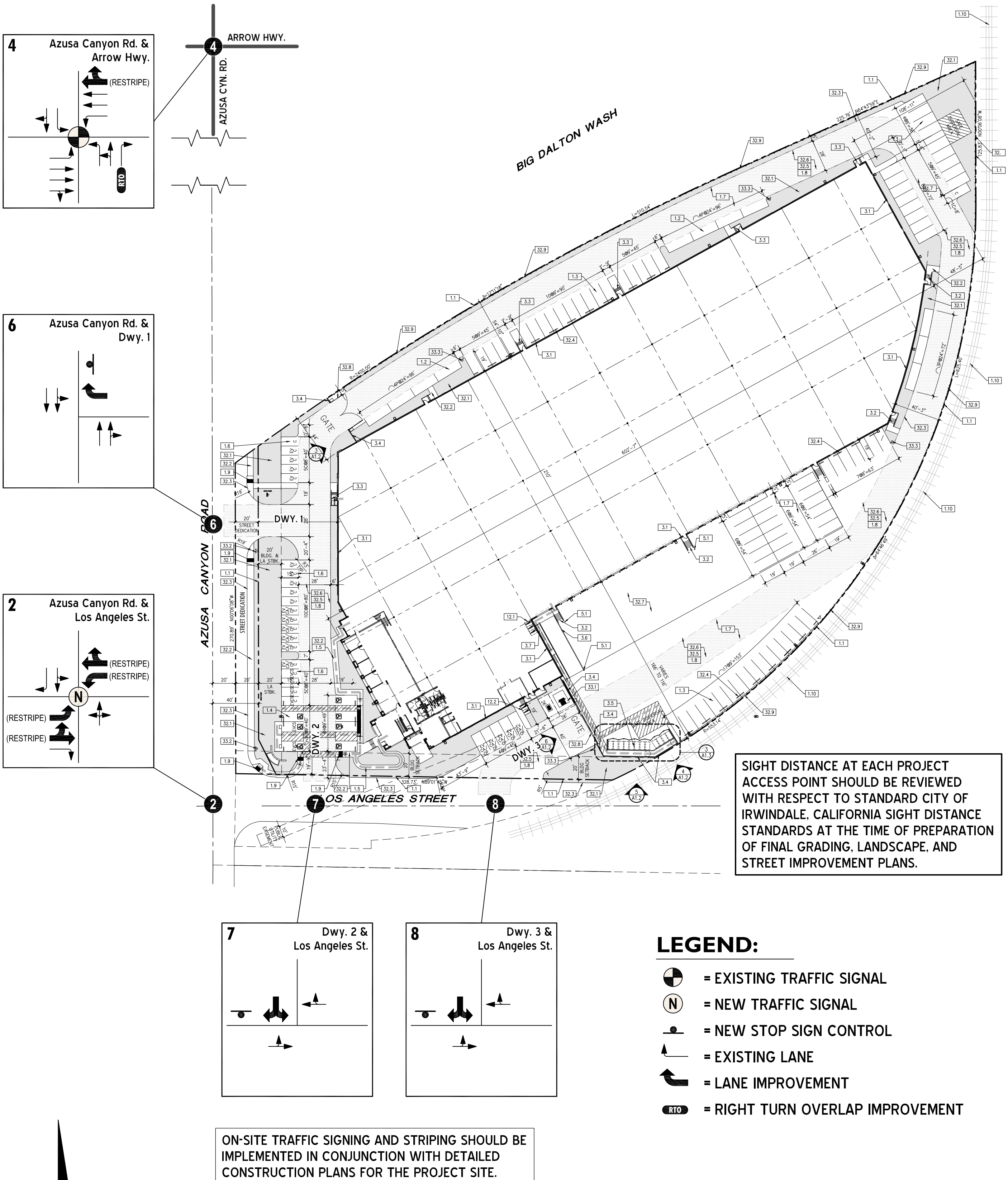
Azusa Canyon Road / Arrow Highway (#4) – The following improvements are necessary to address existing deficient operations:

- 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 x Peak 15-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

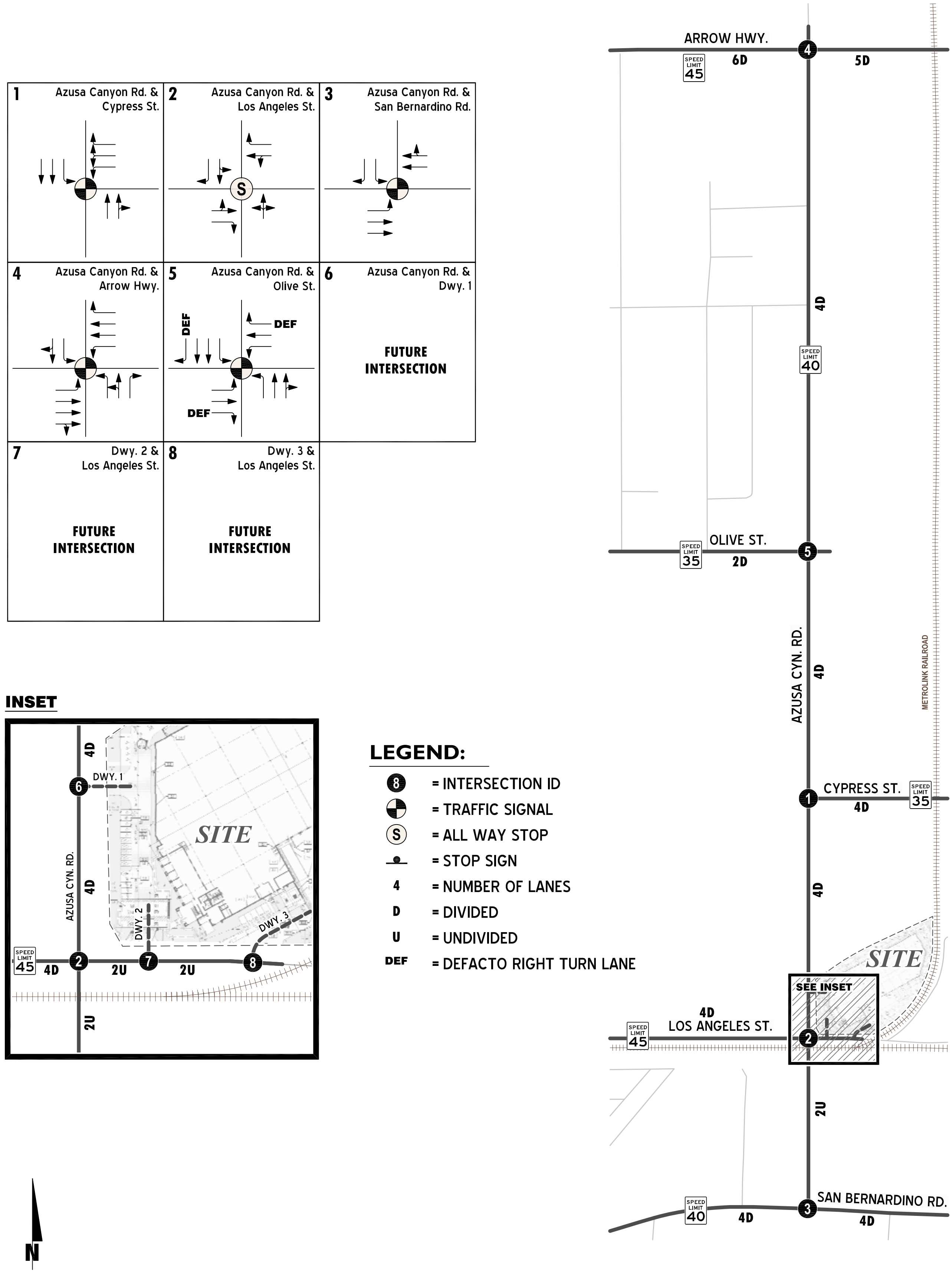
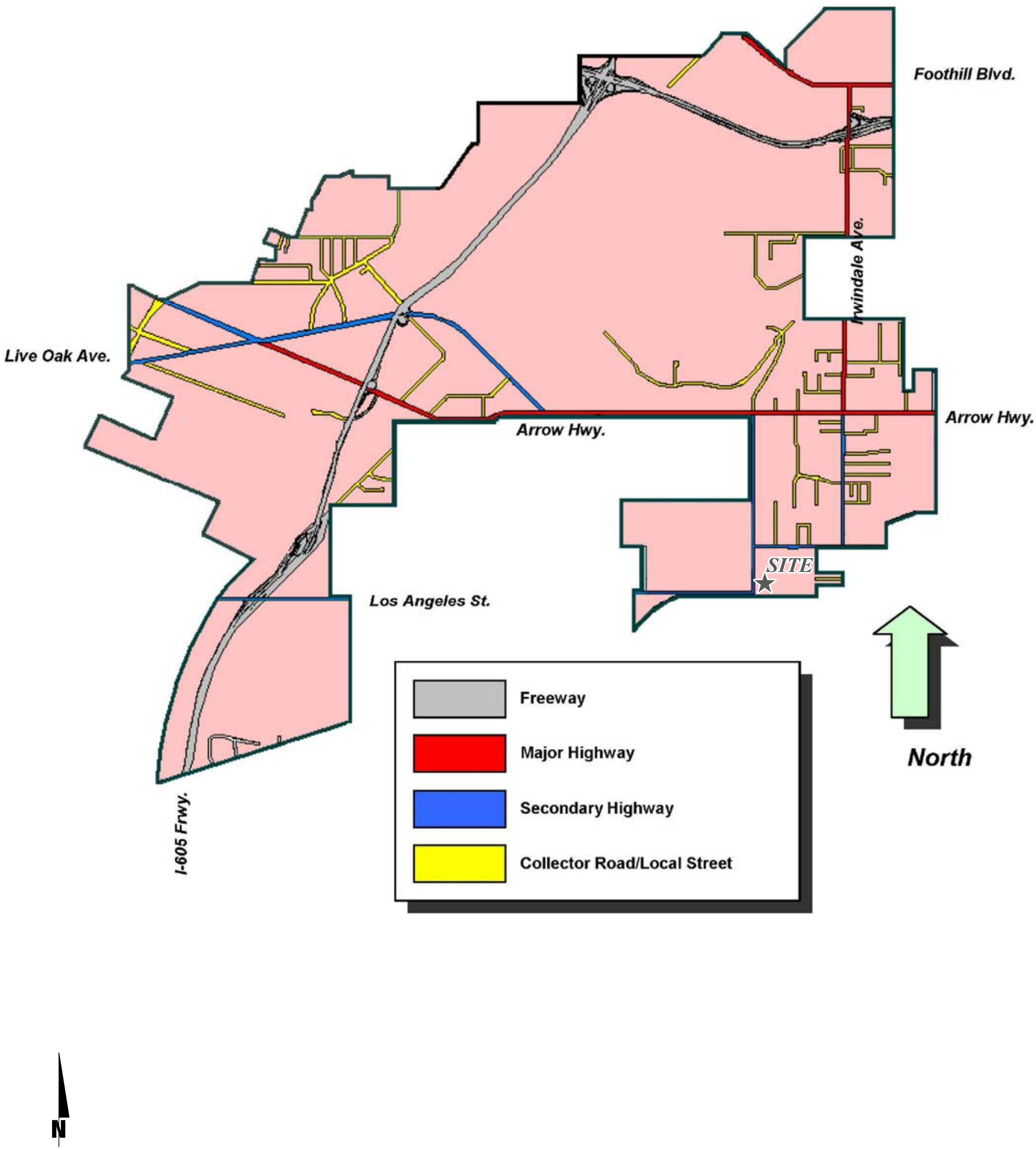


EXHIBIT 3-2: CITY OF IRWINDALE GENERAL PLAN CIRCULATION ELEMENT



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

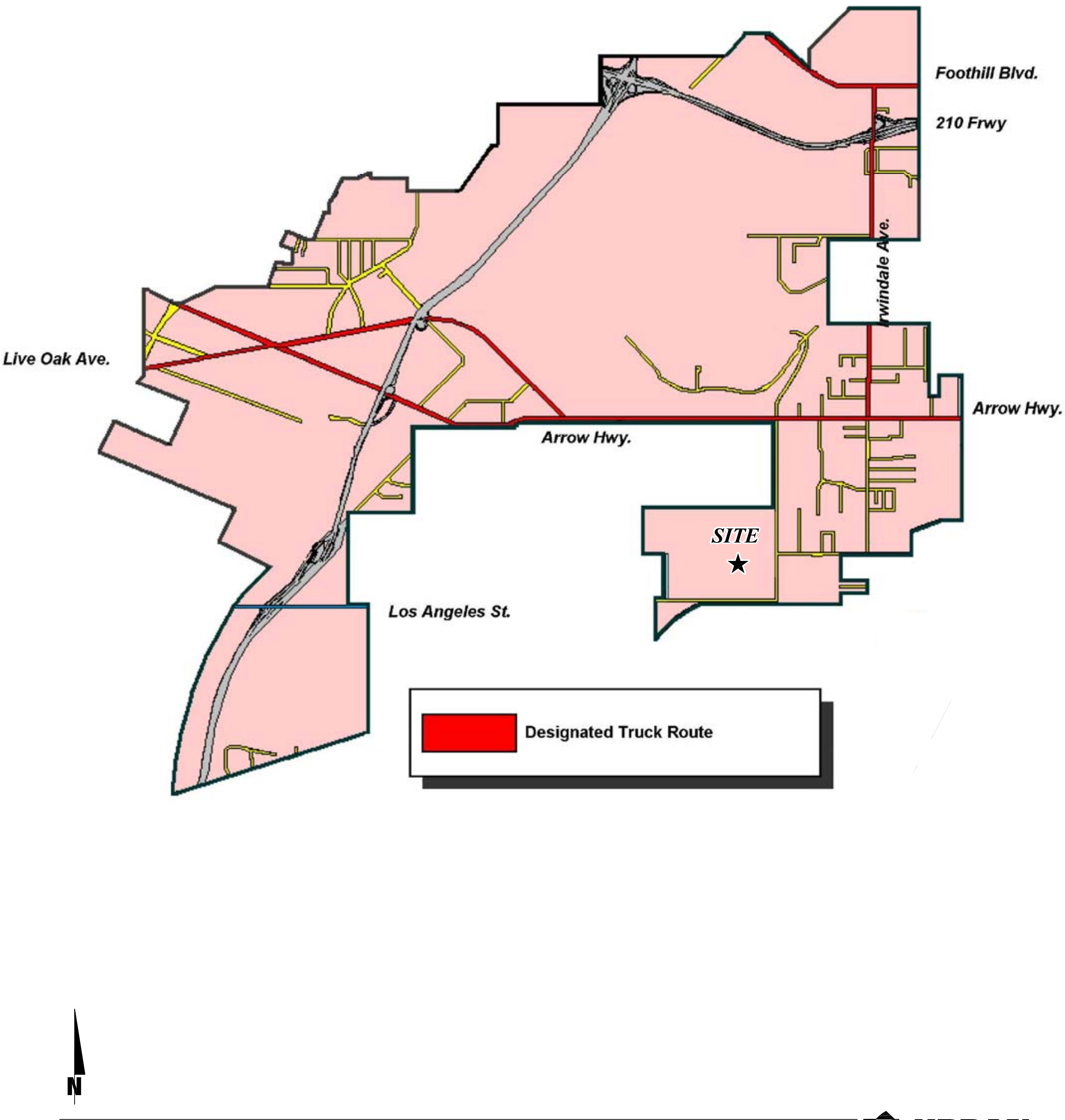
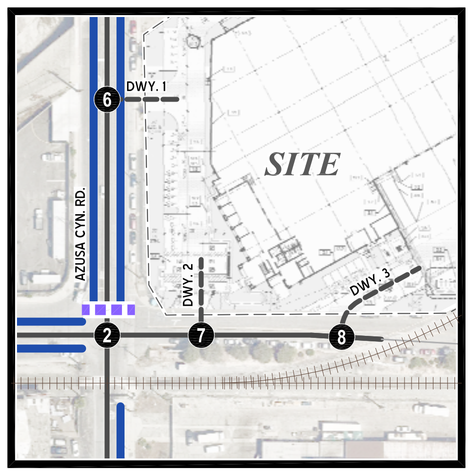


EXHIBIT 3-4: EXISTING PEDESTRIAN AND BICYCLE FACILITIES

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:

Weekday PM Peak Hour (Approach Volume + Exit Volume) x 11.628 = 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):

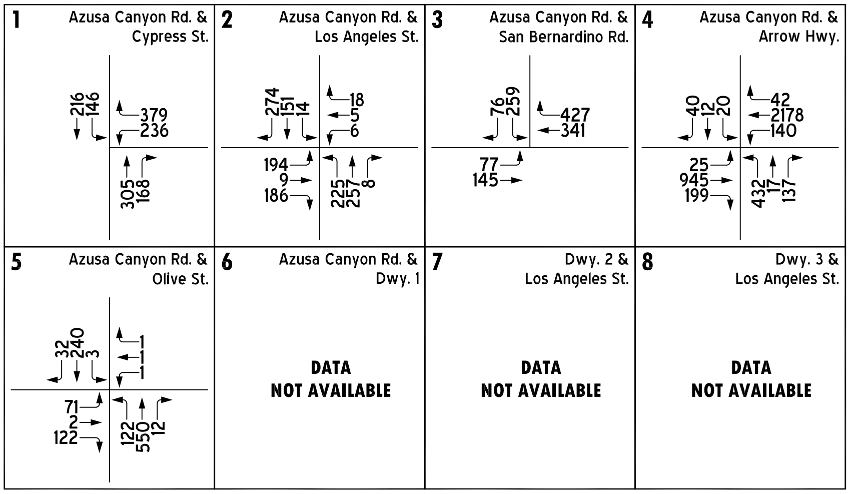
- #2 – Azusa Canyon Road / Los Angeles Street
- #4 - Azusa Canyon Road / Arrow Highway

3.7 EXISTING TRAFFIC SIGNAL WARRANTS ANALYSIS

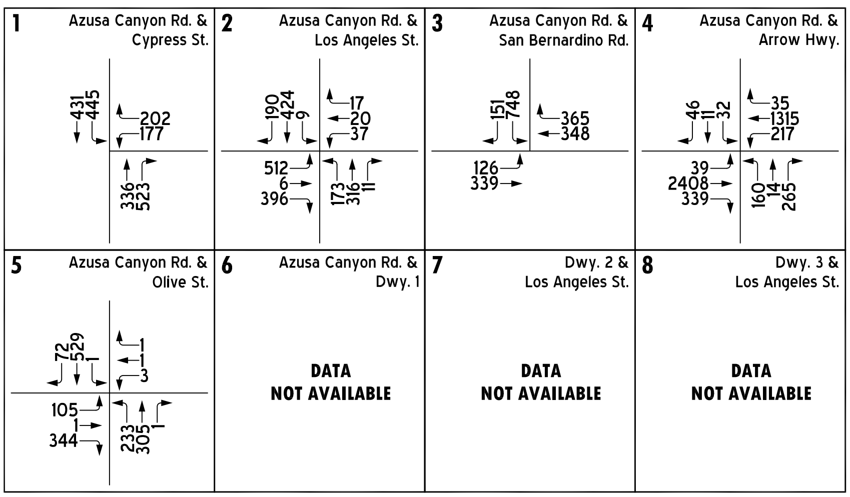
Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. The unsignalized study area intersection of Azusa Canyon Road / Los Angeles Street currently warrants a traffic signal for Existing (2021) traffic conditions. Existing conditions traffic 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



PM PEAK HOUR



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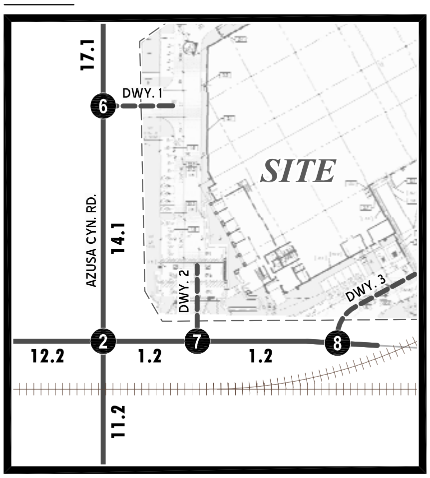

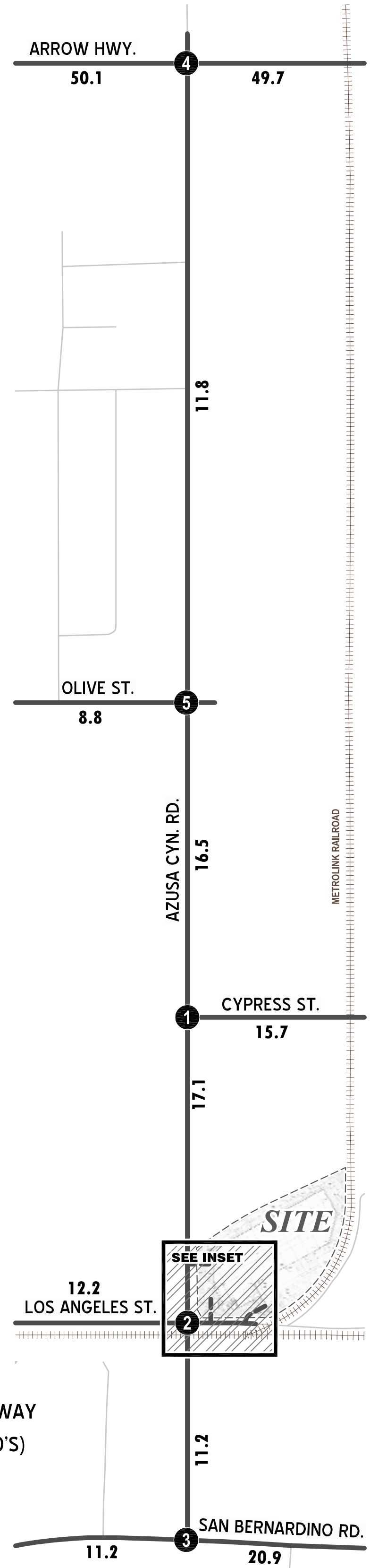

LEGEND:

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

N

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

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												HCM				ICU			
			Northbound			Southbound			Eastbound			Westbound			Delay[2] (Secs)		Level of Service[2]		ICU[4] (v/c)		Level of Service[4]	
			L	T	R	L	T	R	L	T	R	L	T	R	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	31.5	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 In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
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 In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
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 4-2: PROPOSED PROJECT TRIP GENERATION SUMMARY (PCE)

Trip Generation Rates[1]									
Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
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 In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
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)

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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 In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
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 In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
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]									
	ITE LU		AM Peak Hour			PM Peak Hour			
Land Use	Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
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									
	ITE LU		AM Peak Hour			PM Peak Hour			
Land Use	Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
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								
		AM Peak Hour			PM Peak Hour			
Land Use[2]	Quantity[1]	In	Out	Total	In	Out	Total	Daily
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 ***(Proposed - Existing)***		**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.

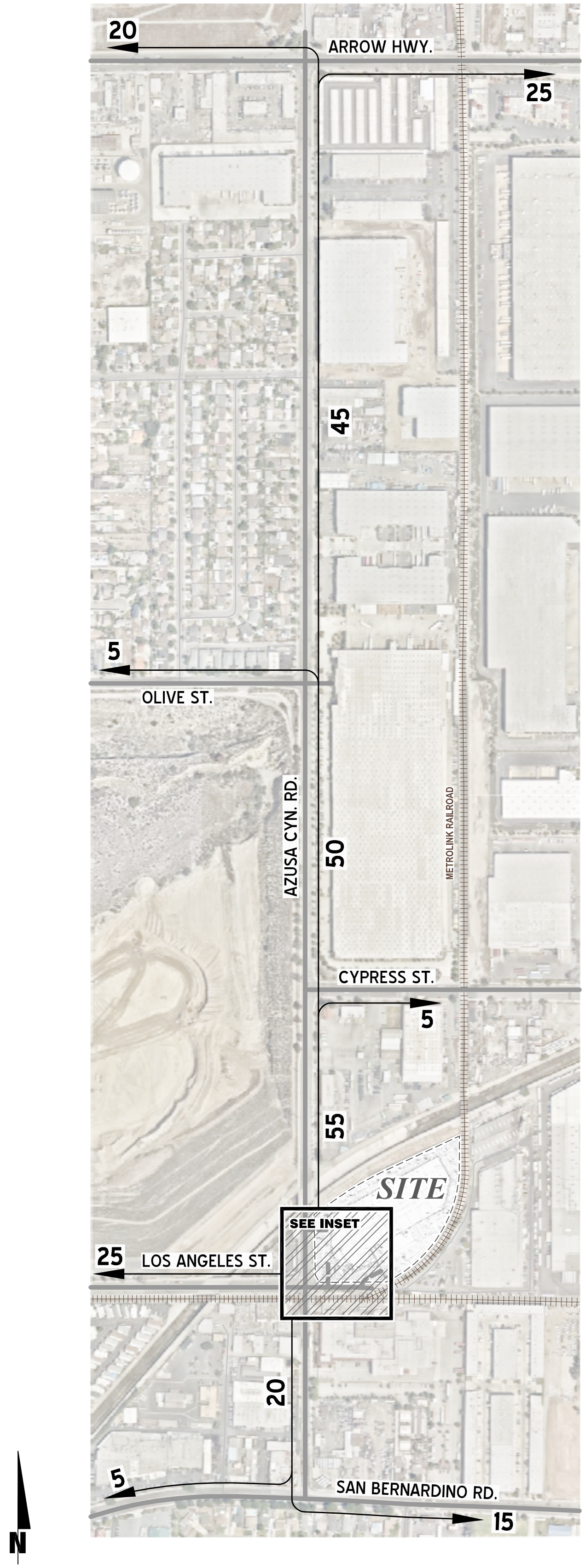
4.5 BACKGROUND TRAFFIC

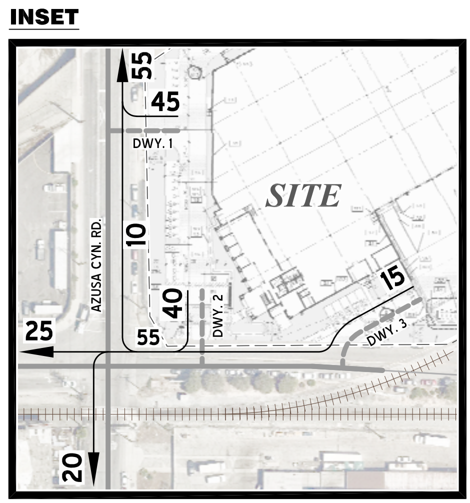
The Interim Year Cumulative (2022) With Project traffic conditions analyses determine the Project's contribution to near-term traffic deficiencies. To account for background traffic growth, traffic associated with other known cumulative development projects in conjunction with an ambient growth from 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





LEGEND:

10 = PERCENT FROM/TO PROJECT

= FUTURE PROJECT DRIVEWAY

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

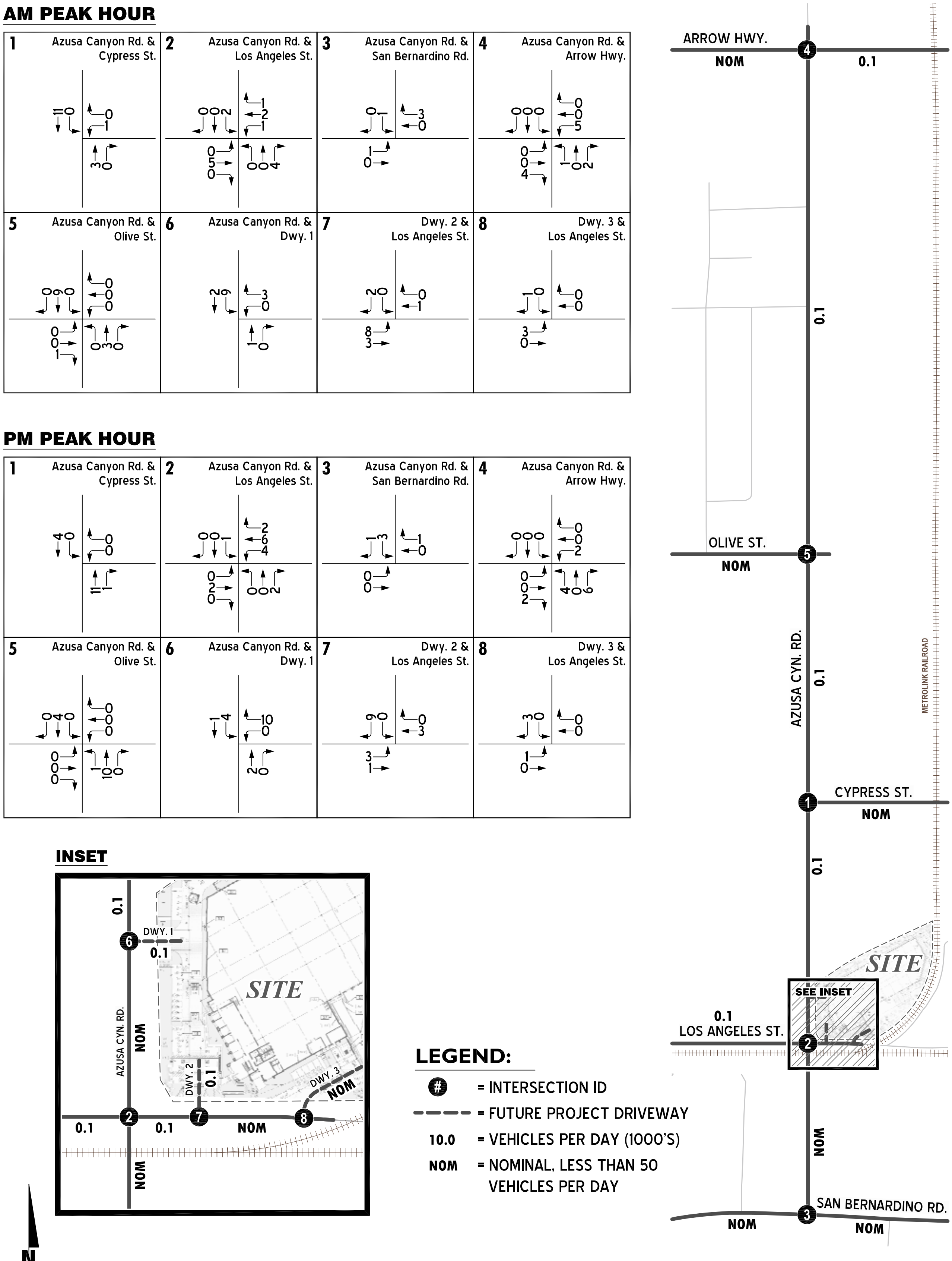


EXHIBIT 4-3: SITE EXISTING BASELINE TRAFFIC VOLUMES (PCE)

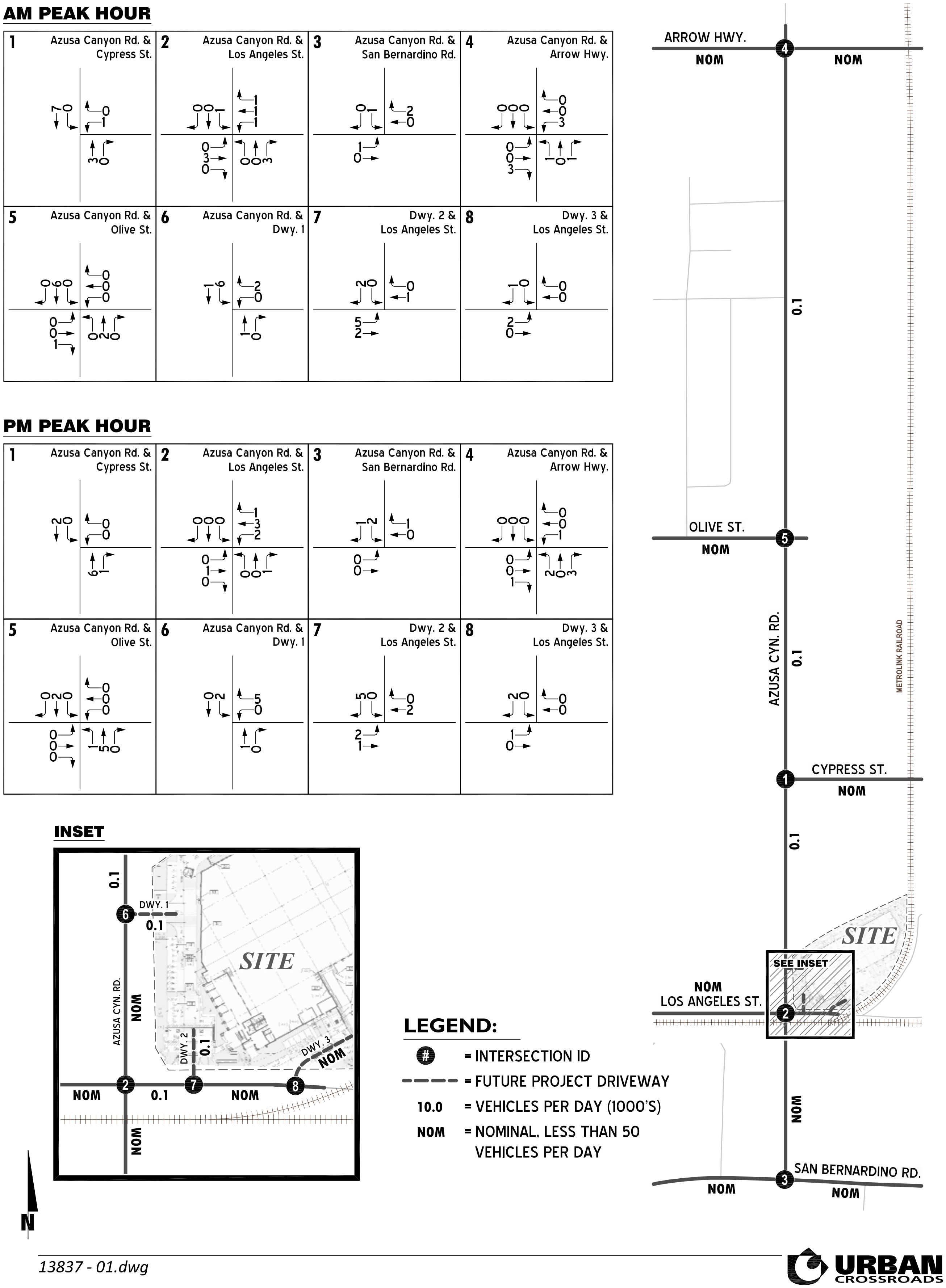


EXHIBIT 4-4: CUMULATIVE DEVELOPMENT LOCATION MAP

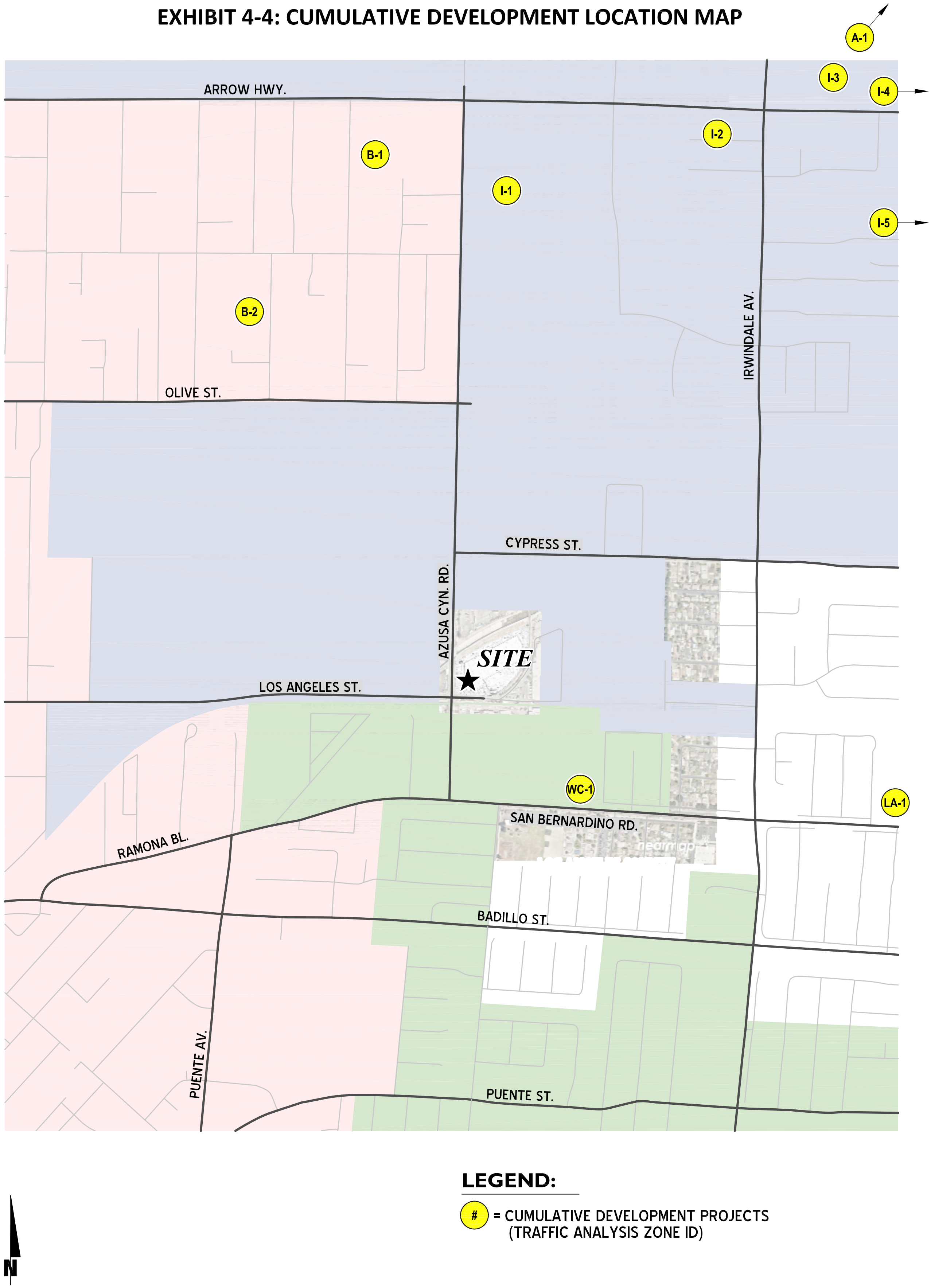


TABLE 4-6: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

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 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							
			Northbound			Southbound			Eastbound			Westbound			HCM Delay[2] (Secs)		HCM Level of Service[2]		ICU[4] (v/c)		ICU Level of Service[4]		HCM Delay[2] (Secs)		HCM Level of Service[2]		ICU[4] (v/c)		ICU Level of Service[4]	
			L	T	R	L	T	R	L	T	R	L	T	R	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.

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

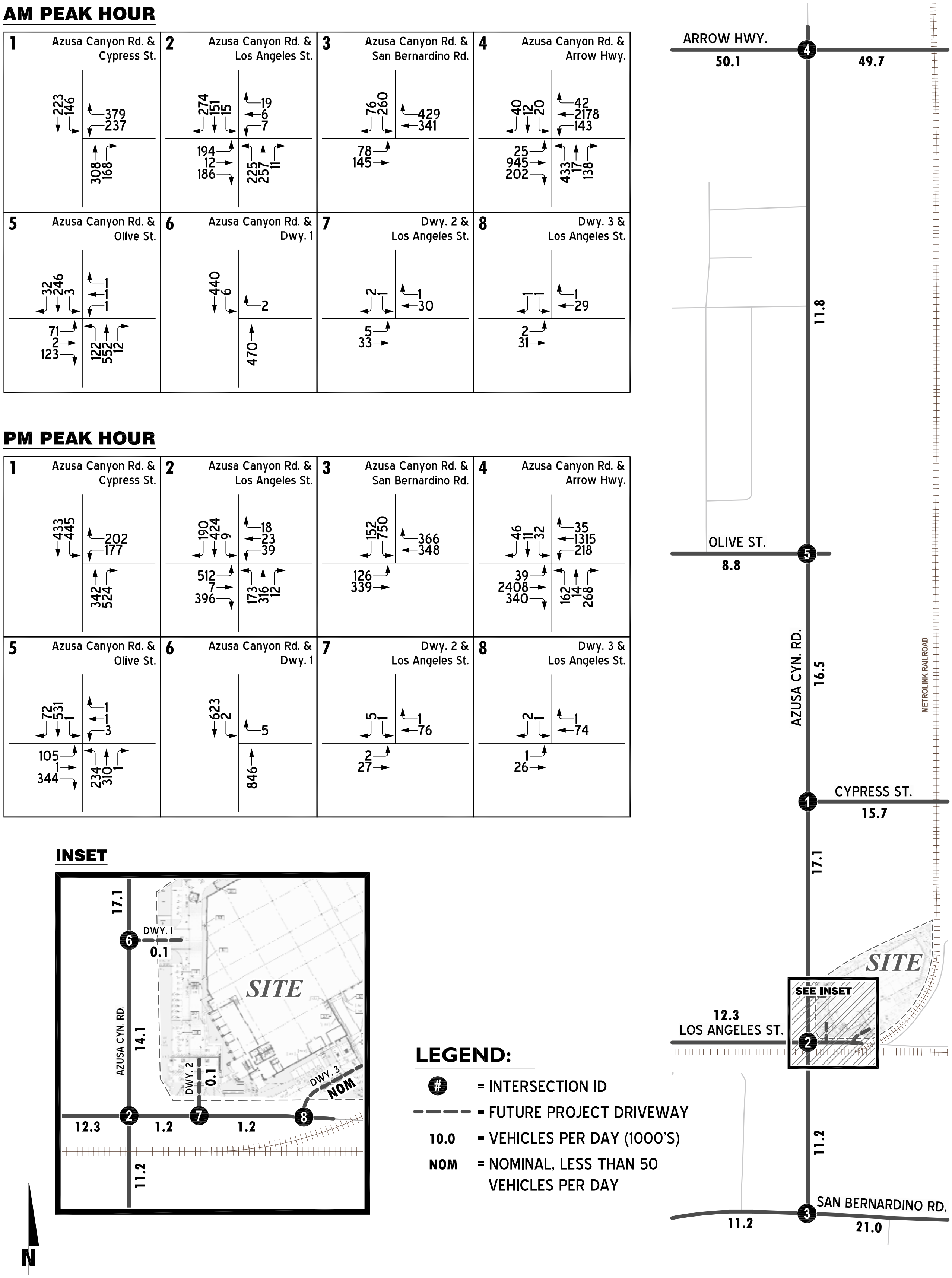
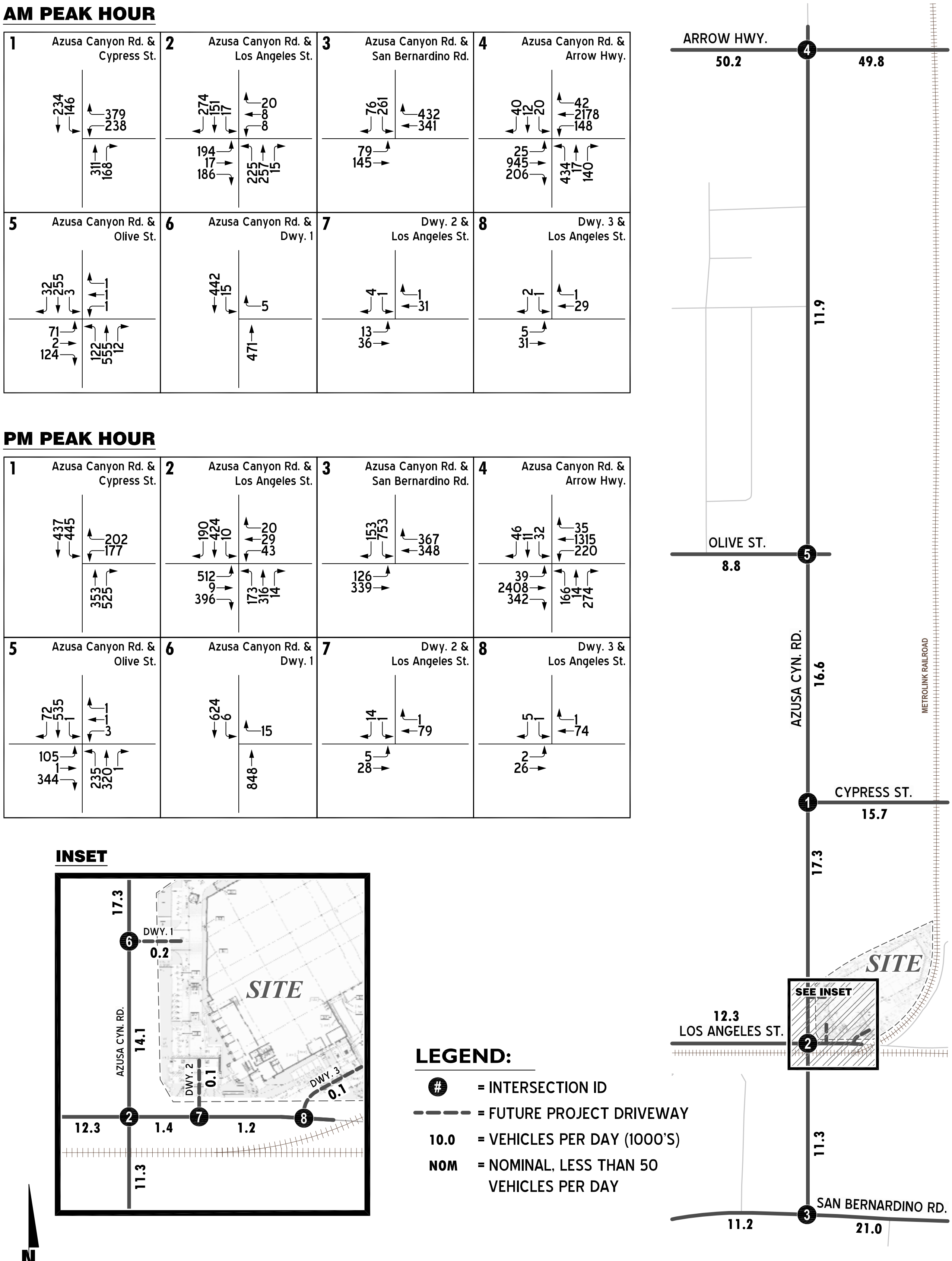


EXHIBIT 5-2: EXISTING (HYPOTHETICAL "NON-COVID" 2021) PLUS SITE BASELINE LAND USE PLUS PROPOSED PROJECT TRAFFIC VOLUMES



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							
															HCM				ICU				HCM				ICU			
			Northbound			Southbound			Eastbound			Westbound			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]	
			L	T	R	L	T	R	L	T	R	L	T	R	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	**TS**	0	1!	0	0.5	0.5	1	**1.5**	0.5	**1**	**1**	**1**	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	**1>**	1	1	0	1	3	0	1	**3**	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	**CSS**	0.5	1.5	0	0	2	0	0	0	0	0	0	**1**	10.0	11.6	A	B	-	-	-	-	10.0	11.7	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.

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

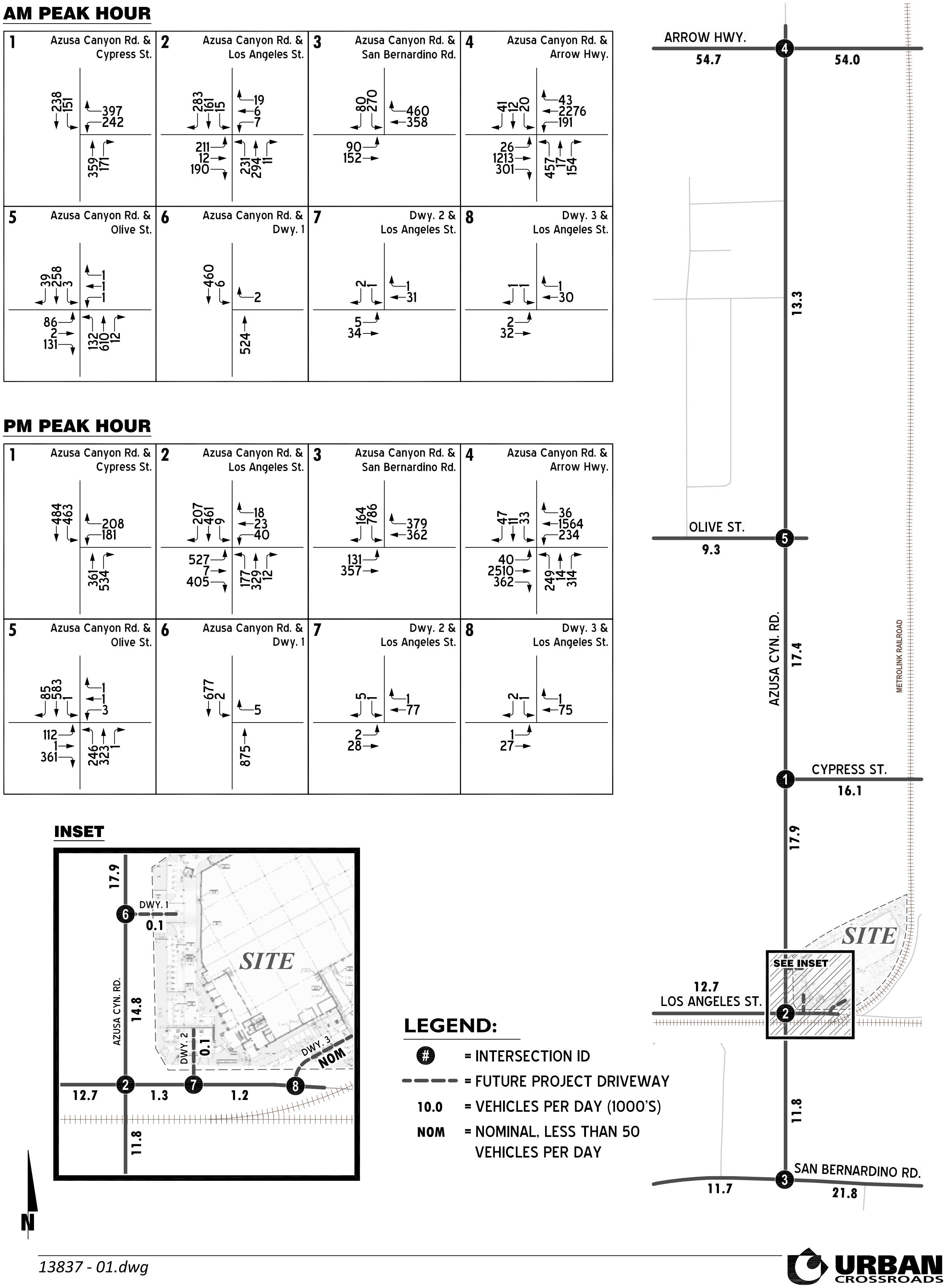
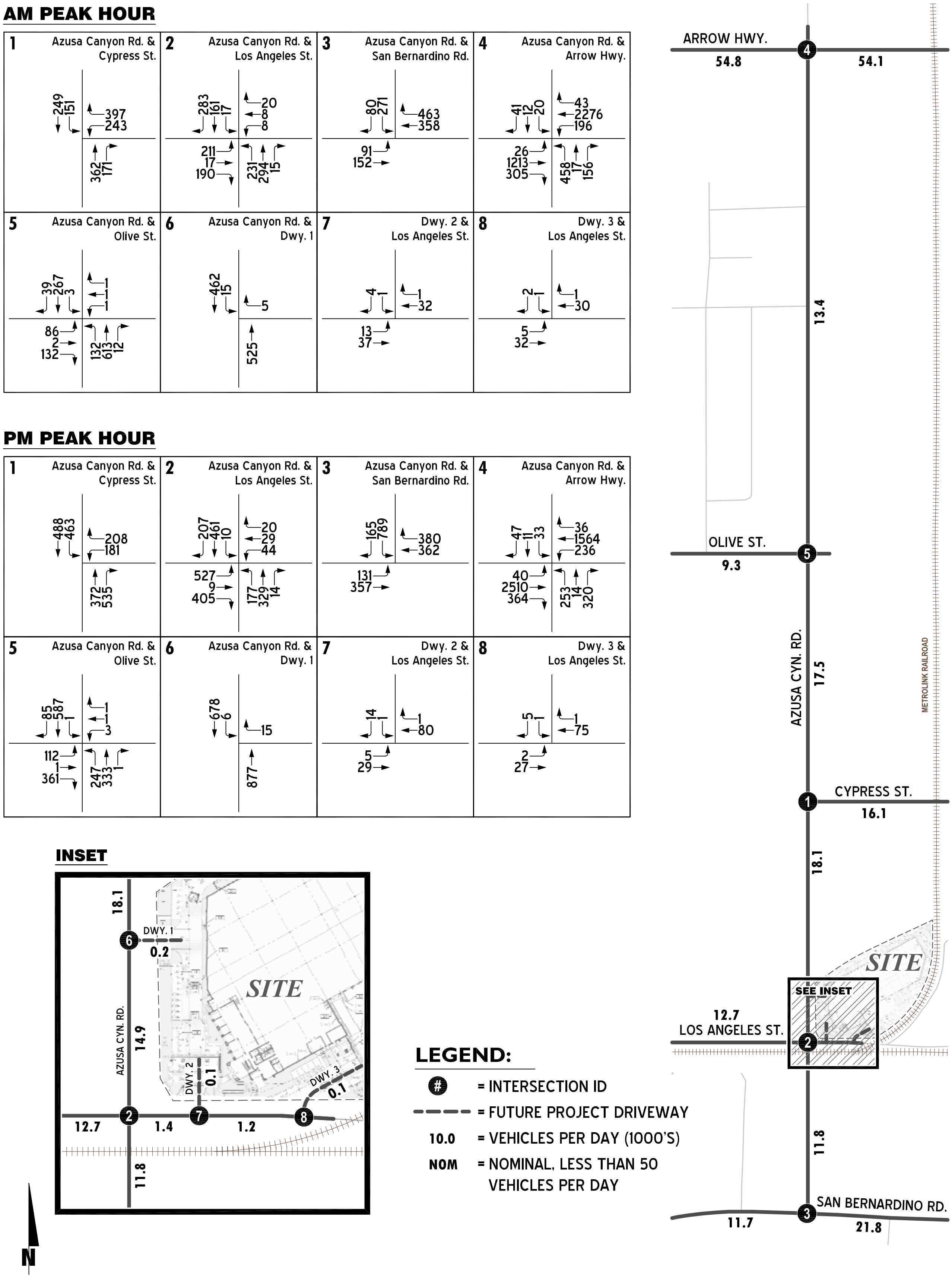


EXHIBIT 6-2: INTERIM YEAR CUMULATIVE PLUS SITE BASELINE LAND USE (2022) WITH PROJECT TRAFFIC VOLUMES



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							
															HCM				ICU				HCM				ICU			
			Northbound			Southbound			Eastbound			Westbound			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]	
			L	T	R	L	T	R	L	T	R	L	T	R	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	TS	0	1!	0	0.5	0.5	1	1.5	0.5	1	1	1	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	1>	1	1	0	1	3	0	1	3	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	CSS	0.5	1.5	0	0	2	0	0	0	0	0	0	1	10.0	11.9	A	B	-	-	-	-	10.0	12.1	A	B	-	-	-	-
7	Dwy. 2 / Los Angeles St.	CSS	0	0	0	0	1!	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.	CSS	0	0	0	0	1!	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.

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

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

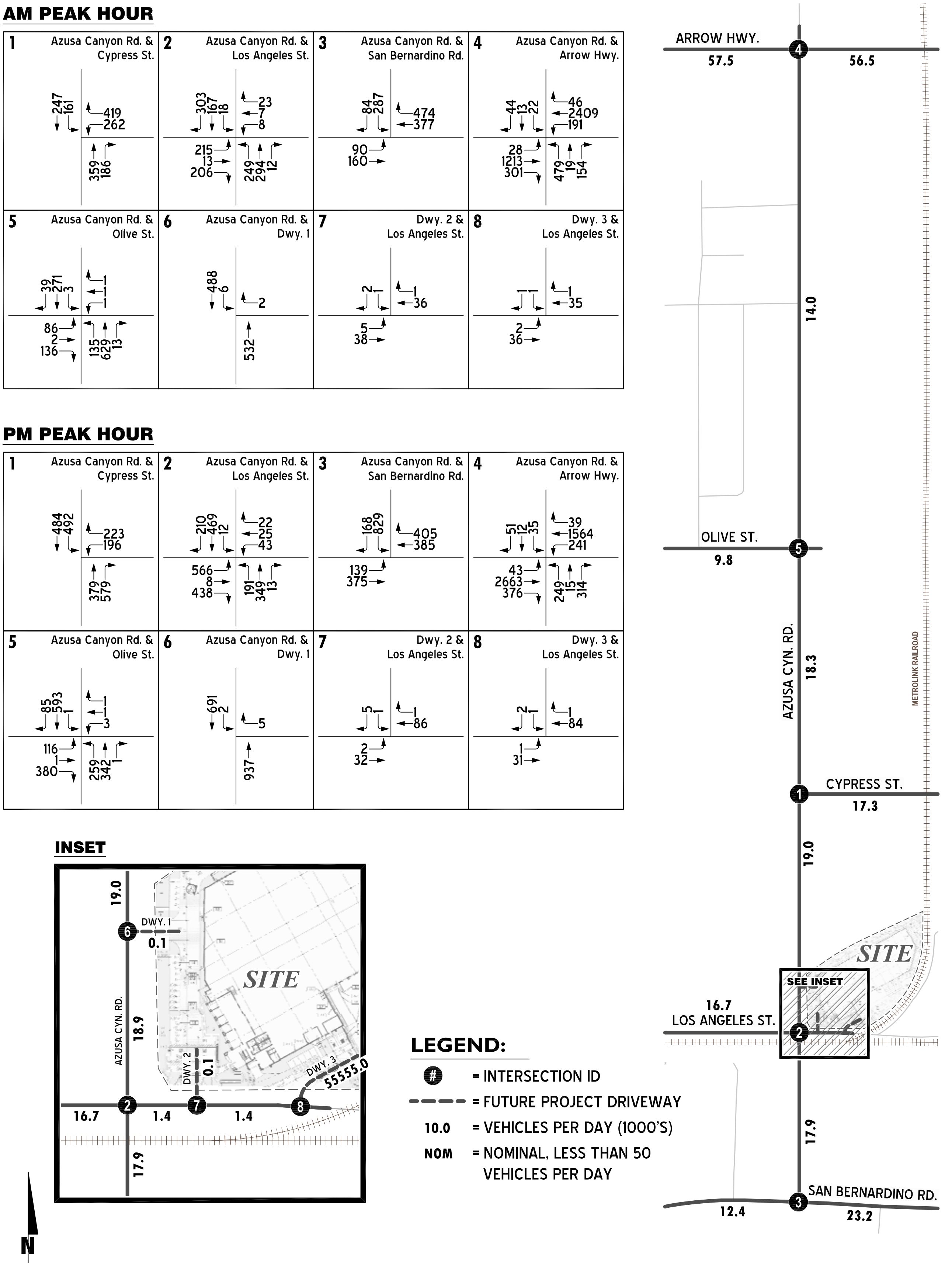

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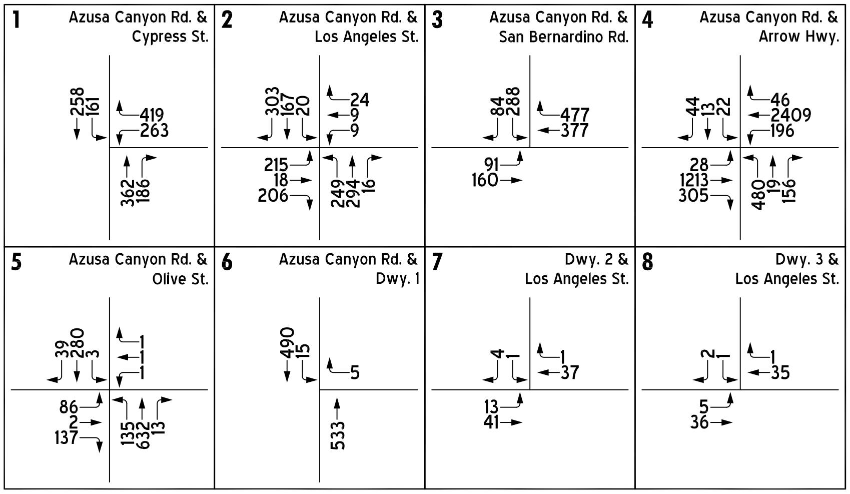
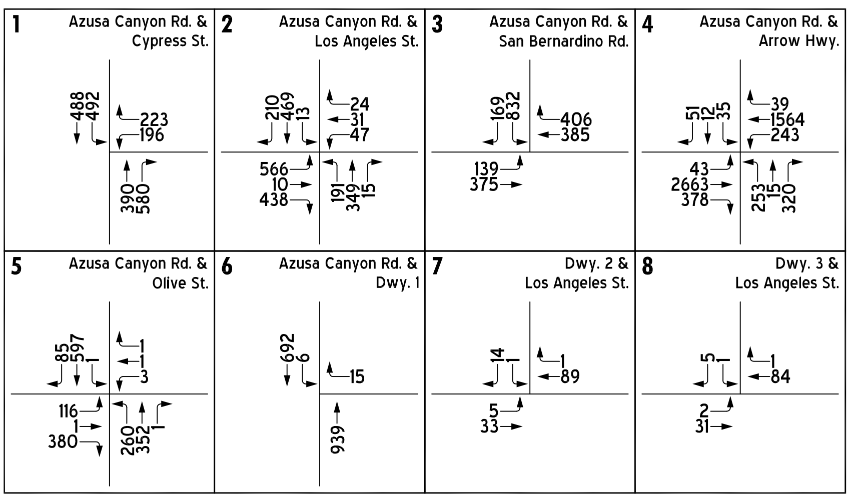
EXHIBIT 7-2: 2040 PLUS SITE BASELINE LAND USE WITH PROJECT TRAFFIC VOLUMES

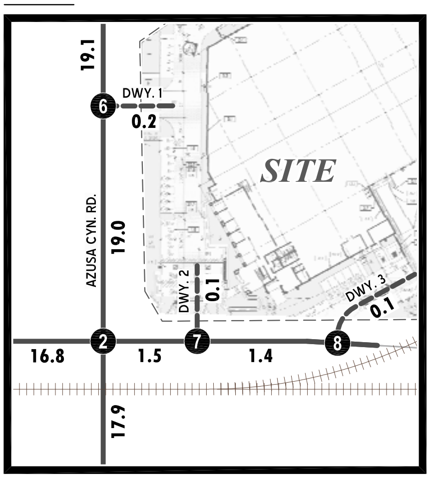
AM PEAK HOUR

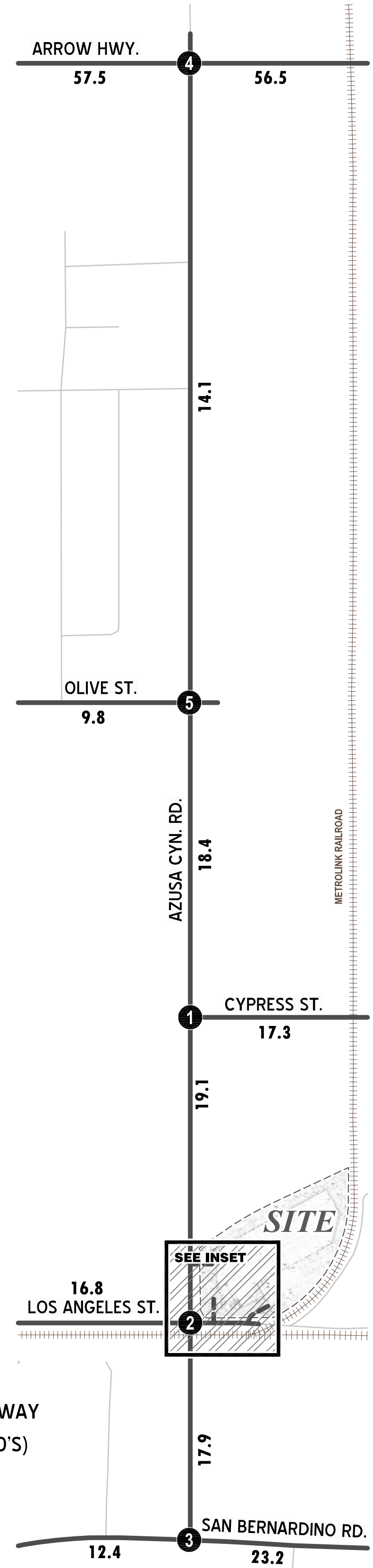


PM PEAK HOUR



INSET





LEGEND:

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

N

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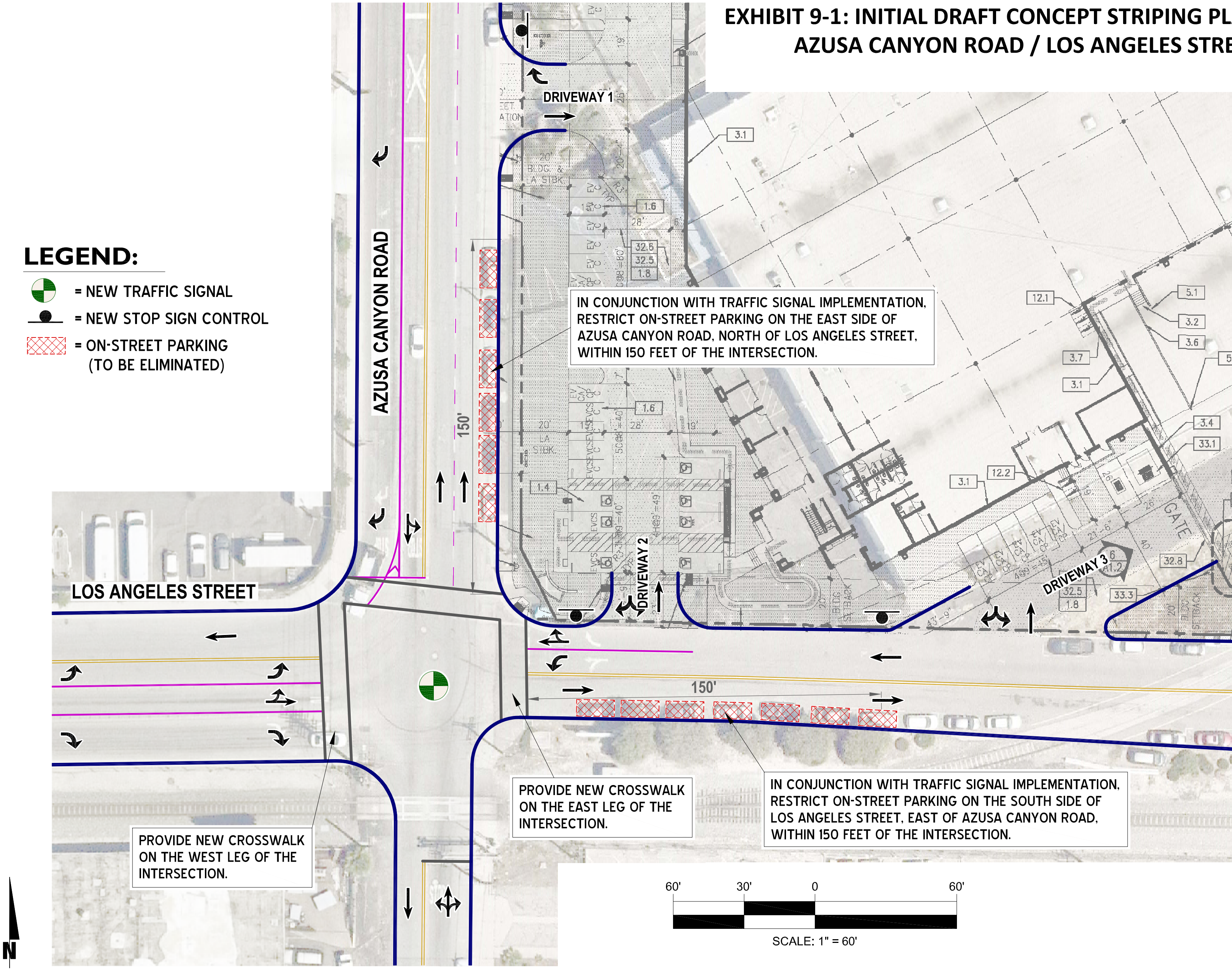
EXHIBIT 9-1: INITIAL DRAFT CONCEPT STRIPING PLAN
AZUSA CANYON ROAD / LOS ANGELES STREET



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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urbanxroads.com

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

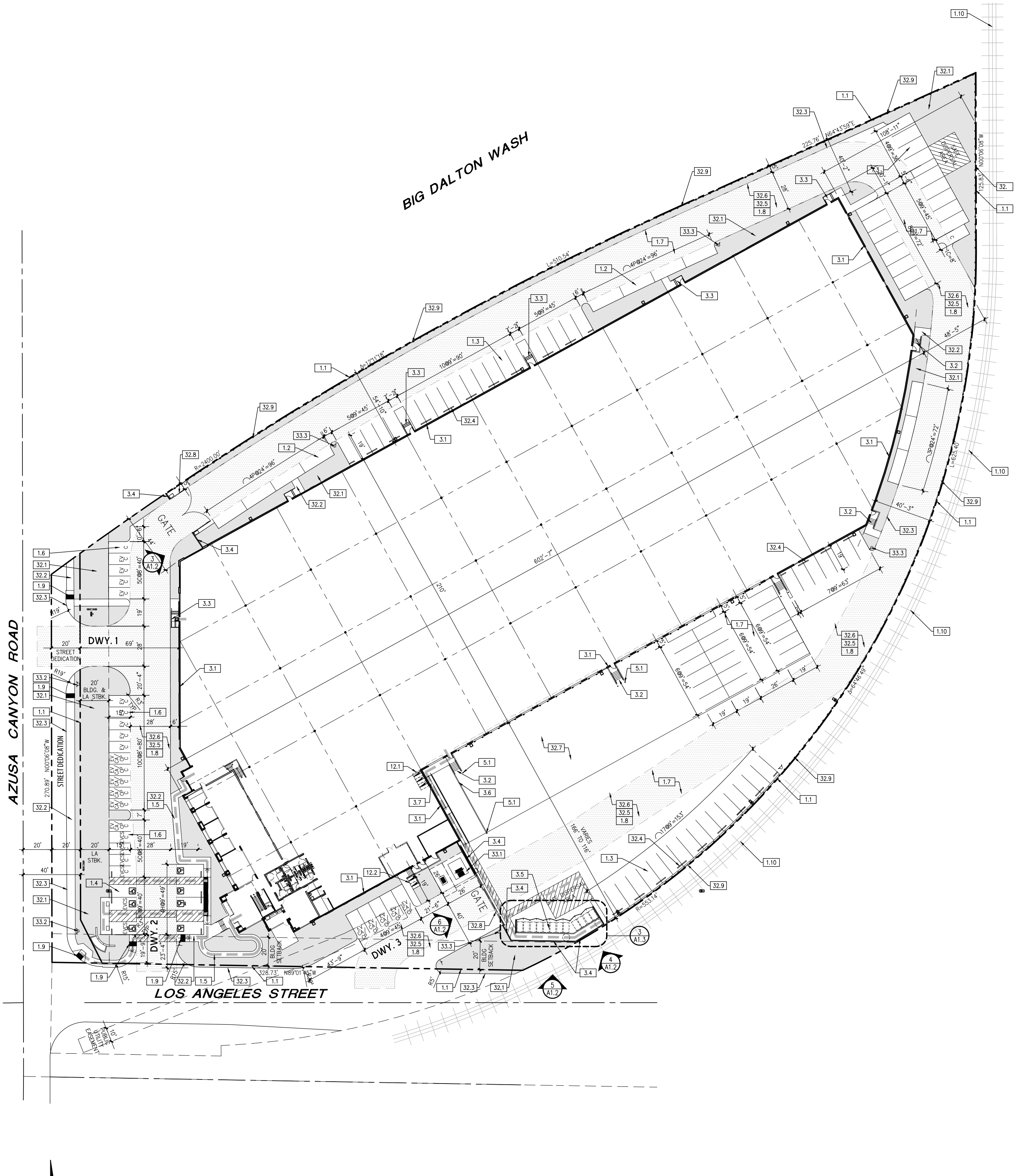
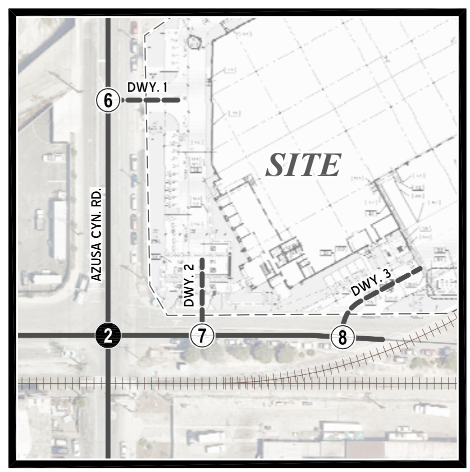


EXHIBIT 2: STUDY AREA

INSET



LEGEND:

- ❺ = EXISTING ANALYSIS LOCATION
- ③ = FUTURE ANALYSIS LOCATION
- ▬ ▬ ▬ = FUTURE PROJECT DRIVEWAY

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

Trip Generation Rates[1]									
			AM Peak Hour			PM Peak Hour			
Land Use	ITE LU Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
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									
			AM Peak Hour			PM Peak Hour			
Land Use	ITE LU Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
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]									
			AM Peak Hour			PM Peak Hour			
Land Use	ITE LU Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
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									
			AM Peak Hour			PM Peak Hour			
Land Use	ITE LU Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
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)

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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 In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
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 In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
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).

F:\UXRjobs_13600-14000_13800\13837\Excel\[13837 - TG.xlsx]Existing (Actual)

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 In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
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 In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
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 ***(Proposed - Existing)***		**21**	**6**	**27**	**8**	**22**	**30**	**222**

[1] TSF = Thousand Square Feet

[2] PCE = Passenger Car Equivalent

F:\UXRjobs_13600-14000_13800\13837\Excel\[13837 - TG.xlsx]TG Comparison

EXHIBIT 3: SITE EXISTING BASELINE TRAFFIC VOLUMES (PCE)

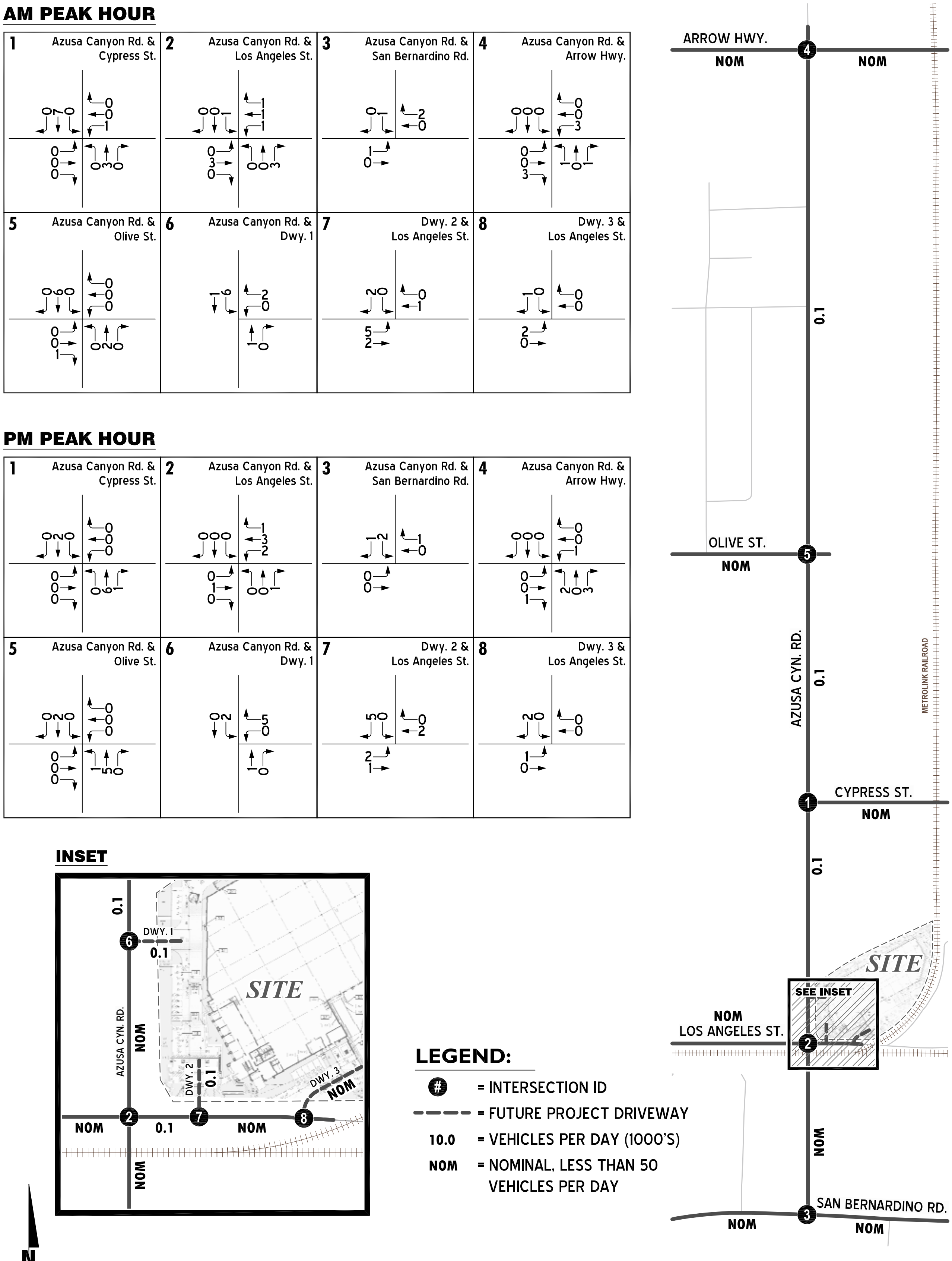
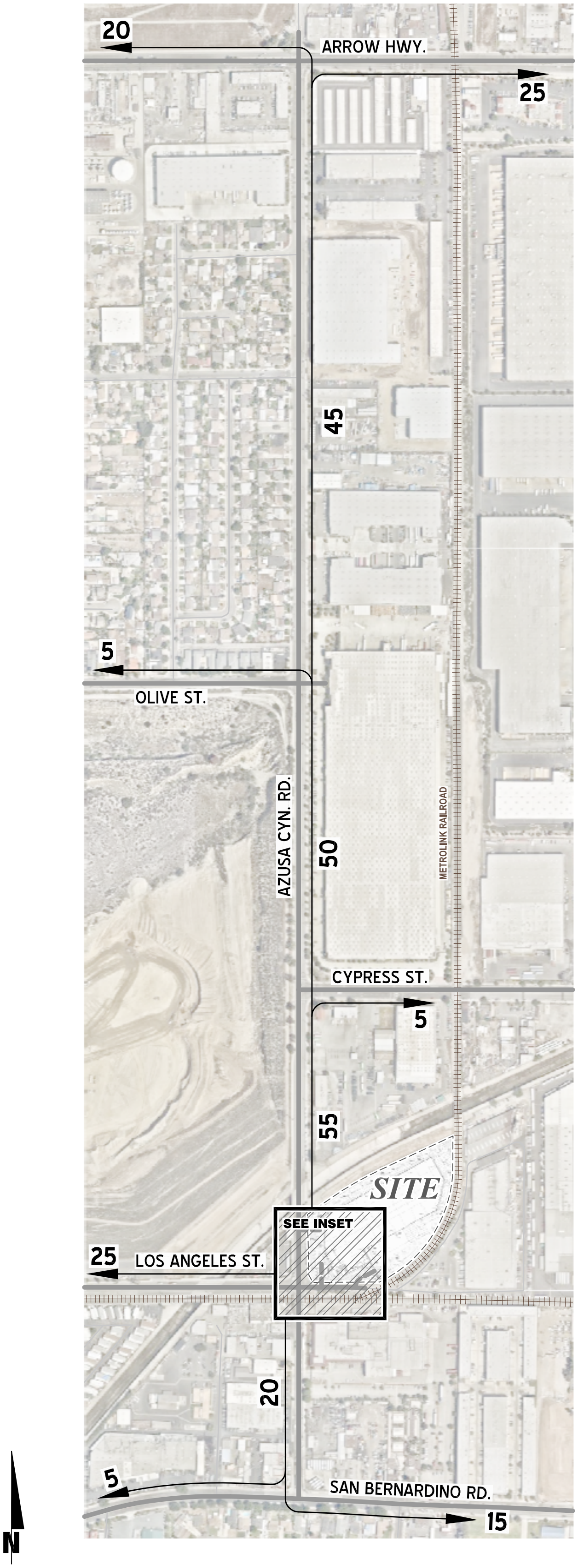
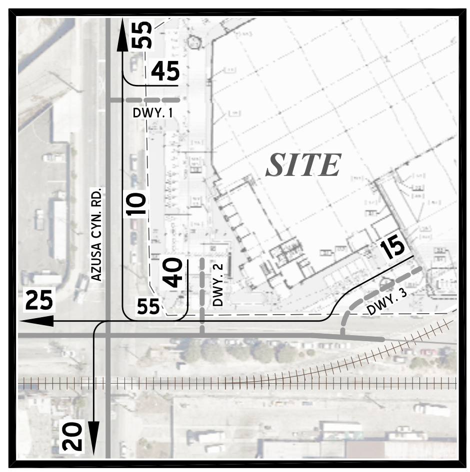


EXHIBIT 4: PROJECT TRIP DISTRIBUTION



INSET



LEGEND:

10 = PERCENT FROM/TO PROJECT

= FUTURE PROJECT DRIVEWAY

EXHIBIT 5: PROPOSED PROJECT ADDED TRAFFIC VOLUMES (PCE)

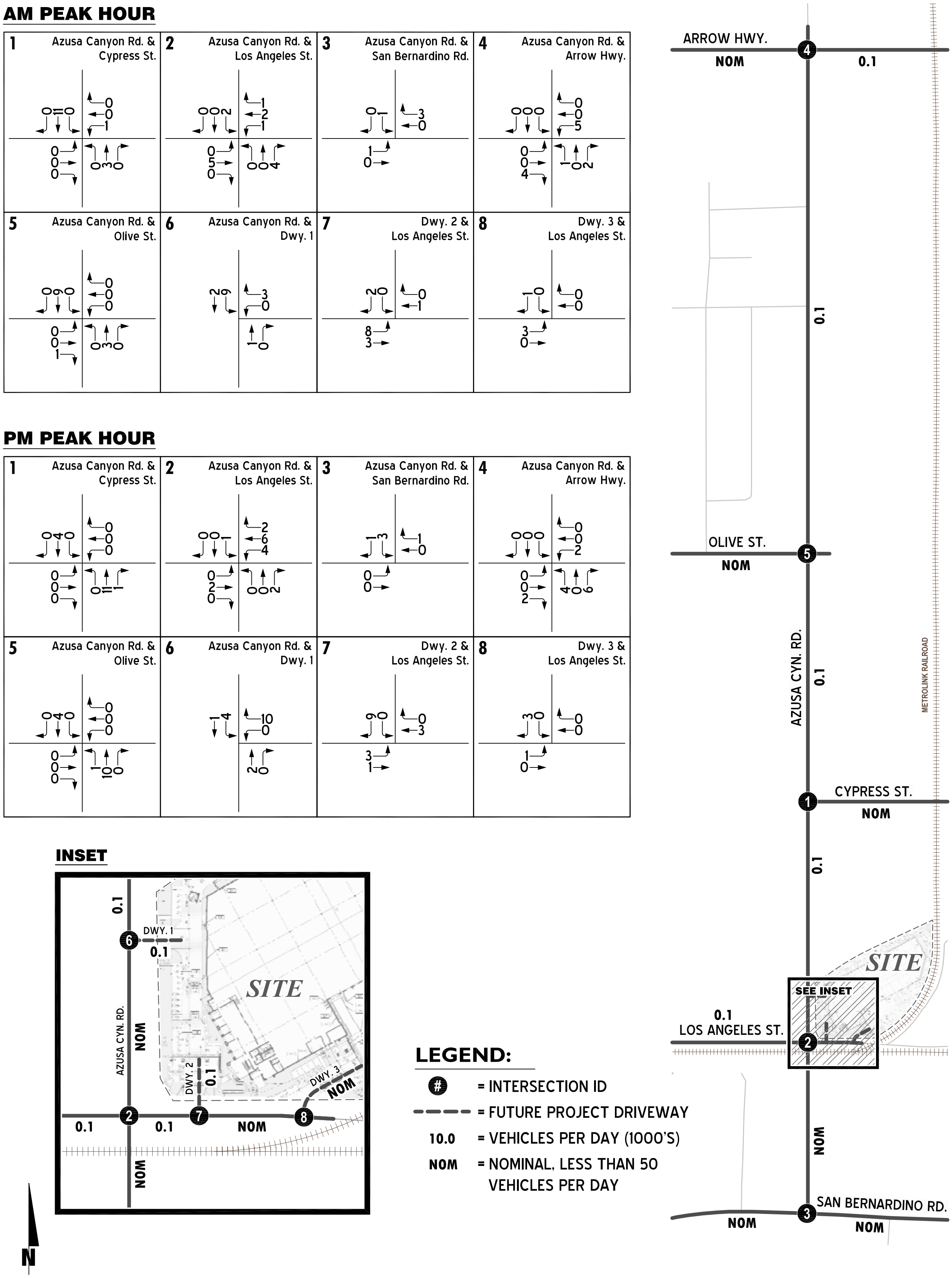


EXHIBIT 6: CITY OF IRWINDALE GENERAL PLAN CIRCULATION ELEMENT

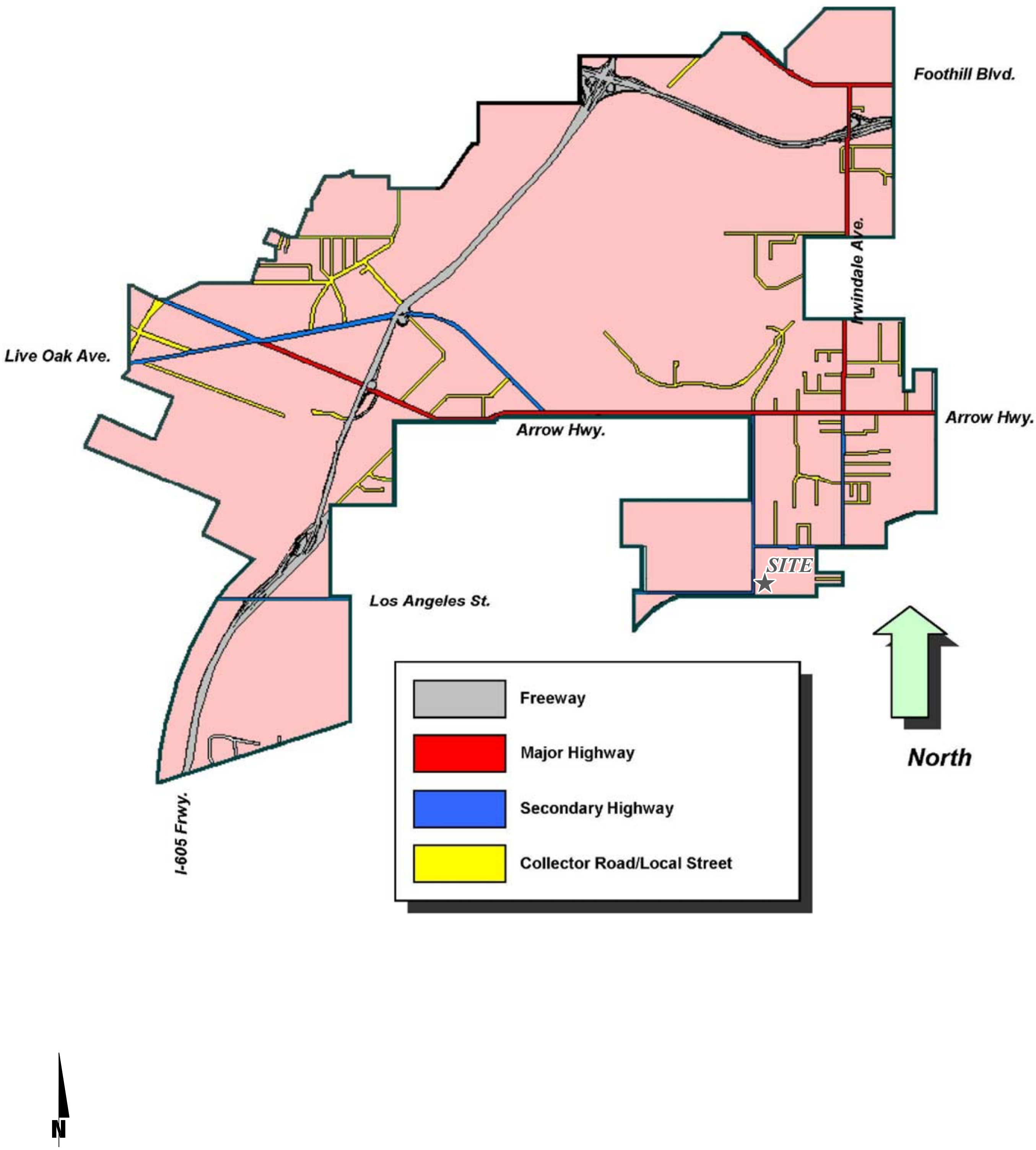


EXHIBIT 7: CITY OF IRWINDALE TRUCK ROUTES

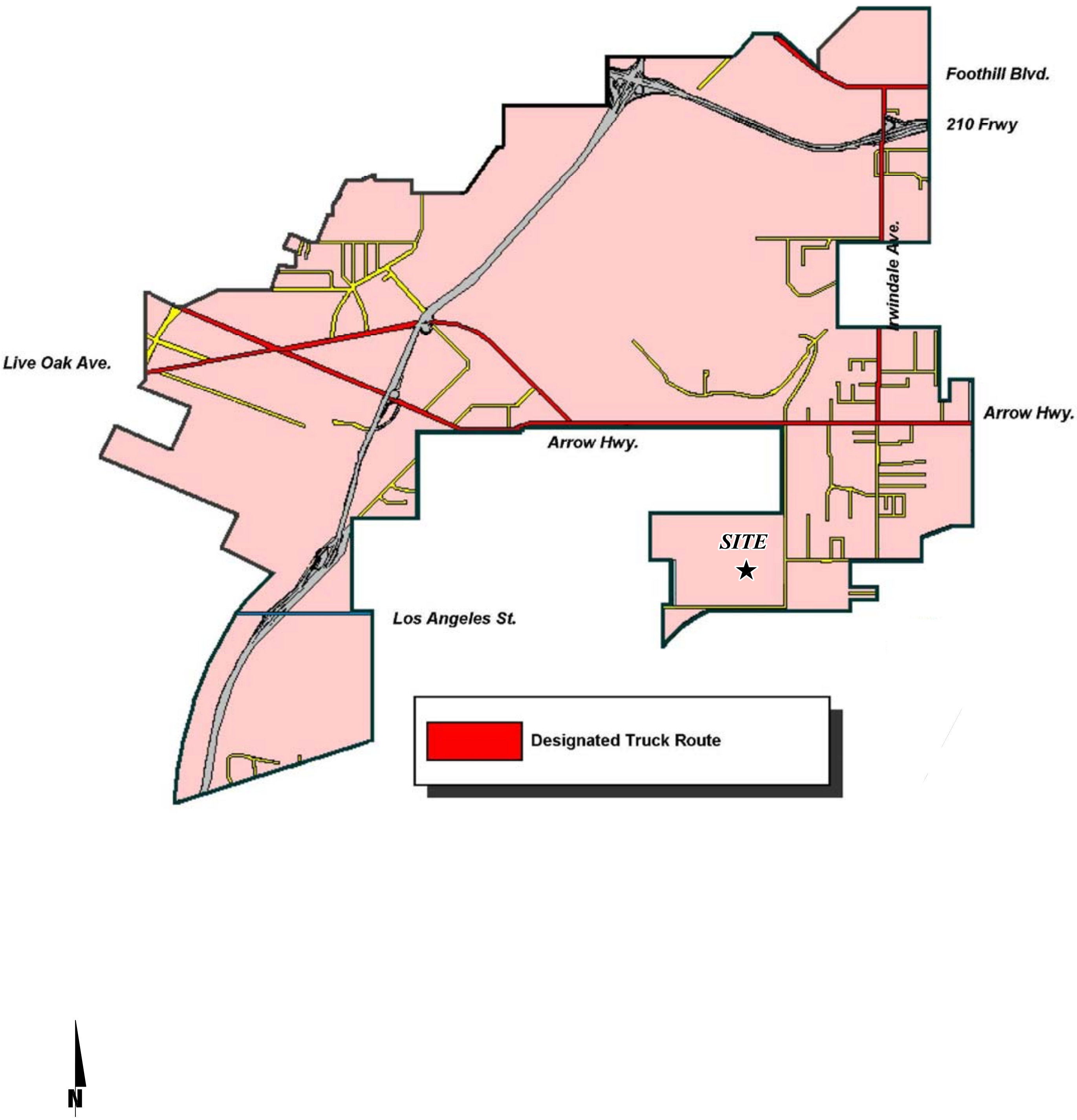


EXHIBIT 8: CITY OF BALDWIN PARK GENERAL PLAN CIRCULATION ELEMENT

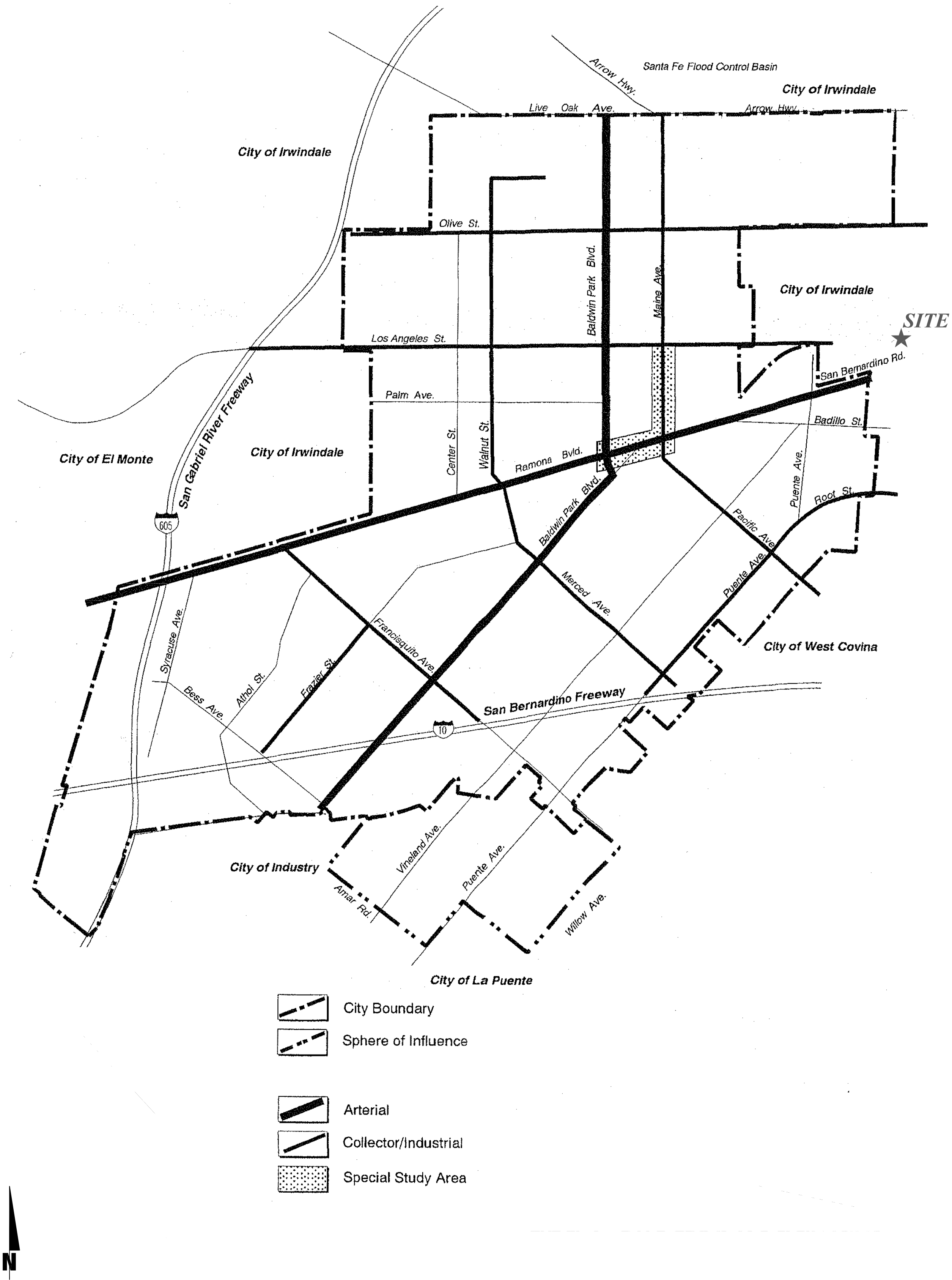
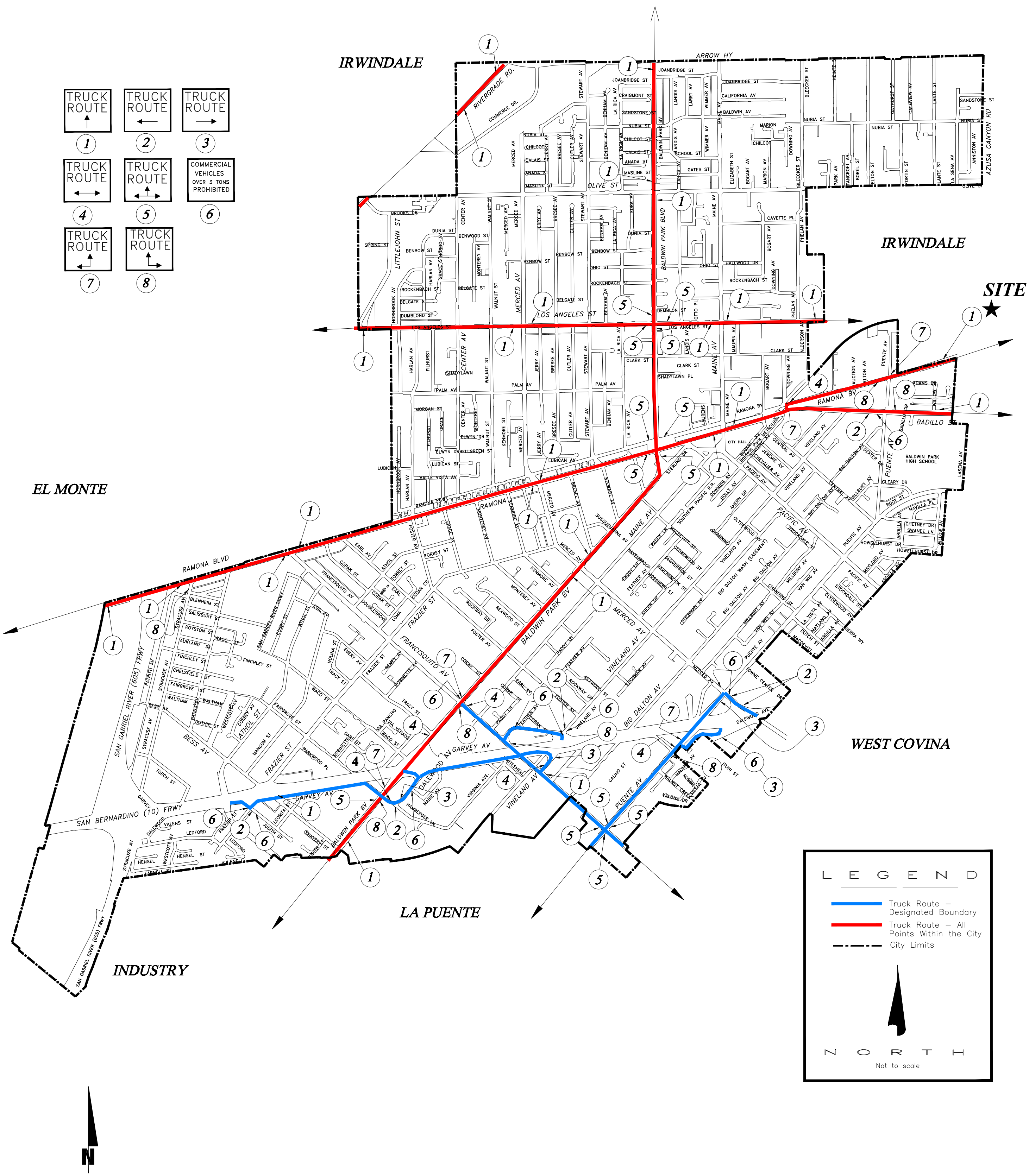


EXHIBIT 9: CITY OF BALDWIN PARK TRUCK ROUTES



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

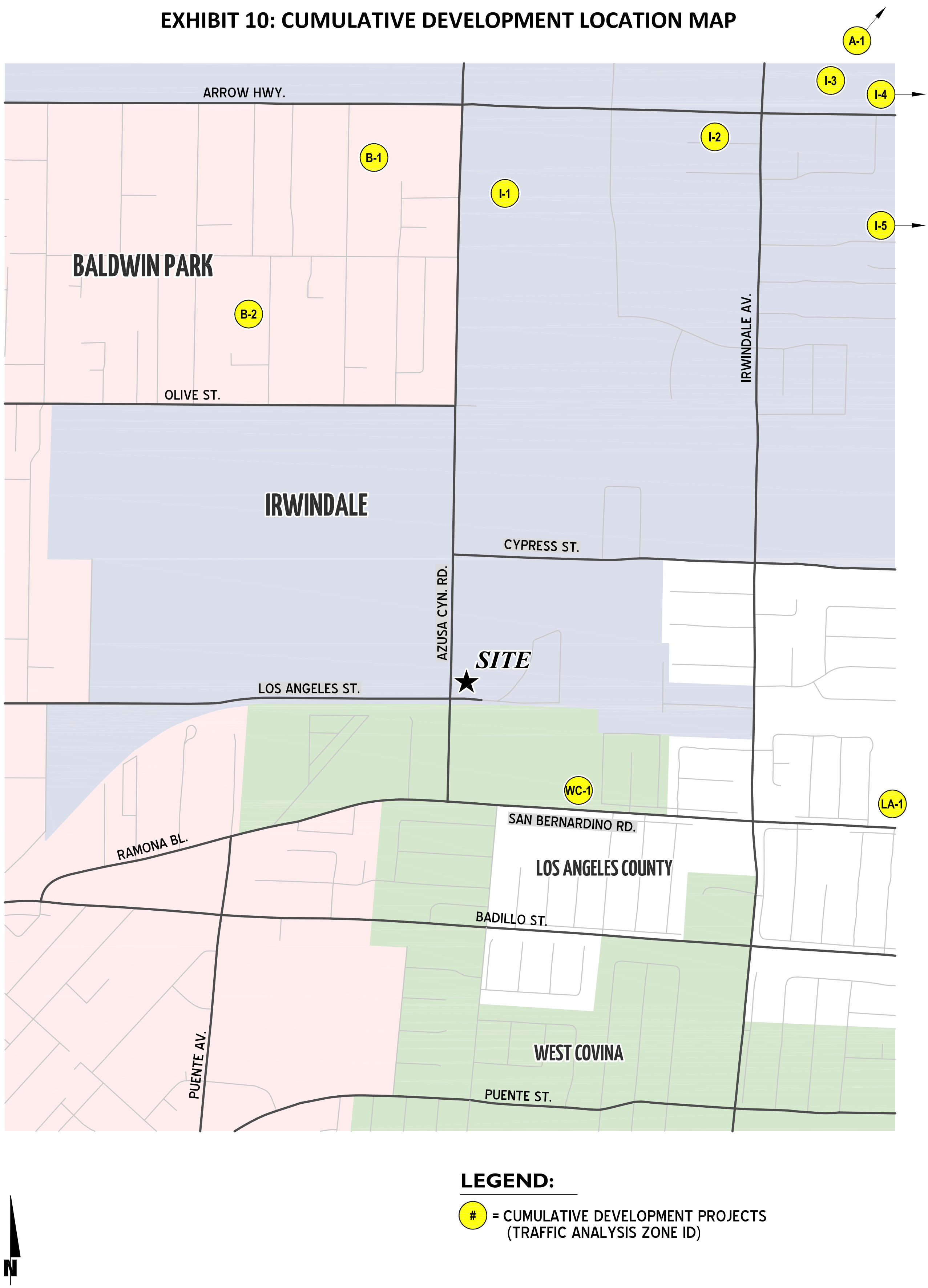


TABLE 6: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

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 Residential
[2] 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.

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

John Kain, AICP
Principal

Marlie Whiteman

Marlie Whiteman, PE
Senior Associate

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APPENDIX 3.1:

TRAFFIC COUNTS

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(951) 268-6268
counts@countsunlimited.com

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

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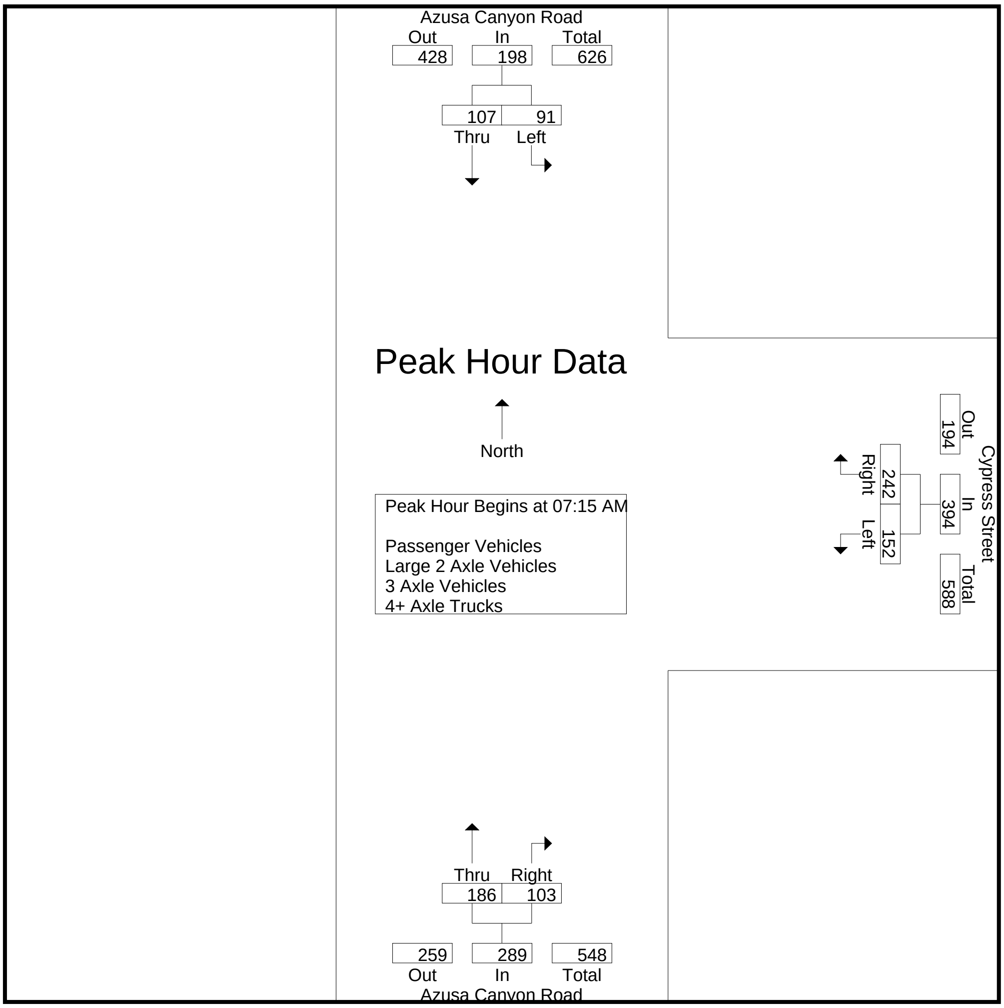

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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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

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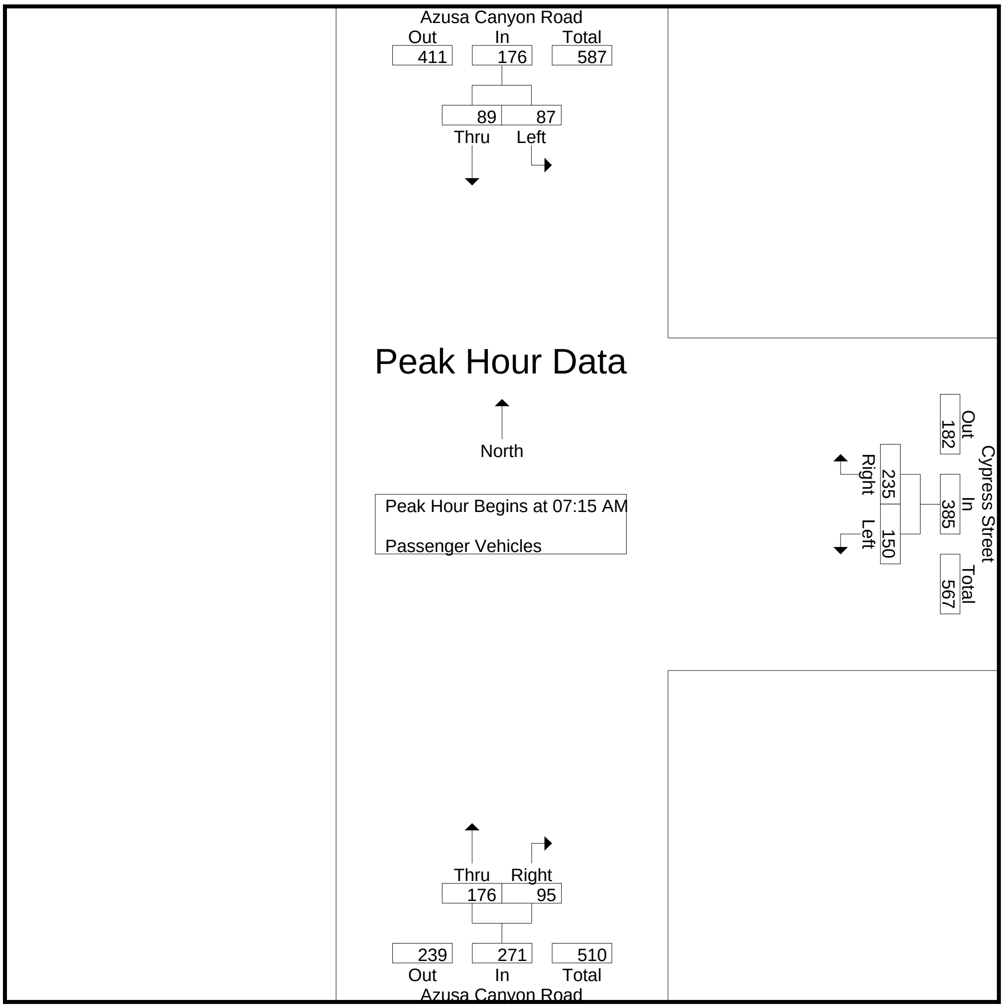
Start Date : 6/17/2021
Page No : 2



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

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City of Irwindale
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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

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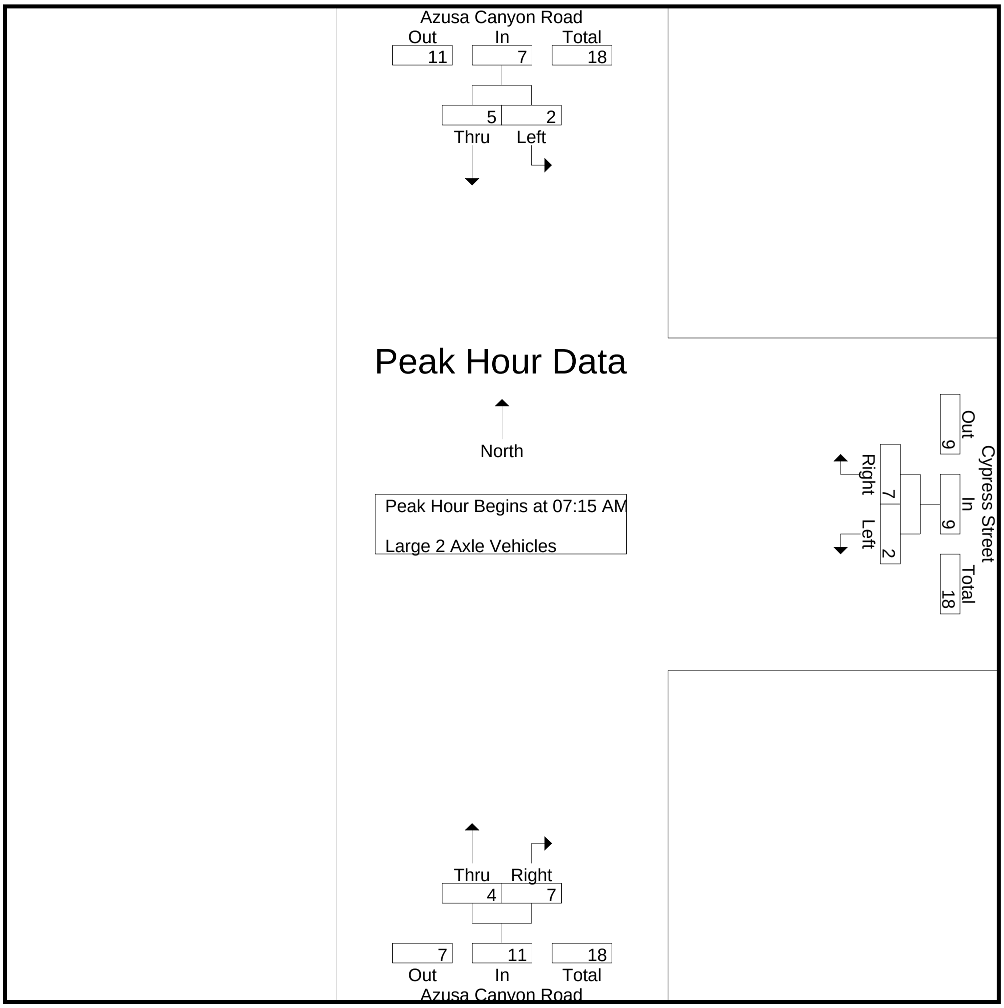

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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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

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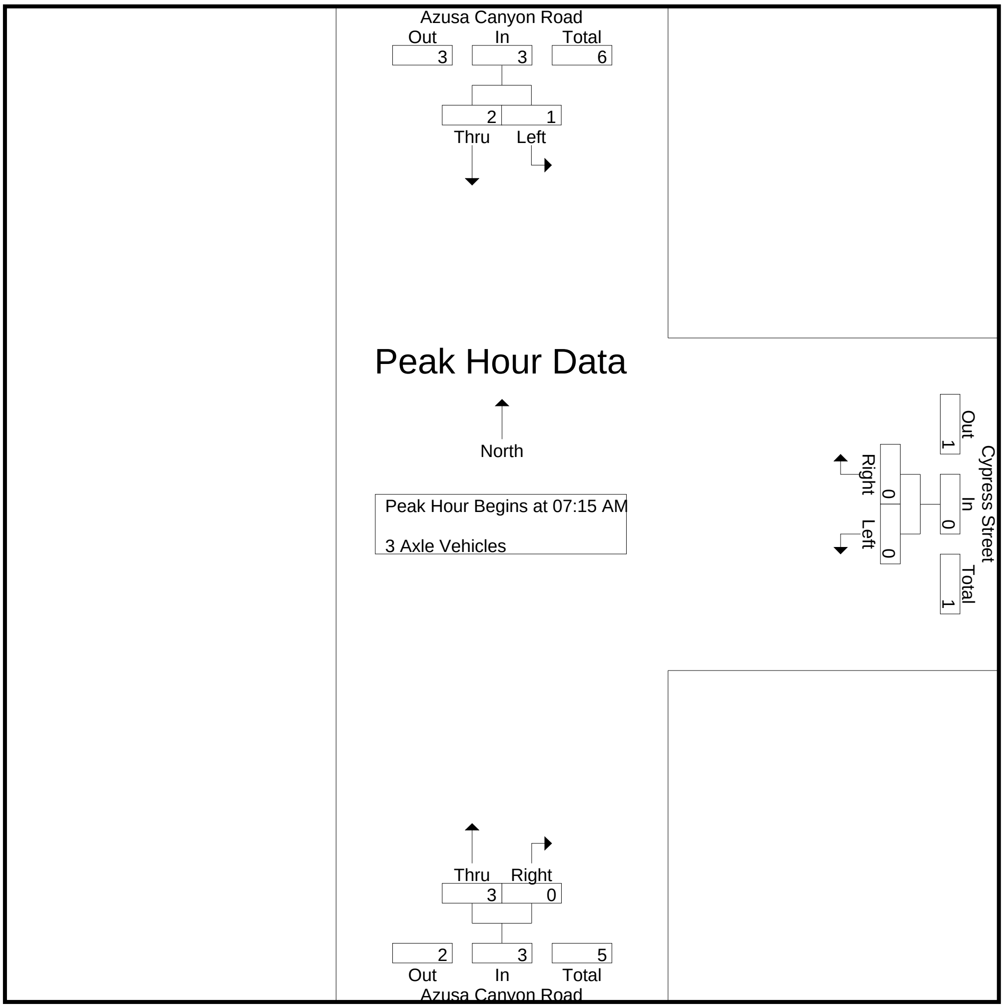

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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File Name : 01_IRW_Azusa Canyon_Cypress_AM
Site Code : 05121286
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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

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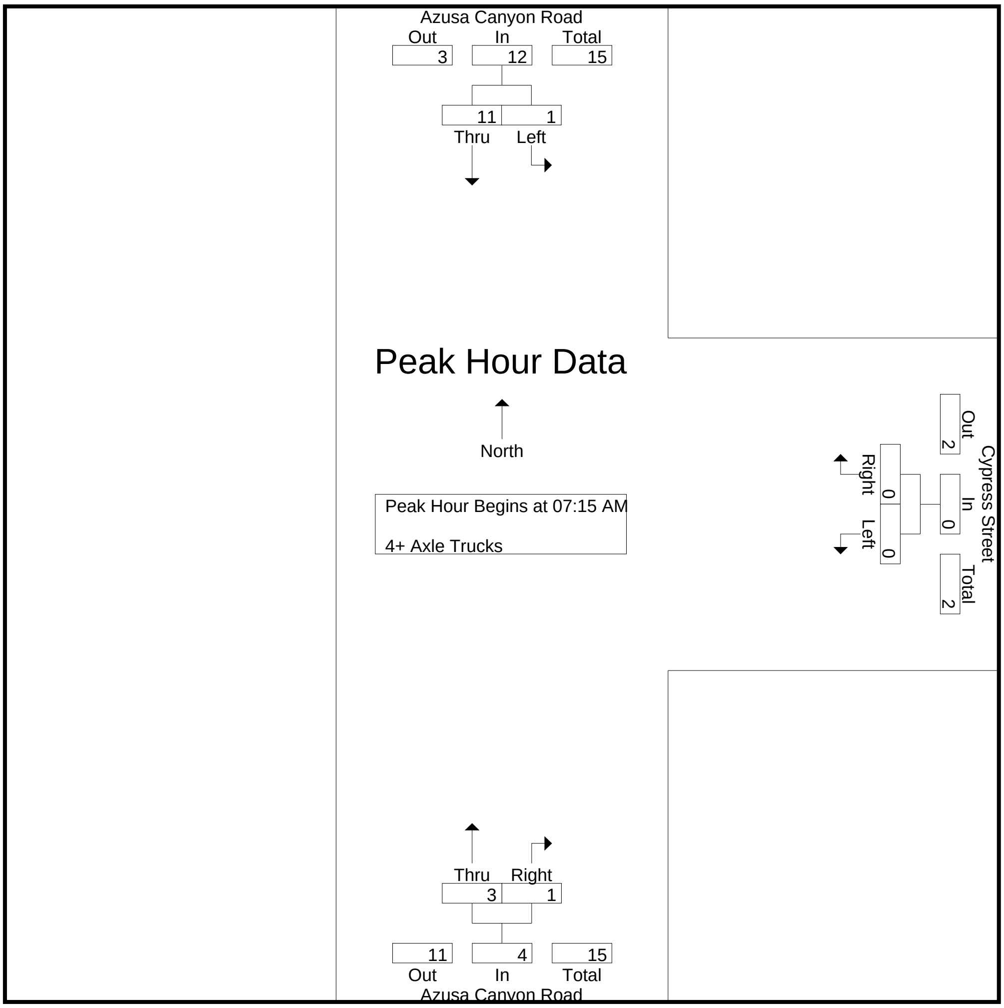

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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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

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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_PM
Site Code : 05121286
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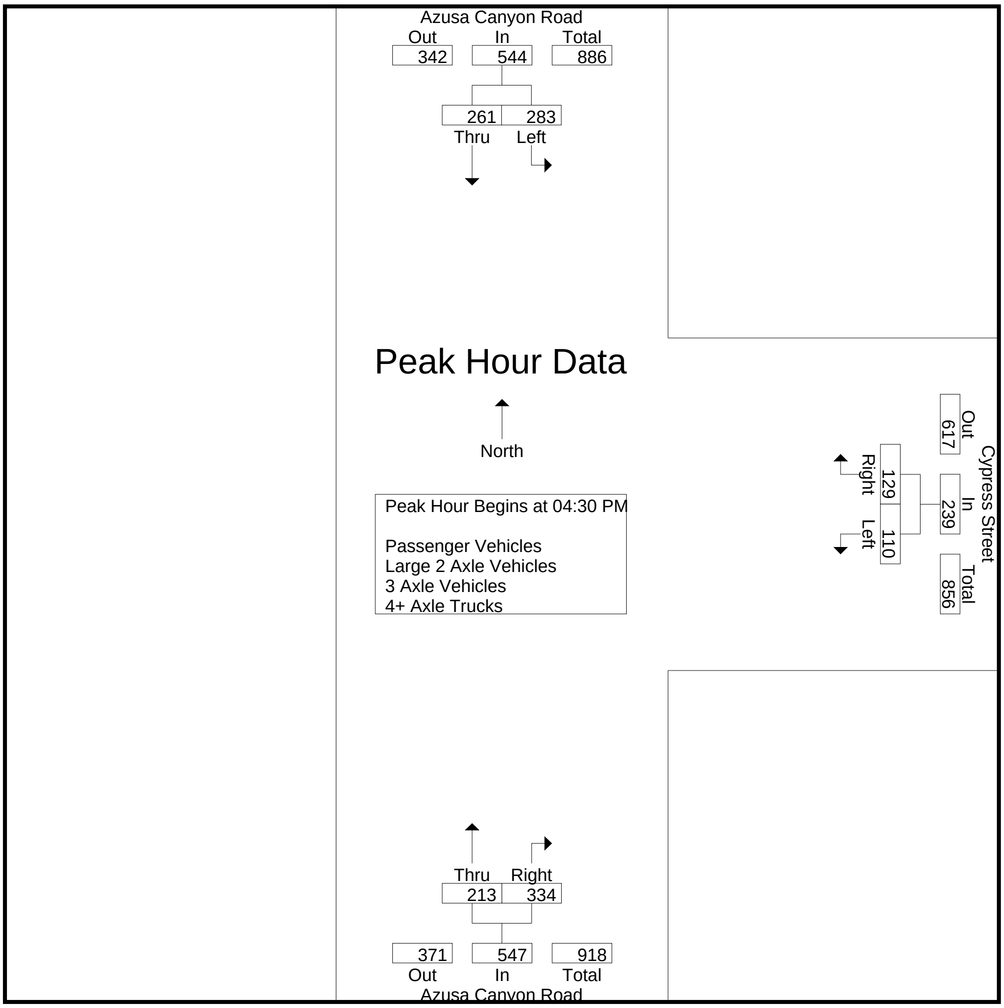

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_PM
Site Code : 05121286
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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

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Site Code : 05121286
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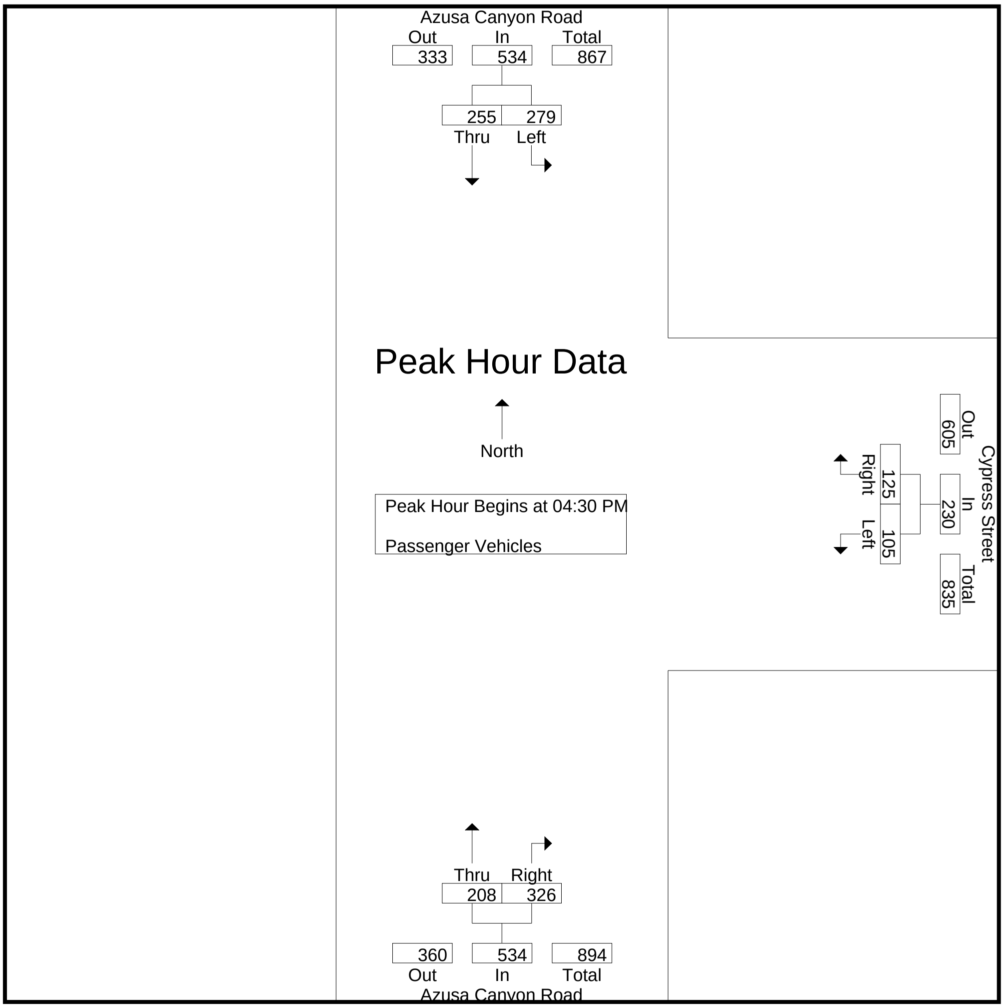

Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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File Name : 01_IRW_Azusa Canyon_Cypress_PM
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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

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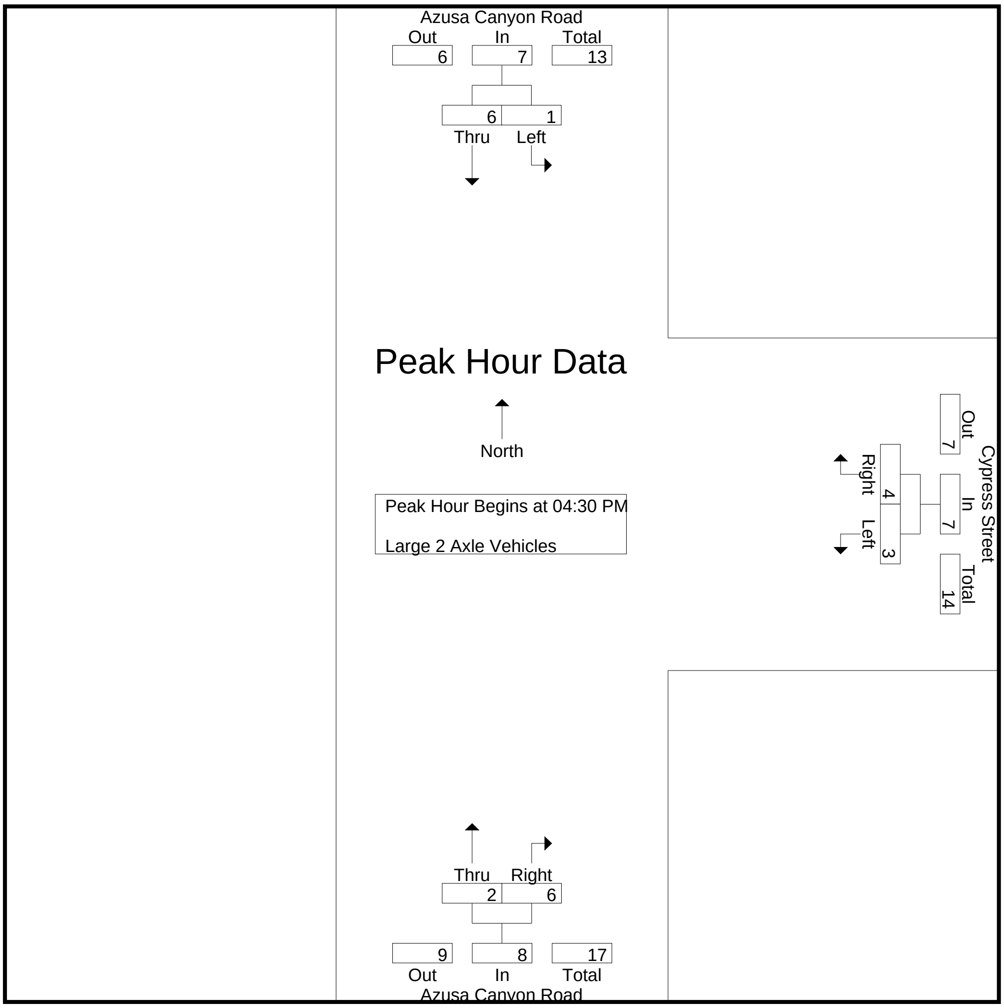

Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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File Name : 01_IRW_Azusa Canyon_Cypress_PM
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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

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Weather: Clear

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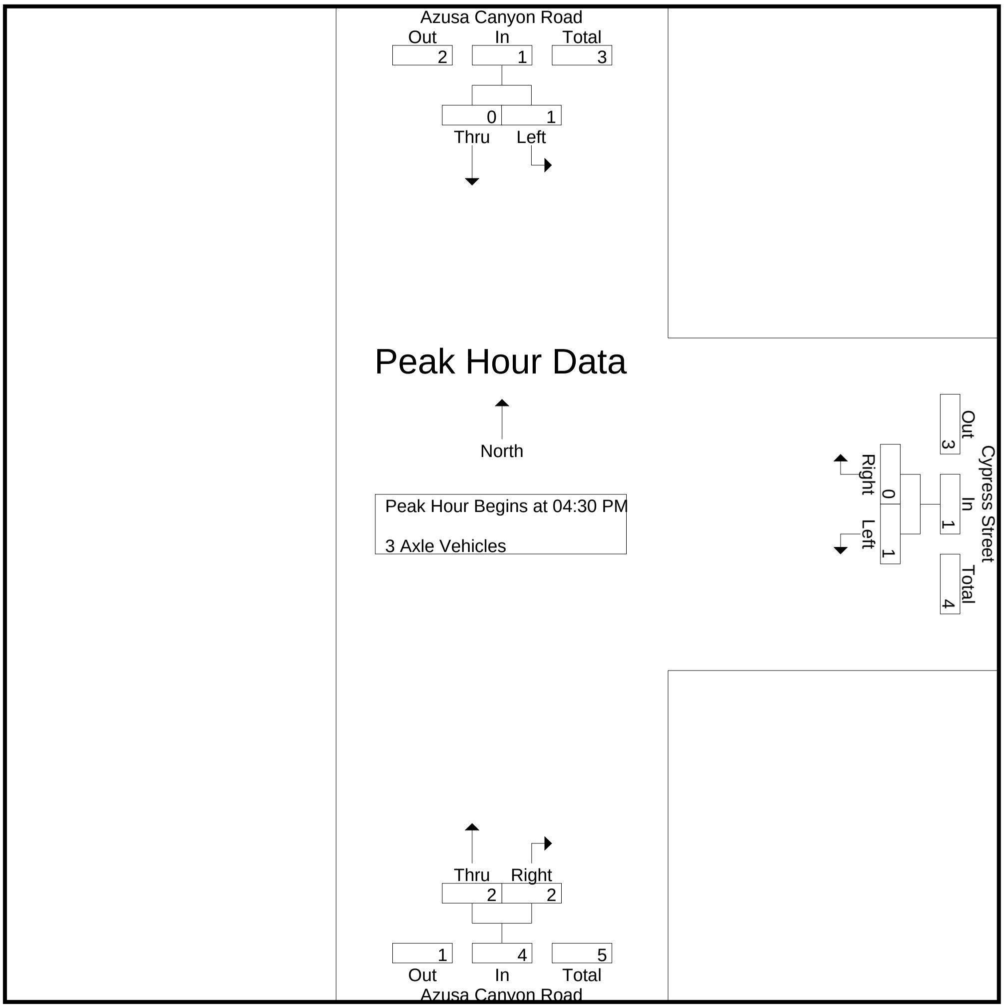

Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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Weather: Clear

File Name : 01_IRW_Azusa Canyon_Cypress_PM
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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

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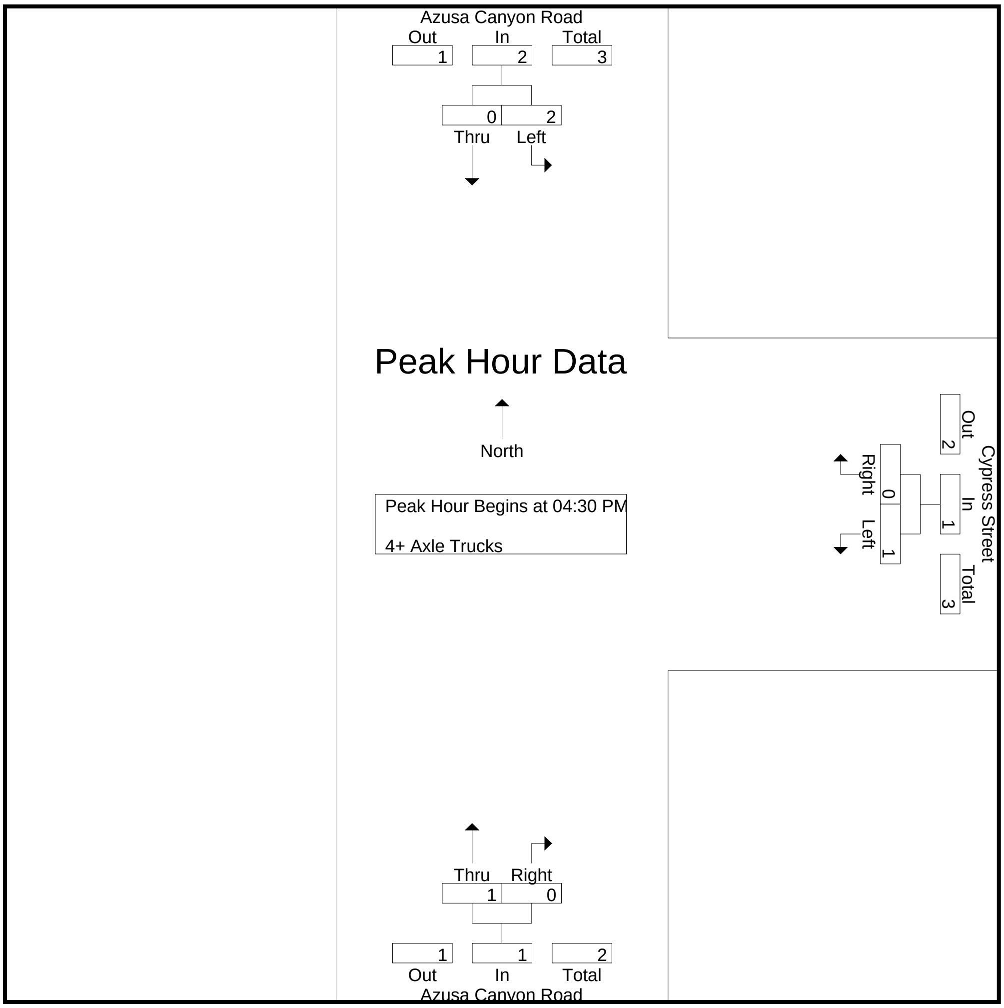

Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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City of Irwindale
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E/W: Los Angeles Street
Weather: Clear

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

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

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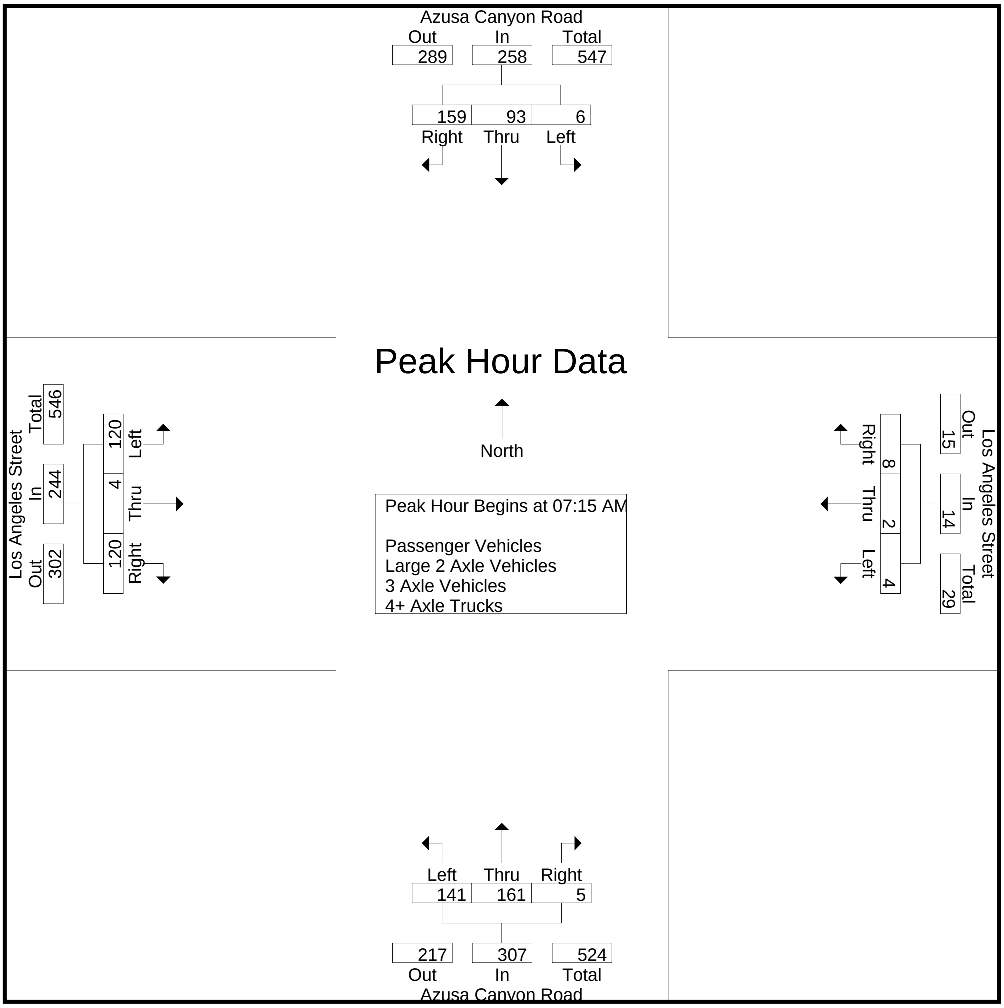

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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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

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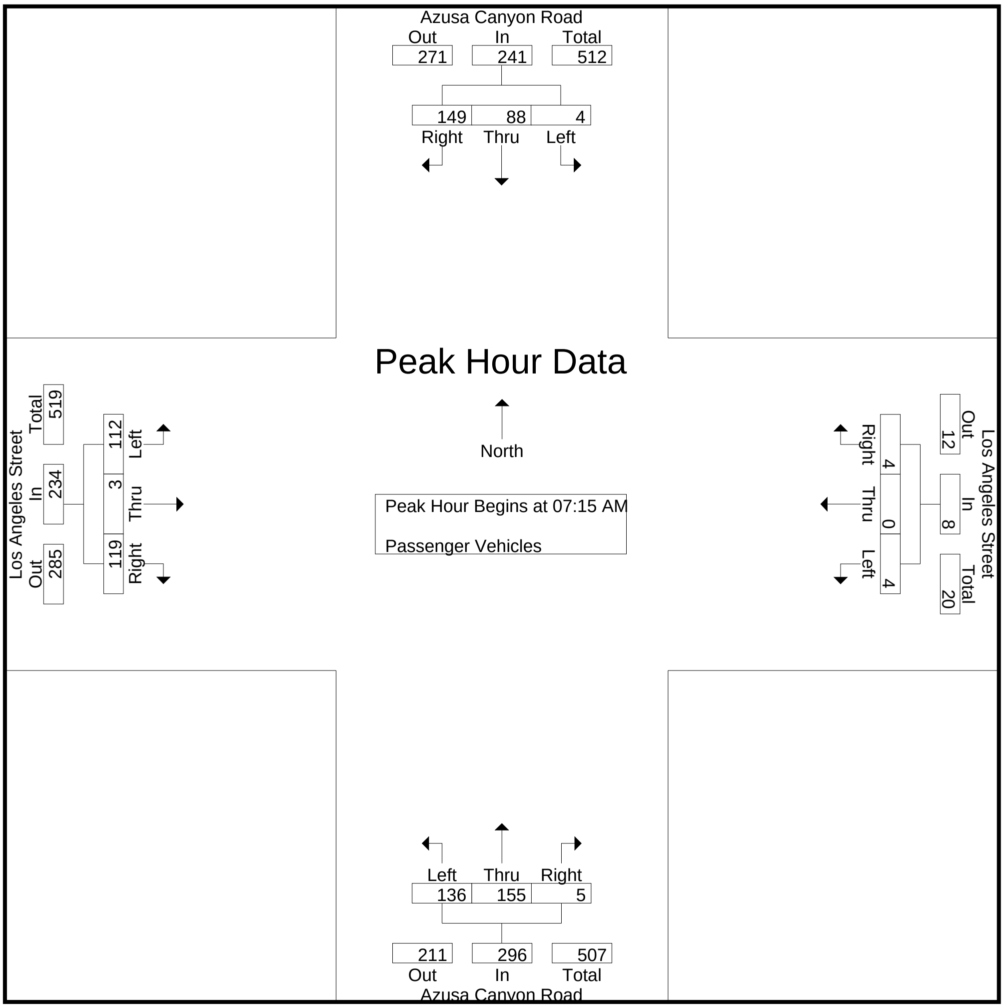
City of Irwindale
N/S: Azusa Canyon Road
E/W: Los Angeles Street
Weather: Clear

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

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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

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City of Irwindale
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Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_AM
Site Code : 05121286
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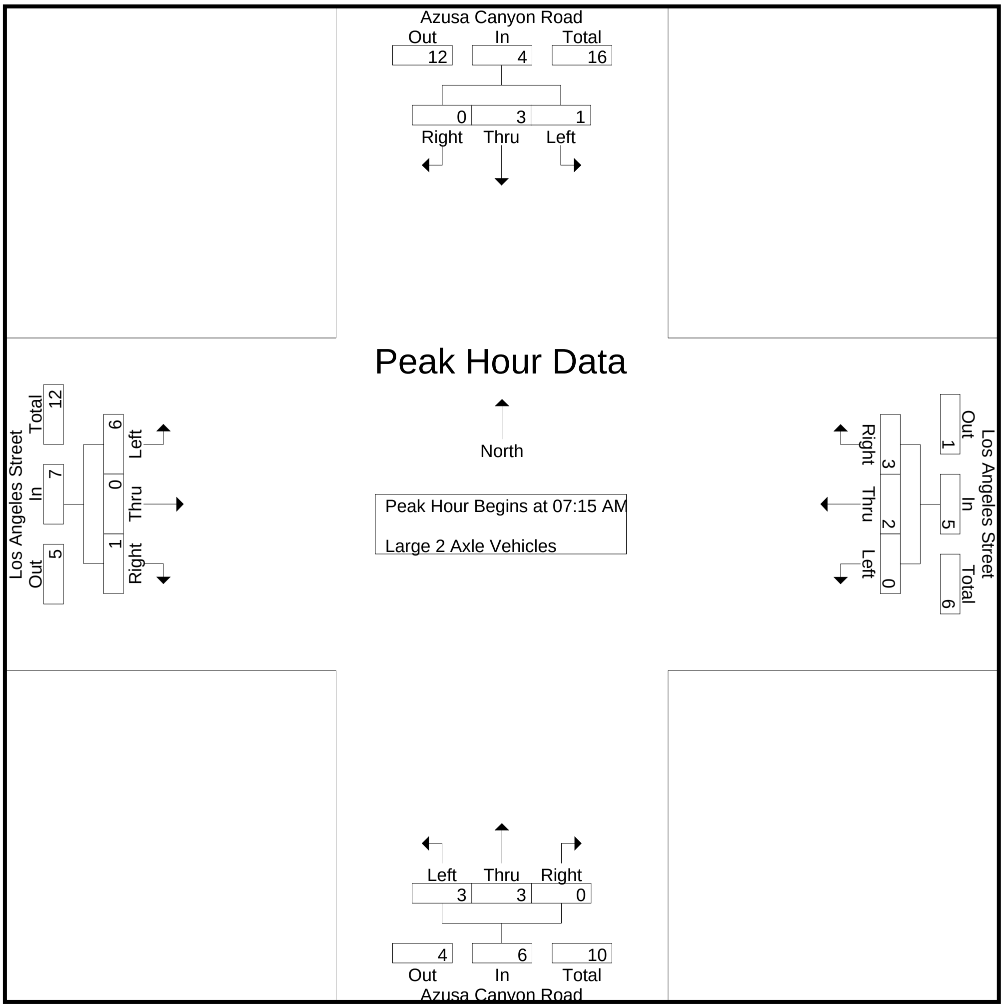
Page No : 2



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

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City of Irwindale
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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

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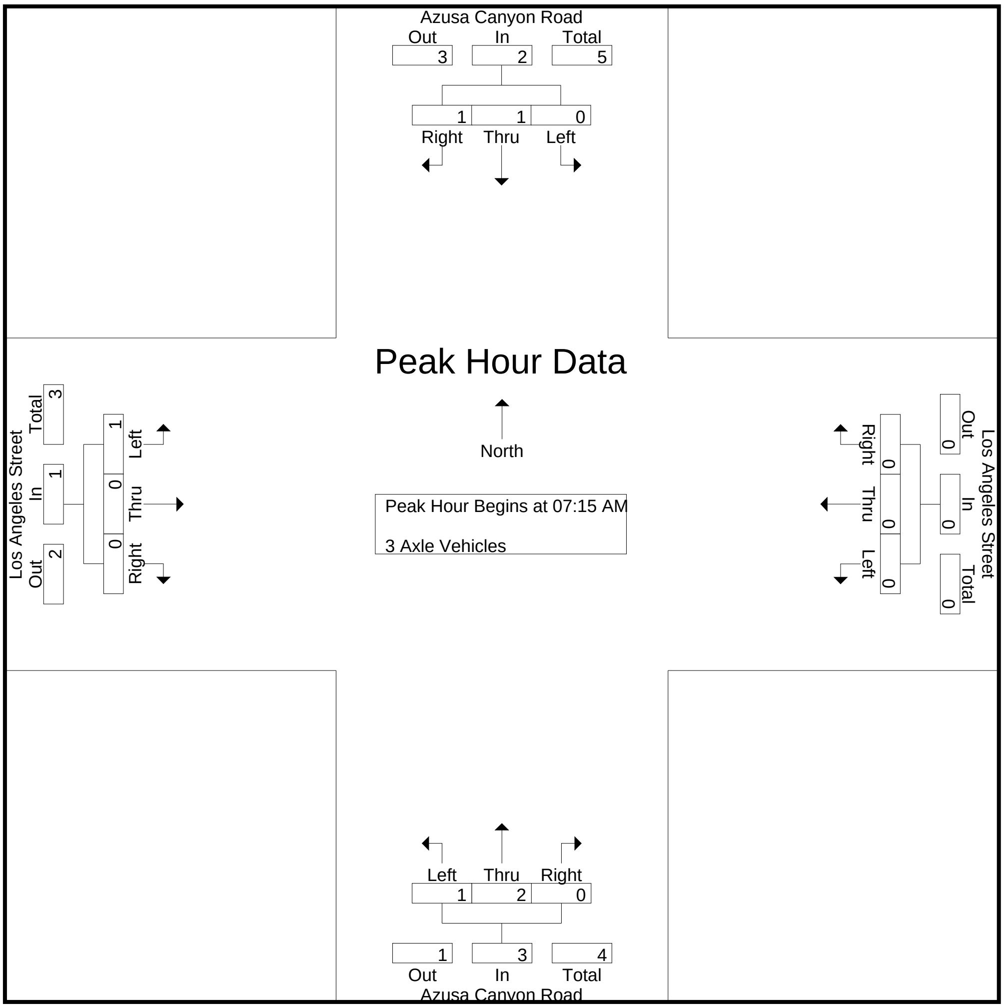
City of Irwindale
N/S: Azusa Canyon Road
E/W: Los Angeles Street
Weather: Clear

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

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City of Irwindale
N/S: Azusa Canyon Road
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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

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City of Irwindale
N/S: Azusa Canyon Road
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Weather: Clear

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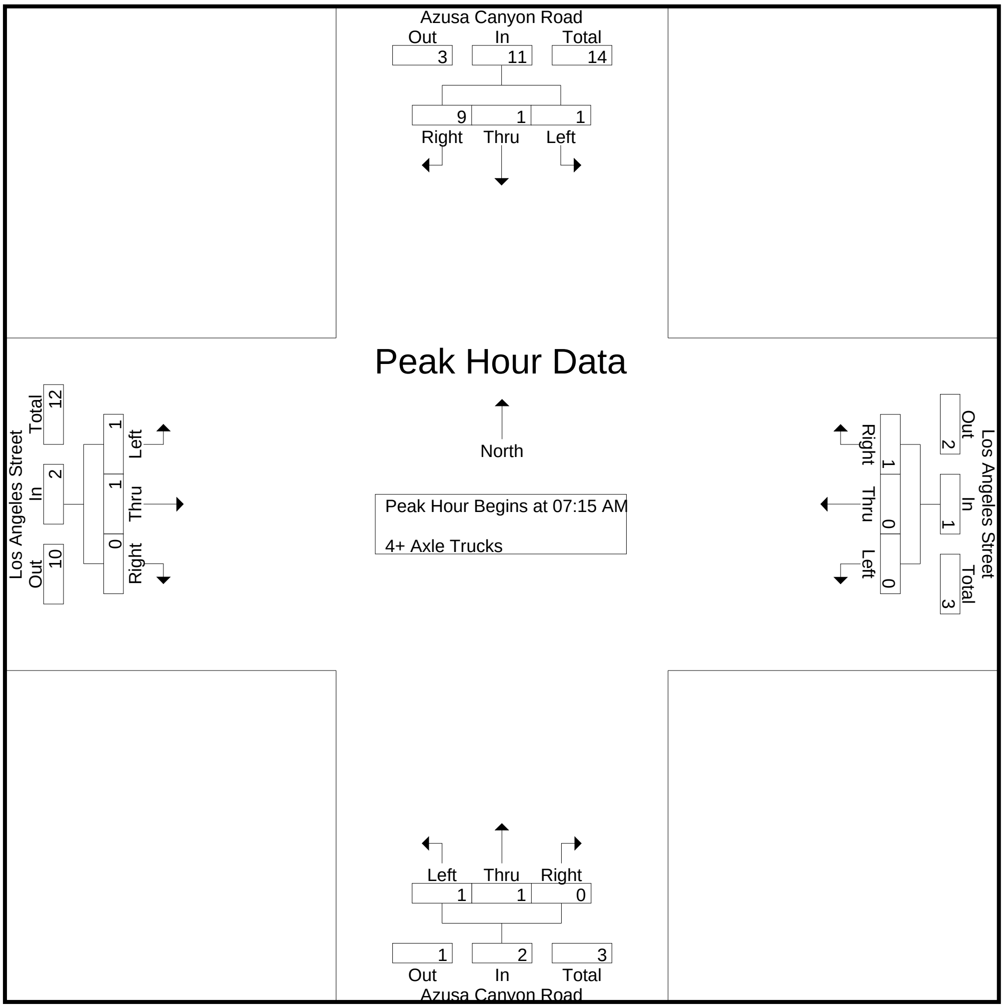

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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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

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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
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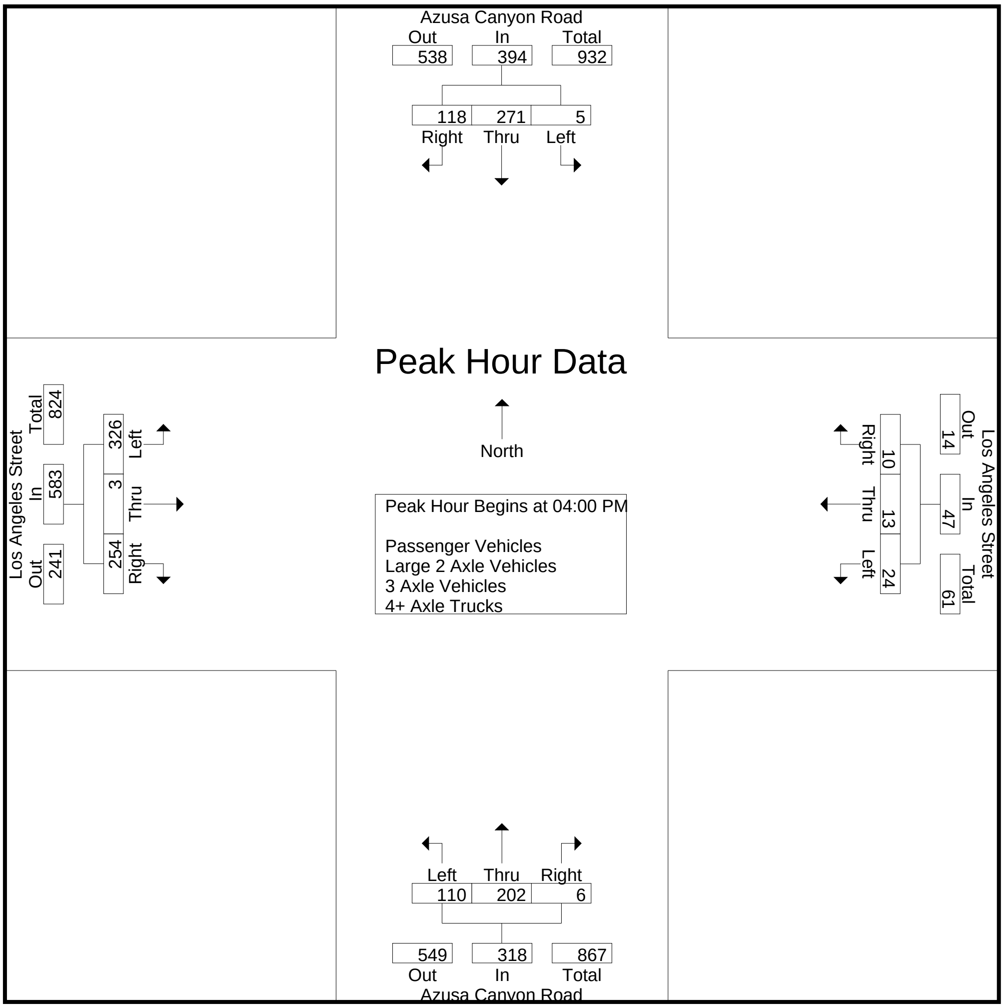

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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City of Irwindale
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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

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City of Irwindale
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Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
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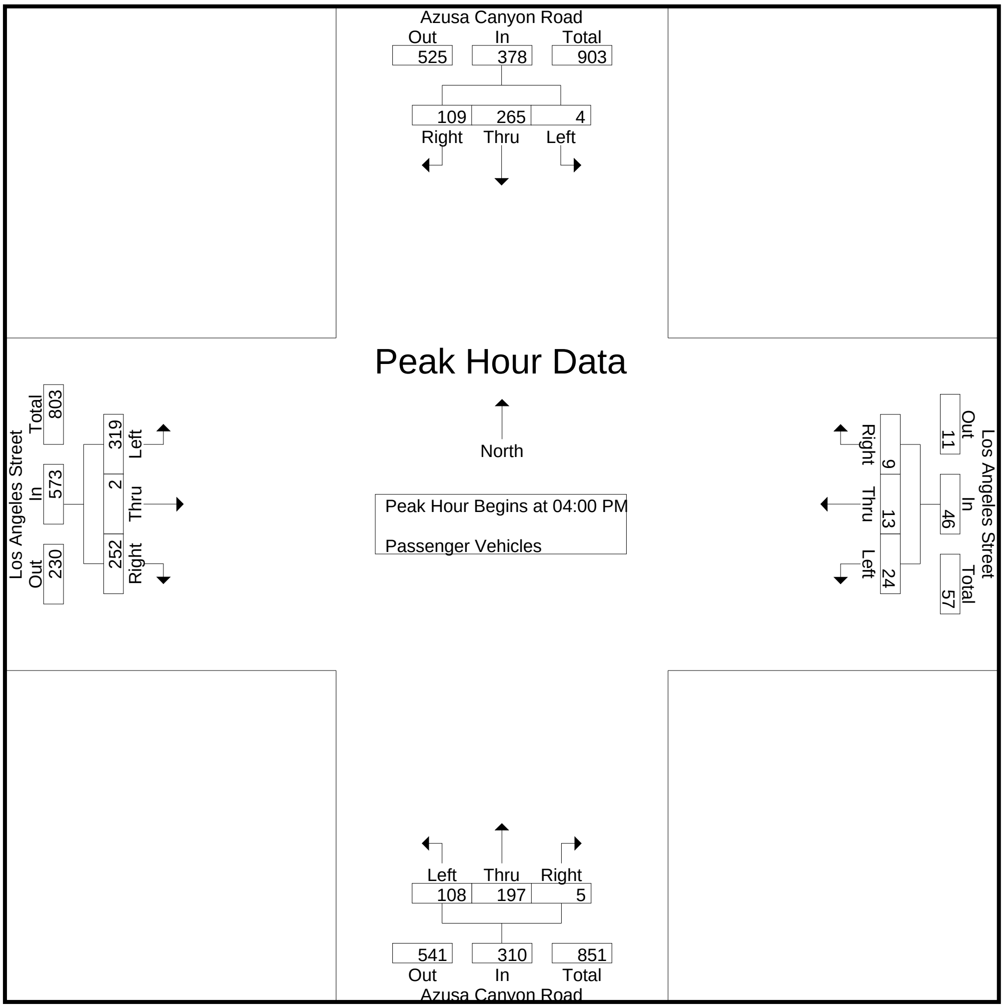

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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City of Irwindale
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Weather: Clear

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

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City of Irwindale
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Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
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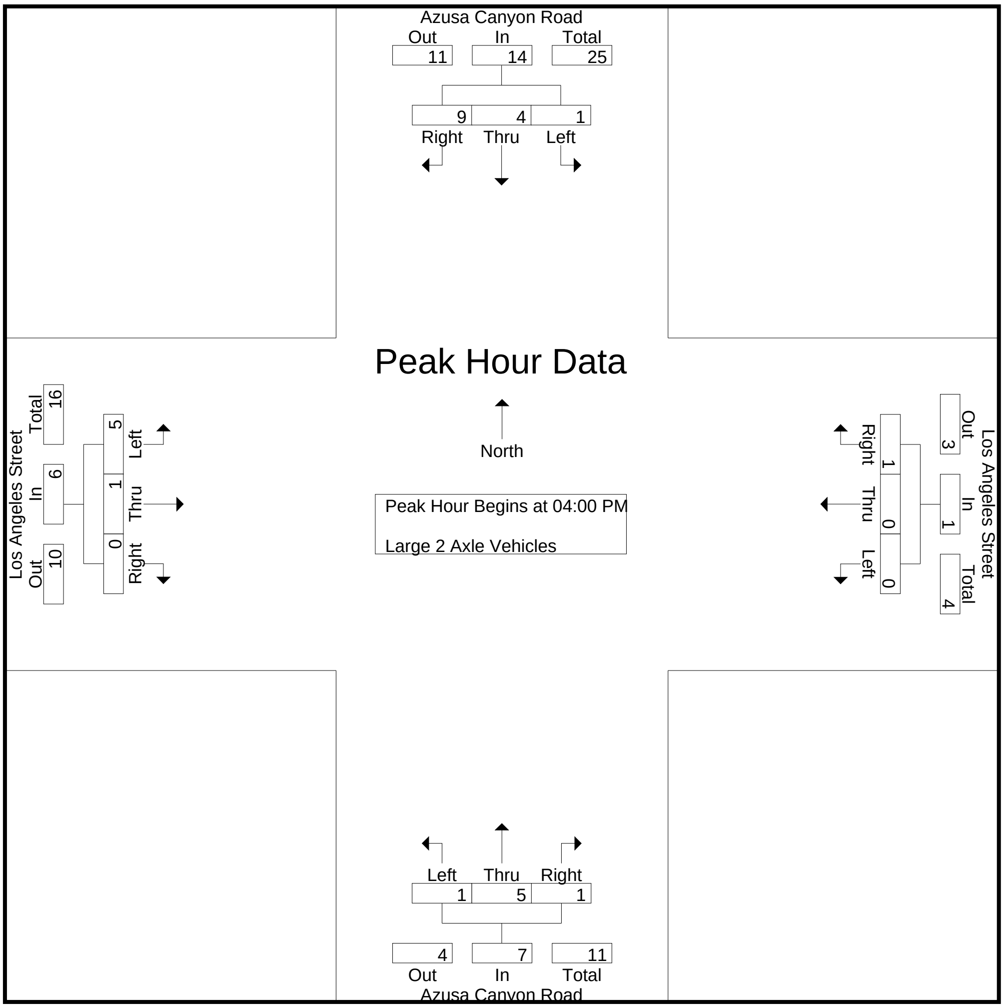

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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City of Irwindale
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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

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City of Irwindale
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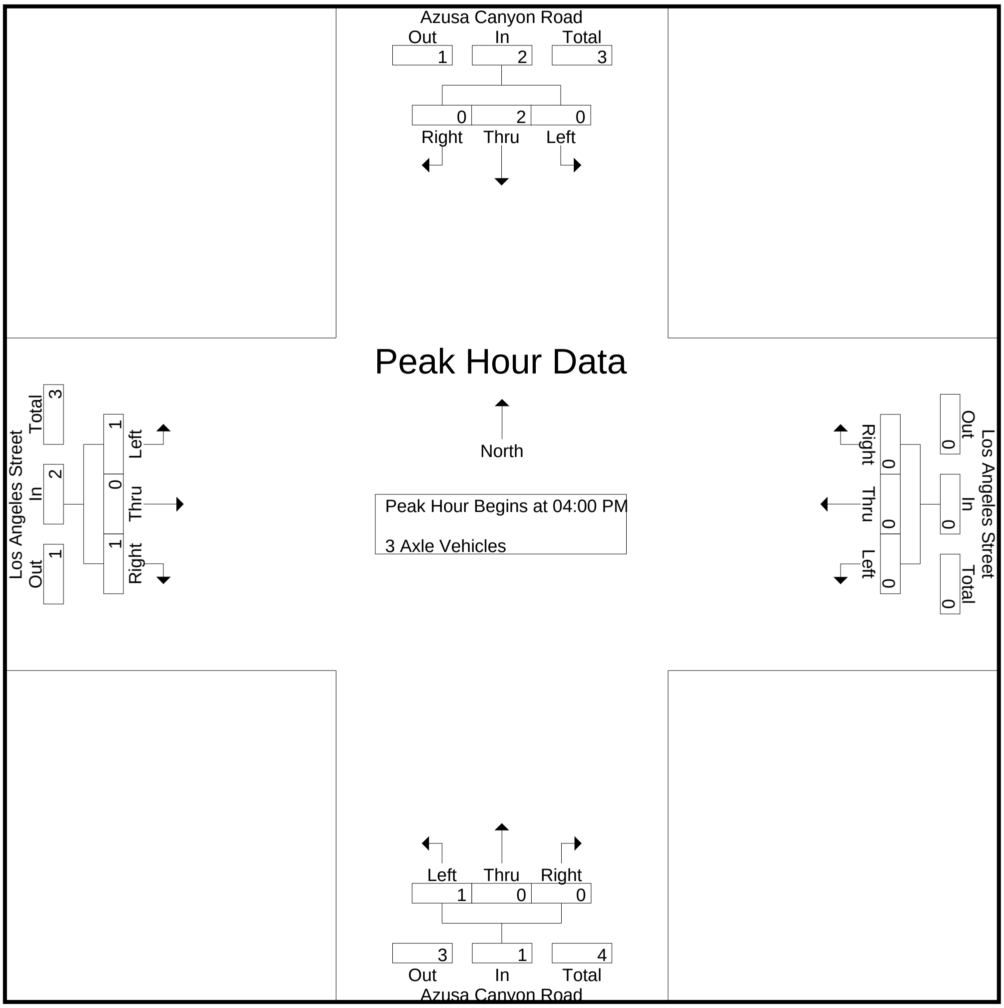

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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		100	0	0		50	0	50	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.250	.000	.000	.250	.250	.000	.250	.500

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City of Irwindale
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Weather: Clear

File Name : 02_IRW_Azusa Canyon_Los Angeles_PM
Site Code : 05121286
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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

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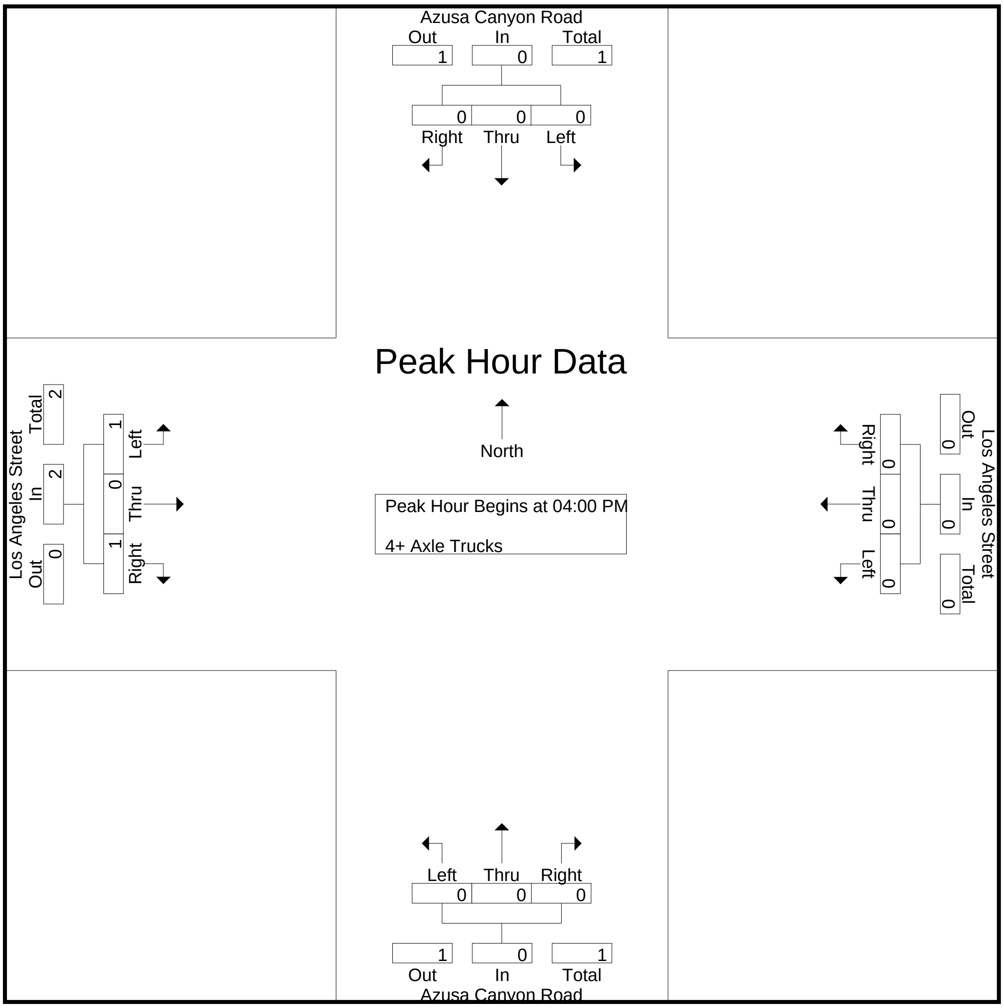
City of Irwindale
N/S: Azusa Canyon Road
E/W: Los Angeles Street
Weather: Clear

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		50	0	50	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

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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

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

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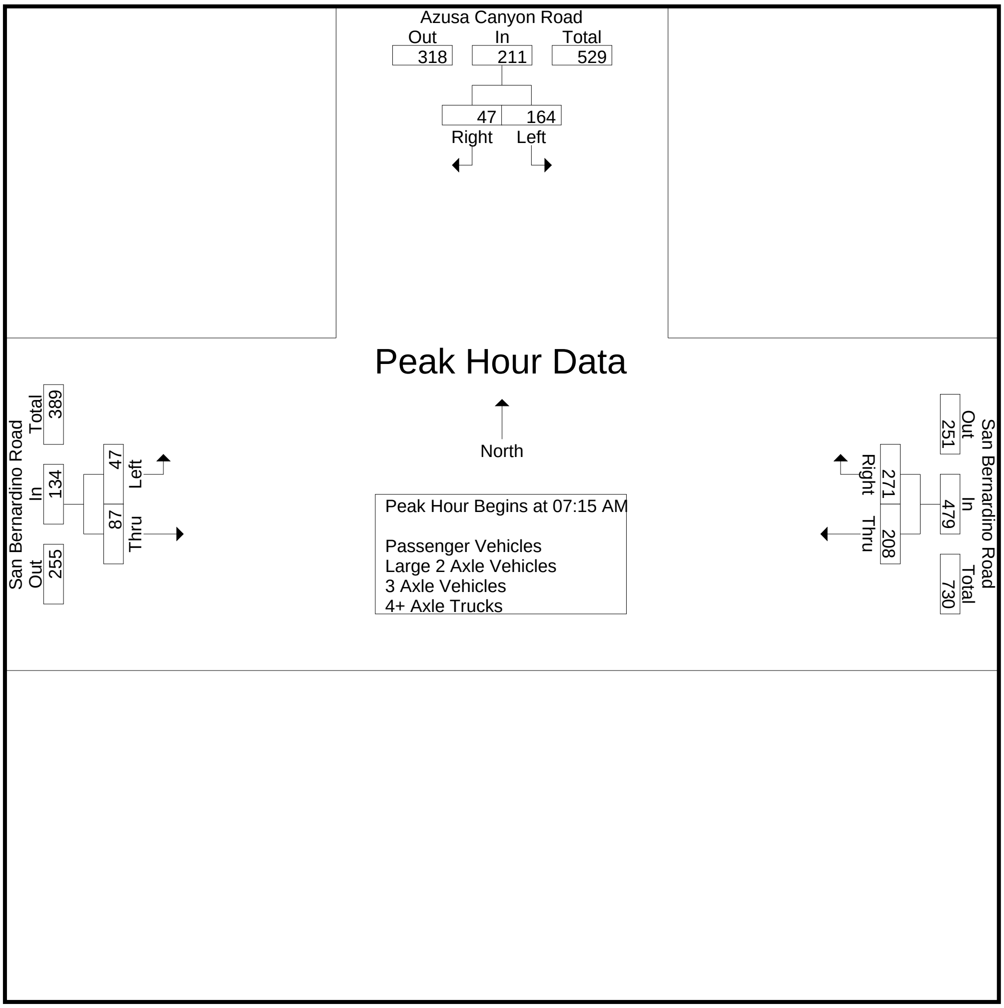
City of Irwindale
N/S: Azusa Canyon Road
E/W: San Bernardino Road
Weather: Clear

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

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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

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

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City of Irwindale
N/S: Azusa Canyon Road
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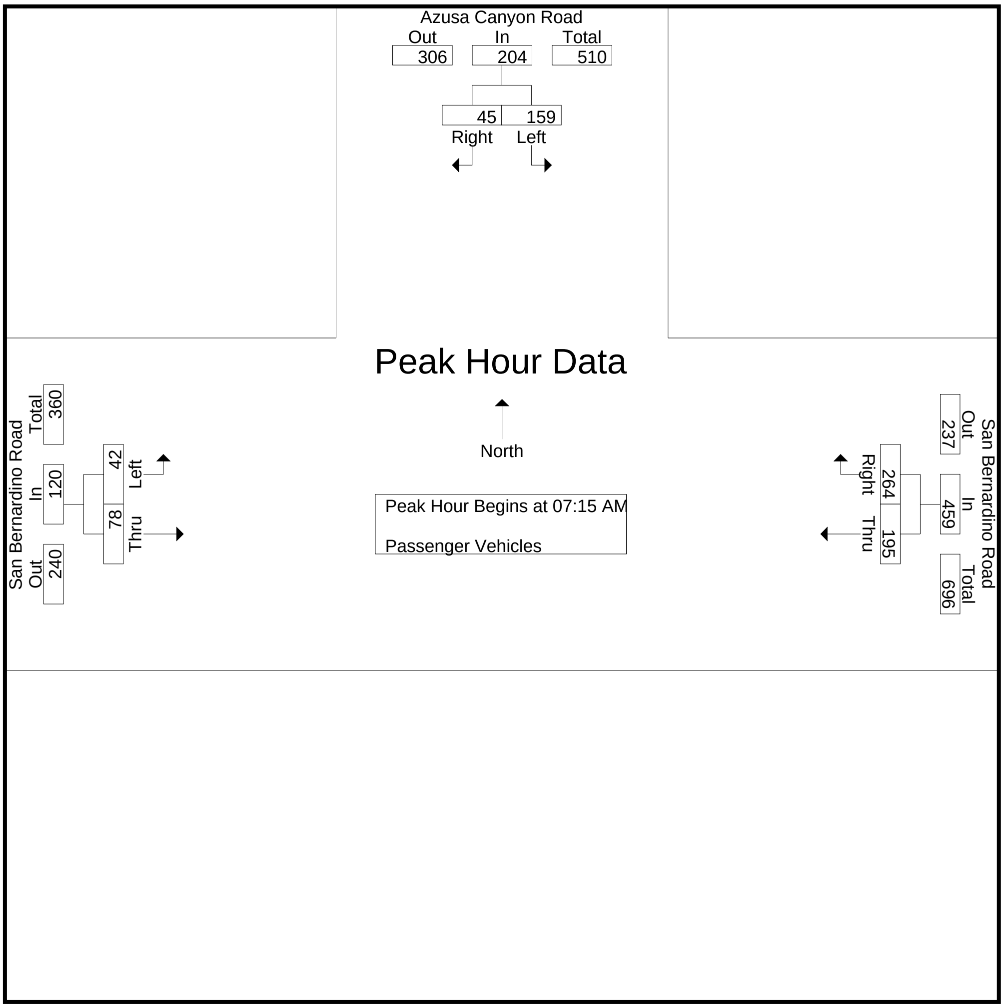
Weather: Clear

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



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

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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

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

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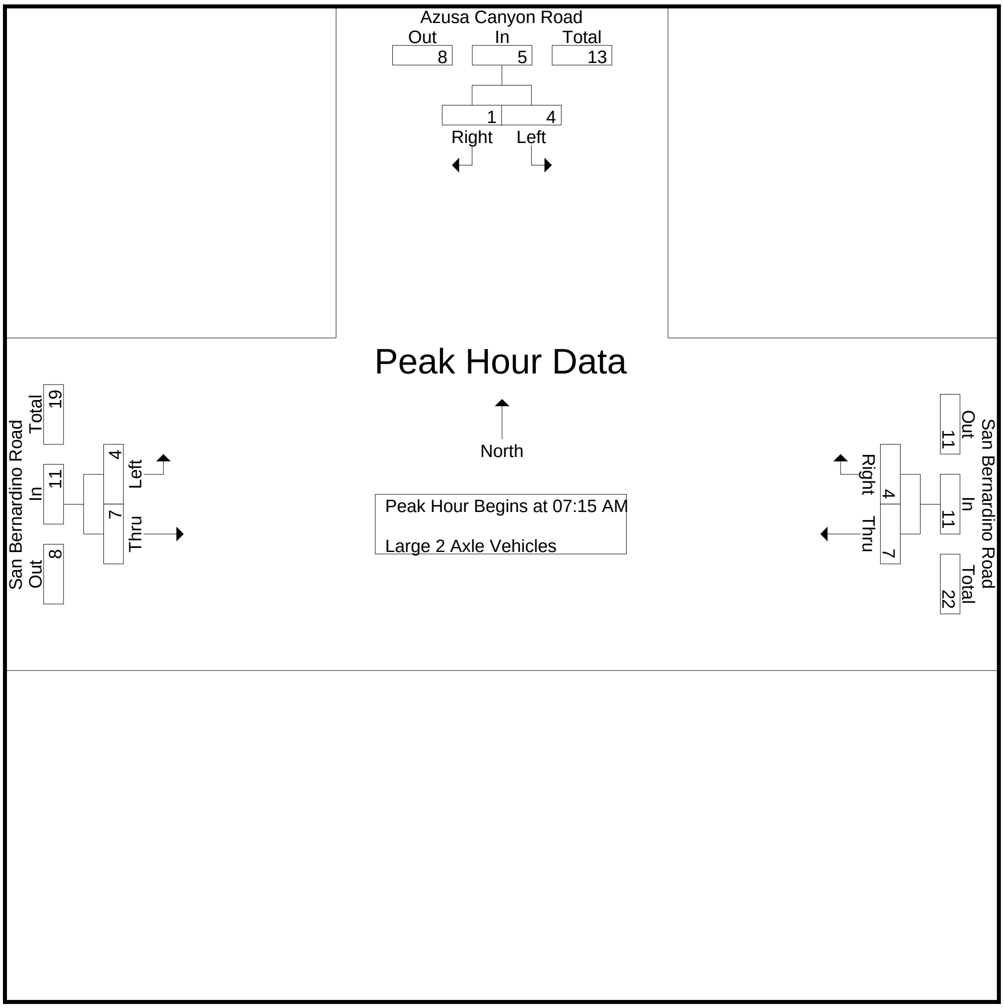
City of Irwindale
N/S: Azusa Canyon Road
E/W: San Bernardino Road
Weather: Clear

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



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

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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

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

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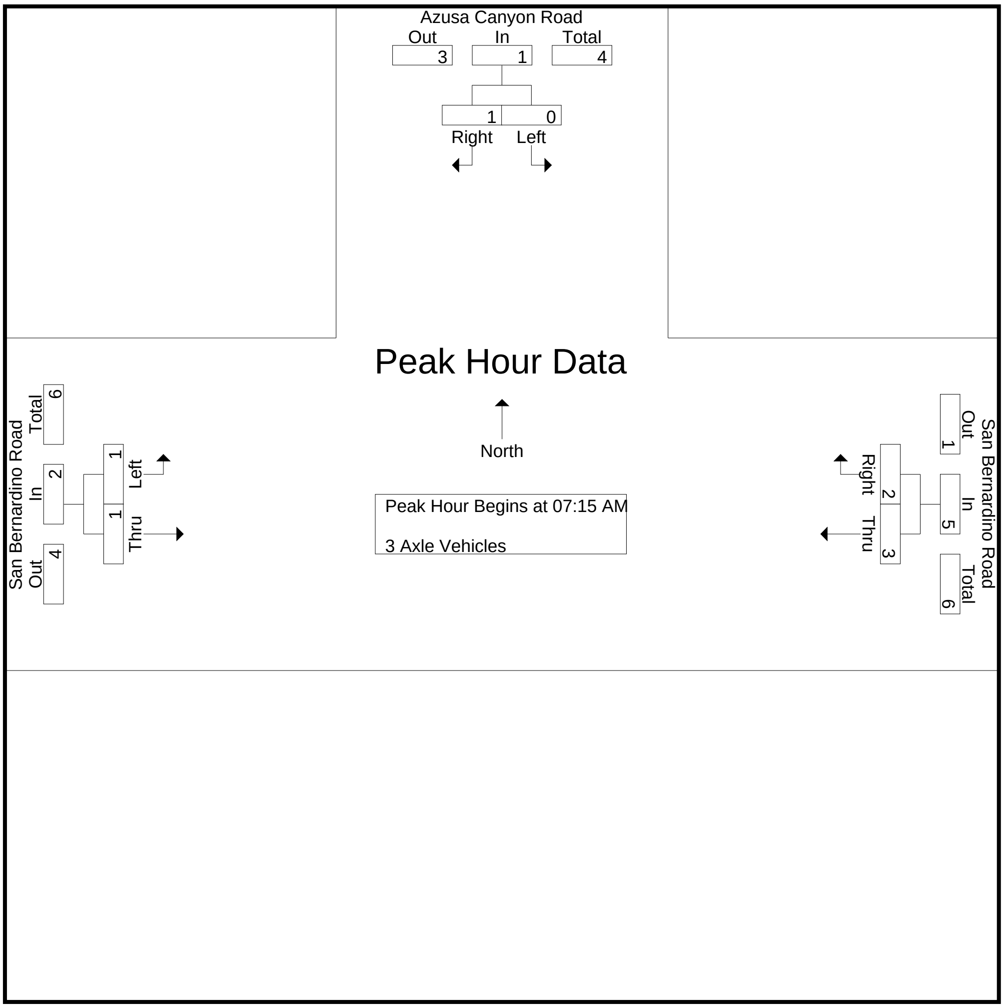
City of Irwindale
N/S: Azusa Canyon Road
E/W: San Bernardino Road
Weather: Clear

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

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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

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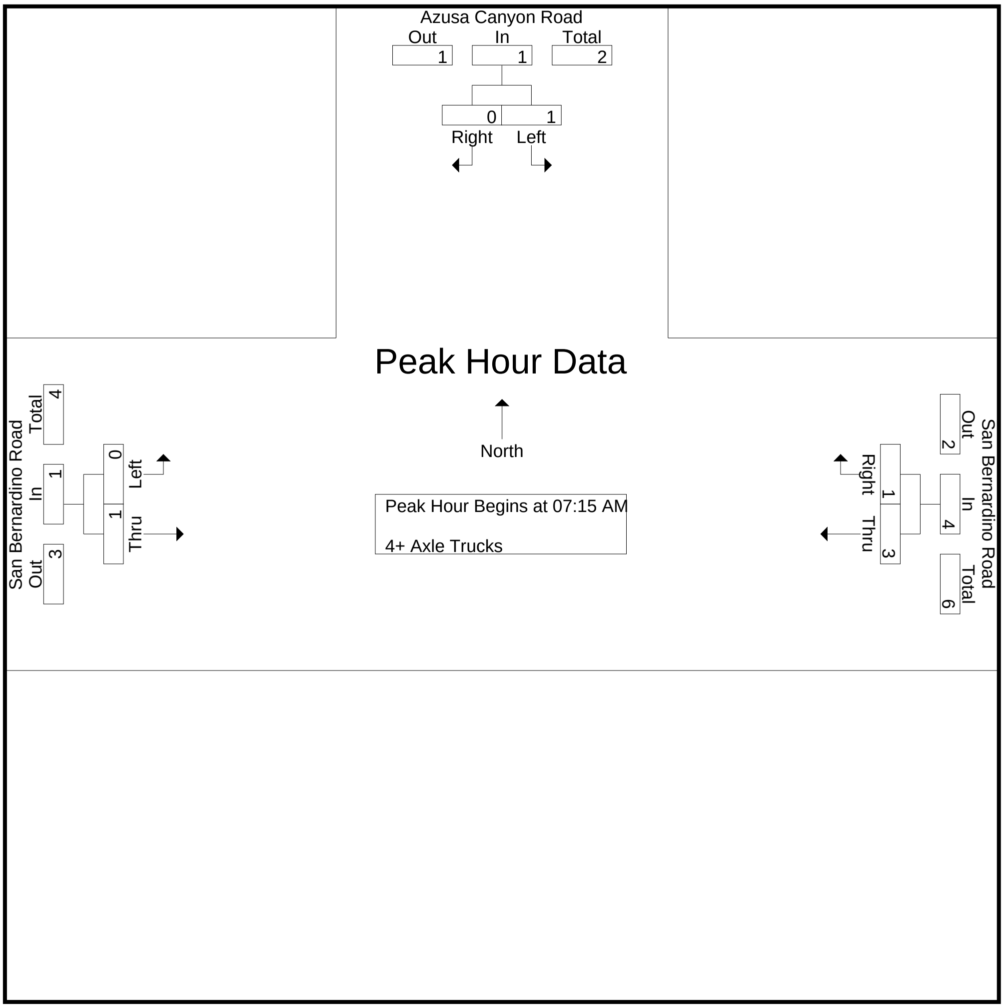
City of Irwindale
N/S: Azusa Canyon Road
E/W: San Bernardino Road
Weather: Clear

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

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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
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	**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

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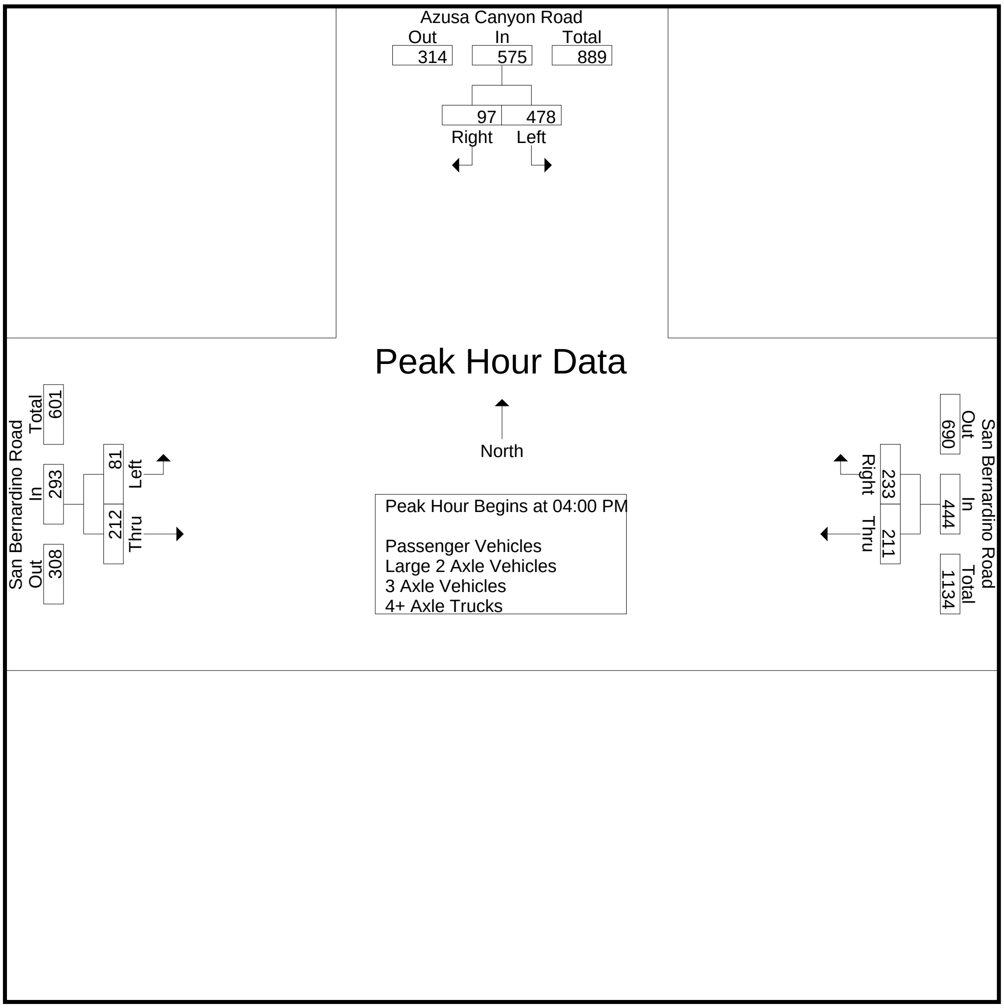
City of Irwindale
N/S: Azusa Canyon Road
E/W: San Bernardino Road
Weather: Clear

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

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City of Irwindale
N/S: Azusa Canyon Road
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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

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City of Irwindale
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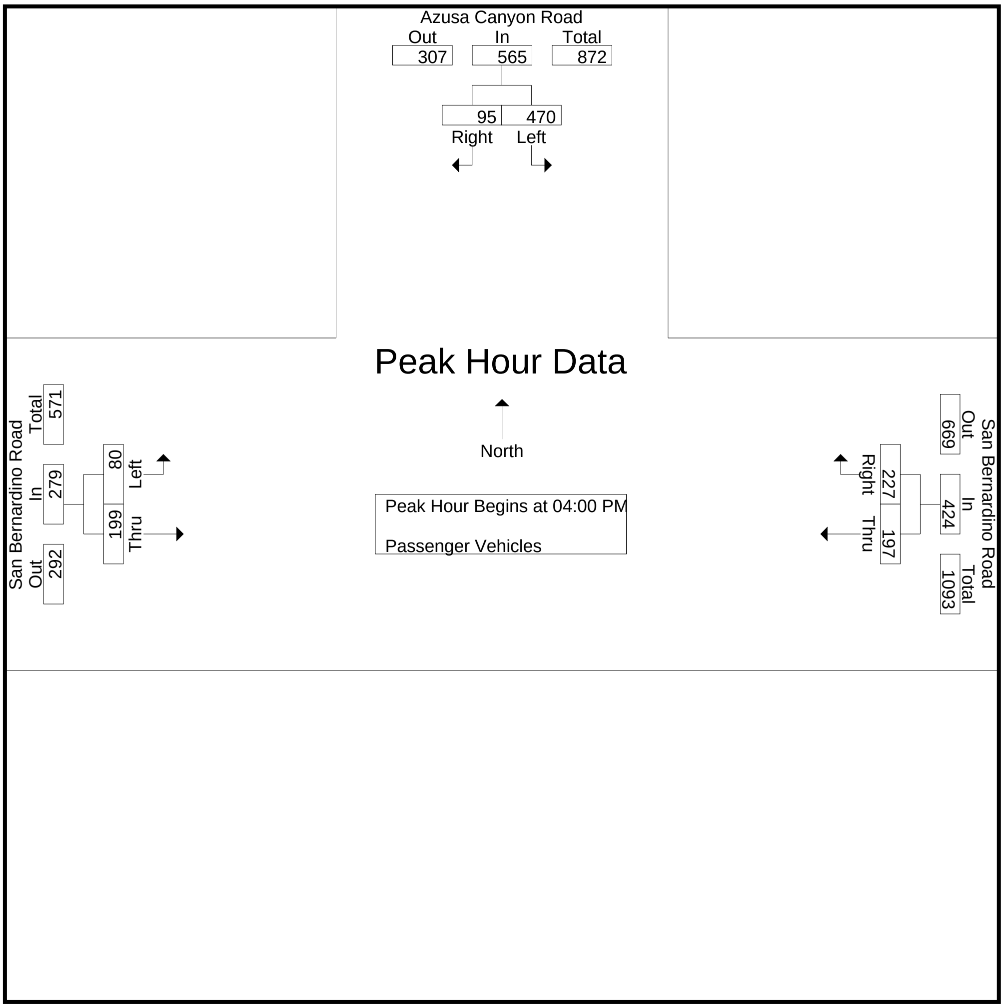
Weather: Clear

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

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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

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City of Irwindale
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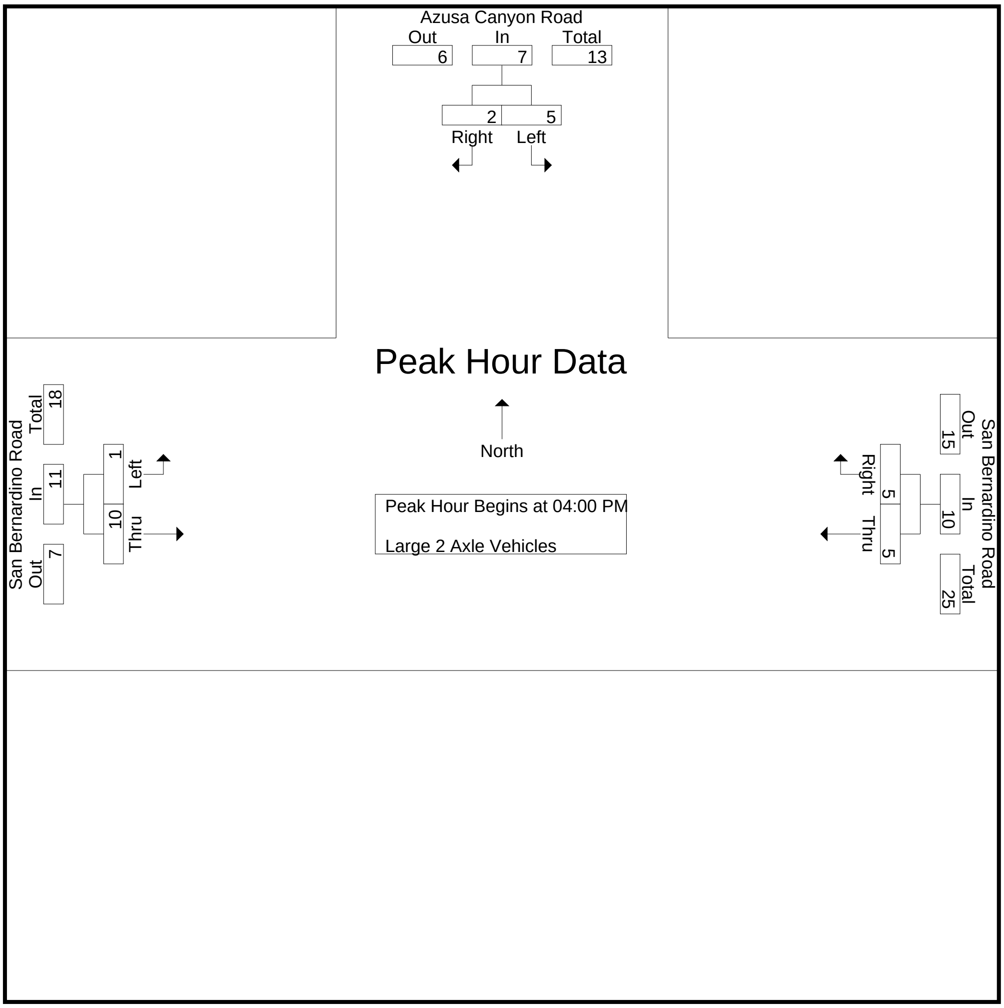
Weather: Clear

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

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City of Irwindale
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E/W: San Bernardino Road
Weather: Clear

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

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

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City of Irwindale
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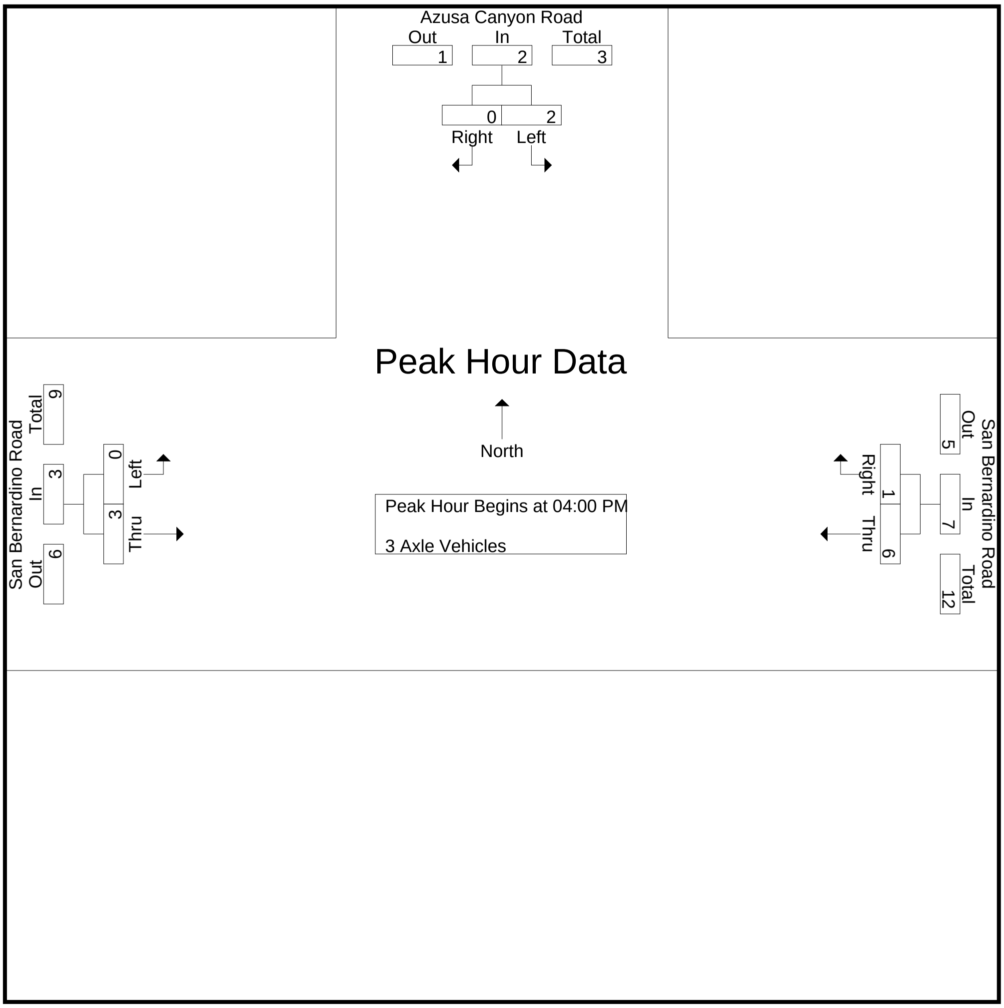
E/W: San Bernardino Road
Weather: Clear

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



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

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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

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City of Irwindale
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E/W: San Bernardino Road
Weather: Clear

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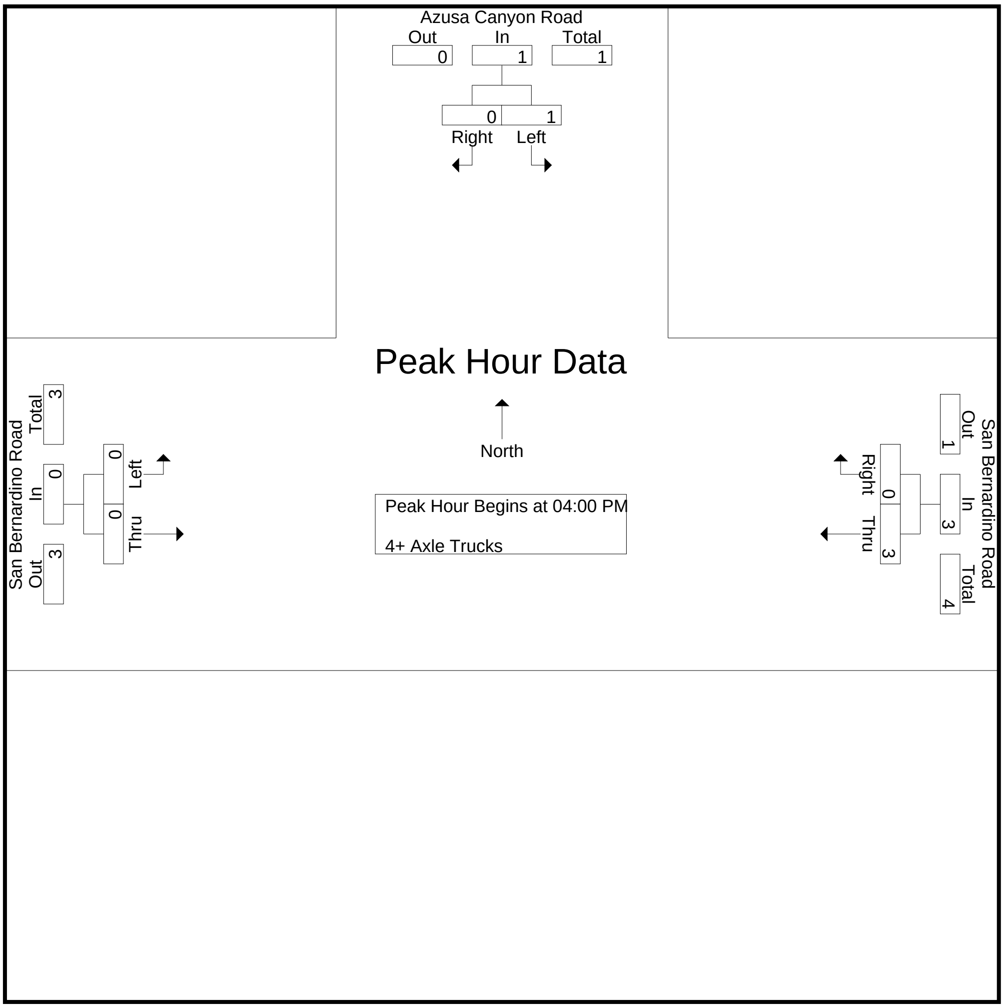

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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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

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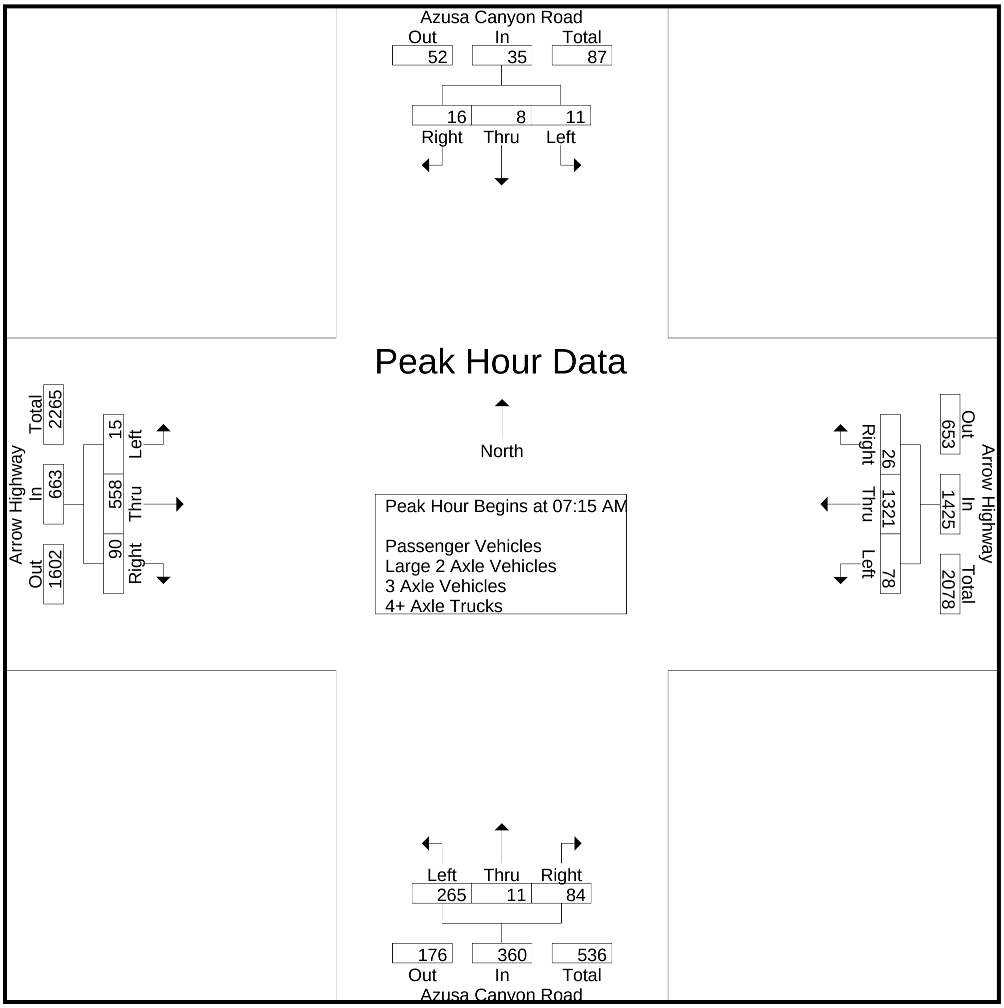
City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

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

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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

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City of Irwindale
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Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
Site Code : 05121286
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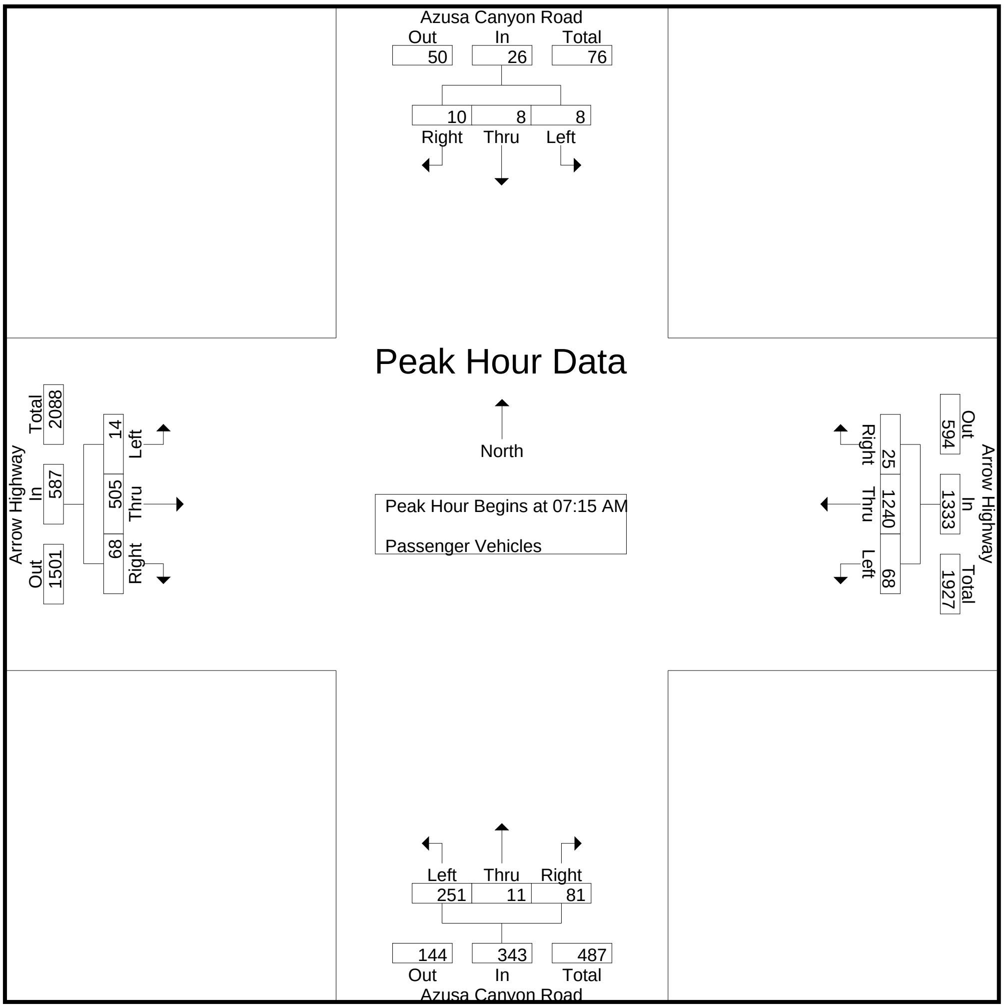

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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City of Irwindale
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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

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City of Irwindale
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Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
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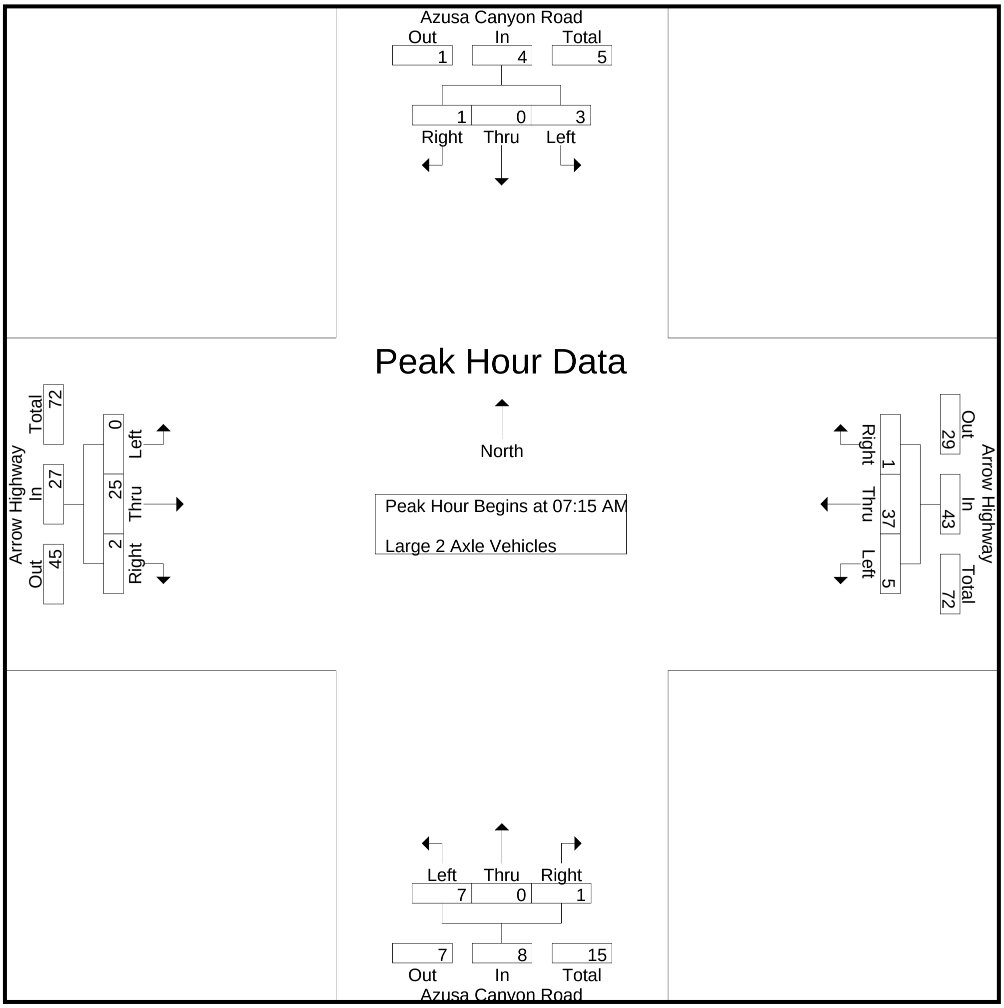

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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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

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City of Irwindale
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Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
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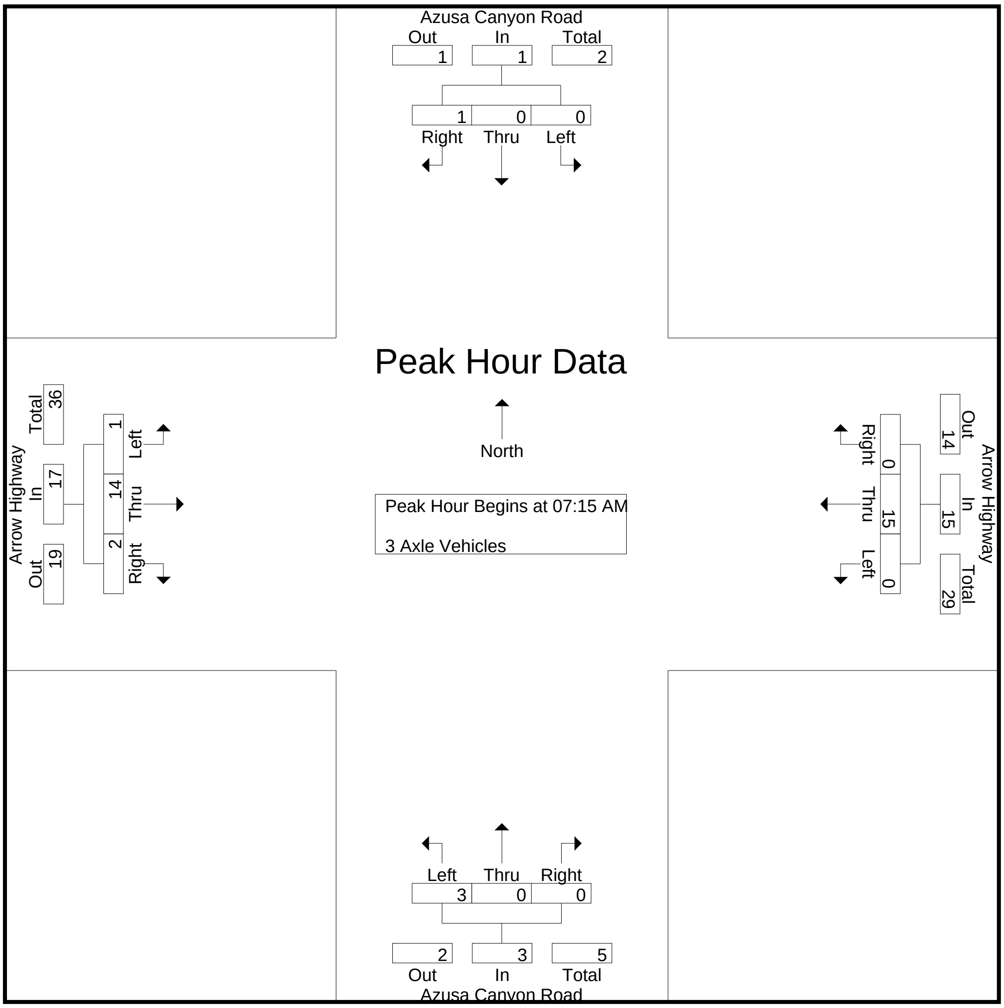

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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City of Irwindale
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Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
Site Code : 05121286
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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

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City of Irwindale
N/S: Azusa Canyon Road
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Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_AM
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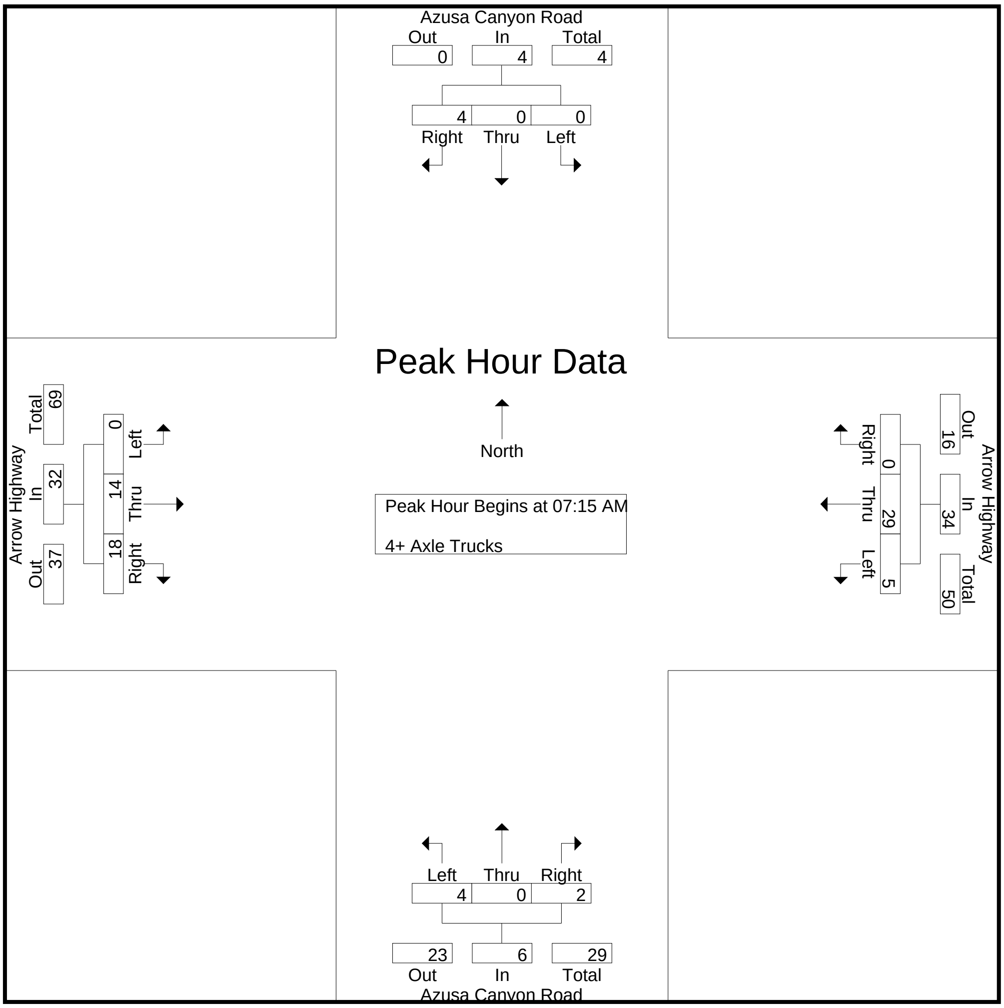

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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City of Irwindale
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Weather: Clear

File Name : 04_IRW_Azusa Canyon_Arrow_PM
Site Code : 05121286
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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

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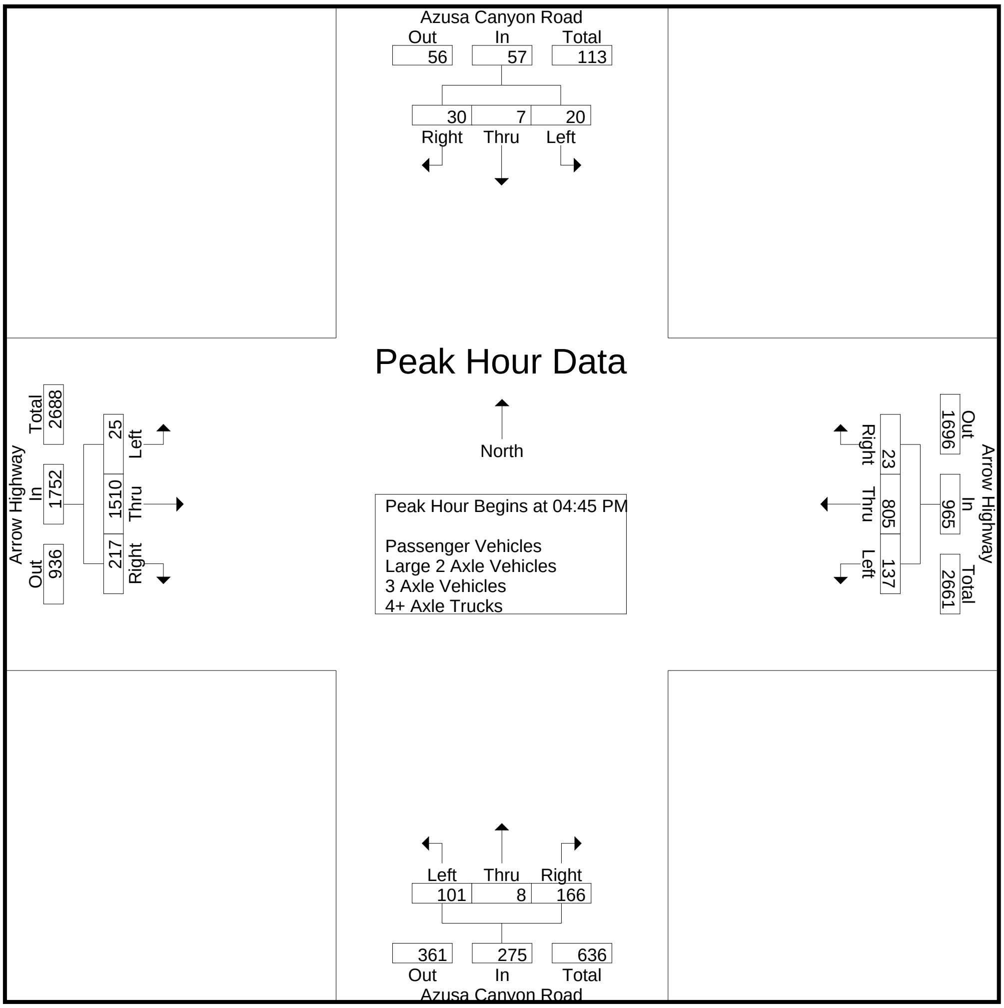
City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

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



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

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

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

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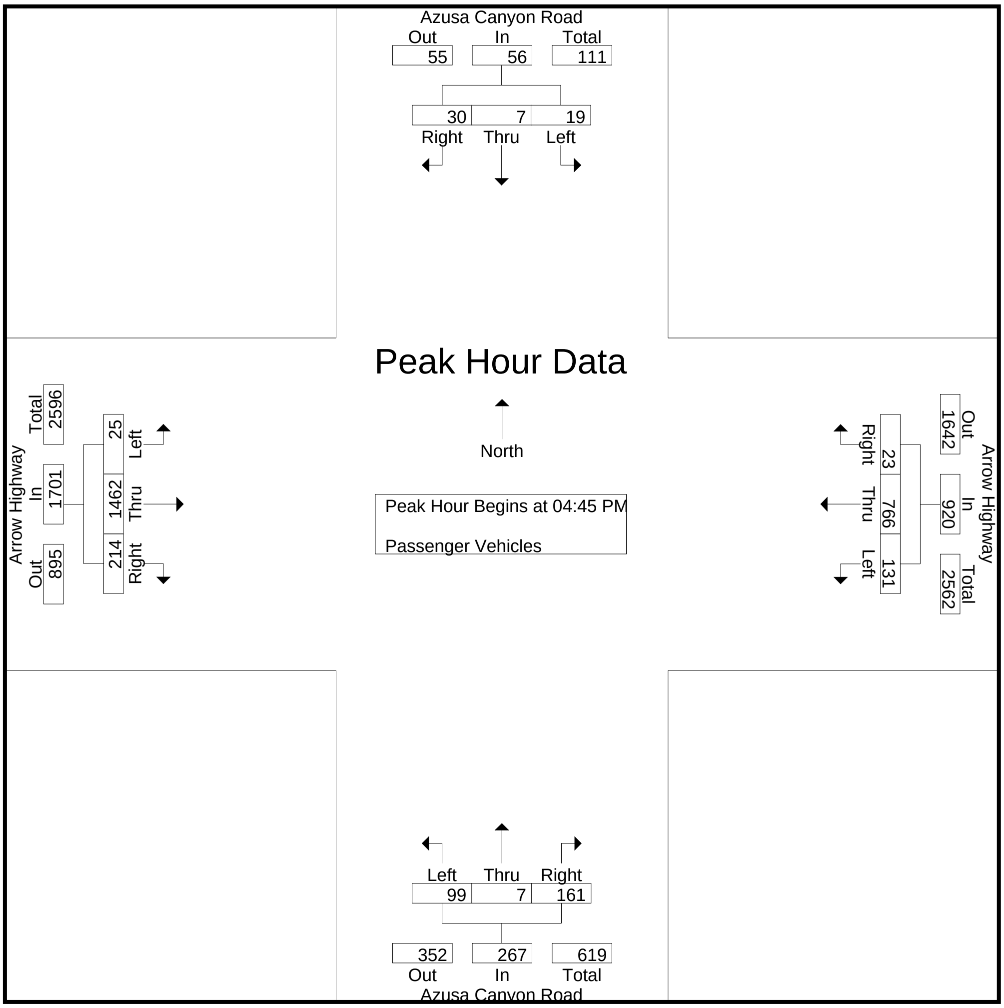

Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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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

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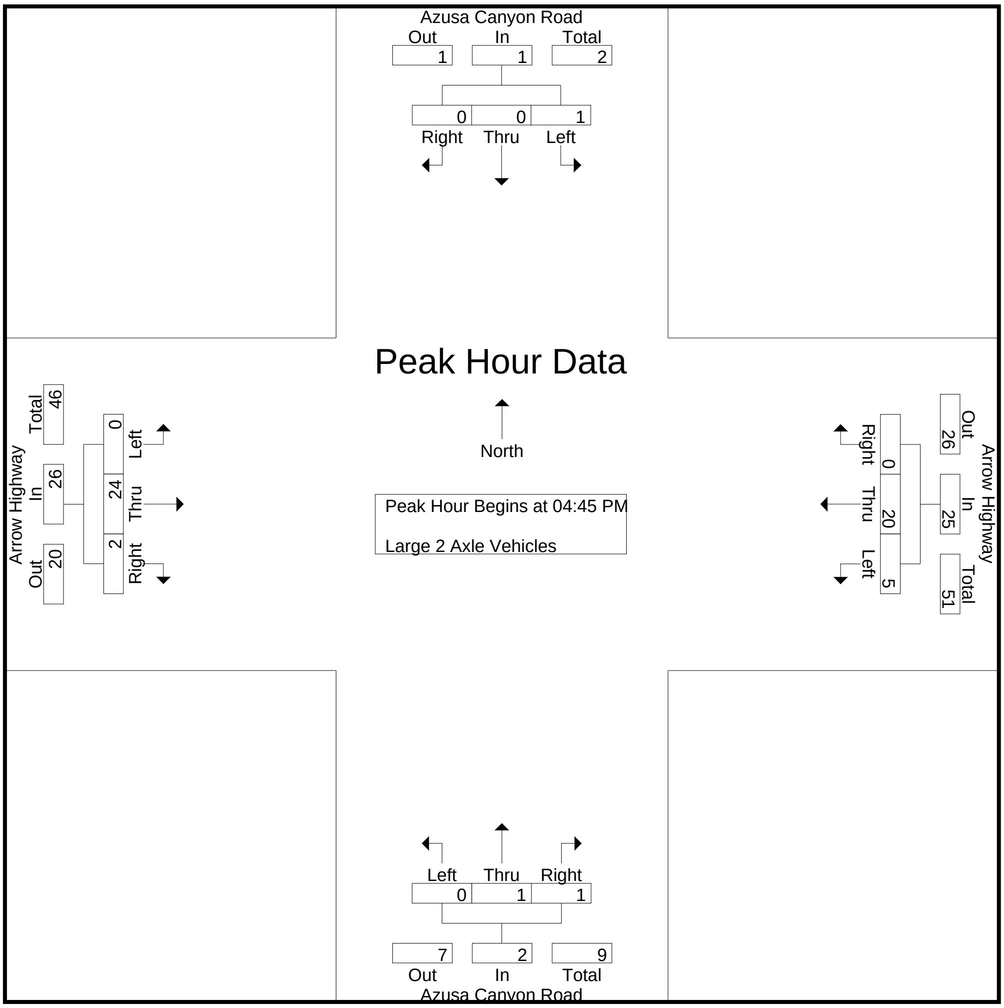

Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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File Name : 04_IRW_Azusa Canyon_Arrow_PM
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
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

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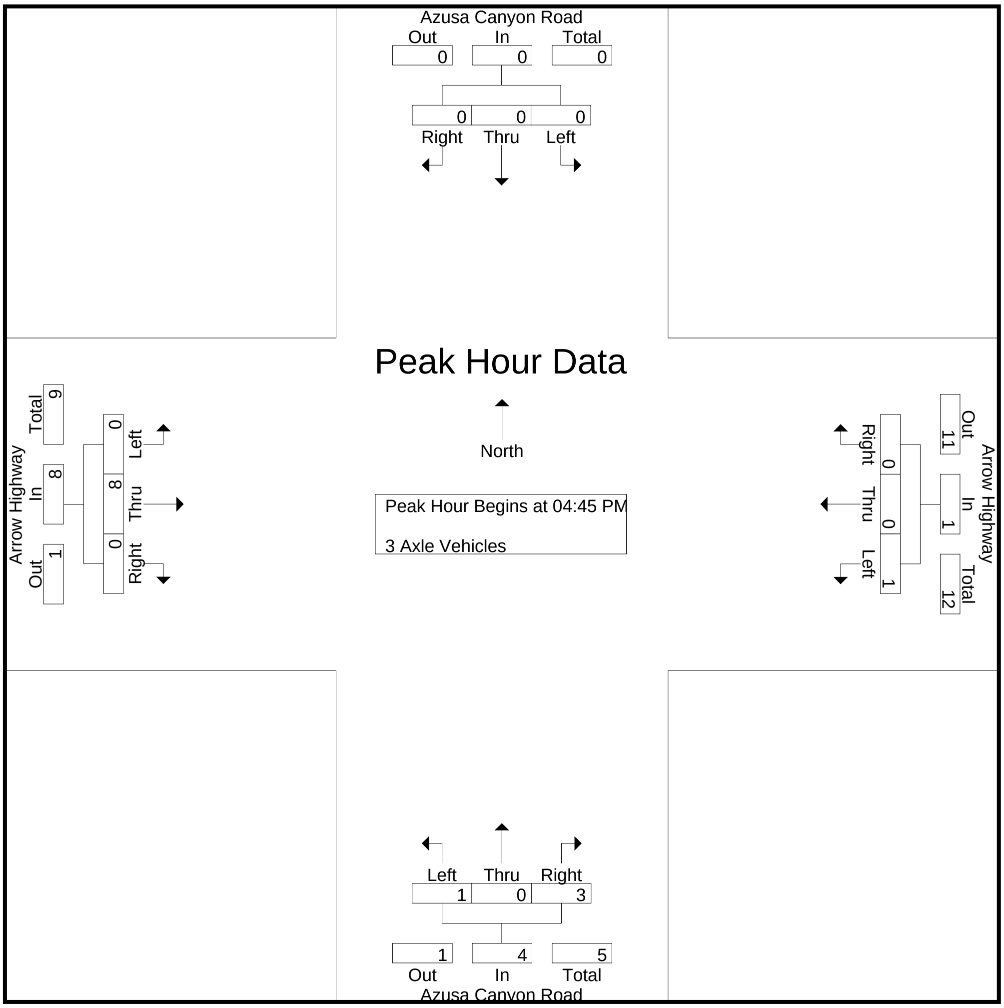

Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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		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

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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	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

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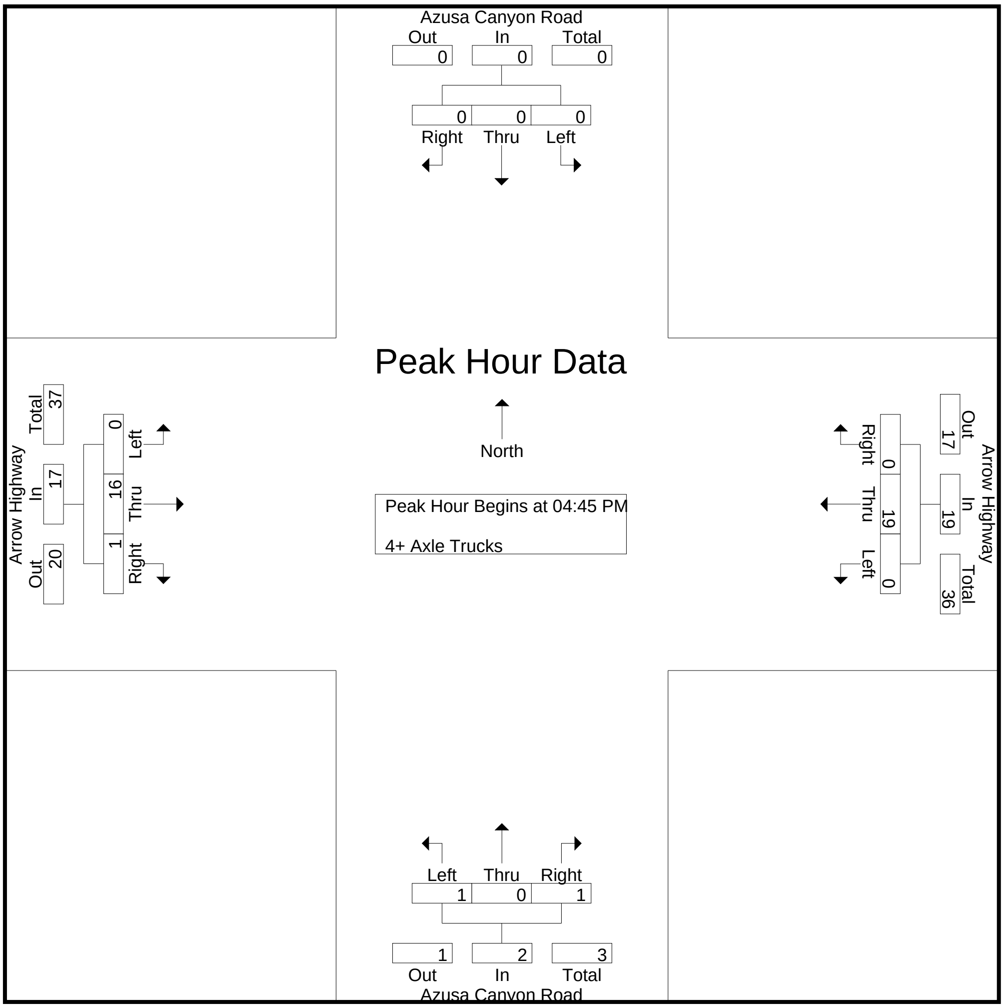
City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

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	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

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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

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

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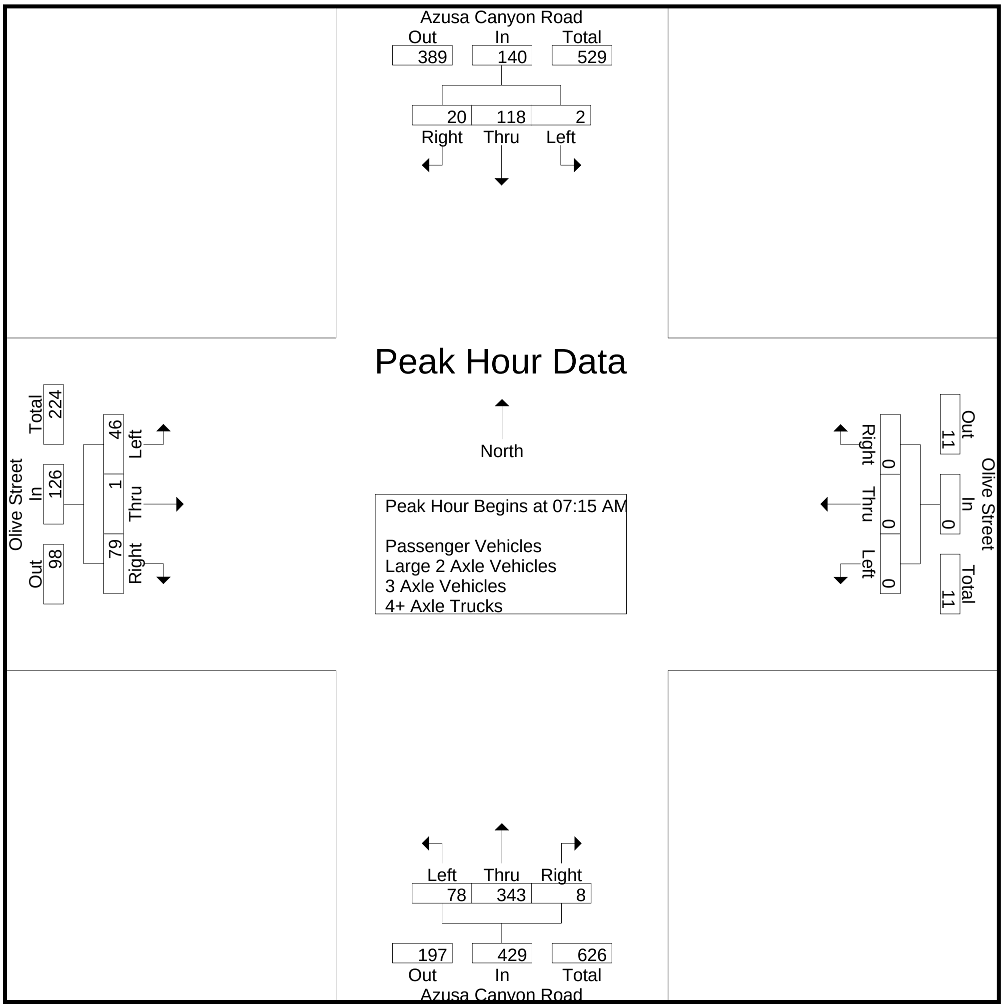
City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

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

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City of Irwindale
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Weather: Clear

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

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

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City of Irwindale
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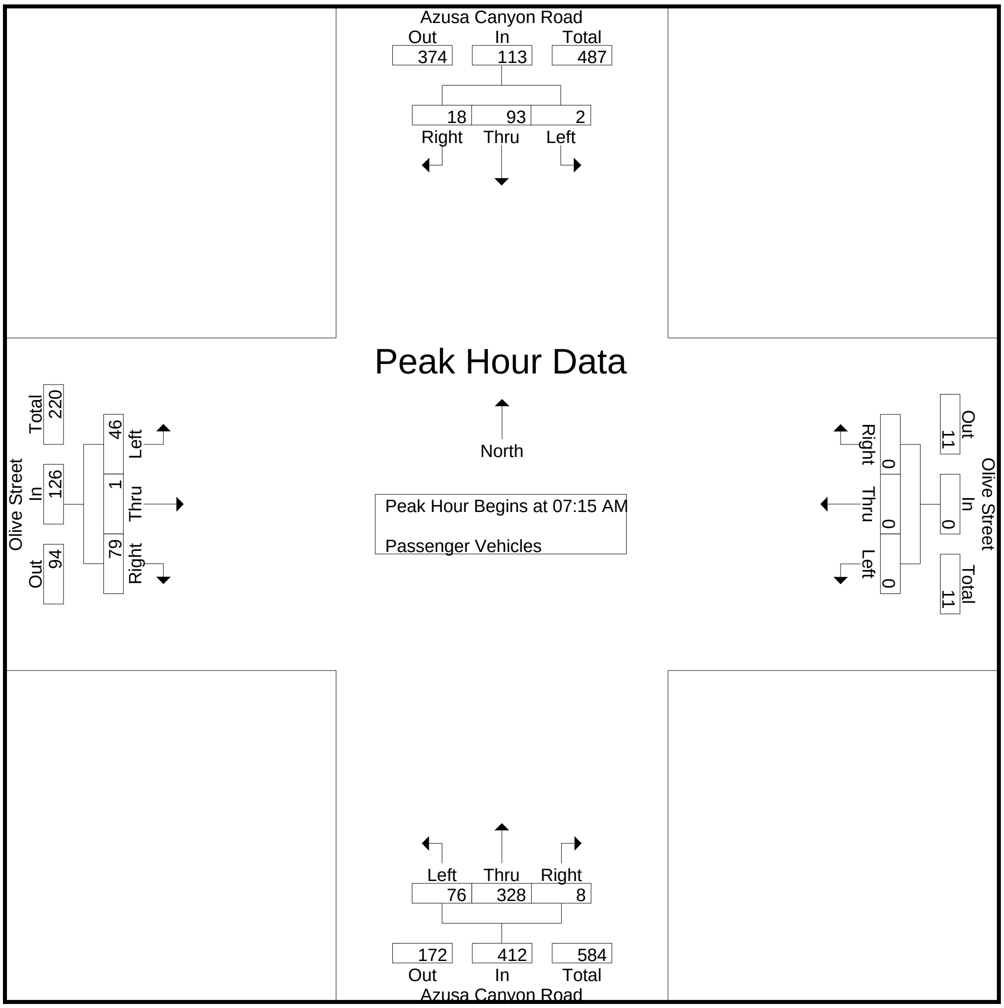
Weather: Clear

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

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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

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City of Irwindale
N/S: Azusa Canyon Road
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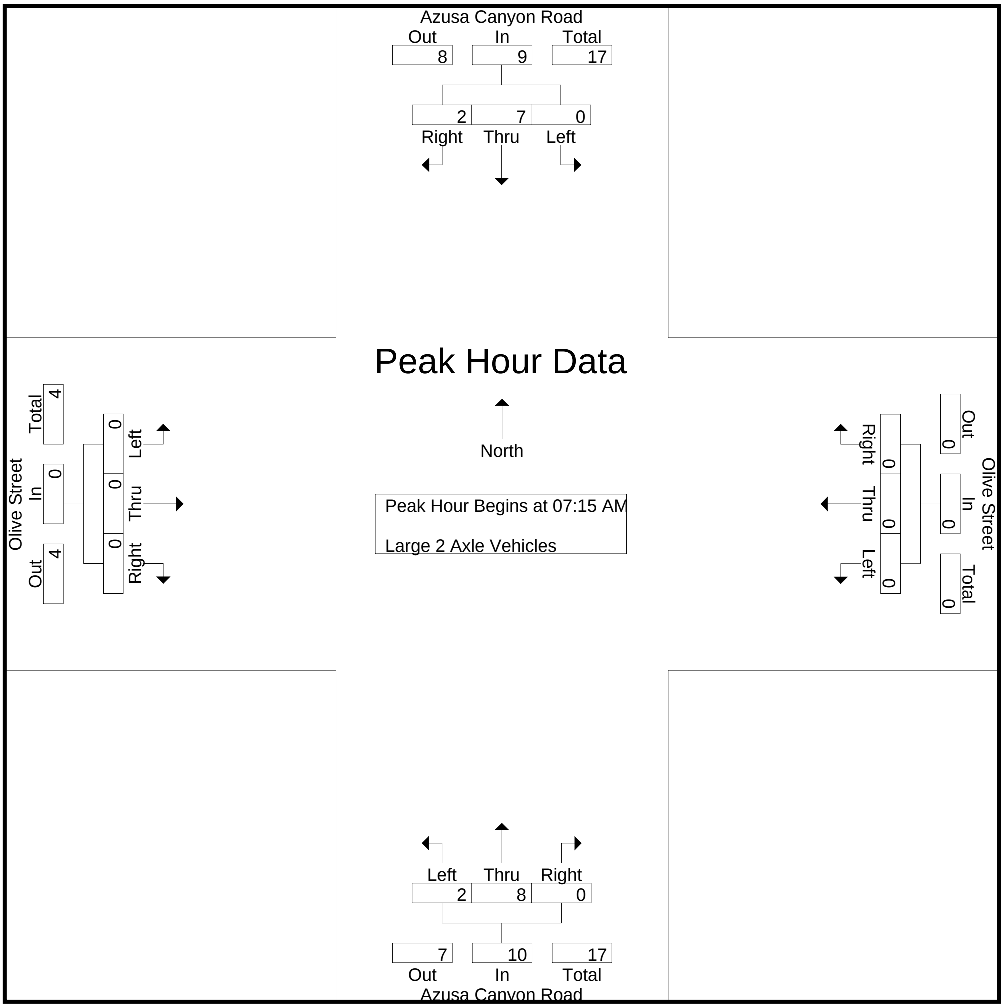
Weather: Clear

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

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City of Irwindale
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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

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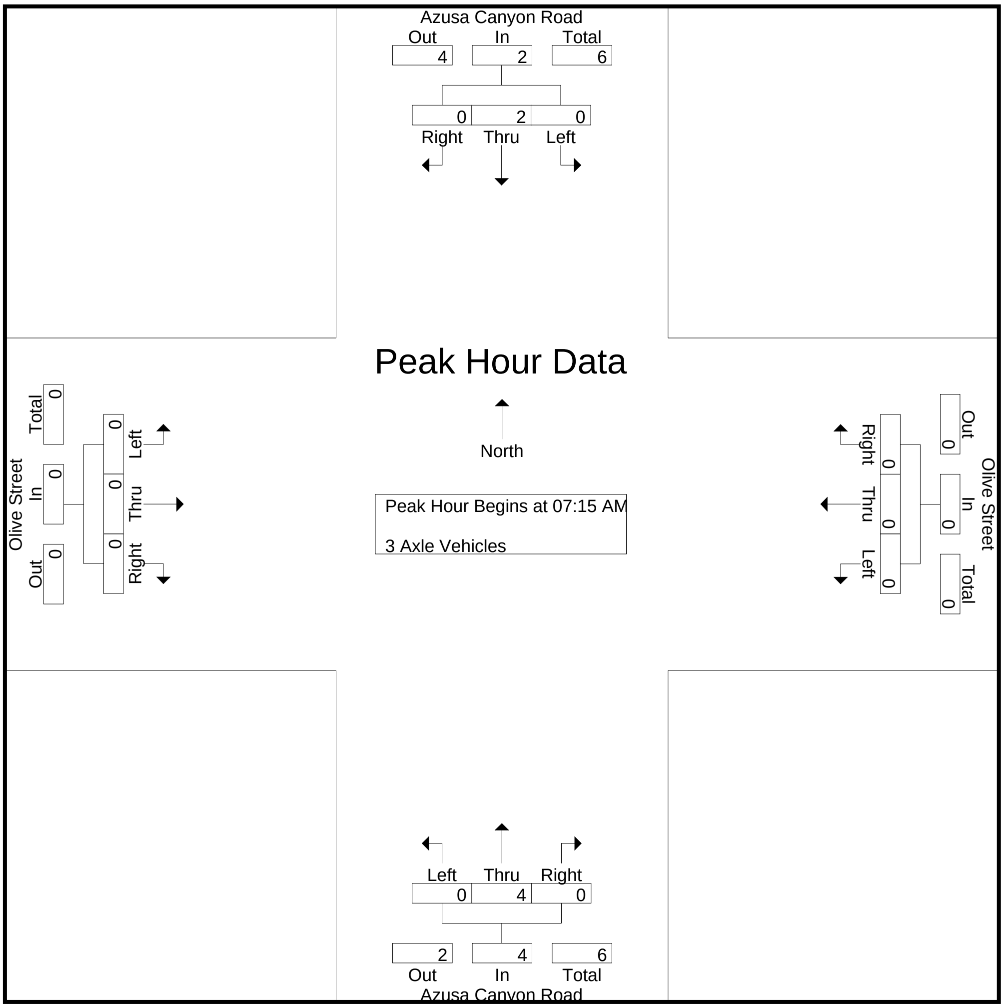
City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

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	100	0		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000

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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

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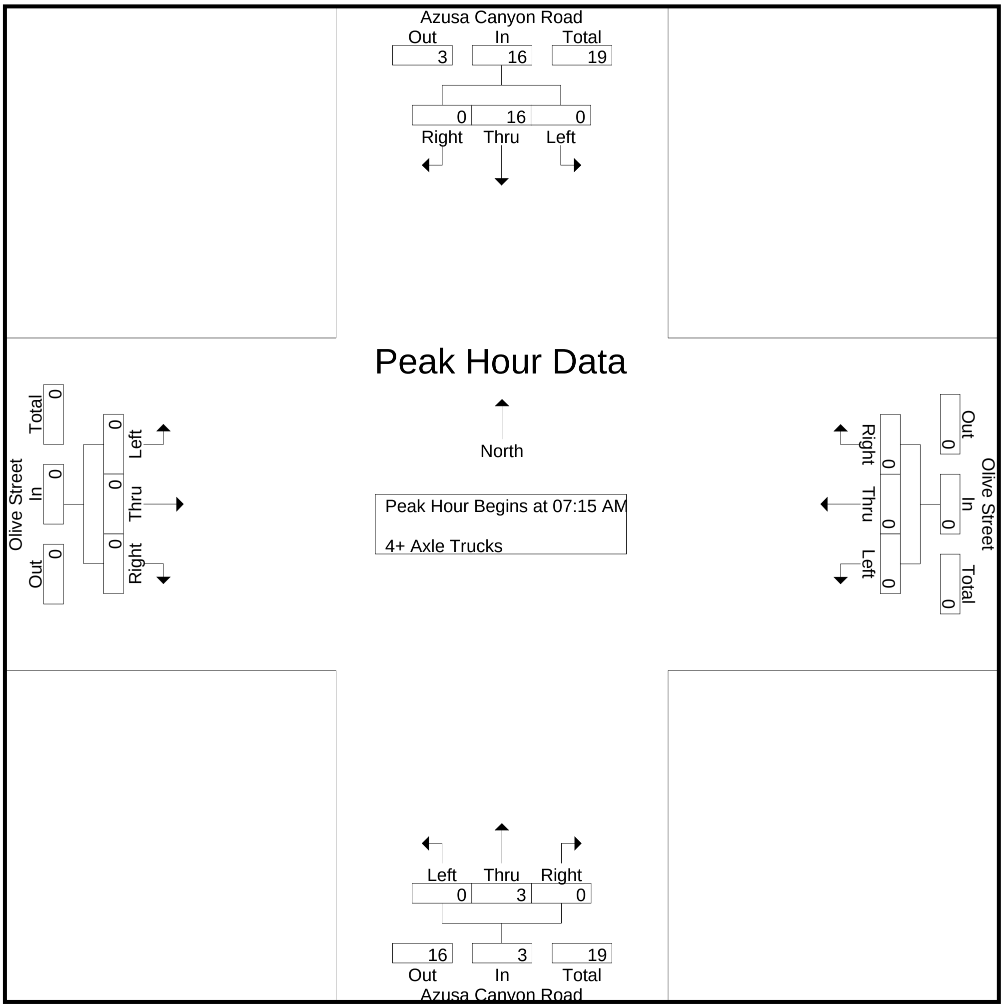

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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City of Irwindale
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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

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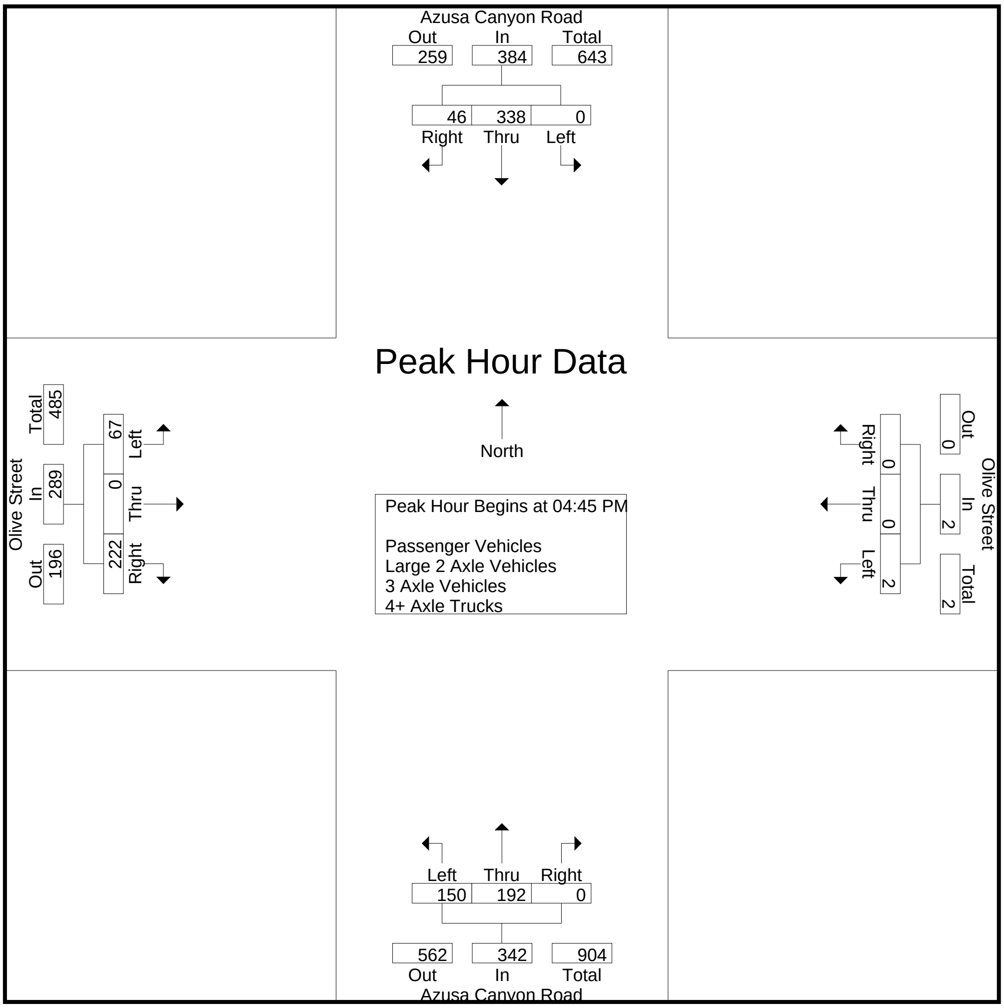

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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Site Code : 05121286
Start Date : 6/17/2021

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

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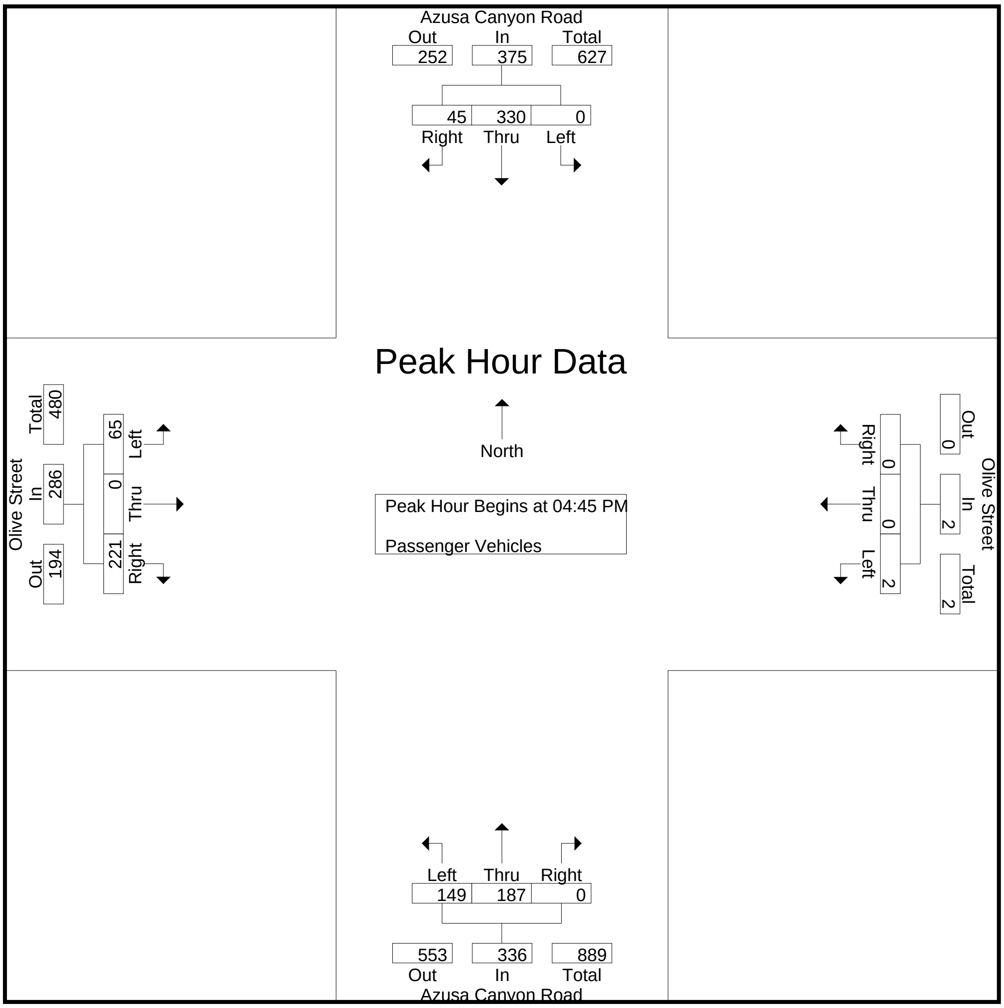

Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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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

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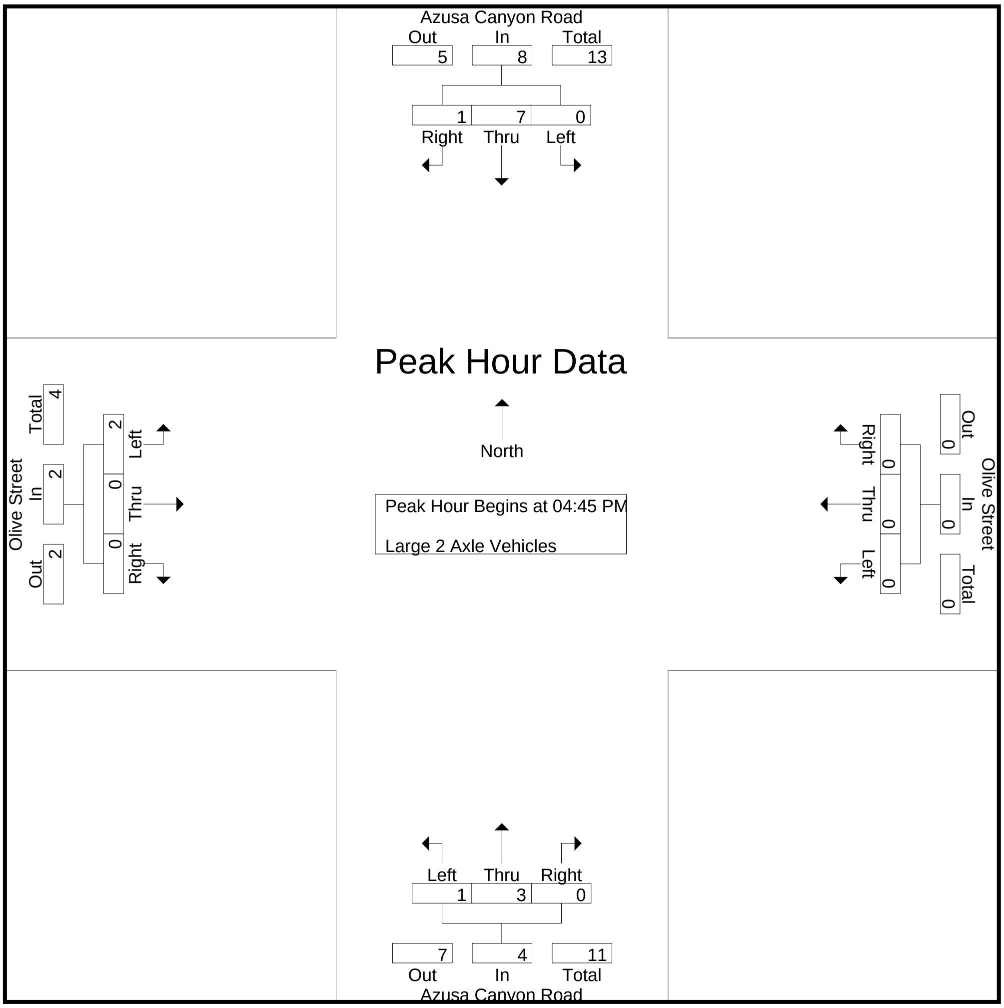

Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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Weather: Clear

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

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	0	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

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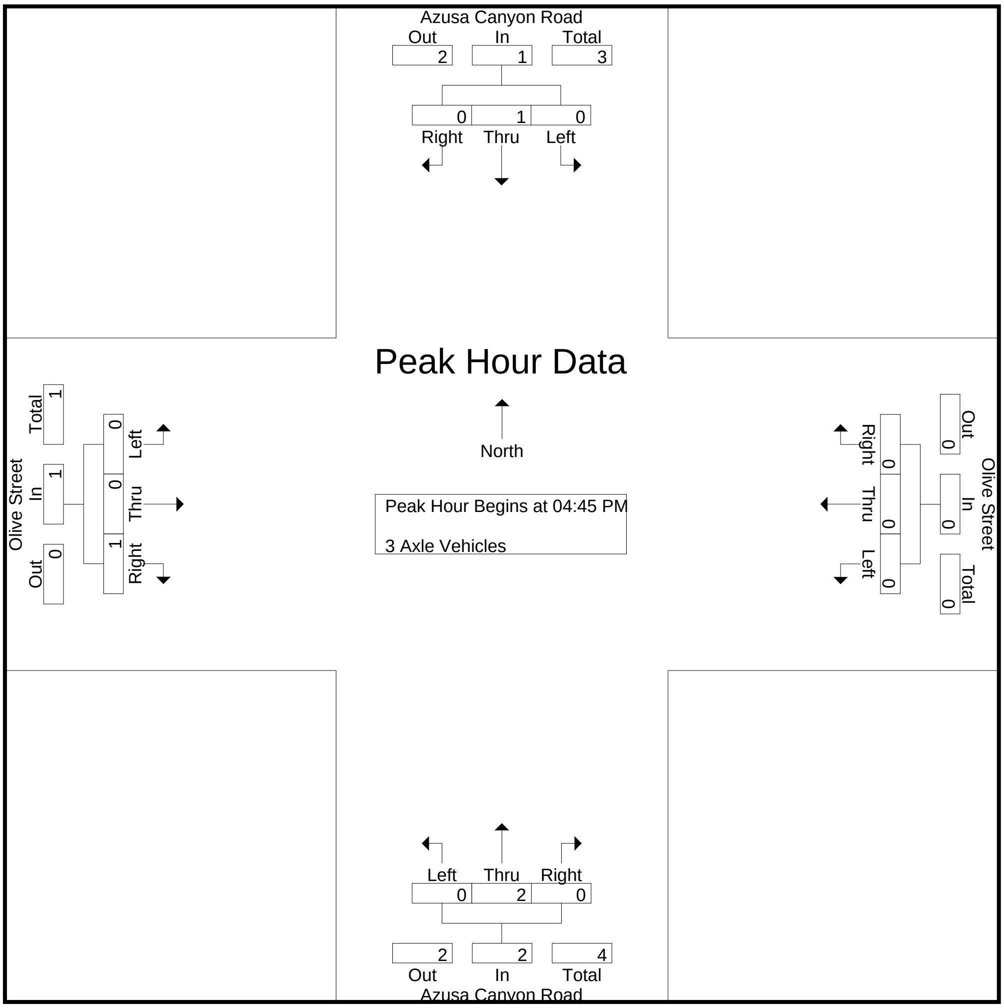
City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

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	100	0		0	0	100	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250

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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

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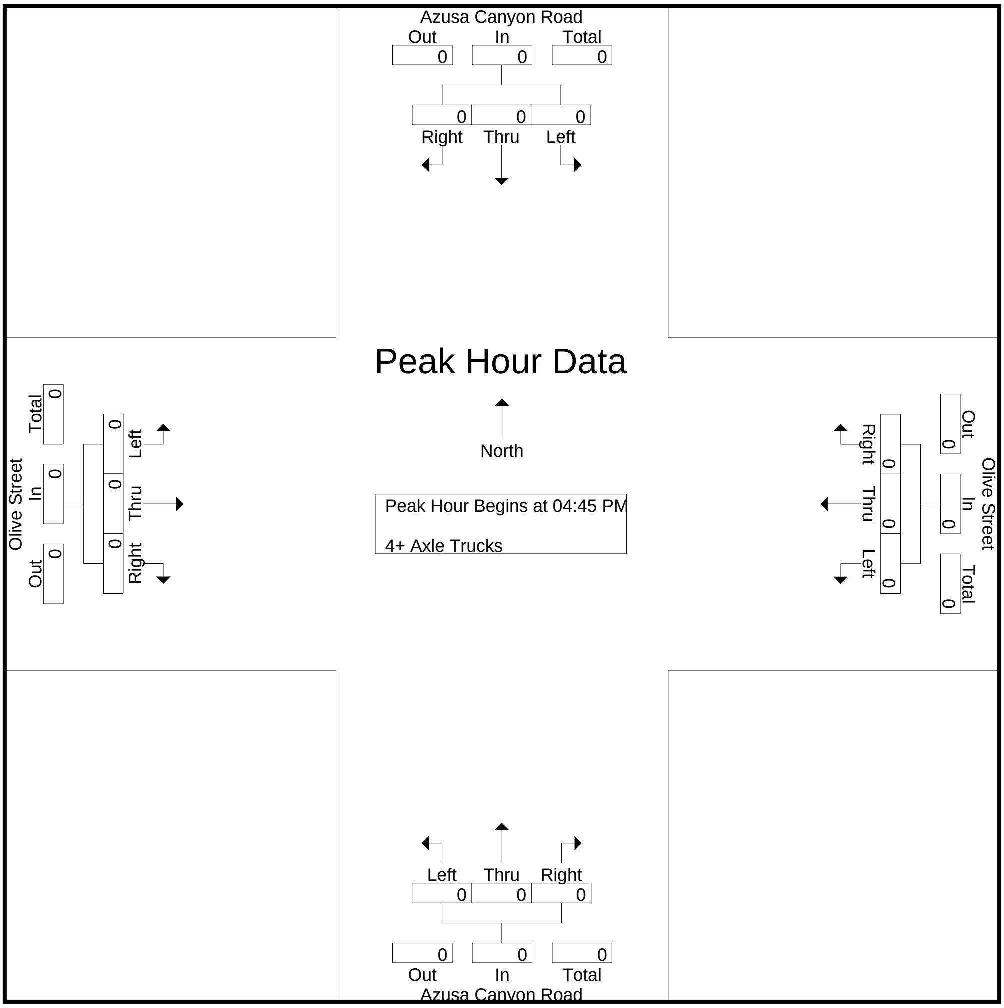
City of Irwindale
N/S: Azusa Canyon Road
E/W: Olive Street
Weather: Clear

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	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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

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%	

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

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%	

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

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

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

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%	

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

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

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

PCE TOTAL = 10,144

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

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%	

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

Counts Unlimited, Inc.

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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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24 Hour Directional Classification Count

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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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.

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.

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	

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

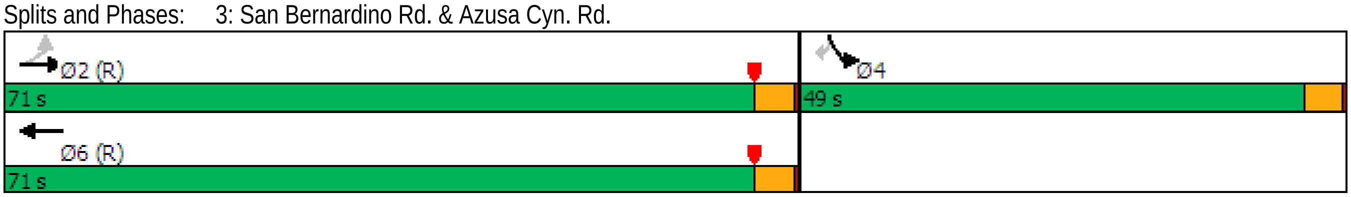
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	15.6	11.3	61.4	14.6
HCM LOS	C	B	F	B

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

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.



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

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.

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

User approved volume balancing among the lanes for turning movement.

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.

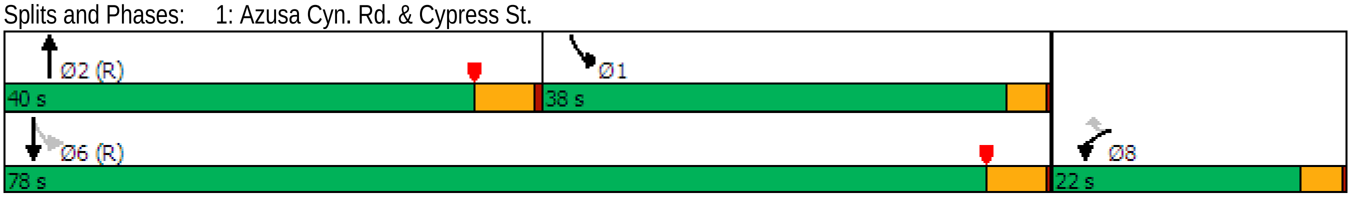
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	2	122	1	1	1	122	550	12	3	240	32
Future Volume (veh/h)	71	2	122	1	1	1	122	550	12	3	240	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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									

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.



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.

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	

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

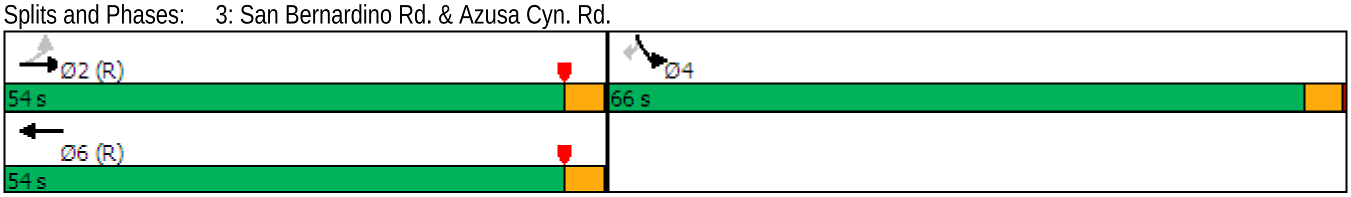
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	35%	99%	0%	65%	0%	2%	0%
Vol Thru, %	63%	1%	0%	35%	0%	98%	0%
Vol Right, %	2%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	500	518	396	57	17	433	190
LT Vol	173	512	0	37	0	9	0
Through Vol	316	6	0	20	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

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.



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

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.

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

User approved volume balancing among the lanes for turning movement.

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.

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									

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

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

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

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

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

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

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

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**

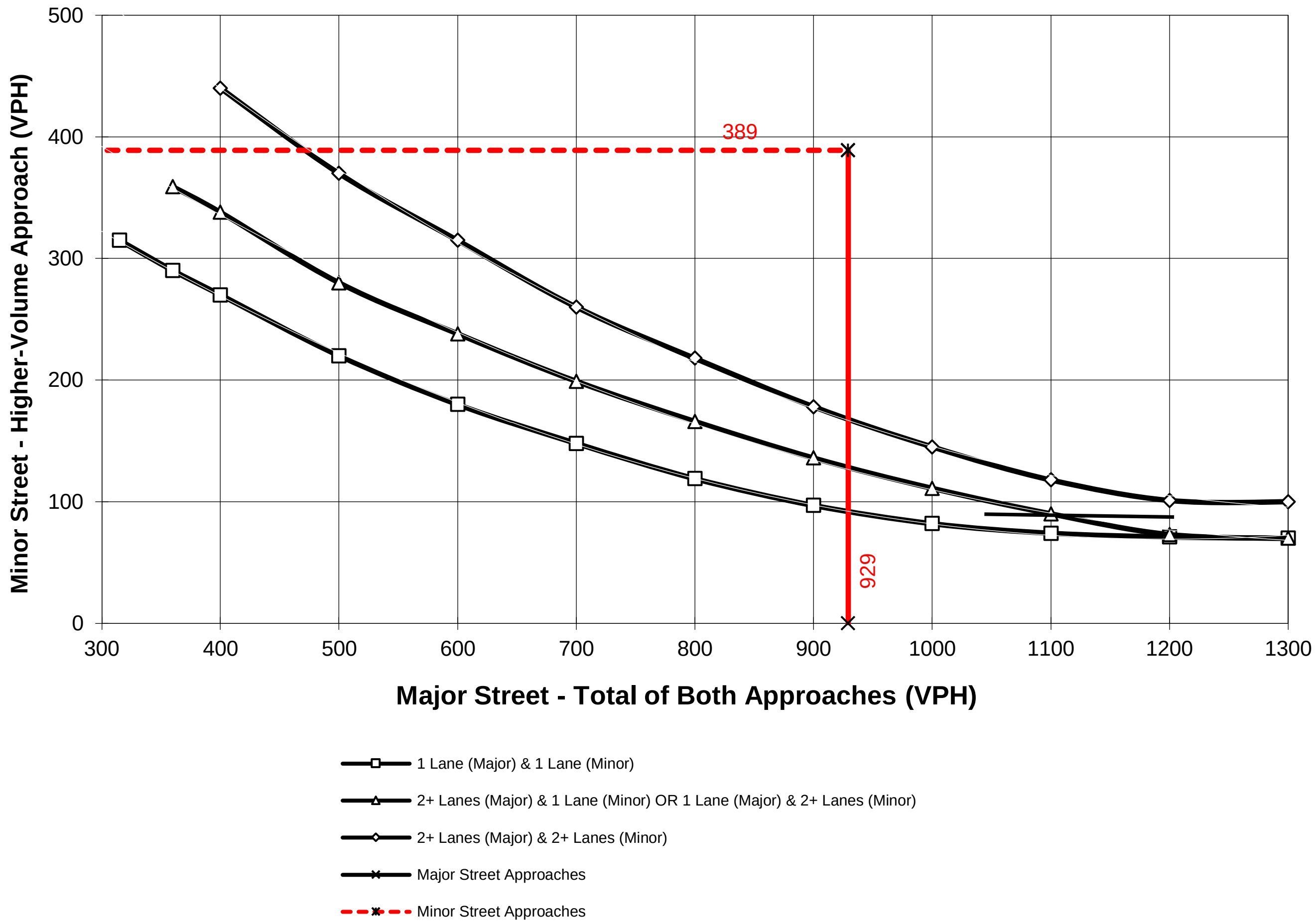
Number of Approach Lanes Major Street = **2**

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**

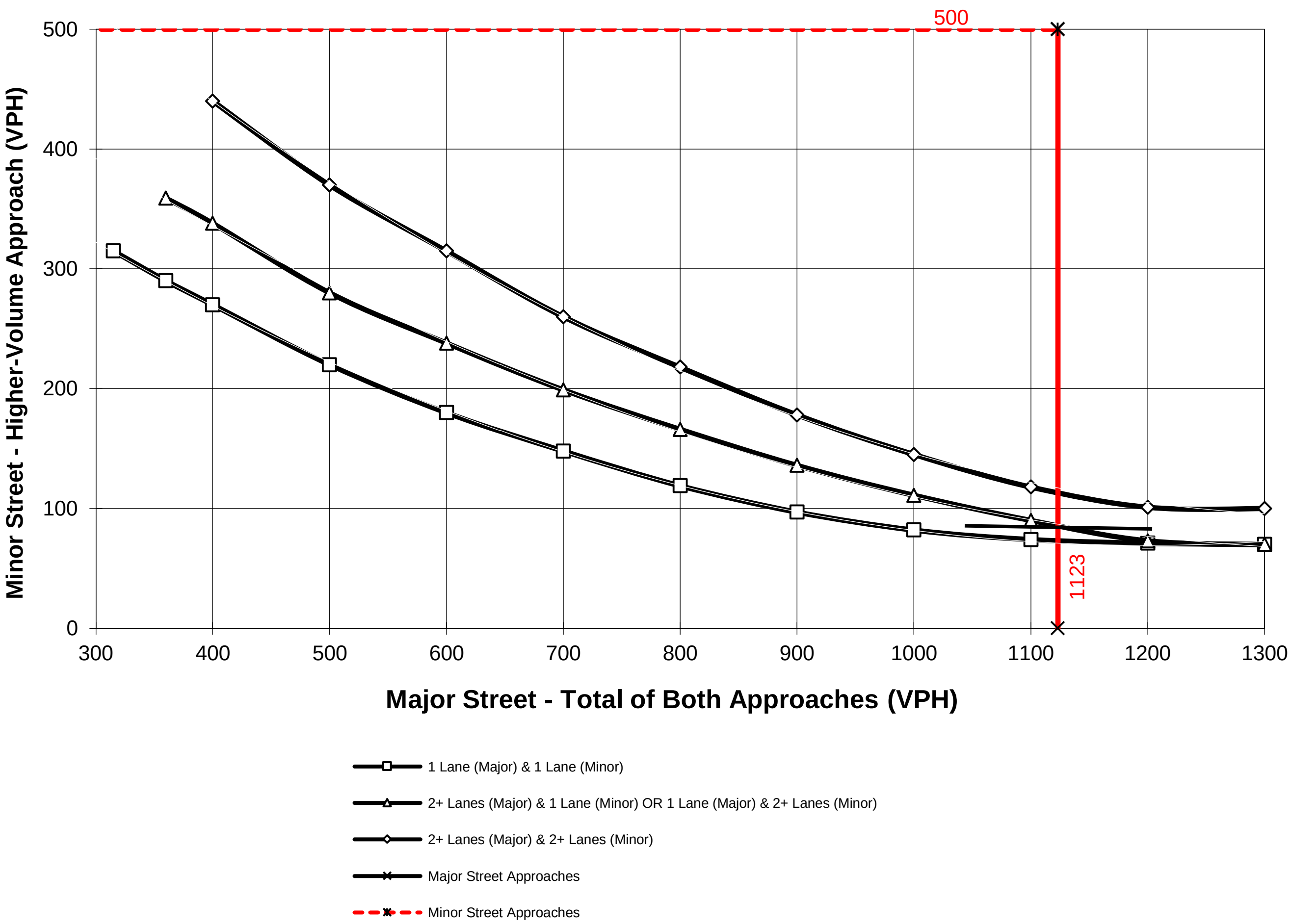
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Los Angeles St.**

High Volume Approach (VPH) = **914**

Number of Approach Lanes Minor Street = **2**

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

APPENDIX 5.1:

EXISTING (HYPOTHETICAL "NON-COVID" 2021) PLUS SITE BASELINE LAND USE CONDITIONS INTERSECTION OPERATIONS ANALYSIS

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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.

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.

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	

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

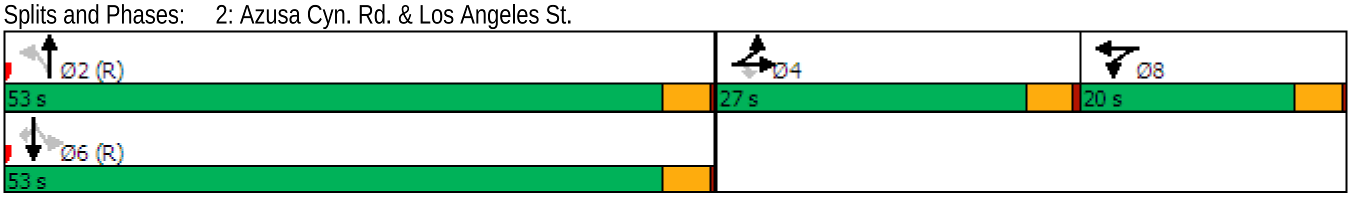
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	15.8	11.4	64	14.7
HCM LOS	C	B	F	B

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

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.



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												

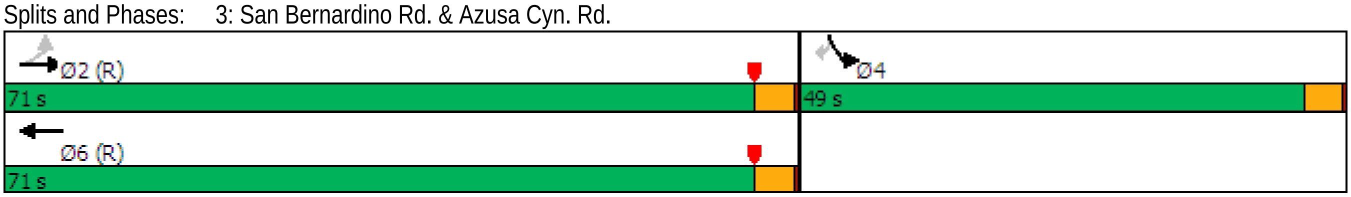
User approved volume balancing among the lanes for turning movement.

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.



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			

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.

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

User approved volume balancing among the lanes for turning movement.

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.

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.

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.

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

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	NBR	WBLn1	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	-

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

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	

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

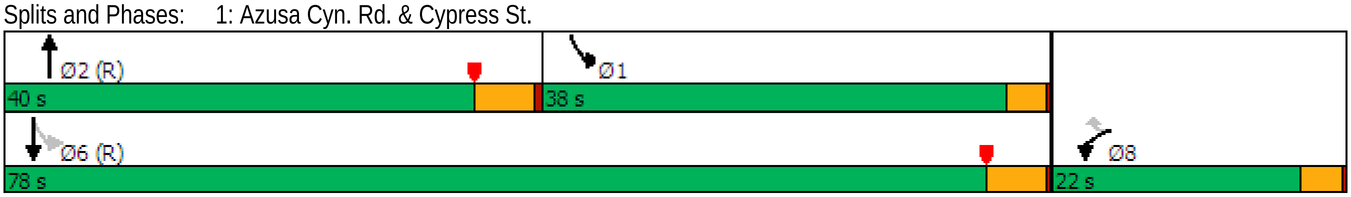
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1595	-	-	-	1049
HCM Lane V/C Ratio	0.001	-	-	-	0.001
HCM Control Delay (s)	7.3	0	-	-	8.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

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.



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.

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	

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

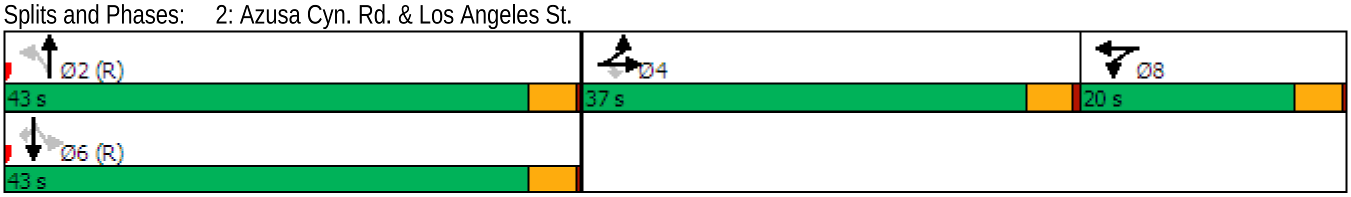
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	35%	99%	0%	63%	0%	2%	0%
Vol Thru, %	63%	1%	0%	37%	0%	98%	0%
Vol Right, %	2%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	501	519	396	62	18	433	190
LT Vol	173	512	0	39	0	9	0
Through Vol	316	7	0	23	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

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.



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

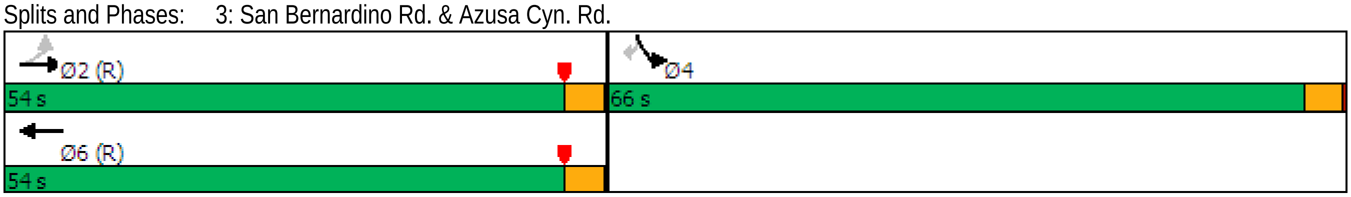
User approved volume balancing among the lanes for turning movement.

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.



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			

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.

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

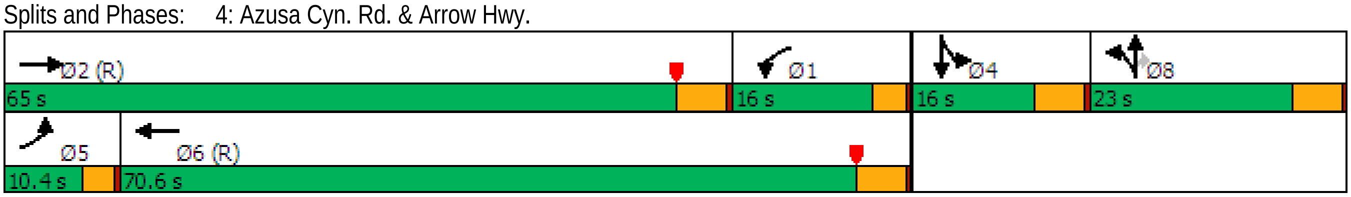
User approved volume balancing among the lanes for turning movement.

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.



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			94	
Approach Delay, s/veh		35.2			3.3			116.5			56.8	
Approach LOS		D			A			F			E	
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.

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.

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

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	NBR	WBLn1	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	-

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

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	

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 Q(veh)	0	-	-	-	0

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

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

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

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

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

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

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

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

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

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

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

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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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.

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	

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

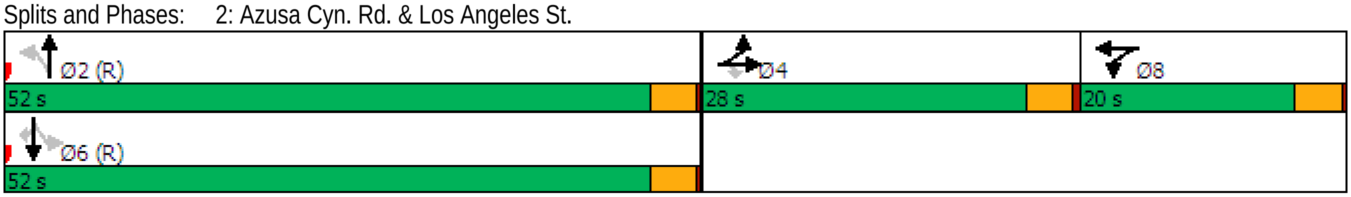
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	16.2	11.5	68.4	15
HCM LOS	C	B	F	B

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

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.



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 lands for turning movement.

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

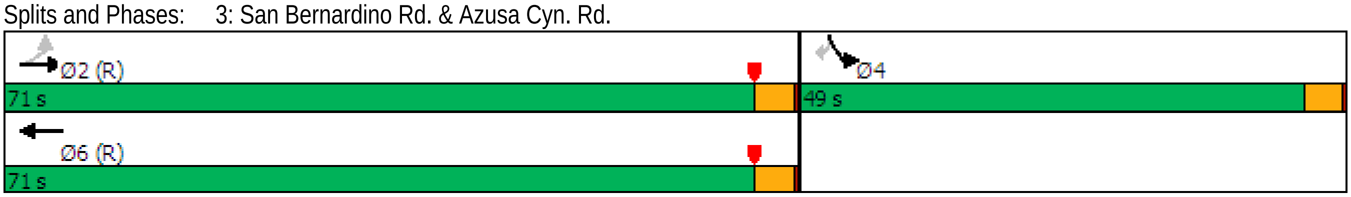
Actuated Cycle Length: 120

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.



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

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.

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

User approved volume balancing among the lanes for turning movement.

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.

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

User approved volume balancing among the lanes for turning movement.

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									

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	

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	NBR	WBLn1	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	-

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	

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

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	

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	-

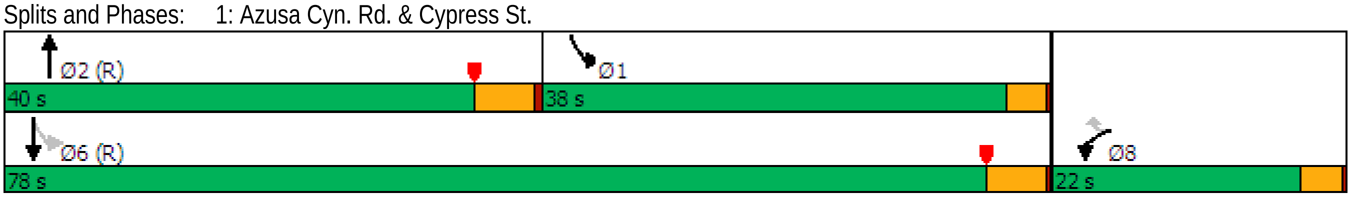
Approach	EB	WB	SB
HCM Control Delay, s	1	0	8.4
HCM LOS			A

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

Lane Group	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
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.



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.

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	

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

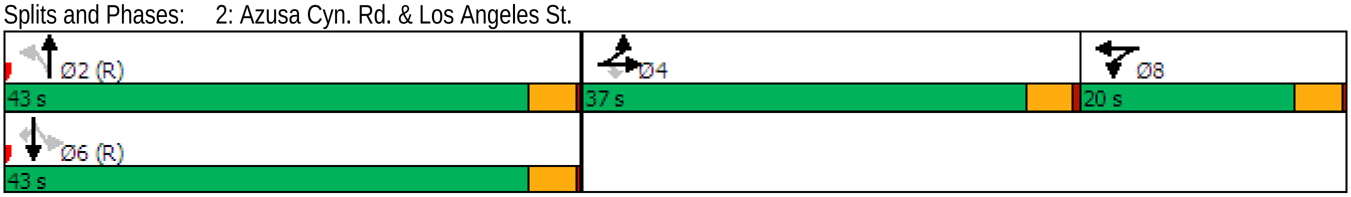
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	34%	98%	0%	60%	0%	2%	0%
Vol Thru, %	63%	2%	0%	40%	0%	98%	0%
Vol Right, %	3%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	503	521	396	72	20	434	190
LT Vol	173	512	0	43	0	10	0
Through Vol	316	9	0	29	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

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.



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

User approved volume balancing among the lanes for turning movement.

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

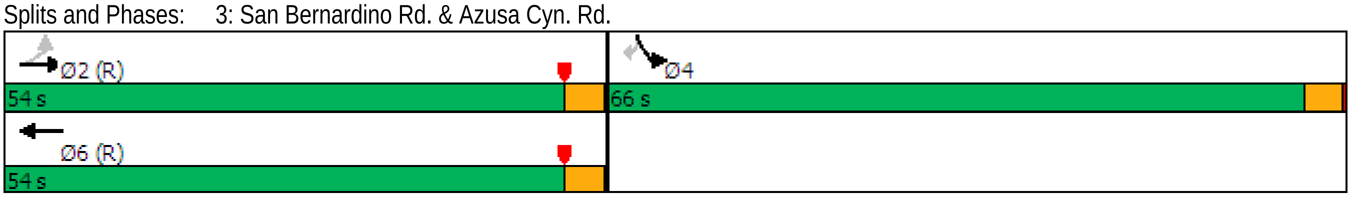
Actuated Cycle Length: 120

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.



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			

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.

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

User approved volume balancing among the lanes for turning movement.

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

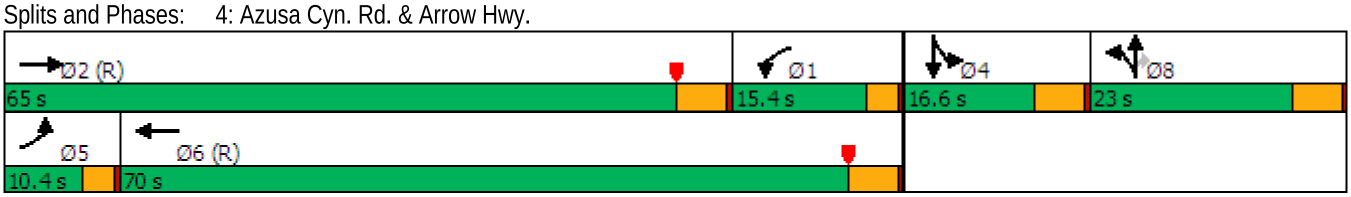
Actuated Cycle Length: 120

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.



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.

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.

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

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	NBR	WBLn1	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	-

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

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	

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

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

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

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

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

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

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

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

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

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		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	28.4	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

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

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

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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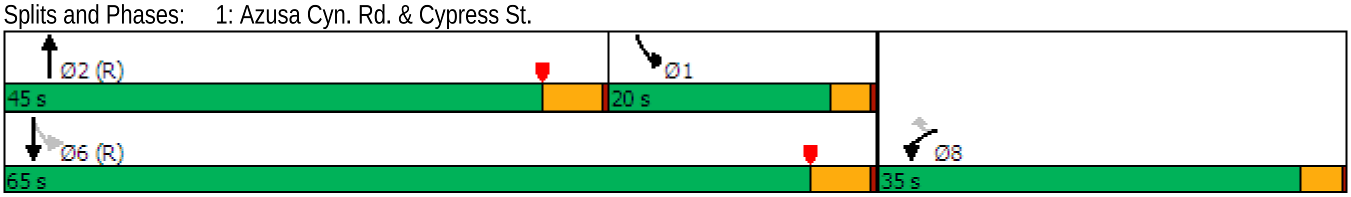
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	242	397	359	171	151	238
Future Volume (vph)	242	397	359	171	151	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		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.



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.

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	

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

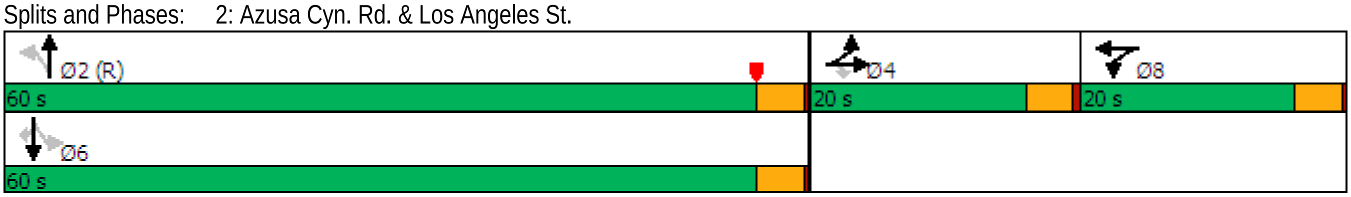
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	43%	95%	0%	54%	0%	9%	0%
Vol Thru, %	55%	5%	0%	46%	0%	91%	0%
Vol Right, %	2%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	536	223	190	13	19	176	283
LT Vol	231	211	0	7	0	15	0
Through Vol	294	12	0	6	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

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.



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

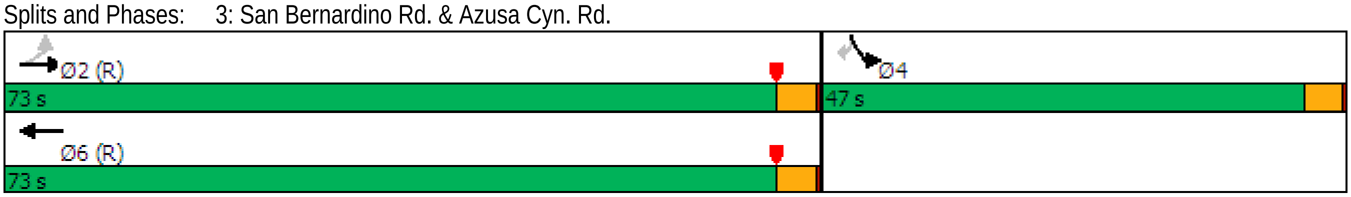
Notes

User approved volume balancing among the lanes for turning movement.

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.



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			

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.

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

User approved volume balancing among the lanes for turning movement.

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.

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

User approved volume balancing among the lanes for turning movement.

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.

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									

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	NBR	WBLn1	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	-

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	

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

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	

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

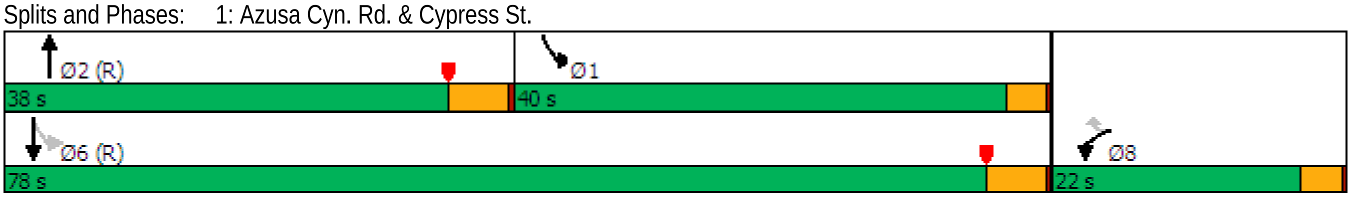
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1593	-	-	-	1048
HCM Lane V/C Ratio	0.001	-	-	-	0.001
HCM Control Delay (s)	7.3	0	-	-	8.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

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.



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+I1), 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.

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

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

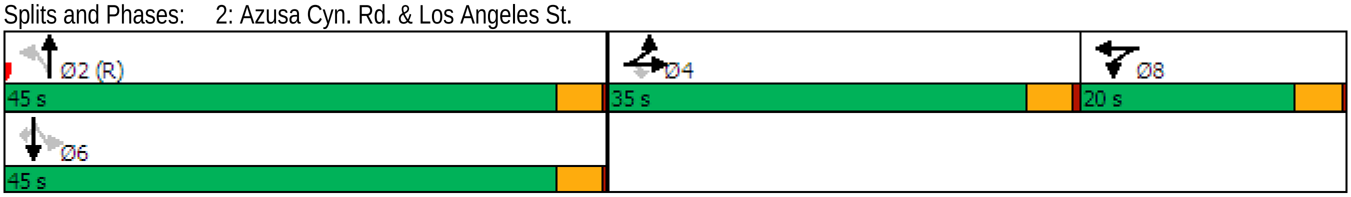
Actuated Cycle Length: 100

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.



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									

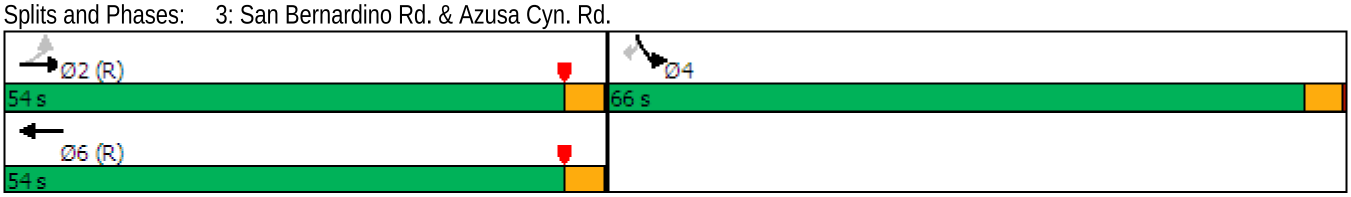
Notes

User approved volume balancing among the lanes for turning movement.

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.



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

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.

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

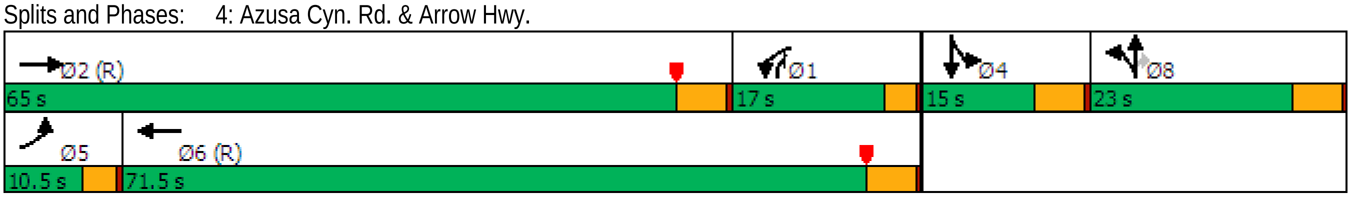
User approved volume balancing among the lanes for turning movement.

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.



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.

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.

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									

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**	**NBR**	**WBLn1**	**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	-

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

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

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

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

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

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

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

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

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

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

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

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

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	1	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

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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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

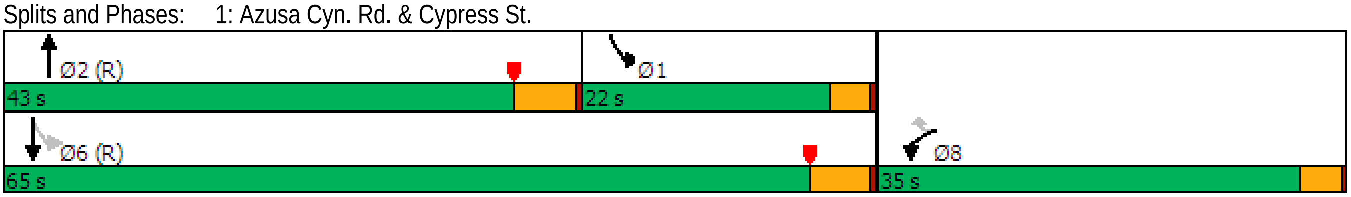
Actuated Cycle Length: 100

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.



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.

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	

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

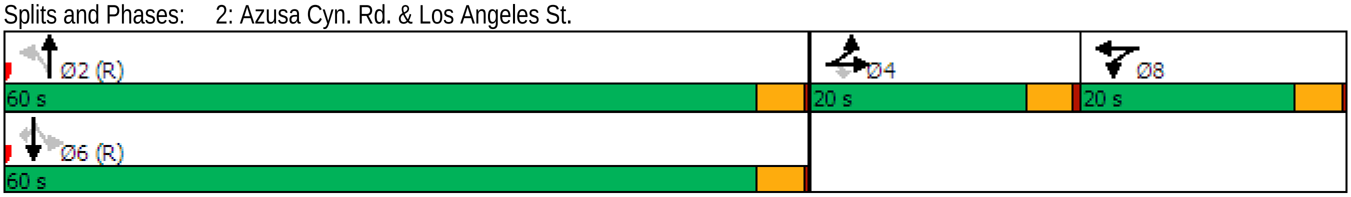
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	17	11.7	94.9	15.6
HCM LOS	C	B	F	C

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

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.



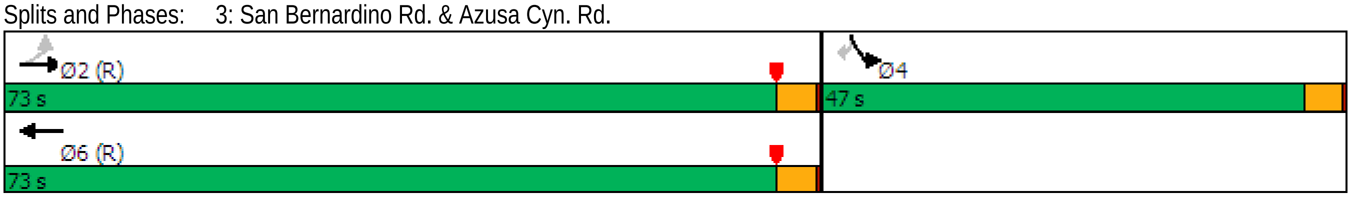
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	17	190	8	8	20	231	294	15	17	161	283
Future Volume (veh/h)	211	17	190	8	8	20	231	294	15	17	161	283
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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.

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.



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

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.

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

User approved volume balancing among the lanes for turning movement.

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.

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.

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

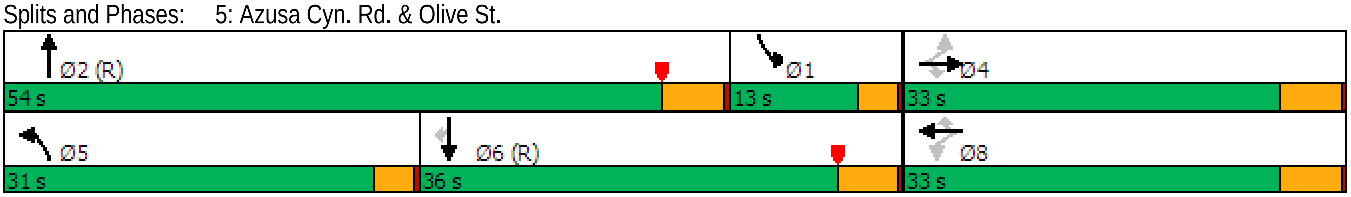
Actuated Cycle Length: 100

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.



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.

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	NBR	WBLn1	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	-

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

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	

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

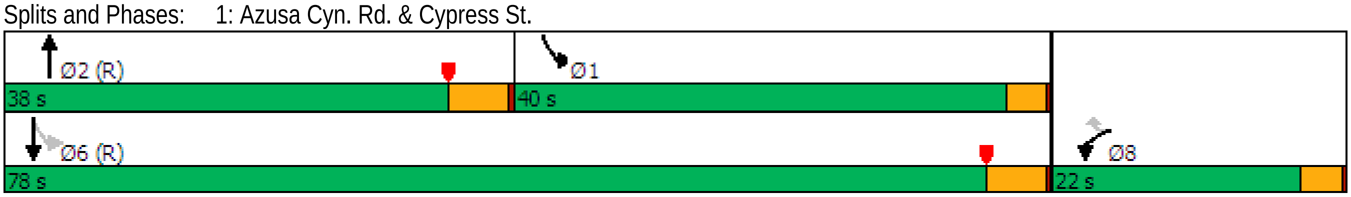
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1593	-	-	-	1048
HCM Lane V/C Ratio	0.003	-	-	-	0.002
HCM Control Delay (s)	7.3	0	-	-	8.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

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.



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+I1), 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.

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	

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

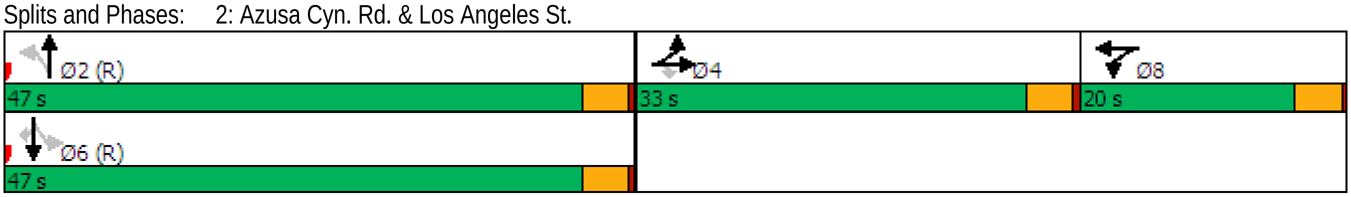
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	126.6	15.9	151	80.3
HCM LOS	F	C	F	F

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

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.



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

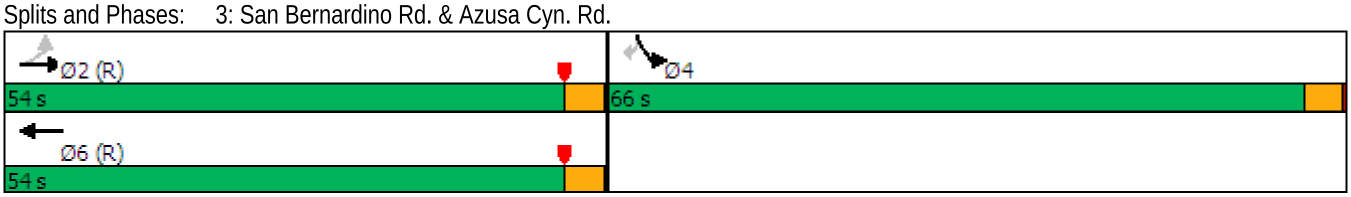
User approved volume balancing among the lanes for turning movement.

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.



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			

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.

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

User approved volume balancing among the lanes for turning movement.

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

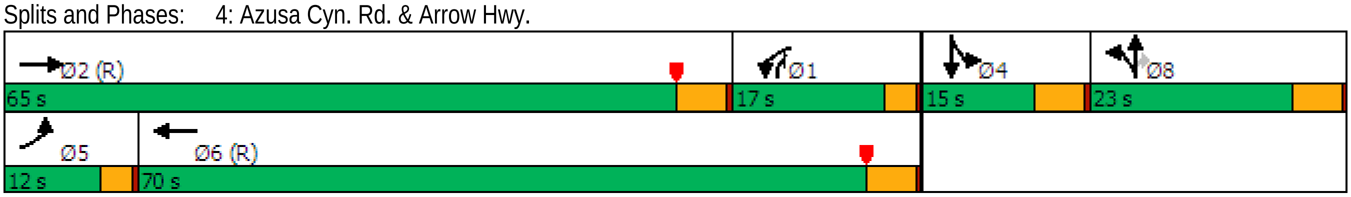
Actuated Cycle Length: 120

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.



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.

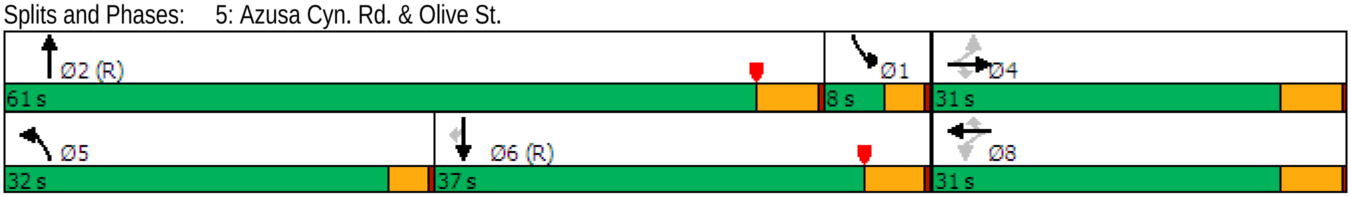
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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.



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

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

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	NBR	WBLn1	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	-

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

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

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

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

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

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

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

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

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

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 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	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

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		c0.46	
v/s Ratio Perm	c0.31					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

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

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

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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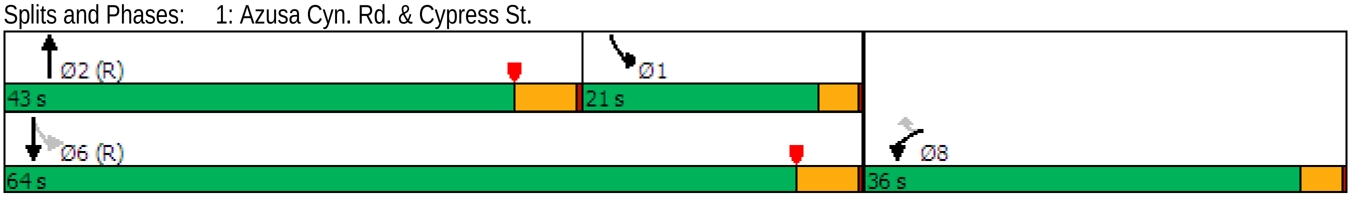
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	262	419	359	186	161	247
Future Volume (vph)	262	419	359	186	161	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		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.



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.

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	

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

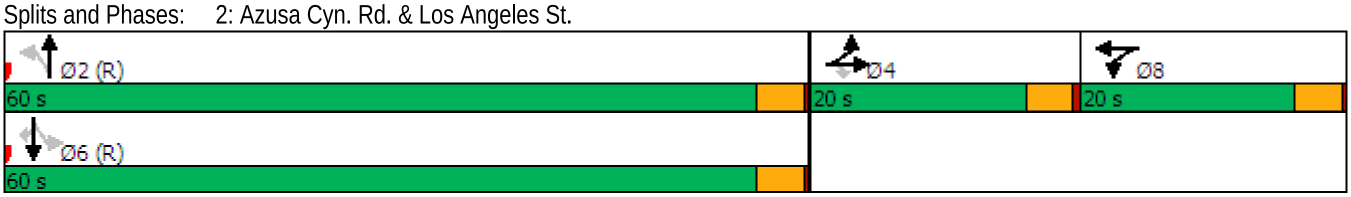
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	17.6	12	112.7	16.8
HCM LOS	C	B	F	C

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

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.



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

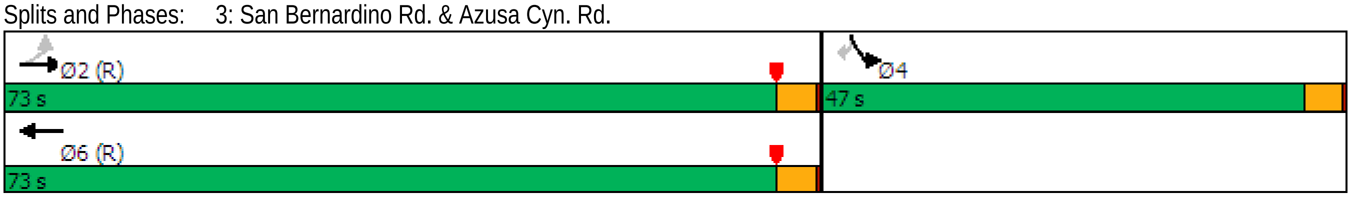
Notes

User approved volume balancing among the lanes for turning movement.

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.



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			

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.

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

User approved volume balancing among the lanes for turning movement.

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.

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

User approved volume balancing among the lanes for turning movement.

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

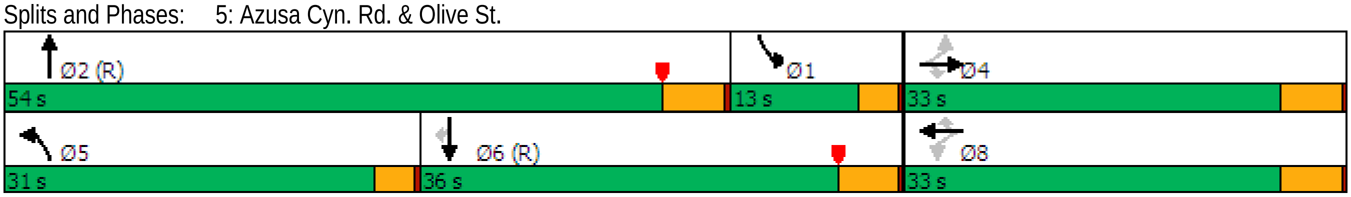
Actuated Cycle Length: 100

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.



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.

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	NBR	WBLn1	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	-

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 Q(veh)	0	-	-	-	0

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 Q(veh)	0	-	-	-	0

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

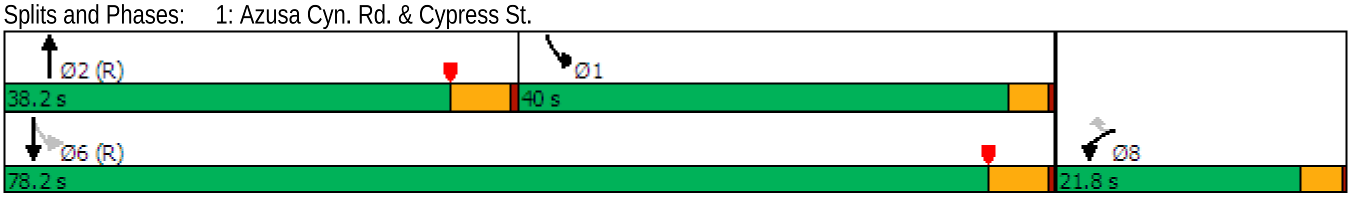
Actuated Cycle Length: 100

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.



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.

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	

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

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

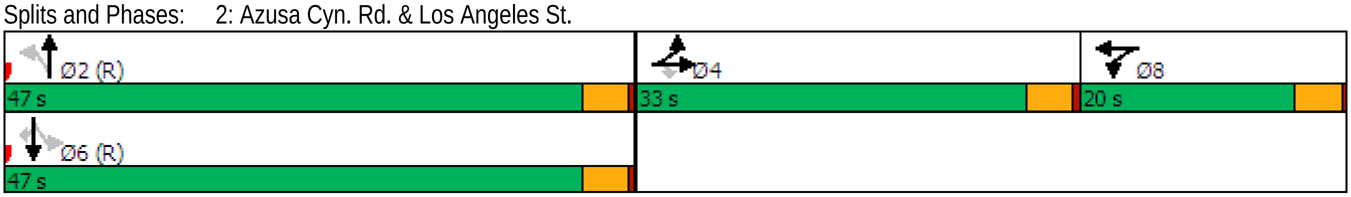
Actuated Cycle Length: 100

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.



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

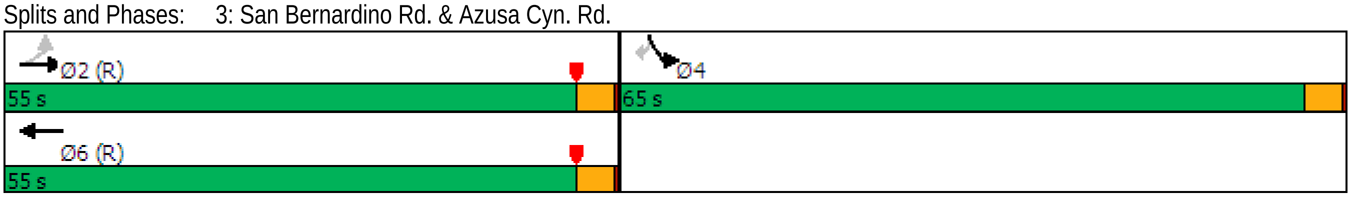
User approved volume balancing among the lanes for turning movement.

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.



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

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.

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

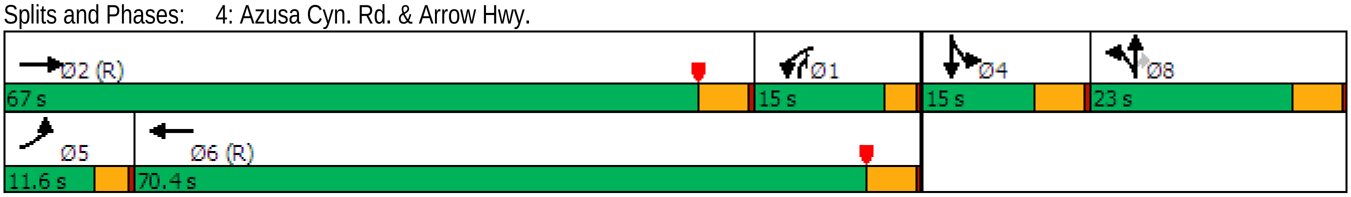
Notes

User approved volume balancing among the lanes for turning movement.

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.



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

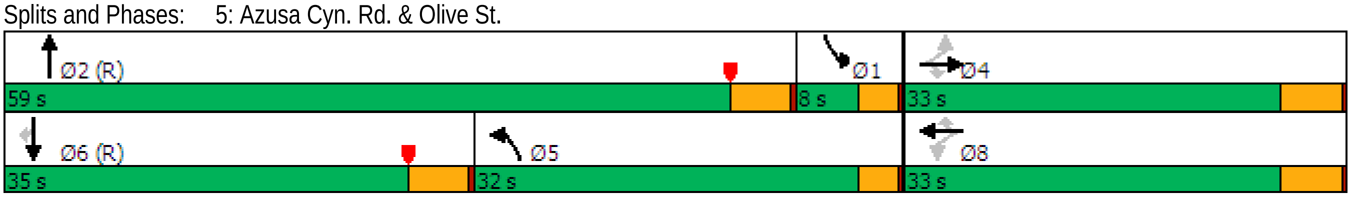
Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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.



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									

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	NBR	WBLn1	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	-

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

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 Q(veh)	0	-	-	-	0

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

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

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

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

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

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

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

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

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

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

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	1	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

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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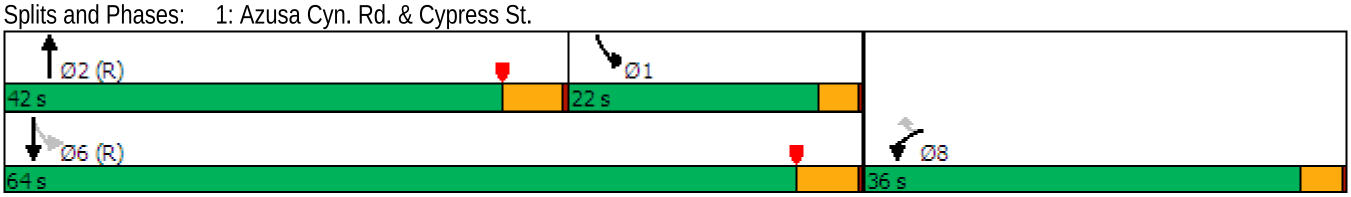
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	263	419	362	186	161	258
Future Volume (vph)	263	419	362	186	161	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	220	
Storage Lanes	1	1		0	1	
Taper Length (ft)	90				110	
Right Turn on Red		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.



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.

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	

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

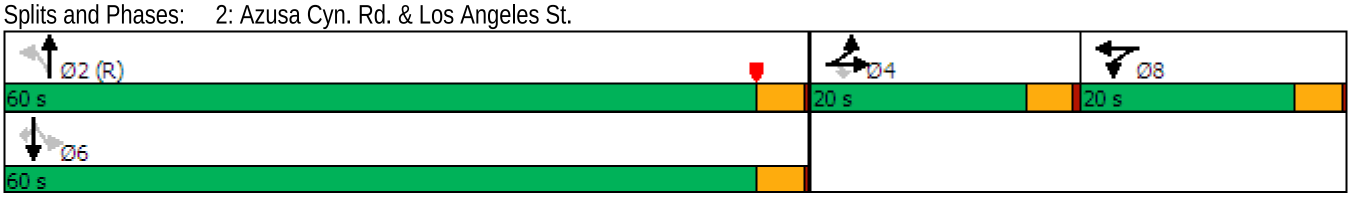
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	45%	92%	0%	50%	0%	11%	0%
Vol Thru, %	53%	8%	0%	50%	0%	89%	0%
Vol Right, %	3%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	559	233	206	18	24	187	303
LT Vol	249	215	0	9	0	20	0
Through Vol	294	18	0	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

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.



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.

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

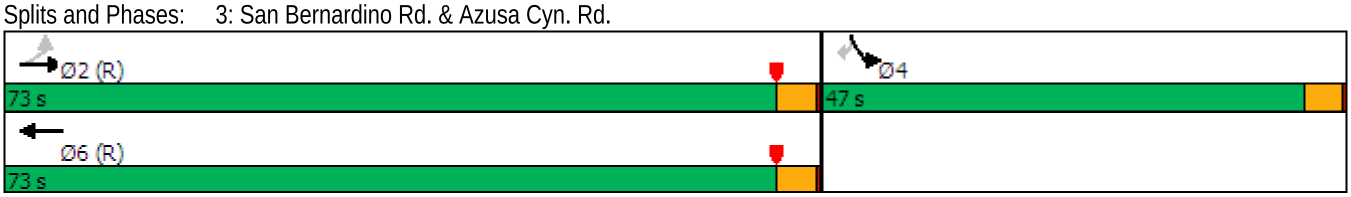
Actuated Cycle Length: 120

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.



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

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.

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

User approved volume balancing among the lanes for turning movement.

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.

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

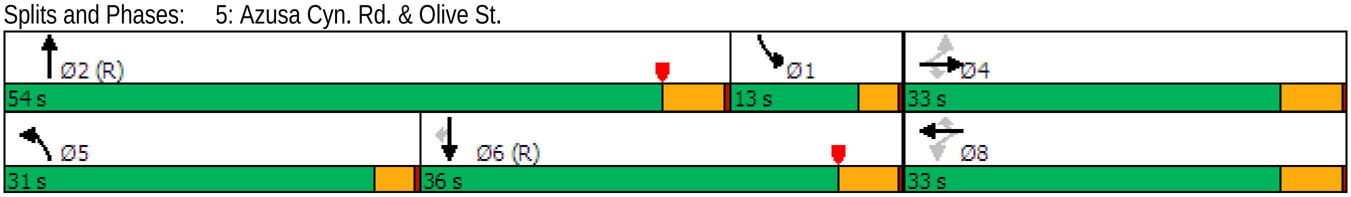
User approved volume balancing among the lanes for turning movement.

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.



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

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

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	NBR	WBLn1	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	-

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

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	

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

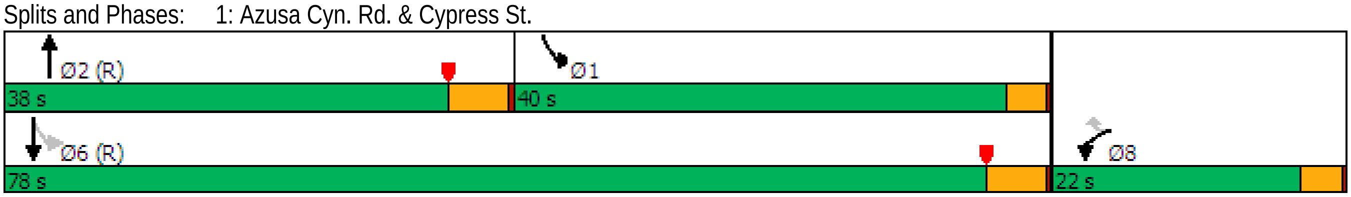
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1587	-	-	-	1041
HCM Lane V/C Ratio	0.003	-	-	-	0.002
HCM Control Delay (s)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	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
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.



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.

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

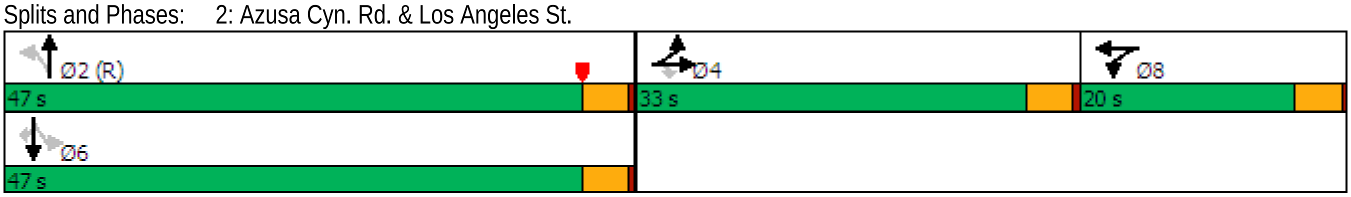
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	159.8	16.3	187.5	89
HCM LOS	F	C	F	F

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

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:NBTL, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Azusa Cyn. Rd. & Los Angeles St.



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

User approved volume balancing among the lanes for turning movement.

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

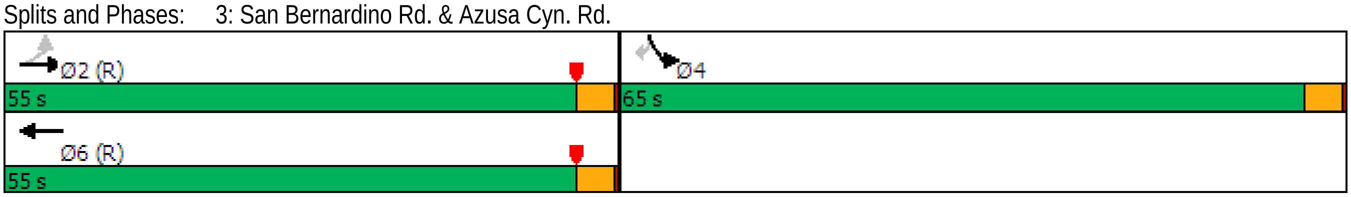
Actuated Cycle Length: 120

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.



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+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			36.5			
HCM 6th LOS			D			

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.

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

User approved volume balancing among the lanes for turning movement.

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

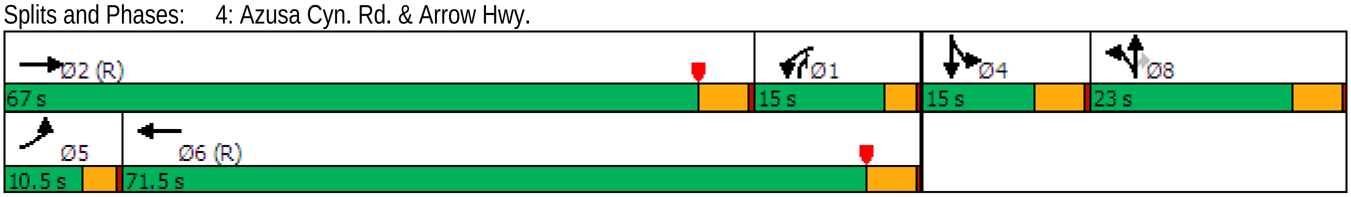
Actuated Cycle Length: 120

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.



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.

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

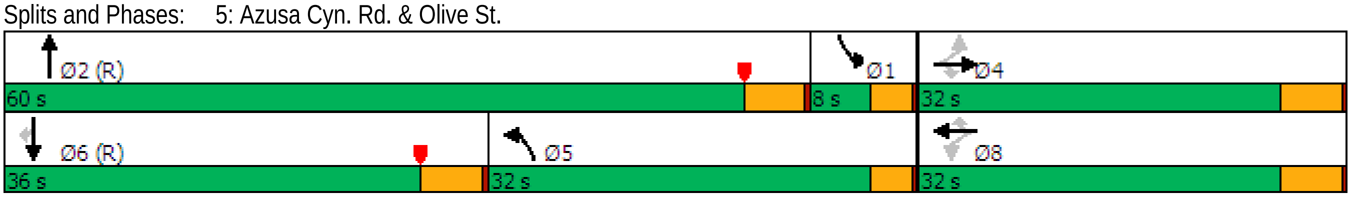
Actuated Cycle Length: 100

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.



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									

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	0	988	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	526	-	-	708	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	526	-	-	708	-
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	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	526	708	-
HCM Lane V/C Ratio	-	-	0.03	0.009	-
HCM Control Delay (s)	-	-	12.1	10.1	0.1
HCM Lane LOS	-	-	B	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

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

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 Q(veh)	0	-	-	-	0

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

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

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

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

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

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

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

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

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

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

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	1	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

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