TRAFFIC IMPACT STUDY
FOR THE PROPOSED
RIALTO ANNEXATION ISLAND 4 INDUSTRIAL PROJECT
IN THE CITY OF RIALTO

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TABLE OF CONTENTS

Page

I. INTRODUCTION 1
A. Purpose of the TIA and Study Objectives 1
B. Site Plan Location and Study Area 1
C. Development Project Identification 3
D. Development Project Description 3
E. Analysis Methodology 5
1. Intersection Analysis – HCM Methodology 5
2. Level of Service Standards and Measure of Significance 5
II. AREA CONDITIONS 8
A. Identify Study Area and Intersections 8
B. Description of Existing Roads, Traffic Controls and Intersection Geometrics 8
C. Existing Traffic Volumes 11
D. Existing Delay and Level of Service 11
E. General Plan Circulation Element 14
F. Transit Service 14
III. PROJECTED FUTURE TRAFFIC 18
A. Project Traffic 18
1. Project Trip Generation 18
2. Trip Distribution and Assignment 18
B. Existing Plus Growth Conditions (Opening Year 2020) 23
1. Ambient Growth Rate 23
2. Opening Year 2020 Existing Plus Growth 23
3. Opening Year 2020 Existing Plus Growth Plus Project 29
C. Cumulative Conditions (Existing Plus Growth Plus Cumulative Projects) 32
1. Cumulative Projects 32
2. Background Growth Rate 32
3. Cumulative Projects Trip Generation 32
4. Cumulative Projects Trip Distribution and Assignment 32
5. Opening Year 2020 Cumulative Without Project Conditions 36
6. Opening Year 2020 Cumulative Plus Project Conditions 36
D. Build-Out Conditions 42
1. Build-Out Without Project Conditions 42
2. Build-Out With Project Conditions 45
IV. MITIGATION MEASURES 51
A. Intersection Improvements 51
B. Roadway Improvements 52
V. FINDINGS AND RECOMMENDATIONS 56
A. Improvements 56
B. Traffic Signal Warrant Analysis 56
C. Site Circulation 57
D. Safety and Operational Improvements 57
E. Fair Share Calculations 57
F. Specific Plan Signalization 57

G. General Plan Conformance 57
H. Regional Funding Mechanisms 58

APPENDICES

APPENDIX A: APPROVED SCOPING AGREEMENT
APPENDIX B: TRAFFIC COUNT DATA SHEETS
APPENDIX C: PCE WORKSHEETS
APPENDIX D: INTERSECTION ANALYSIS WORKSHEETS
APPENDIX E: CUMULATIVE PROJECTS INFORMATION
APPENDIX F: SBTAM MODEL PLOTS AND B-TURNS WORKSHEETS
APPENDIX G: SIGNAL WARRANT ANALYSIS WORKSHEET

LIST OF FIGURES

Page
Figure 1 – Vicinity Map 2
Figure 2 – Project Site Plan 4
Figure 3 – Existing Lane Configuration and Traffic Control 10
Figure 4 – Existing Daily and Peak Hour Traffic Volumes 12
Figure 5 – General Plan Street Classifications 16
Figure 6 – General Plan Truck Routes 17
Figure 7 – Project Trip Distribution – Passenger Vehicles 20
Figure 8 – Project Trip Distribution – Trucks 21
Figure 9 – Project-Related Traffic Volumes 22
Figure 10 – Opening Year 2020 Lane Configuration and Traffic Control 24
Figure 11 – Opening Year 2020 – Existing Plus Growth Traffic Volumes 25
Figure 12 – Opening Year 2020 – Existing Plus Growth Plus Project Traffic Volumes 26
Figure 13 – Location of Cumulative Projects 34
Figure 14 – Cumulative Projects Traffic Volumes 35
Figure 15 – Opening Year 2020 Cumulative Without Project Traffic Volumes 37
Figure 16 – Opening Year 2020 Cumulative Plus Project Traffic Volumes 40
Figure 17 – Build-Out Without Project Traffic Volumes 44
Figure 18 – Build-Out With Project Traffic Volumes 48

LIST OF TABLES

Page
Table 1 – Summary of Intersection Operation – Existing Conditions 13
Table 2 – Summary of Roadway Analysis – Existing Conditions 15
Table 3 – Summary of Project Trip Generation 19
Table 4 – Summary of Intersection Operation – Opening Year 2020 – Existing Plus Growth 27
Table 5 – Summary of Roadway Analysis – Opening Year 2020 – Existing Plus Growth 28
Table 6 – Summary of Intersection Operation – Opening Year 2020 – Existing + Growth Plus Project .. 30
Table 7 – Summary of Roadway Analysis – Opening Year 2020 – Existing + Growth + Project 31
Table 8 – Summary of Cumulative Projects 33
Table 9 – Summary of Intersection Operation – Opening Year 2020 Cumulative Without Project 38
Table 10 – Summary of Roadway Analysis – Opening Year 2020 Cumulative Without Project 39
Table 11 – Summary of Intersection Operation – Opening Year 2020 Cumulative Plus Project 41
Table 12 – Summary of Roadway Analysis – Opening Year 2020 Cumulative Plus Project 43
Table 13 – Summary of Intersection Operation – Build-Out Without Project 46
Table 14 – Summary of Roadway Analysis – Build-Out Without Project 47
Table 15 – Summary of Intersection Operation – Build-Out With Project 49
Table 16 – Summary of Roadway Analysis – Build-Out With Project 50
Table 17 – Summary of Intersection Operation with Proposed Mitigation Measures 53
Table 18 – Summary of Project Fair Share for Mitigation Measures 54
Table 19 – Traffic Impact Mitigation Fair-Share Cost 55

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FOR THE PROPOSED
RIALTO ANNEXATION ISLAND 4 INDUSTRIAL PROJECT
IN THE CITY OF RIALTO

I. INTRODUCTION

A. Purpose of the TIA and Study Objectives

This Traffic Impact Study has been prepared to address the traffic-related impacts of the proposed Rialto Annexation Island 4 Industrial project in the City of Rialto.

This traffic study has been conducted in accordance with the traffic study requirements of the City of Rialto, based on the City's *Traffic Impact Analysis Report Guidelines and Requirements* (Date: December 2013), and in accordance with San Bernardino Association of Governments (SANBAG) Congestion Management Program (CMP) requirements.

This study addresses existing, short-term future, and long-term future traffic conditions, taking into account the project trips to be generated by the project and potential project-related impacts on the surrounding circulation system.

This report includes a description of existing traffic conditions in the surrounding area, estimated project trip generation and distribution, future traffic growth, and an assessment of project-related impacts on the roadway system. Where necessary, circulation system improvements have been identified to achieve acceptable intersection operation in the vicinity of the project.

The project will be evaluated for the following conditions:

- Existing Conditions
- Opening Year 2020 – Existing Plus Growth
- Opening Year 2020 – Existing Plus Growth Plus Project
- Opening Year 2020 Cumulative – Without Project
- Opening Year 2020 Cumulative – With Project
- Build-Out – Without Project
- Build-Out – With Project

B. Site Plan Location and Study Area

The project is located in the northwestern area of the City of Rialto, and is shown in its regional setting on a vicinity map on Figure 1. The project site (approximately 15.95 acres) is bounded by residential uses to the north, vacant land to the south, Maple Avenue to the east, and industrial uses and vacant land to the west. The project is currently within an unincorporated area of San Bernardino County.

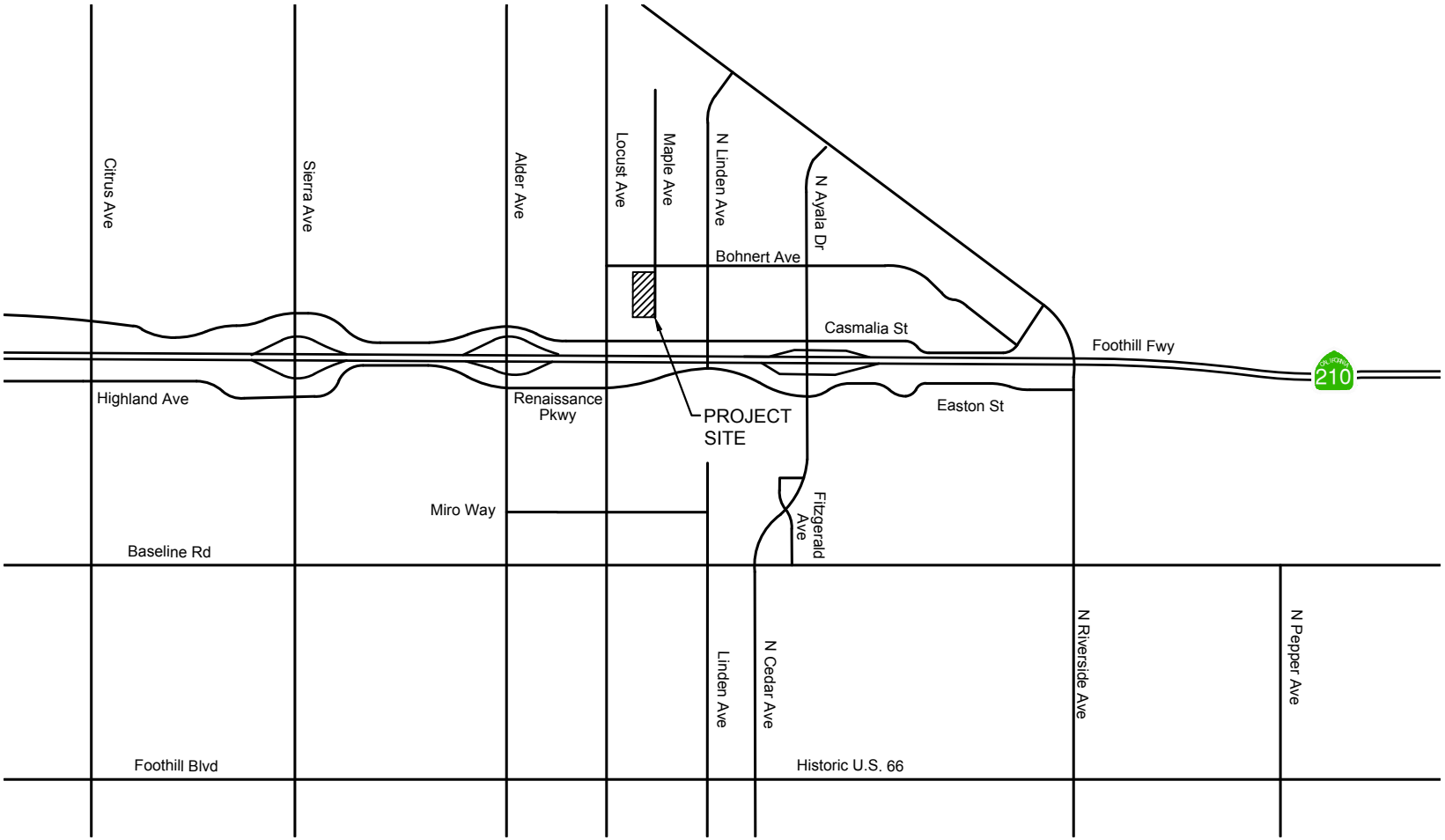


FIGURE 1
VICINITY MAP

C. Development Project Identification

Pending

D. Development Project Description

The project will involve the construction of one warehouse building totaling 382,018 square feet. A copy of the project site plan is provided on Figure 2.

The site is located within unincorporated San Bernardino County and is currently one of a number of unincorporated islands proposed to be annexed to the City of Rialto. The proposed project would require a General Plan Amendment (GPA) and a Zone Change to allow for the parcels within Annexation Island 4 Industrial to be rezoned from Single Residential (RS-1) to Planned Industrial Development (I PID) upon annexation to the City of Rialto.

Vehicular access provisions for the project site would consist of the following:

- Two full-movement driveways on Maple Avenue
- One driveway on the west side of the building on Vineyard Avenue

Passenger vehicles would enter the site via the full-movement driveways on Maple Avenue, depending on which is closest to their parking area destination. Trucks would enter and exit the site via the Vineyard Avenue driveway only.

The proposed opening year for the project is Year 2020. The project will be developed in a single project phase. The project site is located approximately 1½ miles from the City of Rialto's border with the City of Fontana.

NOT TO SCALE

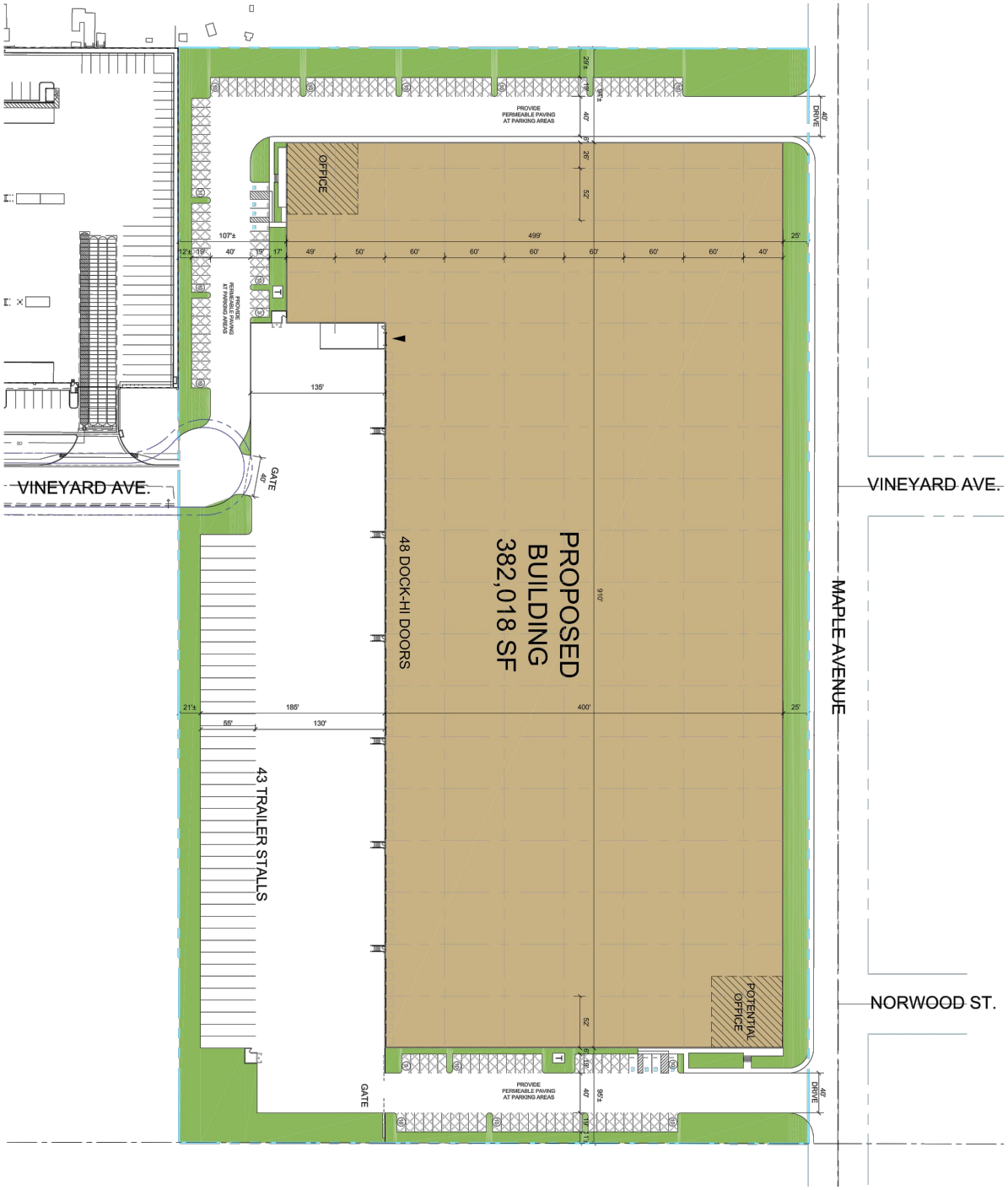


FIGURE 2
PROJECT SITE PLAN

E. Analysis Methodology

1. Intersection Analysis – HCM Methodology

Peak hour intersection operations at signalized and unsignalized intersections were evaluated using the methods prescribed in the Highway Capacity Manual (HCM) 2010, consistent with the requirements of the City of Rialto and the San Bernardino County CMP.

The City of Rialto guidelines require analysis of traffic operations to be based on the vehicular delay methodologies of the HCM (Transportation Research Board Special Report 209). The intersection analysis for the proposed project has been accomplished using the VISTRO software program and using the specified input parameters outlined in the City's *Traffic Impact Analysis Report Guidelines and Requirements*.

Per the HCM Methodology, Level of Service (LOS) for signalized intersections is defined in terms of average vehicle delay. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The charts on the following page provide a description of the operating characteristics of each Level of Service and define the LOS in terms of average seconds of delay for signalized and unsignalized intersections.

2. Level of Service Standards and Measure of Significance

The City of Rialto, per the City of Rialto 2010 General Plan Update, establishes minimum Level of Service standards. According to Policy 4-1.20 of the General Plan document, the City requires that signalized intersections operate at LOS D or better during the morning and evening peak hours. The City's Traffic Study Guidelines require new development to mitigate impacts that cause the Level of Service to fall below LOS D, or cause the peak hour delay to increase as follows:

- LOS A/B – by 10.0 seconds
- LOS C – by 8.0 seconds
- LOS D – by 5.0 seconds
- LOS E – by 2.0 seconds
- LOS F – by 1.0 second

The City's traffic study guidelines require unsignalized intersections to operate with no vehicular movement having an average delay exceeding 120 seconds during the morning and evening peak hours.

LEVEL OF SERVICE DEFINITIONS	
Level of Service	Description
A	No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted but not objectionably so.
D	This level encompasses a zone of increasing restriction, approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED AND UNSIGNALIZED INTERSECTIONS		
Level of Service	Signalized Intersection (Average delay per vehicle, in seconds) [1]	Unsignalized Intersections (Average delay per vehicle, in seconds) [2]
A	≤ 10	0 – 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

[1] Source: Highway Capacity Manual (HCM 2010), Exhibit 18-4.
[2] Source: Highway Capacity Manual (HCM 2010), Exhibits 19-1 and 20-2.

Roadway Segment Analysis

The roadway segment analysis will address the project's impact on daily operating conditions on roadway segments within the project vicinity. Roadway segments are evaluated by comparing the daily traffic volume on a roadway segment to the daily capacity of that segment, to determine the volume-to-capacity (v/c) ratio. Daily capacity is based on the roadway classification, as shown in the following chart:

CITY OF RIALTO ROADWAY CAPACITY (1)				
Roadway Classification	No. of Lanes	Two-Way Traffic Volume (ADT)(2)		
		Service Level **C**	Service Level **D**	Service Level **E**
Local	2	2,500-2,799	2,800-3,099	3,100 +
Collector (60' or 64')	2	9,900-11,199	11,200-12,499	12,500 +
Industrial (45')	2	9,900-11,199	11,200-12,499	12,500 +
Arterial(3)	2	14,400-16,199	16,200-17,999	18,000 +
Secondary Highway	4	16,900-19,399	19,400-21,999	22,000 +
Modified Arterial (100')	4	26,200-29,599	29,600-32,999	33,000 +
Arterial (120')	6	38,700-44,099	44,100-49,499	49,500 +

Notes:
(1) All capacity figures are based on optimum conditions and are intended as guidelines for planning purposes only
(2) Maximum two-way ADT values are based on the 1999 Modified Highway Capacity Manual Level of Service Tables.
(3) Two-lane roads designated as future arterials that conform to arterial design standards for vertical and horizontal alignments are analyzed as arterials.

Source: City of Rialto *Traffic Impact Analysis Report Guidelines and Requirements* (2013)

II. AREA CONDITIONS

A. Identify Study Area and Intersections

This traffic study includes documentation of existing conditions, analysis of cumulative traffic conditions, and identification of project-related impacts at the following study intersections:

Existing Intersections:

1. Alder Avenue at Casmalia St
2. Alder Avenue at SR-210 Westbound Ramps
3. Alder Avenue at SR-210 Eastbound Ramps
4. Locust Avenue at Vineyard Avenue
5. Locust Avenue at Casmalia Street
6. Maple Avenue at Bohnert Avenue
7. Ayala Drive at Casmalia Street
8. Ayala Drive at SR-210 Westbound Ramps
9. Ayala Drive at SR-210 Eastbound Ramps

Future Driveway Intersections:

D1. Maple Avenue at North Driveway
D2. Maple Avenue at South Driveway

In addition, the following roadway segments were analyzed:

- Casmalia Street: Alder Avenue to Locust Avenue
- Casmalia Street: Locust Avenue to Linden Avenue
- Locust Avenue: Vineyard Avenue to Casmalia Street

The study locations were established in conjunction with City staff through the Scoping Agreement process (Exhibit B of the City of Rialto *Traffic Impact Analysis Report Guidelines and Requirements*). A copy of the approved Scoping Agreement is provided in *Appendix A*.

B. Description of Existing Roads, Traffic Controls and Intersection Geometrics

Regional access to the site is provided primarily by the State Route 210 (SR-210) Freeway, approximately 1,000 feet to the south of the project site. In addition, the I-215 Freeway is located approximately 5.5 miles to the east of the site; the I-15 Freeway is approximately 5 miles to the west of the site, and access to the I-10 Freeway is approximately 5 miles to the south.

Existing lane configurations and intersection controls at the study intersections are shown on Figure 3. The following provides a description of the roadways surrounding the project site.

Alder Avenue – Alder Avenue is currently a four-lane roadway within the project vicinity, located approximately ½-mile west of the project site. Alder Avenue is designated as a Major Arterial, with four travel lanes, a bike lane in each direction, and a raised center median. Alder Avenue is a designated truck route from Baseline Road to Casa Grande in the City of Rialto Circulation Element of the General Plan, adopted December, 2010. Alder Avenue currently does not go through to Casa Grande, with a gap between Bohnert Avenue and Summit Avenue. The posted speed limit along Alder Avenue is 50 miles per hour.

Locust Avenue – Locust Avenue is currently a two- to four-lane roadway located approximately 680 feet west of the project site. Locust Avenue is designated as a Secondary Arterial, which would provide four travel lanes and parking / bike lanes within 88 feet of right-of-way. Locust Avenue is designated as a truck route in the Circulation Element. The posted speed limit along Locust Avenue is 45 miles per hour.

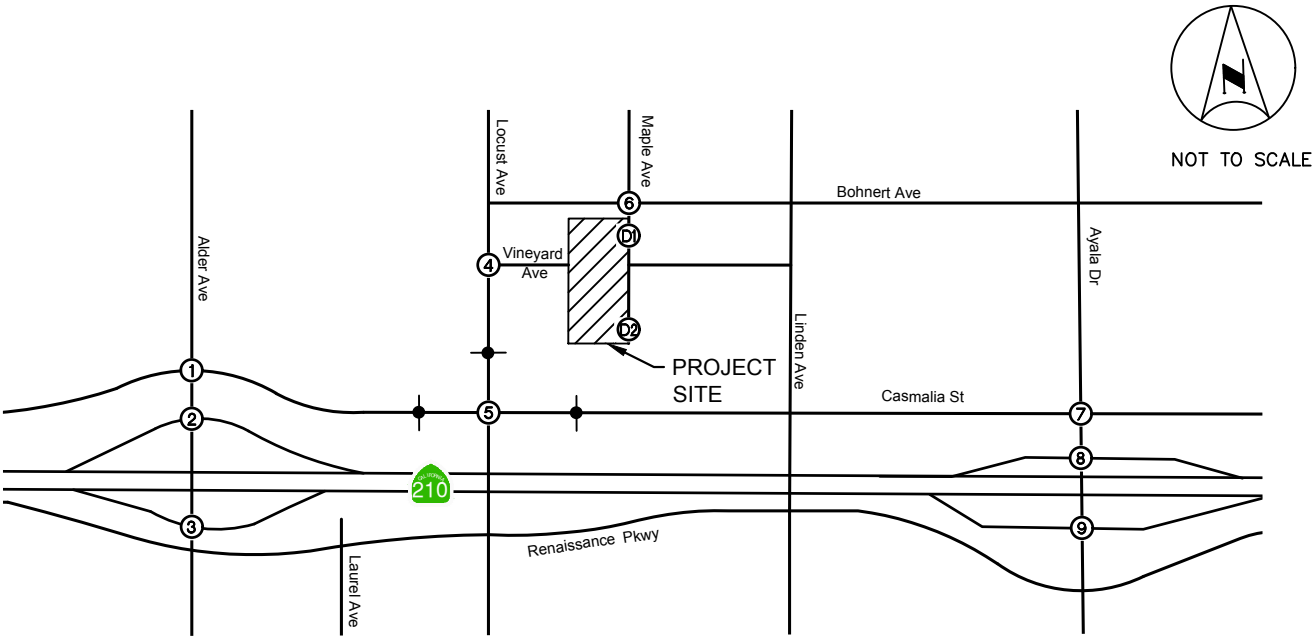
Maple Avenue – Maple Avenue is currently a two-lane roadway and forms the eastern boundary of the project site. Currently Maple Avenue terminates just south of Norwood Street, at the project's southernmost boundary. Maple Avenue is designated as a Secondary Arterial in the Circulation Element. The posted speed limit along Maple Avenue is 25 miles per hour. The project would include two full-movement driveways on Maple Avenue for passenger vehicles.

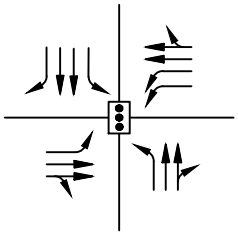
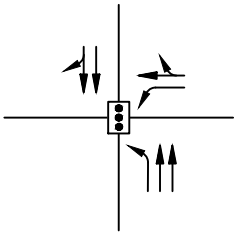
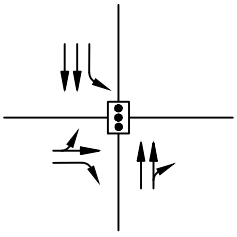
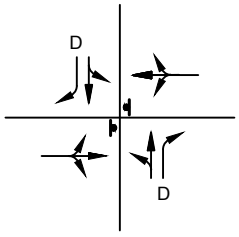
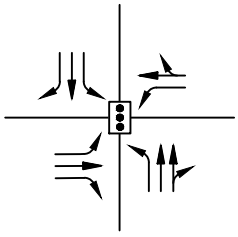
Linden Avenue – Linden Avenue is currently a two-lane north-south roadway within the project vicinity and is located approximately ¼-mile east of the project site. Linden Avenue is designated as a Secondary Arterial in the project vicinity, with two lanes and a parking lane in each direction. The posted speed limit along Linden Avenue in the project vicinity is 45 miles per hour.

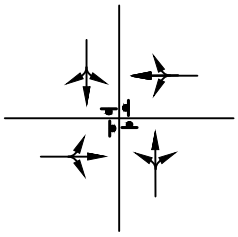
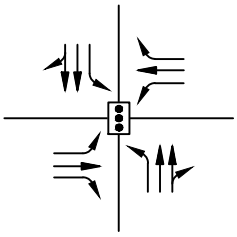
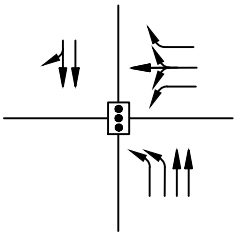
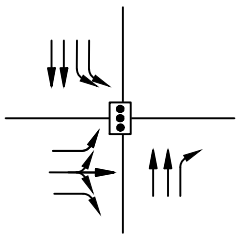
Ayala Drive – Ayala Drive is currently a four-lane roadway within the project vicinity and is located approximately ¾-mile east of the project site. Ayala Drive is designated as a Secondary Arterial in the Circulation Element. Ayala Drive is designated as a truck route in the Circulation Element. However, on June 12, 2018 the Rialto City Council approved an Interim Urgency Ordinance establishing a temporary (45-day) moratorium to prohibit inter-city truck traffic on Ayala Drive between the 210 Freeway and Baseline Road. The moratorium was implemented to allow the City to assess the impact of inter-city truck traffic on the surrounding community. On July 24, 2018, the Council voted to extend the moratorium to June, 2019, to allow the City to conduct analysis and develop recommendations.

Bohnert Avenue – Bohnert Avenue is currently a two-lane roadway and is located approximately 225 feet north of the project site. Bohnert Avenue is designated as a Collector Street, with one travel lane and parking lane in each direction within 64 feet of right-of-way.

Casmalia Street – Casmalia Street is currently a two- to four-lane roadway located approximately 650 feet south of the project site. Casmalia Street is designated as a Secondary Arterial and is a designated truck route from the City's western boundary to Ayala Drive.



1. Alder Ave at Casmalia St	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps	4. Locust Ave at Vineyard Ave	5. Locust Ave at Casmalia St
				

7. Maple Ave at Bohnert Ave	7. Ayala Dr at Casmalia St	8. Ayala Dr at SR-210 WB Ramps	9. Ayala Dr at SR-210 EB Ramps
			

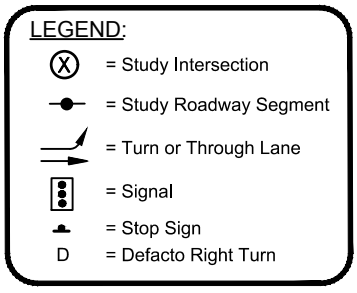


FIGURE 3
EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL

Vineyard Avenue – Vineyard Avenue is currently an unpaved roadway, extending east from Locust Avenue for approximately 600 feet and extending between Maple Avenue and Linden Avenue. At the intersection of Locust Avenue at Vineyard Avenue, the east leg of the intersection is currently restricted by barriers, and the west leg of the intersection is a gated private driveway for the business located on the west side of Locust Avenue. The project would include one driveway at the terminus of Vineyard Avenue east of Locust Avenue for truck access.

C. Existing Traffic Volumes

Existing Peak Hour Turning Movement Volumes

Existing morning and evening peak hour turning movement volumes collected in June and August, 2018. Copies of the traffic count data worksheets are provided in *Appendix B*.

Intersection count data included vehicle classifications for passenger vehicles and trucks. Vehicle classifications are necessary to compute Passenger Car Equivalent (PCE) volumes, which are used in the traffic analysis to address the impacts of truck traffic on intersection and roadway operation.

The PCE volumes were developed by applying a PCE factor of 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for trucks with 4 or more axles. These factors are consistent with the City of Rialto's *Traffic Impact Analysis Guidelines and Requirements*. PCE volume worksheets are provided in *Appendix C*. Existing morning and evening peak hour volumes with the PCE factors applied are presented on Figure 4.

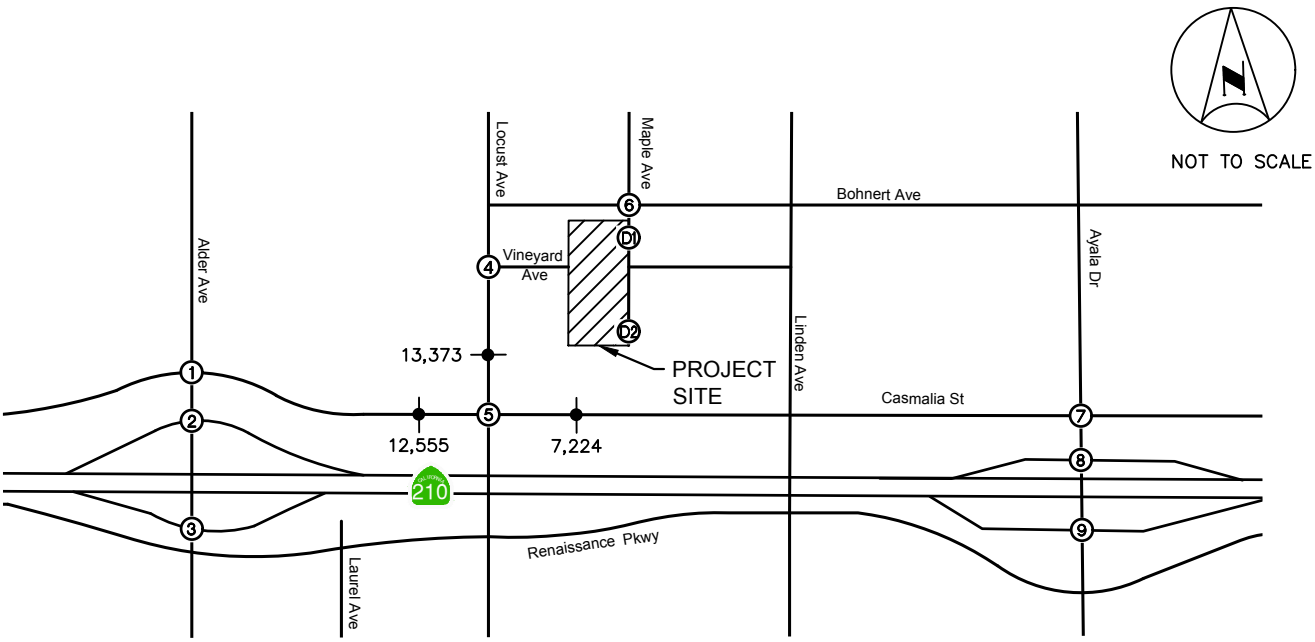
Existing Roadway Daily Volumes

Existing daily roadway volumes were collected in August, 2018 with vehicle classification. The PCE factors were applied to the truck volumes, and the resulting existing daily traffic volumes with PCE are shown on Figure 4 (previously referenced). Daily traffic count data collection worksheets are provided in *Appendix B*.

D. Existing Delay and Level of Service

Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours using the analysis procedures and assumptions described previously in this report. The results of the intersection analysis for Existing Conditions are shown on Table 1. Review of this table indicates that all study intersections are currently operating at an acceptable Level of Service. Copies of Existing Conditions intersection analysis worksheets are provided in *Appendix D*.



1. Alder Ave at Casmalia St	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps	4. Locust Ave at Vineyard Ave	5. Locust Ave at Casmalia St
13/43, 317/197, 22/36 → 31/34, 188/177, 360/320	444/381, 302/268 → 206/153, 10/2, 337/229	465/348, 166/155	580/556	268/219, 251/224, 61/113 → 118/78, 160/158, 24/11
25/12, 88/205, 52/128 → 87/83, 341/194, 239/277	297/346, 464/395	351/254, 2/0, 462/370 → 411/484, 256/273	0/2, 1/11 → 8/4, 462/430	198/186, 53/182, 44/55 → 84/49, 154/170, 7/25

6. Maple Ave at Bohnert Ave	7. Ayala Dr at Casmalia St	8. Ayala Dr at SR-210 WB Ramps	9. Ayala Dr at SR-210 EB Ramps
76/35, 1/1, 62/18 → 28/22, 156/45, 1/4	21/10, 481/303, 17/12 → 20/13, 66/33, 160/87	271/165, 325/385 → 144/194, 3/2, 313/472	437/611, 196/230
44/37, 46/50, 0/1 → 3/1, 1/0, 5/1	11/25, 45/53, 191/178 → 149/92, 333/441, 83/123	632/486, 183/396	70/211, 4/3, 404/698 → 757/685, 346/421

D1. Maple Ave at North Dwy	D2. Maple Ave at South Dwy
FUTURE INTERSECTION	FUTURE INTERSECTION

Note: Existing volumes reflect PCE adjustments.
See PCE Worksheets in Appendix C.

LEGEND:
- (X) = Study Intersection
- XXXX = Average Daily Traffic Volume
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 4
EXISTING DAILY AND PEAK HOUR TRAFFIC VOLUMES

TABLE 1
SUMMARY OF INTERSECTION OPERATION
EXISTING CONDITIONS

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Alder Avenue at Casmalia Street	S	24.9	C	28.5	C
2	Alder Avenue at SR-210 WB Ramps	S	25.0	C	23.6	C
3	Alder Avenue at SR-210 EB Ramps	S	24.1	C	23.7	C
4	Locust Avenue at Vineyard Avenue	U	24.4	C	22.8	C
5	Locust Avenue at Casmalia St	S	22.5	C	18.6	B
6	Maple Avenue at Bohnert Avenue	U	10.4	B	7.5	A
7	Ayala Drive at Casmalia Street	S	28.0	C	22.9	C
8	Ayala Drive at I-210 WB Ramps	S	27.6	C	28.2	C
9	Ayala Drive at I-210 EB Ramps	S	18.0	B	21.8	C

Notes:
- Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst (highest delay) movement.
- Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.
S = Signalized
U = Unsignalized

Daily Roadway Operating Conditions

Roadway Level of Service analysis was conducted based on the roadway capacities presented previously in this report. The results of the roadway analysis for Existing Conditions are shown on Table 2. Review of this table indicates that the study roadway segments are currently operating within their current Level of Service D capacity.

E. General Plan Circulation Element

A copy of the General Plan Street Classifications is provided on Figure 5. Designated truck routes in the City of Rialto General Plan are shown on Figure 6. Project truck traffic is assumed to use the designated truck route system to access the freeway.

F. Transit Service

Transit service to the project area is provided via the OmniTrans transit lines, which serve various San Bernardino cities in the area. Bus stops in the project vicinity are located along Bohnert Avenue, approximately 250 feet to the north; and Baseline Road, approximately 1½ mile to the south. A description of the bus routes serving the project area is provided below.

OmniTrans Route 10 operates between the City of Fontana and the City of San Bernardino, traveling through Rialto along Baseline Road in the project vicinity. Route 10 operates on weekdays from 5:10 AM to 8:15 PM with approximately 30-minute to 1-hour headways (the time between bus arrivals), on Saturdays from 6:20 AM to 7:00 PM with approximately 1-hour headways, and on Sundays from 7:20 AM to 6:00 PM with approximately 1-hour headways.

OmniTrans Route 22 operates between the City of Rialto and the City of Colton, traveling through Rialto along Bohnert Avenue in the project vicinity. Route 22 operates on weekdays from 5:00 AM to 9:40 PM with approximately 30-minute headways, on Saturdays from 7:35 AM to 6:20 PM with approximately 1-hour headways, and on Sundays from 6:35 AM to 7:20 PM with approximately 1-hour headways. Route 22 has a transfer point with Route 10 at the intersection of Riverside Avenue and Baseline Road.

TABLE 2
SUMMARY OF ROADWAY ANALYSIS
EXISTING CONDITIONS

Roadway	Segment	LOS **D** Capacity	Existing ADT w/ PCE	LOS
Casmalia Street	Alder Avenue to Locust Avenue	32,999	12,555	B or better
	Locust Avenue to Linden Avenue	17,999	7,224	B or better
Locust Avenue	Vineyard Avenue to Casmalia Street	17,999	13,373	B or better

Notes: LOS = Level of Service
ADT = Average Daily Traffic
PCE = Passenger Car Equivalent

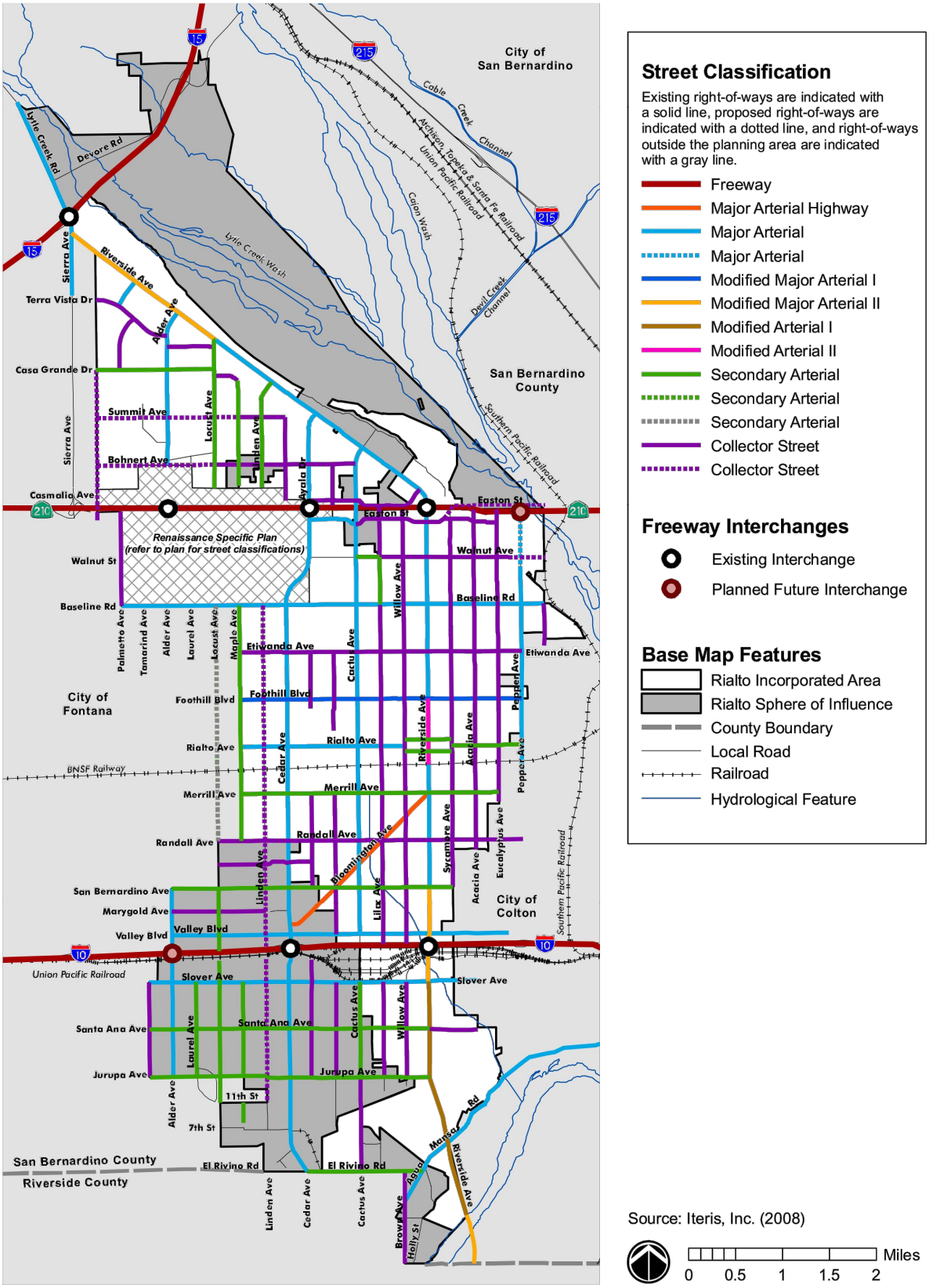


FIGURE 5
GENERAL PLAN
STREET CLASSIFICATIONS

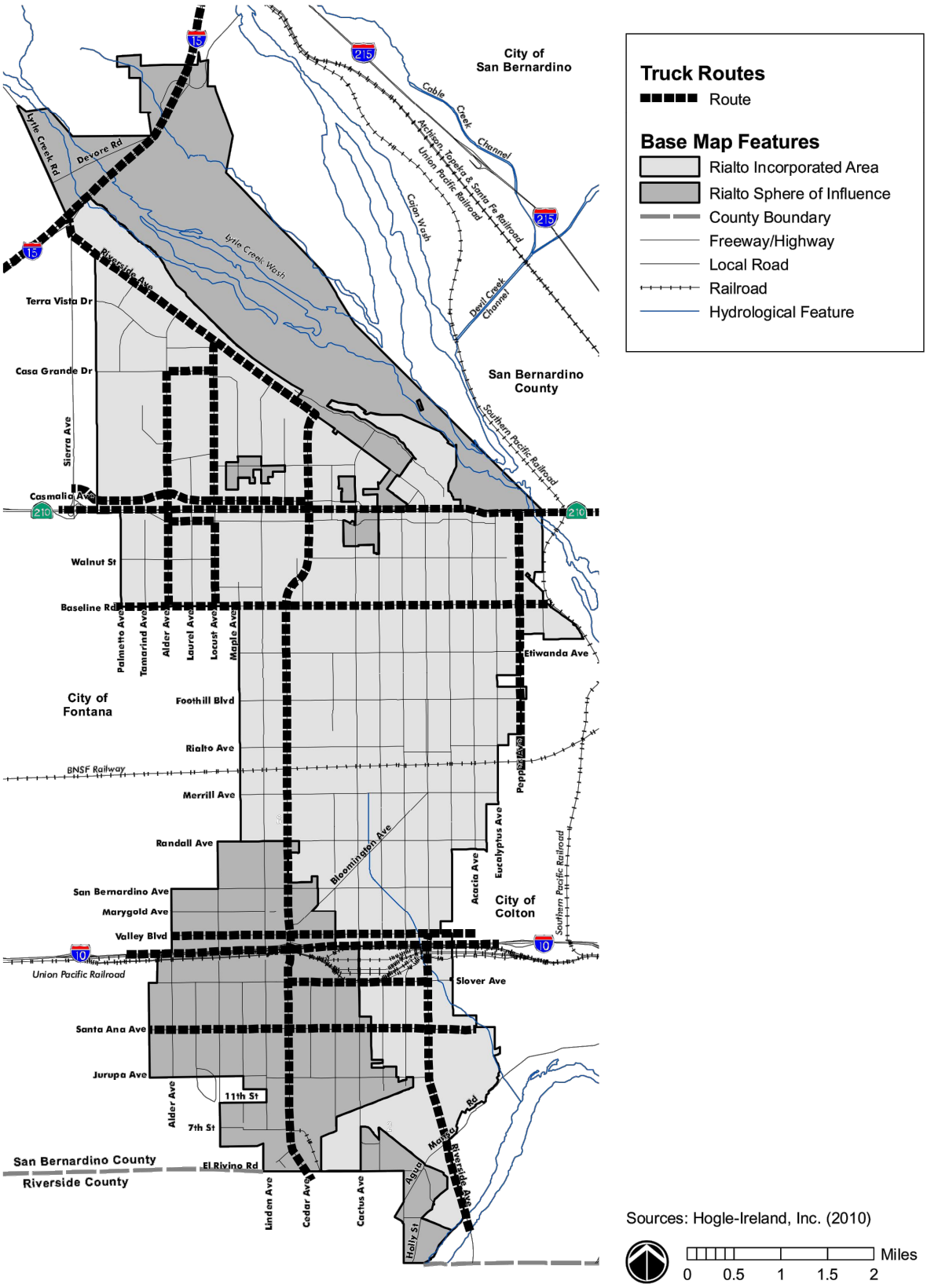


FIGURE 6
GENERAL PLAN
TRUCK ROUTES

III. PROJECTED FUTURE TRAFFIC

A. Project Traffic

1. Project Trip Generation

Trip generation estimates for the Rialto Annexation Island 4 Industrial project are based on daily and peak hourly trip generation rates obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual (9th Edition). ITE trip generation estimates for the project are based on the trip generation rates for ITE Land Use 150: Warehousing.

Trip generation rates and resulting trip generation estimates for the project are summarized on Table 3. The project is estimated to generate 1,360 vehicles trips on a daily basis, with 115 trips in the morning peak hour, and 123 trips in the evening peak hour.

Passenger vehicle and truck mix rates for Warehouse projects are provided in the City of Rialto *Traffic Impact Analysis Report Guidelines and Requirements*. These rates are based on the South Coast Air Quality Management District's (SCAQMD) recommendations for traffic impact studies. The guidelines specify a minimum truck rate of 40% of total project traffic. These vehicle classification splits were applied to the daily and peak hour trip generation to develop an estimate of truck volumes by number of axles (2-axle, 3-axle, and 4+-axle trucks) that would be associated with the proposed project.

Passenger car equivalent (PCE) factors, per City recommendations, were then applied to the truck types, based on number of axles (1.5 PCE for 2-axle trucks, 2.0 PCE for 3-axle trucks, and 3.0 PCE for 4+-axle trucks) to determine the total PCE volumes to be generated by the project. With the PCE factors, the Rialto Annexation Island 4 Industrial project is estimated to generate 2,280 PCE trips on a daily basis, with 191 PCE trips in the morning peak hour, and 206 PCE trips in the evening peak hour.

2. Trip Distribution and Assignment

Trip distribution assumptions for the project were developed by taking into account the proposed site uses, the location of the site access points, and the routes to and from the freeway system for the warehouse trucks. Separate distribution patterns were assumed for passenger car trips and truck trips. The truck docks are located along the west side of the building, and all trucks will enter and exit the site via the Vineyard cul-de-sac to Locust Avenue. All passenger vehicle trips were assigned to the Maple Avenue driveways, to separate passenger car traffic from truck traffic. Trip distribution patterns for passenger vehicles are shown on Figure 7 and trip distribution patterns for trucks are shown on Figure 8. Trip distribution percentages at each study intersection were applied to the project trip generation to determine the project trips through each intersection. The resulting project-related peak hour trips at the study intersections are shown on Figure 9.

TABLE 3
SUMMARY OF PROJECT TRIP GENERATION
RIALTO ANNEXATION ISLAND 4 INDUSTRIAL PROJECT

TRIP GENERATION RATES [1]

ITE Land Use	ITE Code	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Warehousing	150	KSF	3.560	0.237	0.063	0.300	0.080	0.240	0.320

PROJECT TRIP GENERATION

Project Land Use		Quantity	Unit	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Warehousing		382.018	KSF	1,360	91	24	115	31	92	123
Passenger Vehicles	60.00%			816	55	14	69	19	55	74
Trucks	40.00%			544	36	10	46	12	37	49

PROJECT TRIPS - PASSENGER CAR EQUIVALENTS (PCE)

Vehicle Type	Vehicle Mix [2]	Daily Vehicles	PCE Factor	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Passenger Vehicles	60.0%	816	1.0	816	55	14	69	19	55	74
2-Axle Trucks	0.8%	11	1.5	17	1	0	1	0	1	1
3-Axle Trucks	11.2%	152	2.0	304	20	5	25	7	21	28
4+ Axle Trucks	28.0%	381	3.0	1,143	76	20	96	26	77	103
Total Truck PCE Trips				1,464	97	25	122	33	99	132
Total Project PCE Trips				2,280	152	39	191	52	154	206

[1] Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition

[2] Source: City of Rialto Traffic Impact Analysis Report Guidelines and Requirements, December, 2013

PCE = Passenger Car Equivalent

KSF = Thousand Square Feet

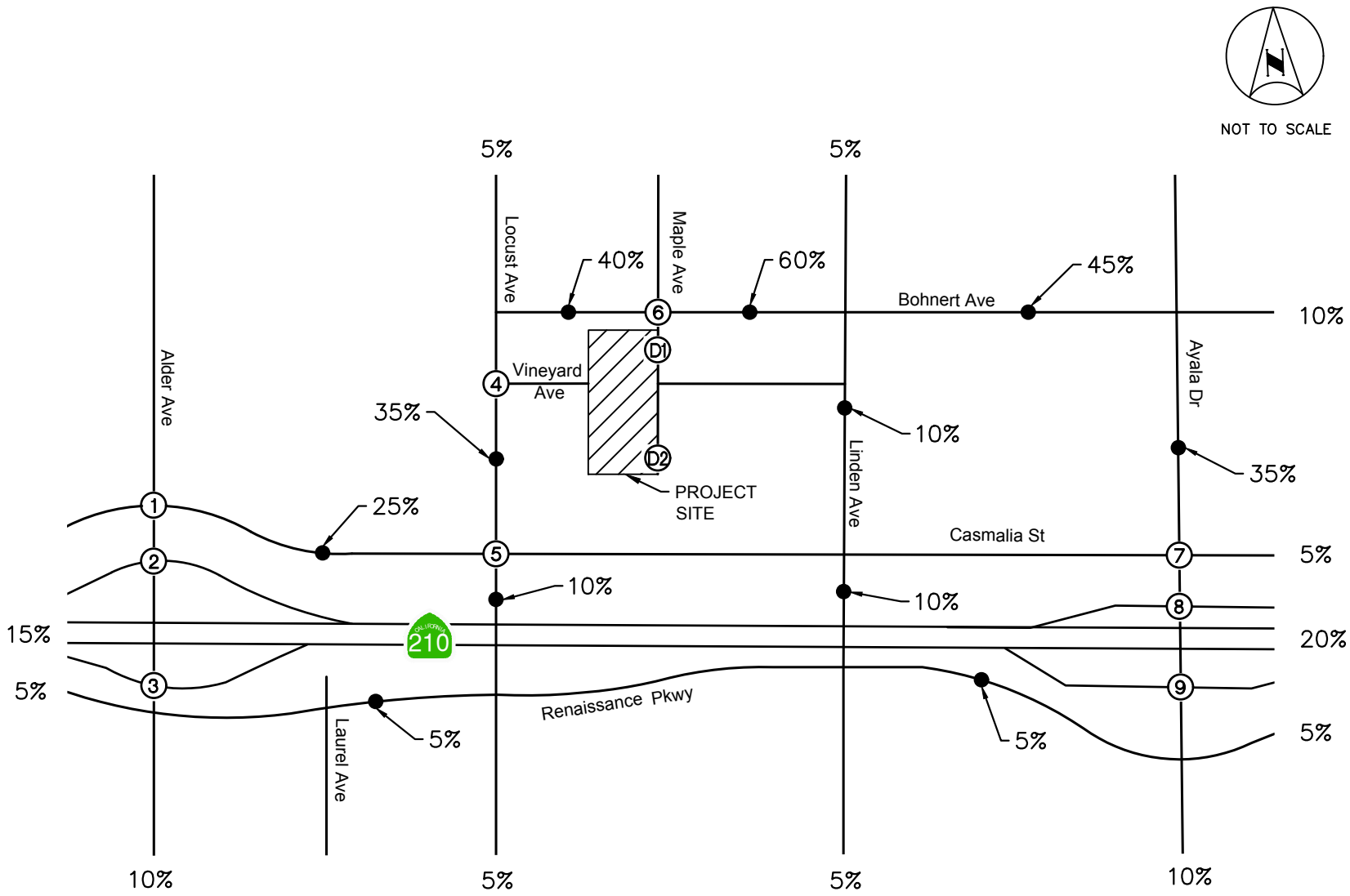


FIGURE 7
PROJECT TRIP DISTRIBUTION - PASSENGER CARS

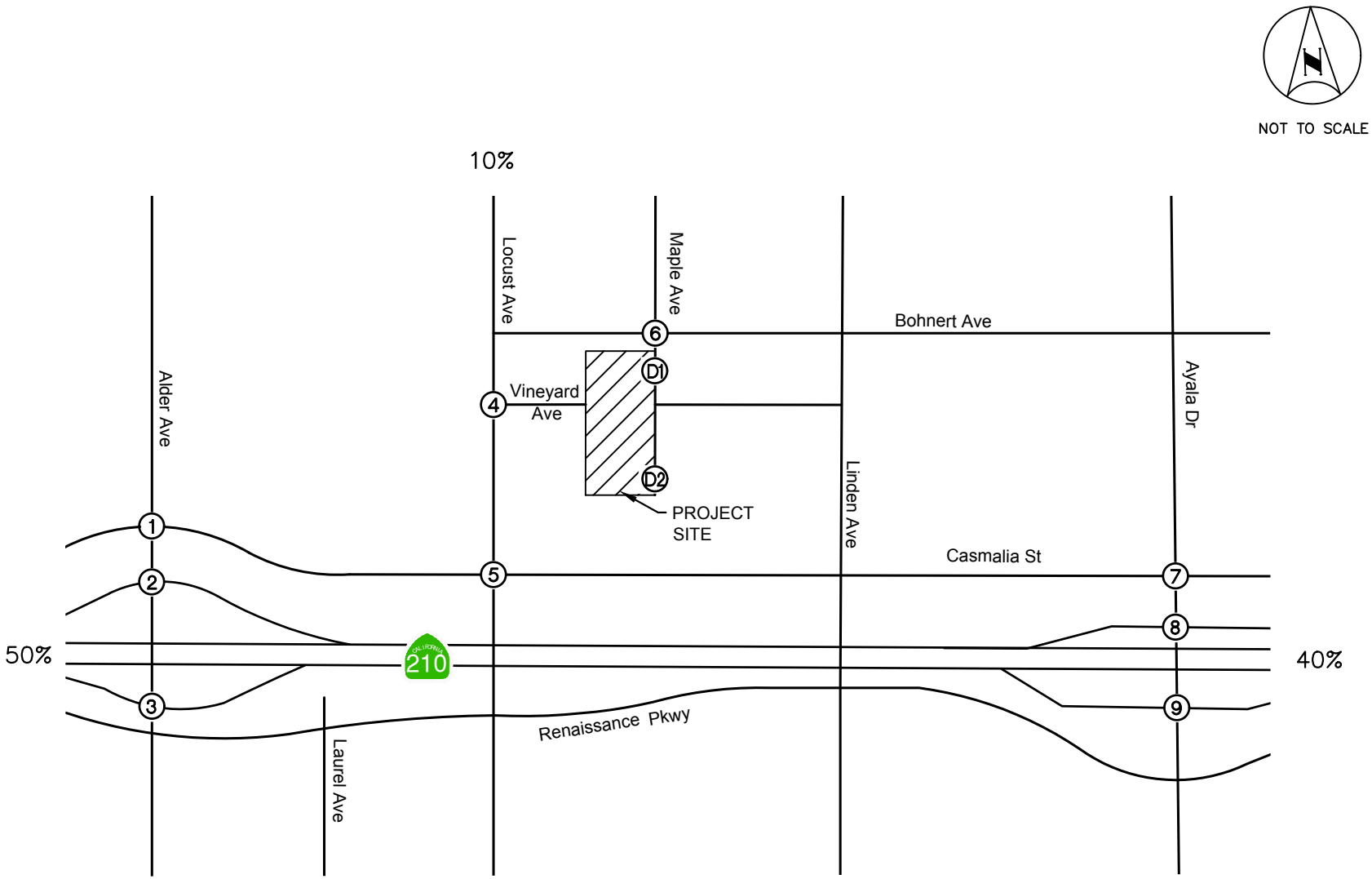
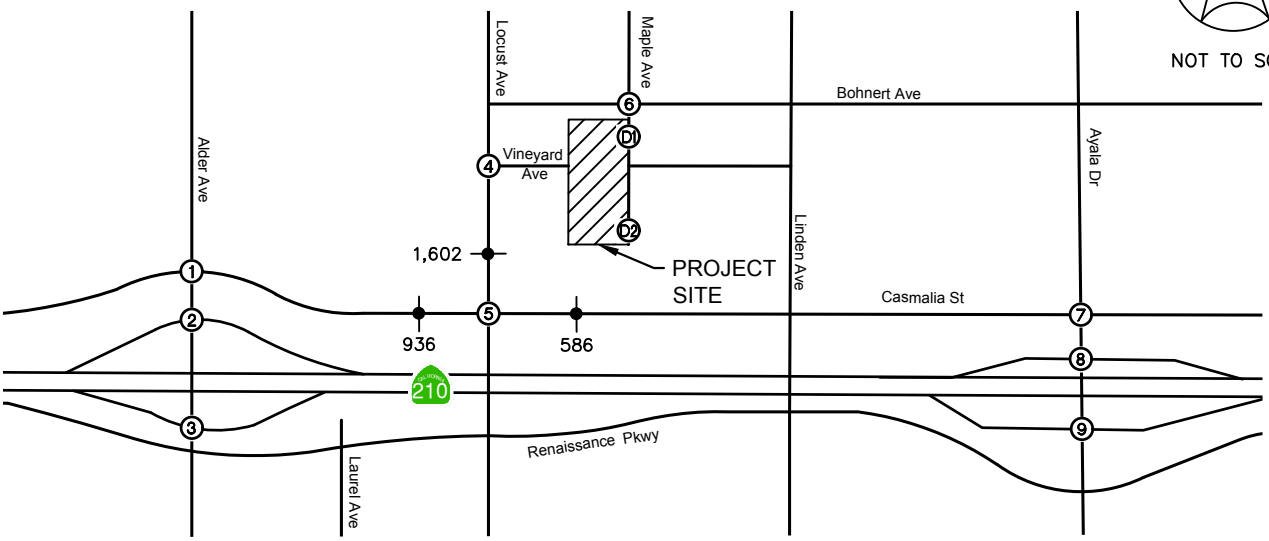
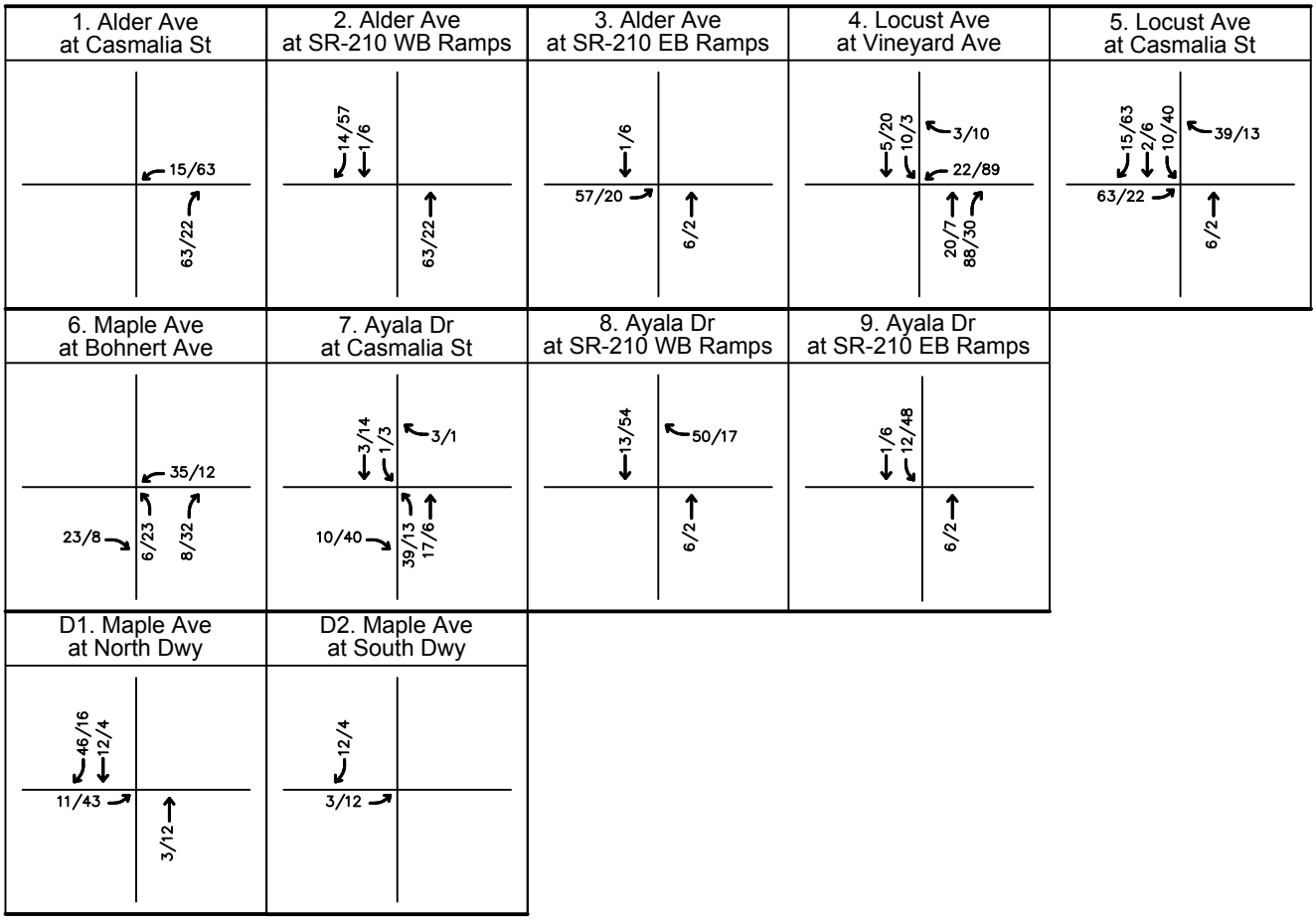


FIGURE 8
PROJECT TRIP DISTRIBUTION - TRUCKS





Note: Volumes reflect PCE adjustments. See PCE Worksheets in Appendix C.

LEGEND:

- (X) = Study Intersection
- XXXX = Average Daily Traffic Volume
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 9
PROJECT-RELATED TRAFFIC VOLUMES

B. Existing Plus Growth Conditions (Opening Year 2020)

The project Opening Year is anticipated to be Year 2020. Local roadway and intersection improvements that are currently underway, or have been conditioned on other projects are expected to be in place by the Project Opening Year 2020. For the Opening Year 2020 analysis scenarios, the following local intersection improvement is assumed:

- Improvement of the north leg of the intersection of Locust Avenue at Casmalia Street to include a second southbound through lane.

Opening Year 2020 lane configurations and intersection controls with the addition of this improvement are shown on Figure 10.

1. Ambient Growth Rate

An ambient growth rate of 2.0% per year to Opening Year 2020 was applied to existing peak hour traffic volumes to develop Existing Plus Growth forecasts. The resulting daily and peak hour Existing Plus Growth without the project (Opening Year 2020) traffic volumes are shown on Figure 11.

Project traffic was then added to develop Existing Plus Growth Plus Project (Opening Year 2020) traffic forecasts. Existing Plus Growth Plus Project daily and peak hour traffic volumes are shown on Figure 12.

2. Opening Year 2020 Existing Plus Growth

Peak Hour Operating Conditions

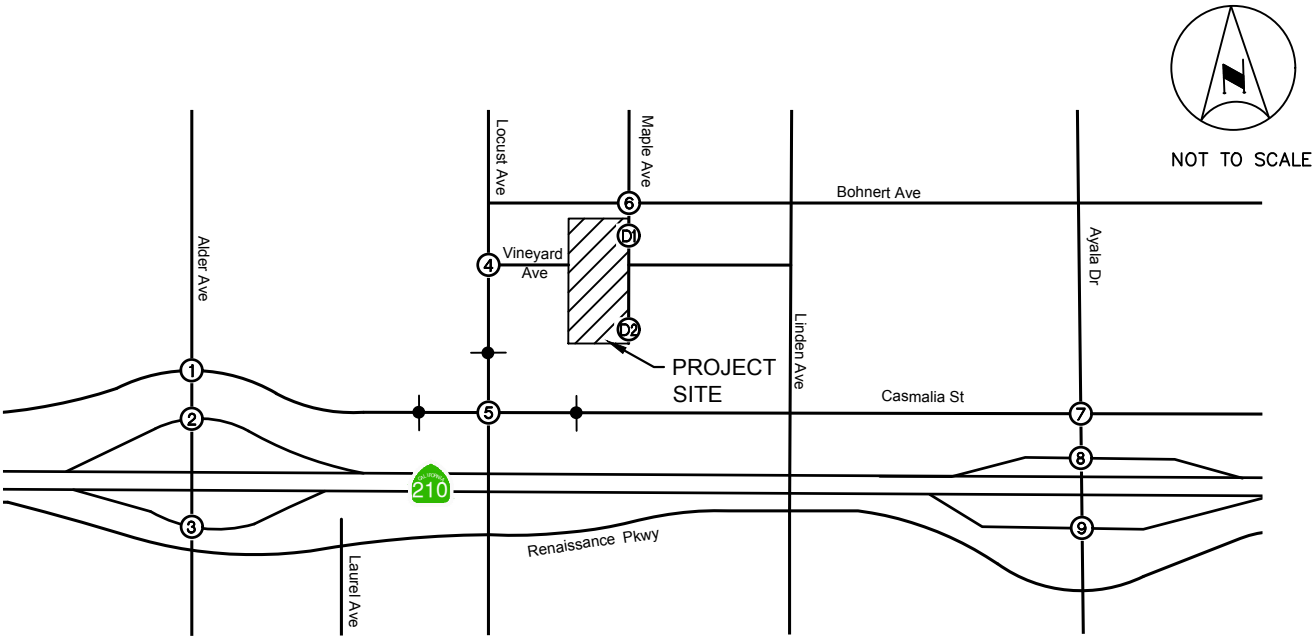
Intersection Level of Service analysis was conducted for Existing Plus Growth without the project (Opening Year 2020). The results are shown on Table 4. Intersection analysis worksheets are provided in *Appendix D*.

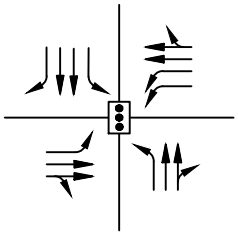
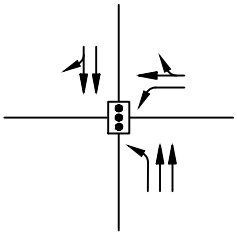
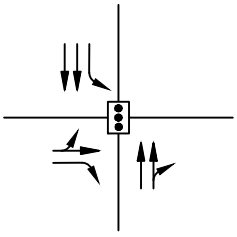
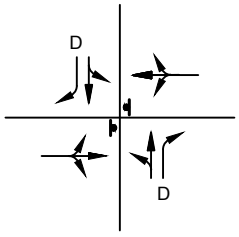
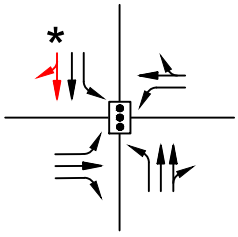
Review of this table indicates that with the addition of ambient growth, and assuming the planned intersection improvements, all study intersections would continue to operate at an acceptable Level of Service.

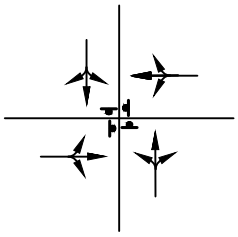
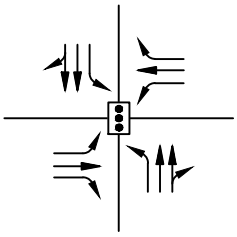
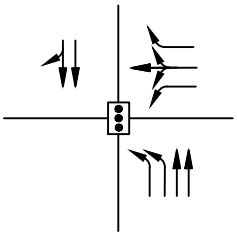
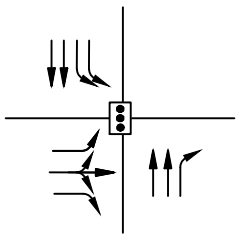
Daily Roadway Operating Conditions

Roadway Level of Service analysis was conducted for the Existing Plus Growth conditions and the results are shown on Table 5.

Review of this table indicates that the study roadway segments would continue to operate within their LOS D capacity with the addition of ambient growth traffic.



1. Alder Ave at Casmalia St	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps	4. Locust Ave at Vineyard Ave	5. Locust Ave at Casmalia St
				

7. Maple Ave at Bohnert Ave	7. Ayala Dr at Casmalia St	8. Ayala Dr at SR-210 WB Ramps	9. Ayala Dr at SR-210 EB Ramps
			

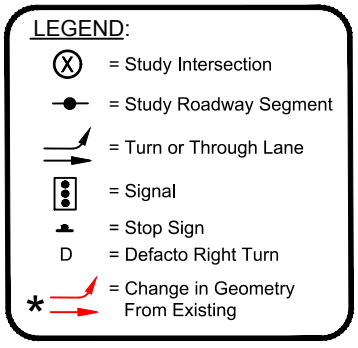
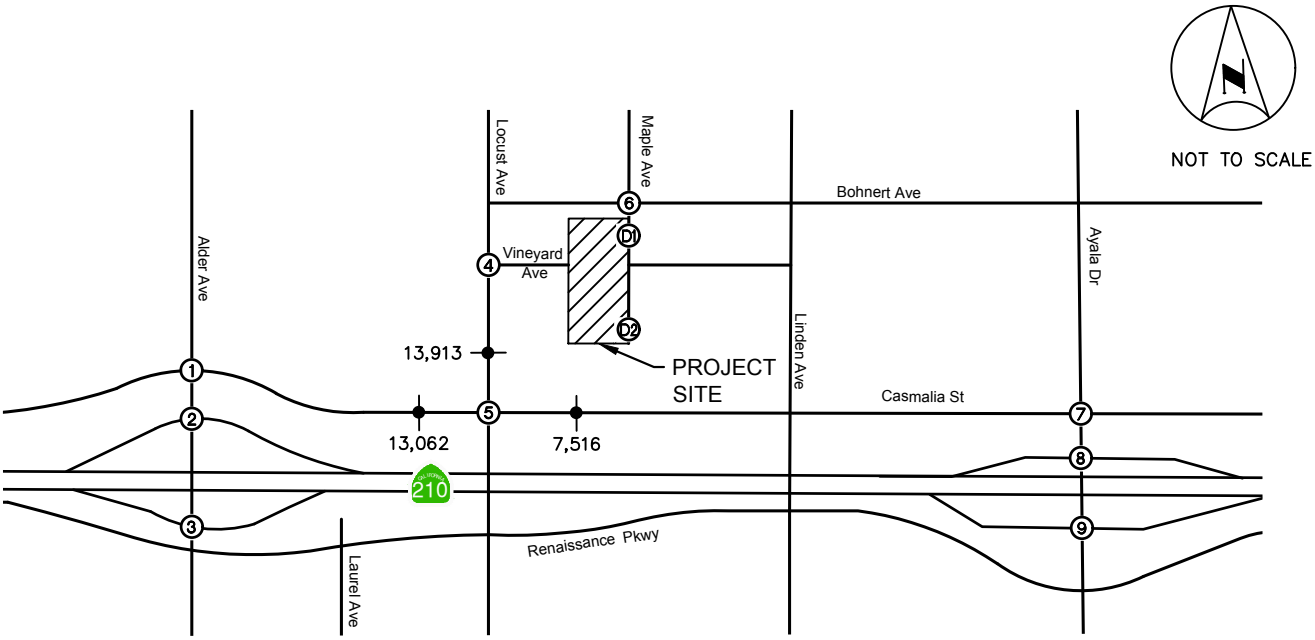


FIGURE 10
OPENING YEAR 2020 LANE CONFIGURATION AND TRAFFIC CONTROL



1. Alder Ave at Casmalia St	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps	4. Locust Ave at Vineyard Ave	5. Locust Ave at Casmalia St
14/45 ↓ 330/205 ↓ 23/37 ↓ 26/12 → 92/213 → 54/133 → 90/86 ↑ 355/202 ↑ 249/288 ↑ ← 32/35 ← 196/184 ← 374/333	462/396 ↓ 314/279 ↓ 309/360 ↑ 483/411 ↑ ← 214/159 ← 10/2 ← 350/238	484/362 ↓ 173/161 ↓ 365/264 → 2/0 → 480/385 → 427/503 ↑ 266/284 ↑	603/578 ↓ 0/2 → 1/11 → 8/4 ↑ 480/447 ↑	279/228 ↓ 261/233 ↓ 63/118 ↓ 206/193 → 55/189 → 46/57 → 87/51 ↑ 160/177 ↑ 7/26 ↑ ← 123/81 ← 166/164 ← 25/11

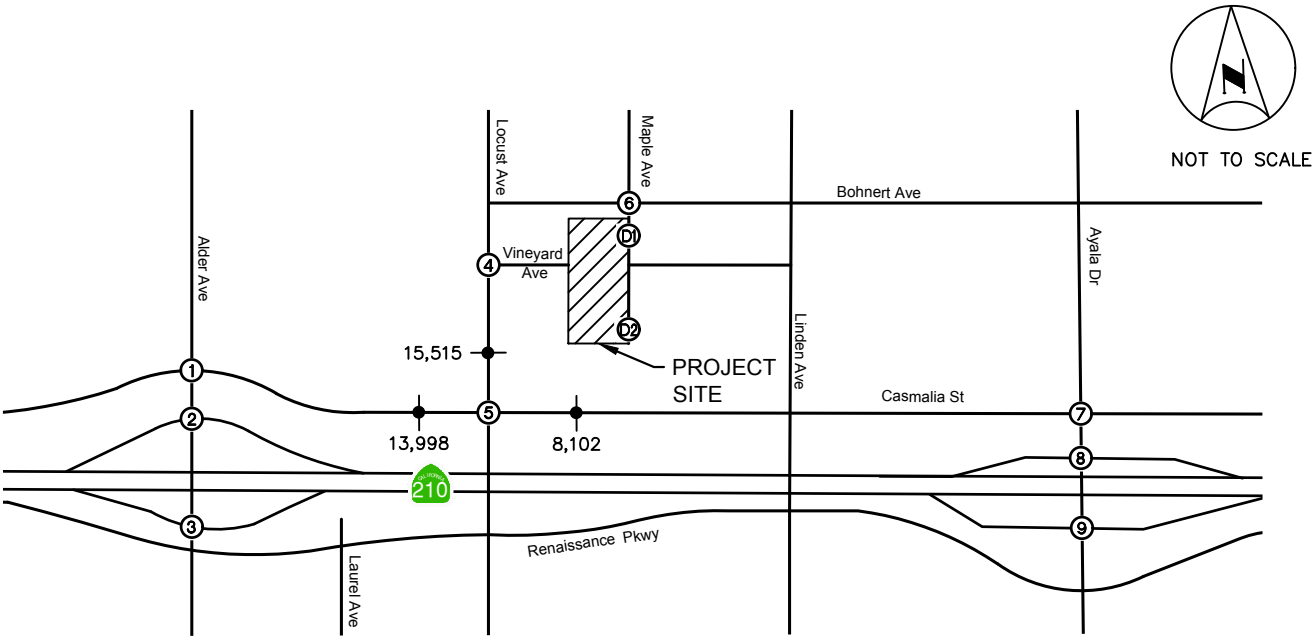
6. Maple Ave at Bohnert Ave	7. Ayala Dr at Casmalia St	8. Ayala Dr at SR-210 WB Ramps	9. Ayala Dr at SR-210 EB Ramps
79/36 ↓ 1/1 ↓ 64/19 ↓ 46/38 → 48/52 → 0/1 → 3/1 ↑ 1/0 ↑ 5/1 ↑ ← 29/23 ← 162/47 ← 1/4	22/10 ↓ 500/315 ↓ 18/12 ↓ 11/26 → 47/55 → 199/185 → 155/96 ↑ 346/459 ↑ 86/128 ↑ ← 21/14 ← 69/34 ← 166/90	282/172 ↓ 338/400 ↓ 657/505 ↑ 190/412 ↑ ← 150/202 ← 3/2 ← 326/491	454/635 ↓ 204/239 ↓ 73/219 → 4/3 → 420/726 → 787/712 ↑ 360/438 ↑

D1. Maple Ave at North Dwy	D2. Maple Ave at South Dwy
FUTURE INTERSECTION	FUTURE INTERSECTION

Note: Volumes reflect PCE adjustments. See PCE Worksheets in Appendix C.

LEGEND:
- (X) = Study Intersection
- XXXX = Average Daily Traffic Volume
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 11
OPENING YEAR 2020 - EXISTING PLUS GROWTH TRAFFIC VOLUMES



1. Alder Ave at Casmalia St	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps	4. Locust Ave at Vineyard Ave	5. Locust Ave at Casmalia St
14/45, 330/205, 23/37 → 32/35, 196/184, 389/396	476/453, 315/285 → 214/159, 10/2, 350/238	485/368, 173/161	608/598, 10/3 → 3/10, 22/89	294/291, 263/239, 73/158 → 162/94, 166/164, 25/11
26/12, 92/213, 54/133 → 90/86, 355/202, 312/310	309/360, 546/433	422/284, 2/0, 480/385 → 433/505, 266/284	0/2, 1/11 → 8/4, 500/454, 88/30	269/215, 55/189, 46/57 → 87/51, 166/179, 7/26

6. Maple Ave at Bohnert Ave	7. Ayala Dr at Casmalia St	8. Ayala Dr at SR-210 WB Ramps	9. Ayala Dr at SR-210 EB Ramps
79/36, 1/1, 64/19 → 29/23, 162/47, 36/16	22/10, 503/329, 19/15 → 24/15, 69/34, 166/90	282/172, 351/454 → 200/219, 3/2, 326/491	455/641, 216/287
46/38, 48/52, 23/9 → 9/24, 1/0, 13/33	11/26, 47/55, 209/225 → 194/109, 363/465, 86/128	657/505, 196/414	73/219, 4/3, 420/726 → 793/714, 360/438

D1. Maple Ave at North Dwy	D2. Maple Ave at South Dwy
46/16, 14/10	12/4, 2/6
11/43 → 12/14	3/12 → 9/2

Note: Volumes reflect PCE adjustments. See PCE Worksheets in Appendix C.

LEGEND:
- (X) = Study Intersection
- XXXX = Average Daily Traffic Volume
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 12
OPENING YEAR 2020 - EXISTING PLUS GROWTH PLUS PROJECT TRAFFIC VOLUMES

TABLE 4
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2020 - EXISTING PLUS GROWTH

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Alder Avenue at Casmalia Street	S	25.1	C	28.6	C
2	Alder Avenue at SR-210 WB Ramps	S	25.7	C	24.0	C
3	Alder Avenue at SR-210 EB Ramps	S	24.5	C	24.2	C
4	Locust Avenue at Vineyard Avenue	U	25.8	D	24.0	C
5	Locust Avenue at Casmalia St	S	23.5	C	19.2	B
6	Maple Avenue at Bohnert Avenue	U	10.7	B	7.5	A
7	Ayala Drive at Casmalia Street	S	28.6	C	23.1	C
8	Ayala Drive at I-210 WB Ramps	S	27.8	C	28.2	C
9	Ayala Drive at I-210 EB Ramps	S	18.3	B	22.1	C

Notes:
- Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst (highest delay) movement.
- Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.
S = Signalized
U = Unsignalized

TABLE 5
SUMMARY OF ROADWAY ANALYSIS
OPENING YEAR 2020 - EXISTING PLUS GROWTH

Roadway	Segment	LOS D Capacity	Existing ADT w/ PCE	Existing Plus Growth ADT	LOS
Casmalia Street	Alder Avenue to Locust Avenue	32,999	12,555	13,062	B or better
	Linden Avenue to Ayala Drive	17,999	7,224	7,516	B or better
Locust Avenue	Vineyard Avenue to Casmalia Street	17,999	13,373	13,913	B or better

Notes: LOS = Level of Service
ADT = Average Daily Traffic
PCE = Passenger Car Equivalent

3. Opening Year 2020 Existing Plus Growth Plus Project

Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for the Existing Plus Growth Plus Project conditions. The results of the intersection analysis are shown on Table 6. Review of this table indicates that the following study intersection would operate at an unacceptable Level of Service in the evening peak hour with the addition of Project traffic:

- #4 – Locust Avenue at Vineyard Avenue: PM – LOS E

The Level of Service for an unsignalized intersection is reported based on the single approach movement with the highest delay, which in this case, would be the westbound approach for intersection #4 (vehicles leaving the site). Since the east leg of Vineyard Avenue will end in a cul-de-sac at the project boundary, the only traffic on the westbound leg of Vineyard Avenue will be project traffic for this proposed project, and the warehouse project immediately adjacent to the west (PPD2107-0068). In addition, while the existing business on the south side of Vineyard Avenue does not currently use Vineyard Avenue for site ingress or egress, the property owner could choose to begin taking access via Vineyard Avenue, which would contribute a small amount of additional traffic.

The traffic from these two projects would experience delay during the evening peak hour while waiting for an acceptable gap in traffic on Locust Avenue. While the side street approach operates at a deficient Level of Service based on the highest delay approach, the overall intersection delay would be acceptable. Any queuing that occurs on the side street is contained on the minor intersection approach, would occur for only a limited period of time during the working week, and would not impact the progression of traffic on the main arterial.

Daily Roadway Operating Conditions

Roadway Level of Service analysis was conducted for the Existing Plus Growth Plus Project condition and the results are shown on Table 7.

Review of this table indicates that the study roadway segments will operate within their Level of Service D capacity with the addition of Project traffic.

TABLE 6
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2020 - EXISTING PLUS GROWTH PLUS PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Project Impact	Impact Sig?	Without Project		With Project		Project Impact	Impact Sig?
			Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	Alder Avenue at Casmalia Street	S	25.1	C	24.9	C	-0.2	No	28.6	C	29.1	C	0.5	No
2	Alder Avenue at SR-210 WB Ramps	S	25.7	C	25.3	C	-0.4	No	24.0	C	24.0	C	0.0	No
3	Alder Avenue at SR-210 EB Ramps	S	24.5	C	24.7	C	0.2	No	24.2	C	24.2	C	0.0	No
4	Locust Avenue at Vineyard Avenue	U	25.8	D	30.1	D	4.3	No	24.0	C	44.4	**E**	20.4	No
5	Locust Avenue at Casmalia St	S	23.5	C	28.3	C	4.8	No	19.2	B	22.0	C	2.8	No
6	Maple Avenue at Bohnert Avenue	U	10.7	B	12.1	B	1.4	No	7.5	A	7.7	A	0.2	No
7	Ayala Drive at Casmalia Street	S	28.6	C	29.8	C	1.2	No	23.1	C	24.6	C	1.5	No
8	Ayala Drive at I-210 WB Ramps	S	27.8	C	28.3	C	0.5	No	28.2	C	26.1	C	-2.1	No
9	Ayala Drive at I-210 EB Ramps	S	18.3	B	18.6	B	0.3	No	22.1	C	23.5	C	1.4	No
D1	Maple Avenue at North Driveway	U	N/A	-	8.8	A	N/A	-	N/A	-	8.8	A	N/A	-
D2	Maple Avenue at South Driveway	U	N/A	-	8.6	A	N/A	-	N/A	-	8.6	A	N/A	-

Notes:
- Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst (highest delay) movement.
- Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.

S = Signalized
U = Unsignalized

TABLE 7
SUMMARY OF ROADWAY ANALYSIS
OPENING YEAR 2020 - EXISTING PLUS GROWTH PLUS PROJECT

Roadway	Segment	LOS D Capacity	Existing ADT w/ PCE	Existing Plus Growth ADT	Daily Project Traffic	Existing + Growth + Project ADT	LOS
Casmalia Street	Alder Avenue to Locust Avenue	32,999	12,555	13,062	936	13,998	B or better
	Linden Avenue to Ayala Drive	17,999	7,224	7,516	586	8,102	B or better
Locust Avenue	Vineyard Avenue to Casmalia Street	17,999	13,373	13,913	1,602	15,515	C or better

Notes: LOS = Level of Service
ADT = Average Daily Traffic
PCE = Passenger Car Equivalent

C. Cumulative Conditions (Existing Plus Growth Plus Cumulative Projects)

1. Cumulative Projects

In addition to ambient growth, traffic volumes for Cumulative Projects (approved and pending projects) were added to the Existing Plus Growth traffic volumes. Cumulative Projects consist of any project that has been approved and is not yet occupied, and projects that are in various stages of the application and approval process, but have not yet been approved.

A summary of Cumulative Projects in the project vicinity and the trip generation associated with each is provided on Table 8. The locations of the Cumulative Projects are shown on Figure 13. Cumulative Project traffic volumes are shown on Figure 14.

2. Background Growth Rate

As discussed earlier, an ambient growth rate of 2.0% per year to Opening Year 2019 was assumed for this analysis.

3. Cumulative Projects Trip Generation

Trip generation information for the Cumulative Projects was derived either from approved traffic studies, where available; or developed by Kimley-Horn if approved traffic studies were not available. Project information and trip generation assumptions for Cumulative Projects are provided in *Appendix E*.

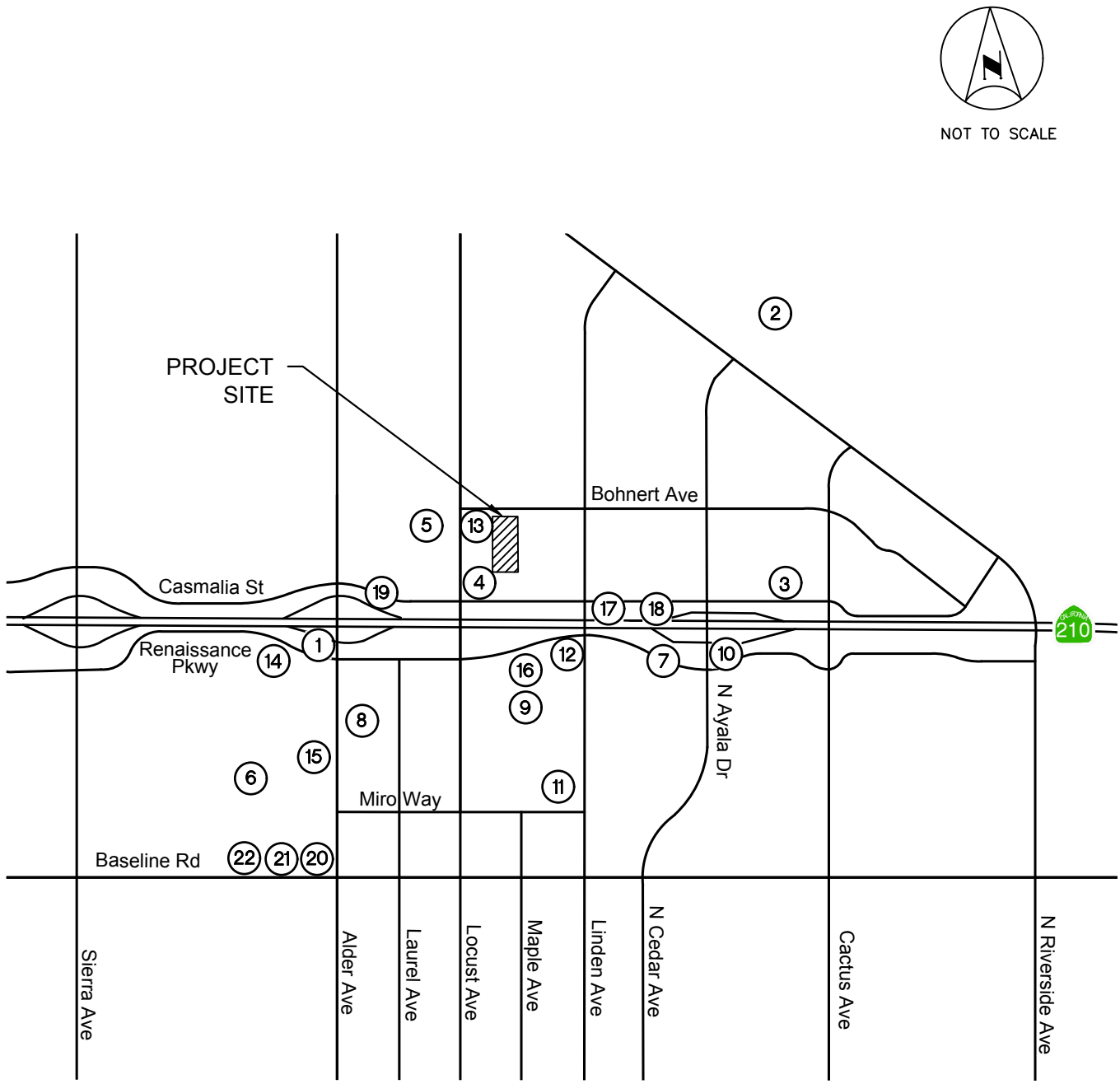
4. Cumulative Projects Trip Distribution and Assignment

Likewise, trip distribution and assignment for the Cumulative Projects were either derived from approved traffic studies, where available; or were developed by Kimley-Horn if approved traffic studies were not available. Trip distribution assumptions for Cumulative Projects are provided in *Appendix E*.

TABLE 8
SUMMARY OF CUMULATIVE PROJECTS

Project #	Land Use	Quantity	Units	Trip Generation Estimates						
					AM Peak Hour			PM Peak Hour		
				Daily	In	Out	Total	In	Out	Total
1	Sater Bros									
	Hotel	100	ROOMS	817	31	22	53	31	29	60
	High-Turnover (Sit-Down) Restaurant	2.000	KSF	254	12	11	23	13	9	22
	Pass-by High-Turn (Sit-Down) Restaurant			-57	0	0	0	-2	-2	-4
	Fast-Food Restaurant w/o D.T.	1.000	KSF	716	26	18	44	13	13	26
	Pass-by Fast-Food Restaurant			-161	-6	-4	-10	-3	-3	-6
	Fast-Food Restaurant w/ D.T.	5.440	KSF	2,699	126	121	247	92	85	177
	Pass-by Fast-Food Restaurant			-638	-31	-30	-61	-20	-20	-40
	Gasoline Station w/ Conv. Mkt. & Car Wash	16	VFP	2,445	97	93	190	113	109	222
	Pass-by Gasoline/Service Station			-572	-21	-21	-42	-26	-26	-52
	Site Internal Capture (10%)			-693	-29	-27	-56	-26	-25	-51
2	Lytle Creek SP (10% of Capacity)									
	Single-Family Detached Housing	504	DU	4,823	95	284	379	321	188	509
	Condominium	336	DU	1,952	25	123	148	117	58	175
3	Emaar Enterprise Homes	20.00	DU	191	4	11	15	13	7	20
4	B+B Plastics	150.27	KSF	963	64	17	81	22	64	86
5	Prologis (Locust at Stonehurst)	473.000	KSF	2,824	187	50	237	64	191	255
6	Prologis (Tamarind at Walnut)	384.000	KSF	2,292	152	39	191	52	154	206
7	Renaissance Marketplace									
	North Side Area	65.756	KSF	4,441	89	70	159	115	203	318
	South Side Area	523.567	KSF	13,340	213	96	309	547	617	1,164
8	I-210 Logistics IV	412.560	KSF	2,462	105	28	133	35	106	141
9	PA 108 Building 6	855.000	KSF	9,841	168	946	1,114	949	58	1,007
10	Renaissance East									
	Hotel	108	ROOMS	882	34	23	57	33	32	65
	Hotel Internal Capture (8%)			-71	-3	-2	-5	-3	-3	-6
	Specialty Retail Center	9.100	KSF	403	-	-	-	11	14	25
	Pass-by Specialty Retail Center (10%)			40	0	0	0	1	1	2
	High-Turnover (Sit-Down) Restaurant	9.170	KSF	1,166	55	51	106	60	42	102
	Fast-Food Restaurant w/ D.T.	7.620	KSF	3,780	177	170	347	129	119	248
	Pass-by Fast-Food Restaurant (10%)			-378	-18	-17	-35	-13	-12	-25
11	PA 108 Building 4-B	411.330	KSF	2,454	162	44	206	55	165	220
12	Hotel (SWC of Linden and Renaissance)	135	Occupied Room	1,204	52	38	90	46	48	94
13	Locust / Vineyard Warehouse	120.600	KSF	719	47	12	59	17	47	64
14	Renaissance / Palmetto Warehouse	340.715	KSF	2,033	138	35	173	47	138	185
15	Morin Warehouse	200.000	KSF	1,193	77	22	99	26	78	104
16	Buildings 7, 8, and 9 Warehouse	540.427	KSF	3,224	216	57	273	73	218	291
17	SEC Casmalia / Linden Warehouse	136.220	KSF	813	54	13	67	18	55	73
18	Fuel Station/Fast Food at SWC of Casmalia / Ayala	7.000	KSF	4,419	202	188	390	174	164	338
19	Diesel Fuel Expansion at SEC of Casmalia / Alder	7.300	KSF	2,382	113	107	220	86	81	167
20	NWC Baseline / Alder Warehouse	255.655	KSF	1,526	104	28	132	34	104	138
21	NWC Baseline / Tamarind Warehouse	156.500	KSF	935	65	18	83	23	65	88
22	Baseline / Palmetto Warehouse	99.999	KSF	599	41	12	53	13	41	54
Total Project Trips				75,262	2,823	2,647	5,469	3,250	3,213	6,462

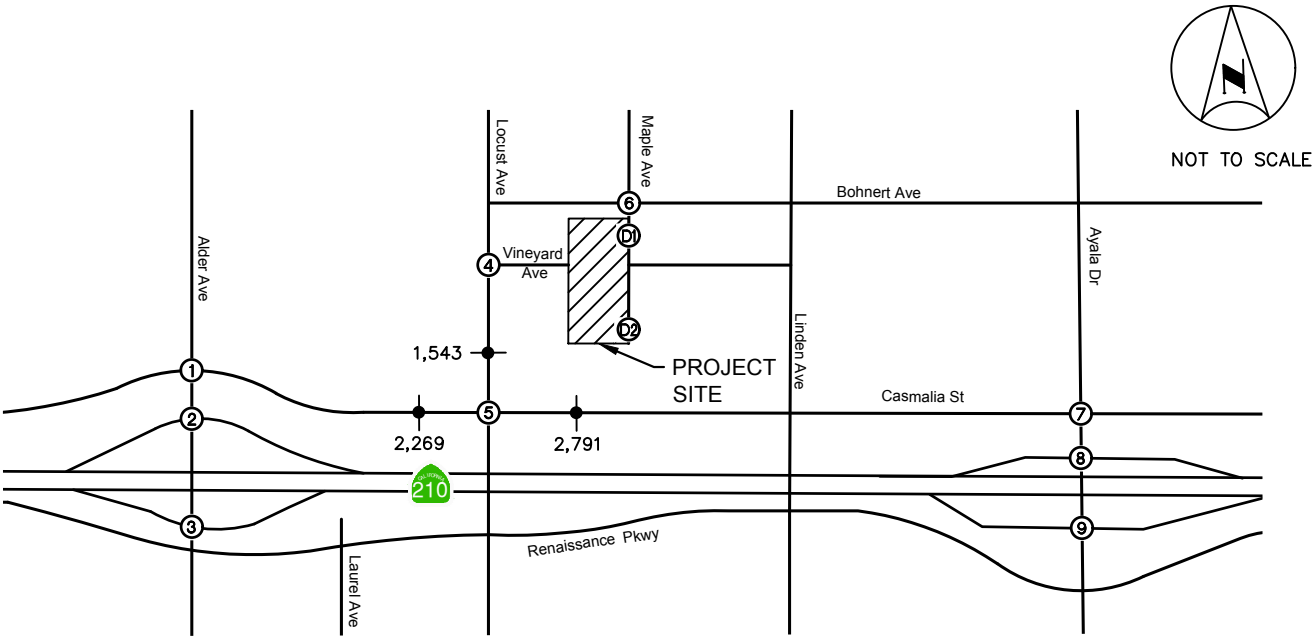
DU = Dwelling Units, KSF = 1,000 square feet, VFP = Vehicle Fueling Positions, DT = Drive-through



LEGEND:

(X) = Cumulative Project See Appendix E

FIGURE 13
LOCATION OF CUMULATIVE PROJECTS



1. Alder Ave at Casmalia St	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps	4. Locust Ave at Vineyard Ave	5. Locust Ave at Casmalia St
17/11 ↓ 14/12 ← 143/228 ← 17/13 → 12/14 ↑ 245/133 ↑	88/214 ↓ 153/174 ↓ 30/57 ← 303/125 ← 199/347 ↑ 336/233 ↑	445/284 ↓ 36/22 ↓ 199/93 → 357/241 → 335/486 ↑ 112/322 ↑	56/155 ↓ 4/18 ← 151/77 ↑ 18/6 ↑	8/33 ↓ 22/27 ↓ 26/95 ↓ 80/19 ← 74/110 ← 19/12 ← 58/25 → 83/56 → 4/8 → 2/10 ↑ 13/33 ↑ 5/13 ↑
6. Maple Ave at Bohnert Ave	**7. Ayala Dr at Casmalia St**	**8. Ayala Dr at SR-210 WB Ramps**	**9. Ayala Dr at SR-210 EB Ramps**	
2/1 ← 0/2 →	17/13 ↓ 190/152 ↓ 11/9 ← 14/13 → 10/9 → 198/274 → 339/212 ↑ 106/167 ↑	122/98 ↓ 284/394 ↓ 307/197 ← 166/243 ← 63/88 ↑ 202/275 ↑	284/381 ↓ 167/257 ↓ 83/127 → 76/86 → 181/236 ↑ 207/227 ↑	
D1. Maple Ave at North Dwy	**D2. Maple Ave at South Dwy**			
FUTURE INTERSECTION	FUTURE INTERSECTION			

Note: Volumes reflect PCE adjustments. See PCE Worksheets in Appendix C.

LEGEND:
- (X) = Study Intersection
- XXXX = Average Daily Traffic Volume
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 14
CUMULATIVE PROJECTS TRAFFIC VOLUMES

5. Opening Year 2020 Cumulative Without Project Conditions

Peak Hour Operating Conditions

Daily and peak hour traffic volumes for Opening Year 2020 Cumulative Without Project Conditions are shown on Figure 15. Intersection Level of Service results are shown on Table 9. Review of this table indicates that, with the addition of Cumulative Projects traffic, the following intersections would operate at an unacceptable Level of Service:

- #2 – Alder Avenue at SR-210 Westbound Ramps: AM – LOS F; PM – LOS E
- #3 – Alder Avenue at SR-210 Eastbound Ramps: AM – LOS E; PM – LOS F
- #4 – Locust Avenue at Vineyard Avenue: AM – LOS E; PM – LOS E
- #7– Ayala Drive at Casmalia Street: AM – LOS E

Copies of intersection analysis worksheets are provided in *Appendix D*.

Daily Roadway Operating Conditions

Roadway Level of Service analysis was conducted for Opening Year 2020 Cumulative without Project conditions and the results are shown on Table 10.

Review of this table indicates that the study roadway segments will operate within their Level of Service D capacity with the addition of cumulative project traffic.

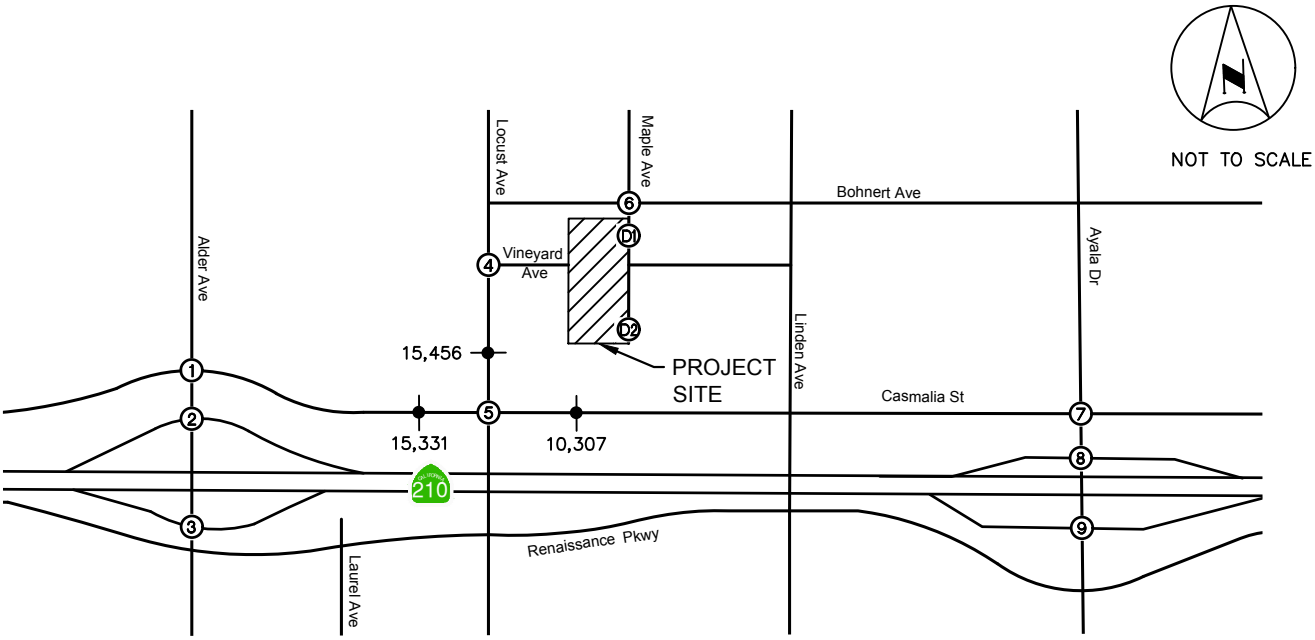
6. Opening Year 2020 Cumulative Plus Project Conditions

Peak Hour Operating Conditions

Project traffic was added to Opening Year 2020 Cumulative traffic volumes to develop Opening Year 2020 Cumulative plus Project traffic forecast volumes. The resulting daily and peak hour traffic volumes are shown on Figure 16.

Intersection Level of Service analysis results are shown on Table 11. As this table indicates, with the addition of project traffic, the following intersections would continue to operate at an unacceptable Level of Service:

- #2 – Alder Avenue at SR-210 Westbound Ramps: AM – LOS F; PM – LOS F
- #3 – Alder Avenue at SR-210 Eastbound Ramps: AM – LOS E; PM – LOS F
- #4 – Locust Avenue at Vineyard Avenue: AM – LOS E; PM – LOS F
- #7– Ayala Drive at Casmalia Street: AM – LOS E



1. Alder Ave at Casmalia St	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps	4. Locust Ave at Vineyard Ave	5. Locust Ave at Casmalia St
14/45, 347/216, 23/37 → 32/35, 210/196, 517/561 26/12, 109/226, 54/133 → 90/86, 367/216, 494/421	550/610, 467/453 → 244/216, 10/2, 653/363 508/707, 819/644	929/646, 209/183 564/357, 2/0, 837/626 → 762/989, 378/606	659/733 → 4/18 0/2, 1/11 → 8/4, 631/524, 18/6	287/261, 283/260, 89/213 → 203/100, 240/274, 44/23 264/218, 138/245, 50/65 → 89/61, 173/210, 12/39

6. Maple Ave at Bohnert Ave	7. Ayala Dr at Casmalia St	8. Ayala Dr at SR-210 WB Ramps	9. Ayala Dr at SR-210 EB Ramps
79/36, 1/1, 64/19 → 29/23, 164/48, 1/4 46/38, 48/54, 0/1 → 3/1, 1/0, 5/1	39/23, 690/467, 18/12 → 21/14, 80/43, 166/90 25/39, 57/64, 397/459 → 494/308, 452/626, 86/128	404/270, 622/794 → 457/399, 3/2, 492/734 720/593, 392/687	738/1016, 371/496 156/346, 4/3, 496/812 → 968/948, 567/665

D1. Maple Ave at North Dwy	D2. Maple Ave at South Dwy
FUTURE INTERSECTION	FUTURE INTERSECTION

Note: Volumes reflect PCE adjustments. See PCE Worksheets in Appendix C.

LEGEND:
- (X) = Study Intersection
- XXXX = Average Daily Traffic Volume
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 15
OPENING YEAR 2020 CUMULATIVE WITHOUT PROJECT TRAFFIC VOLUMES

TABLE 9
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2020 CUMULATIVE WITHOUT PROJECT

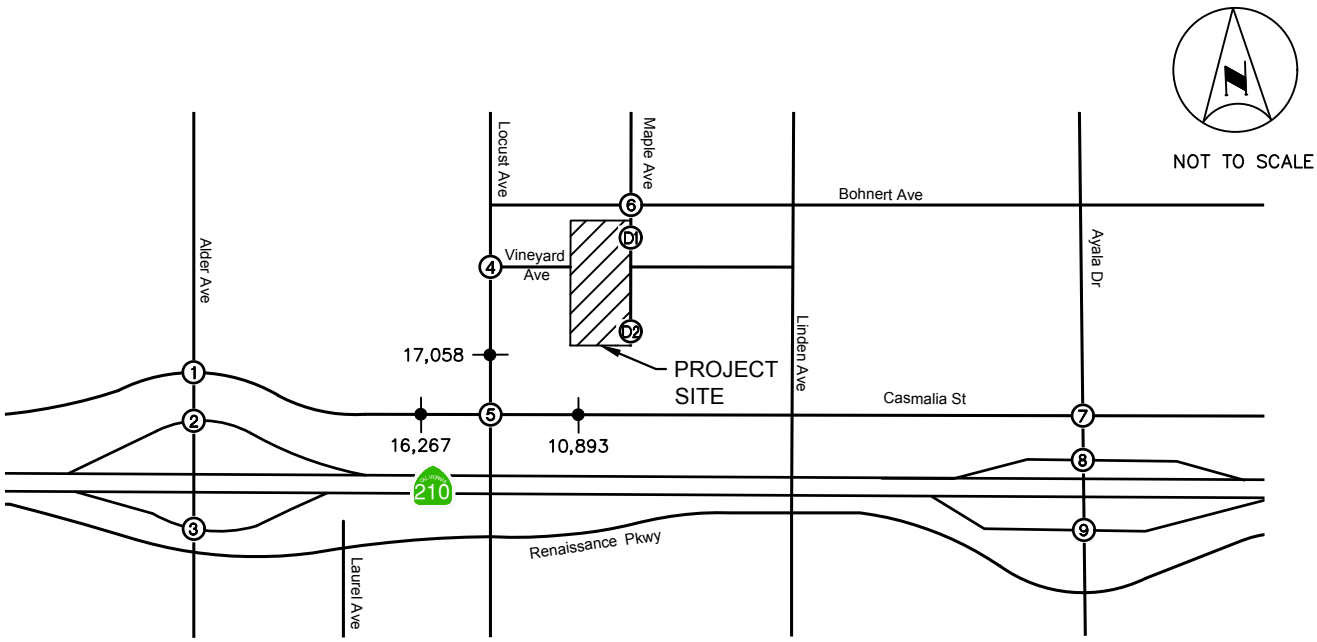
Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Alder Avenue at Casmalia Street	S	26.2	C	29.9	C
2	Alder Avenue at SR-210 WB Ramps	S	82.5	F	72.6	E
3	Alder Avenue at SR-210 EB Ramps	S	66.9	E	88.9	F
4	Locust Avenue at Vineyard Avenue	U	35.4	E	38.0	E
5	Locust Avenue at Casmalia St	S	30.7	C	22.9	C
6	Maple Avenue at Bohnert Avenue	U	10.7	B	7.5	A
7	Ayala Drive at Casmalia Street	S	63.2	E	35.1	D
8	Ayala Drive at I-210 WB Ramps	S	33.9	C	31.0	C
9	Ayala Drive at I-210 EB Ramps	S	21.8	C	33.2	C

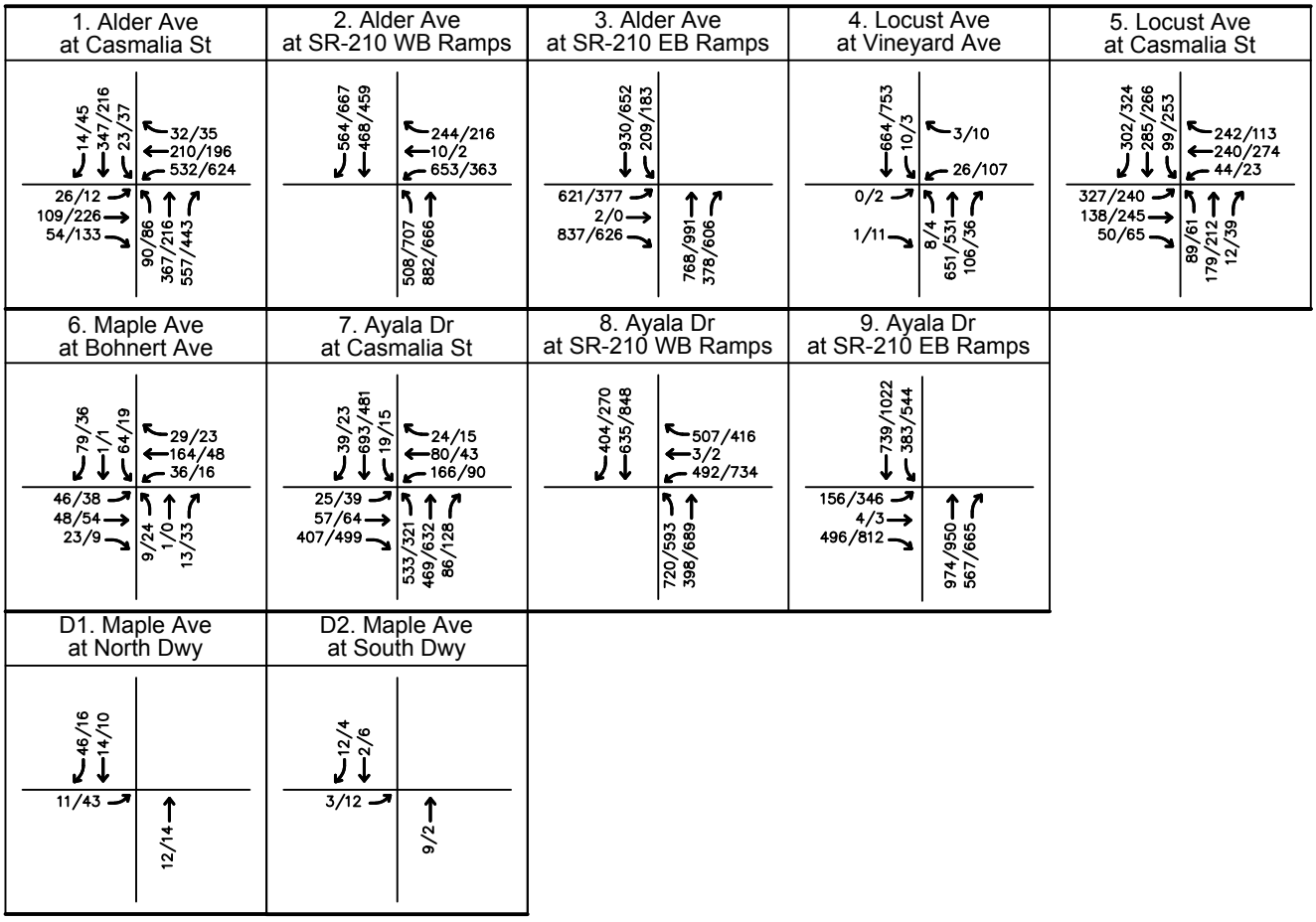
Notes:
- Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst (highest delay) movement.
- Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.
S = Signalized
U = Unsignalized

TABLE 10
SUMMARY OF ROADWAY ANALYSIS
OPENING YEAR 2020 CUMULATIVE WITHOUT PROJECT

Roadway	Segment	LOS D Capacity	Existing Plus Growth ADT	Cumulative Projects ADT	Opening Year + Cum. Projects ADT	LOS
Casmalia Street	Alder Avenue to Locust Avenue	32,999	13,062	2,269	15,331	B or better
	Linden Avenue to Ayala Drive	17,999	7,516	2,791	10,307	B or better
Locust Avenue	Vineyard Avenue to Casmalia Street	17,999	13,913	1,543	15,456	C or better

Notes: LOS = Level of Service
ADT = Average Daily Traffic





Note: Volumes reflect PCE adjustments. See PCE Worksheets in Appendix C.

LEGEND:

Ⓧ = Study Intersection

XXXX = Average Daily Traffic Volume

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 16
OPENING YEAR 2020 CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES

TABLE 11
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2020 CUMULATIVE PLUS PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Project Impact	Impact Sig?	Without Project		With Project		Project Impact	Impact Sig?
			Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	Alder Avenue at Casmalia Street	S	26.2	C	26.8	C	0.6	No	29.9	C	30.5	C	0.6	No
2	Alder Avenue at SR-210 WB Ramps	S	82.5	F	83.6	F	1.1	Yes	72.6	E	82.6	F	10.0	Yes
3	Alder Avenue at SR-210 EB Ramps	S	66.9	E	67.1	E	0.2	No	88.9	F	88.8	F	-0.1	No
4	Locust Avenue at Vineyard Avenue	U	35.4	E	44.6	E	9.2	No	38.0	E	129.2	F	91.2	Yes
5	Locust Avenue at Casmalia St	S	30.7	C	40.0	D	9.3	Yes	22.9	C	26.3	C	3.4	No
6	Maple Avenue at Bohnert Avenue	U	10.7	B	12.1	B	1.4	No	7.5	A	7.7	A	0.2	No
7	Ayala Drive at Casmalia Street	S	63.2	E	71.0	E	7.8	Yes	35.1	D	38.2	D	3.1	No
8	Ayala Drive at I-210 WB Ramps	S	33.9	C	35.5	D	1.6	No	31.0	C	32.6	C	1.6	No
9	Ayala Drive at I-210 EB Ramps	S	21.8	C	22.0	C	0.2	No	33.2	C	35.3	D	2.1	No
D1	Maple Avenue at North Driveway	U	N/A	-	8.8	A	N/A	-	N/A	-	8.8	A	N/A	-
D2	Maple Avenue at South Driveway	U	N/A	-	8.6	A	N/A	-	N/A	-	8.6	A	N/A	-

Notes:
- Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst (highest delay) movement.
- Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.

S = Signalized
U = Unsignalized

Based on the significance thresholds presented earlier in this report, the project impact would be considered cumulatively significant at the following intersections:

- #2 – Alder Avenue at SR-210 Westbound Ramps: AM and PM
- #4 – Locust Avenue at Vineyard Avenue: PM
- #5 – Locust Avenue at Casmalia Street: AM
- #7 – Ayala Drive at Casmalia Street: AM

Recommended measures to mitigate the project impacts are presented in the Project Impact Mitigation section of this report. Copies of intersection analysis worksheets are provided in *Appendix D*.

In this With Project analysis, each of the site driveways was also analyzed. The results indicate that each driveway will operate at an acceptable Level of Service during both peak hours.

Daily Roadway Operating Conditions

Roadway Level of Service analysis results for Opening Year 2020 Cumulative Plus Project conditions are shown on Table 12. Review of this table indicates that with the addition of project traffic, the study roadway segments would continue to operate within their Opening Year 2020 Level of Service D capacity.

D. Build-Out Conditions

1. Build-Out Without Project Conditions

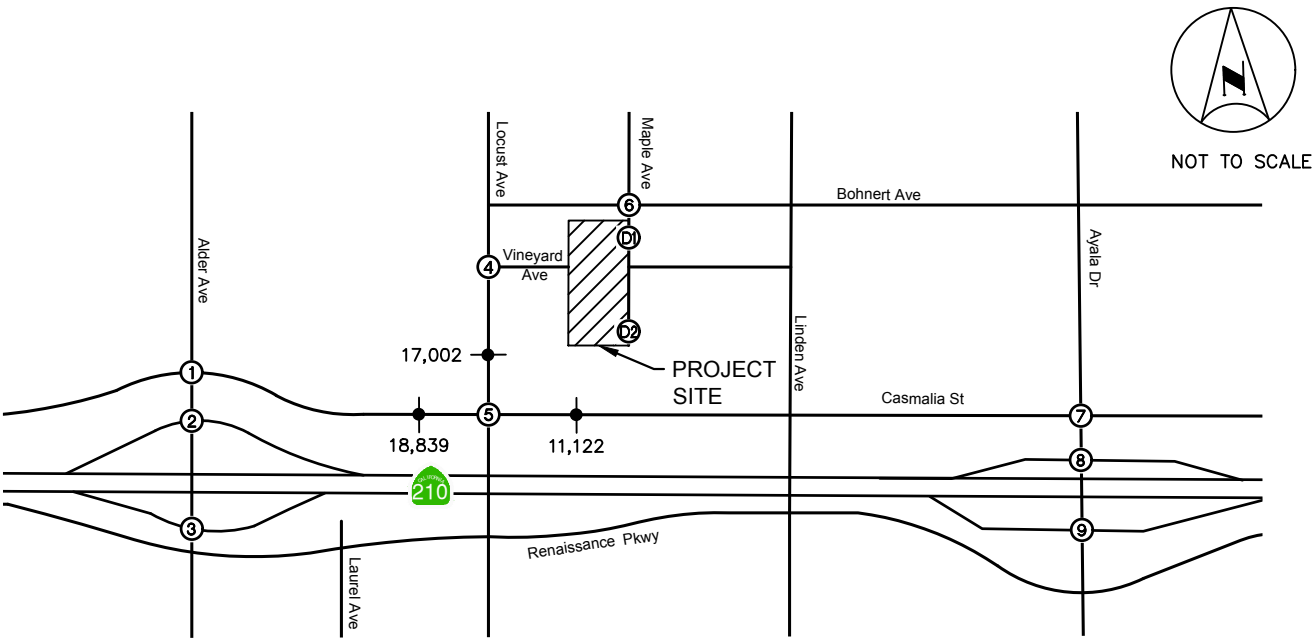
A Build-Out analysis was conducted because the proposed project would require a General Plan Amendment (GPA) and Zone Change. To derive the Build-Out intersection turning movement volumes, the San Bernardino Transportation Analysis Model (SBTAM) base year 2012 and build-out year future traffic projections were used. However, it was first necessary to post-process the raw volumes obtained from the model output. This process involved determining the annual growth between the base model year and the future model year, and applying the resulting growth to existing count volumes. This was accomplished using the B-Turns analysis worksheets, developed by the Federal Highway Administration (FHWA), which translate the grown volumes into peak hour turning movements.

As a conservative approach, if a Build-Out turning movement volume produced by this process was less than Opening Year 2020 Cumulative volumes for that movement, manual adjustments were made to assure that all forecast Build-Out volumes would be equal to or greater than the Opening Year 2020 Cumulative turning movement volumes. Both SBTAM Model plots and B-Turns analysis worksheets are provided in *Appendix F.* The resulting traffic volumes for Build-Out Without Project conditions are shown on Figure 17. Lane geometries for the study intersections are assumed to be the same as Opening Year Conditions, previously shown on Figure 10.

TABLE 12
SUMMARY OF ROADWAY ANALYSIS
OPENING YEAR 2020 CUMULATIVE PLUS PROJECT

Roadway	Segment	LOS **D** Capacity	Opening Year + Cum. Projects ADT	Daily Project Traffic	Opening Year + Cum. Project + Project ADT	LOS
Casmalia Street	Alder Avenue to Locust Avenue	32,999	15,331	936	16,267	B or better
	Linden Avenue to Ayala Drive	17,999	10,307	586	10,893	B or better
Locust Avenue	Vineyard Avenue to Casmalia Street	17,999	15,456	1,602	17,058	D or better

Notes: LOS = Level of Service
ADT = Average Daily Traffic



1. Alder Ave at Casmalia St	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps	4. Locust Ave at Vineyard Ave	5. Locust Ave at Casmalia St
14/46, 410/239, 23/37 ← 32/38, 210/196, 517/561 → 90/90, 412/267, 494/421 ← 26/16, 109/226, 61/154 →	550/610, 467/453 ← 244/216, 10/2, 653/363 → 508/707, 819/644 ←	929/646, 209/183 ← 564/357, 2/0, 837/626 → 762/989, 378/606 ←	659/733 ← 4/18 → 8/4, 631/552, 18/6 ← 0/2, 1/11 →	287/261, 283/312, 89/213 ← 203/100, 240/274, 44/23 → 89/76, 173/300, 12/41 ← 264/218, 138/245, 50/69 →

6. Maple Ave at Bohnert Ave	7. Ayala Dr at Casmalia St	8. Ayala Dr at SR-210 WB Ramps	9. Ayala Dr at SR-210 EB Ramps
79/48, 1/1, 64/20 ← 29/23, 164/48, 1/4 → 3/2, 1/0, 5/1 ← 56/44, 48/54, 0/1 →	46/23, 690/467, 18/12 ← 21/14, 144/43, 166/90 → 494/308, 452/626, 86/131 ← 25/39, 57/66, 397/459 →	404/270, 622/794 ← 457/399, 3/2, 492/734 → 720/593, 392/687 ←	738/1016, 371/496 ← 968/948, 567/665 ← 156/346, 4/3, 496/812 →

D1. Maple Ave at North Dwy	D2. Maple Ave at South Dwy
FUTURE INTERSECTION	FUTURE INTERSECTION

Note: Volumes reflect PCE adjustments. See PCE Worksheets in Appendix C.

LEGEND:
- (X) = Study Intersection
- XXXX = Average Daily Traffic Volume
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 17
BUILD-OUT WITHOUT PROJECT TRAFFIC VOLUMES

Peak Hour Operating Conditions

Intersection Level of Service results are shown on Table 13. Review of this table indicates that, under Build-Out conditions, the following intersections would operate at an unacceptable Level of Service:

- #2 – Alder Avenue at SR-210 Westbound Ramps: AM – LOS F; PM – LOS E
- #3 – Alder Avenue at SR-210 Eastbound Ramps: AM – LOS E; PM – LOS F
- #4 – Locust Avenue at Vineyard Avenue: AM – LOS E; PM – LOS E
- #7– Ayala Drive at Casmalia Street: AM – LOS E

Copies of intersection analysis worksheets are provided in *Appendix D*.

Daily Roadway Operating Conditions

Roadway Level of Service analysis was conducted for Build-Out Without Project conditions and the results are shown on Table 14.

Review of this table indicates that the study roadway segments will operate within their General Plan Level of Service D capacity.

2. Build-Out With Project Conditions

Project-related traffic was added to the Build-Out traffic volumes. Build-Out With Project peak hour turning movement volumes at study intersections are shown on Figure 18.

Peak Hour Operating Conditions

Intersection Level of Service results are shown on Table 15. Review of this table indicates that, with the addition of project traffic, the following intersections would continue to operate at an unacceptable Level of Service:

- #2 – Alder Avenue at SR-210 Westbound Ramps: AM – LOS F; PM – LOS F
- #3 – Alder Avenue at SR-210 Eastbound Ramps: AM – LOS E; PM – LOS F
- #4 – Locust Avenue at Vineyard Avenue: AM – LOS E; PM – LOS F
- #7– Ayala Drive at Casmalia Street: AM – LOS E

Copies of intersection analysis worksheets are provided in *Appendix D*.

Daily Roadway Operating Conditions

Roadway Level of Service analysis was conducted for Build-Out With Project conditions and the results are shown on Table 16. Review of this table indicates that the study roadway segments will operate within their General Plan Level of Service D capacity.

TABLE 13
SUMMARY OF INTERSECTION OPERATION
BUILD-OUT WITHOUT PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Alder Avenue at Casmalia Street	S	26.0	C	30.0	C
2	Alder Avenue at SR-210 WB Ramps	S	82.5	F	72.6	E
3	Alder Avenue at SR-210 EB Ramps	S	66.9	E	88.9	F
4	Locust Avenue at Vineyard Avenue	U	35.4	E	39.8	E
5	Locust Avenue at Casmalia St	S	30.7	C	24.1	C
6	Maple Avenue at Bohnert Avenue	U	10.8	B	7.6	A
7	Ayala Drive at Casmalia Street	S	63.1	E	35.1	D
8	Ayala Drive at I-210 WB Ramps	S	33.9	C	30.8	C
9	Ayala Drive at I-210 EB Ramps	S	21.8	C	33.2	C

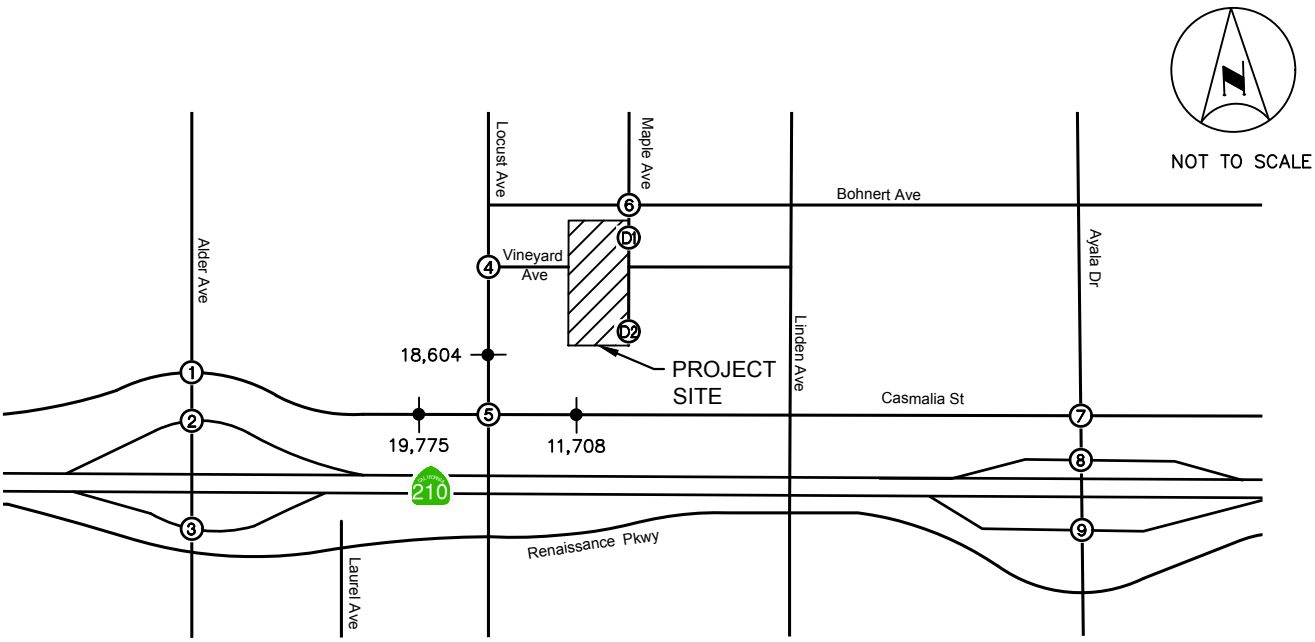
Notes:
- Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst (highest delay) movement.
- Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.
S = Signalized
U = Unsignalized

TABLE 14
SUMMARY OF ROADWAY ANALYSIS
BUILD-OUT WITHOUT PROJECT

Roadway	Segment	General Plan LOS **D** Capacity	Build-Out ADT [1]	LOS
Casmalia Street	Alder Avenue to Locust Avenue	32,999	18,839	B or better
	Linden Avenue to Ayala Drive	32,999	11,122	B or better
Locust Avenue	Vineyard Avenue to Casmalia Street	21,999	17,002	B or better

Notes: LOS = Level of Service
ADT = Average Daily Traffic

[1] Build-Out ADT for Casmalia Street is based on the Year 2035 Volumes from the Renaissance Specific Plan Amendment TIA (dated September, 2016). Build-Out ADT for Locust Avenue was calculated by applying a 10% growth from Opening Year 2020 Cumulative ADT.



1. Alder Ave at Casmalia St	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps	4. Locust Ave at Vineyard Ave	5. Locust Ave at Casmalia St
14/46, 410/239, 23/37 → 32/38, 210/196, 532/624	564/667, 468/459 → 244/216, 10/2, 653/363	930/652, 209/183	664/753, 10/3 → 3/10, 26/107	302/324, 285/318, 99/253 → 242/113, 240/274, 44/23
26/16, 109/226, 61/154 → 90/90, 412/267, 557/443	508/707, 882/666	621/377, 2/0, 837/626 → 768/991, 378/606	0/2, 1/11 → 8/4, 651/559, 106/36	327/240, 138/245, 50/69 → 89/76, 179/302, 12/41

6. Maple Ave at Bohnert Ave	7. Ayala Dr at Casmalia St	8. Ayala Dr at SR-210 WB Ramps	9. Ayala Dr at SR-210 EB Ramps
79/48, 1/1, 64/20 → 29/23, 164/48, 36/16	46/23, 693/481, 19/15 → 24/15, 144/43, 166/90	404/270, 635/848 → 507/416, 3/2, 492/734	739/1022, 383/544
56/44, 48/54, 23/9 → 9/25, 1/0, 13/33	25/39, 57/66, 407/499 → 533/321, 469/632, 86/131	720/593, 398/689	156/346, 4/3, 496/812 → 974/950, 567/665

D1. Maple Ave at North Dwy	D2. Maple Ave at South Dwy
46/16, 14/10	12/4, 2/6
11/43 → 12/14	3/12 → 9/2

Note: Volumes reflect PCE adjustments. See PCE Worksheets in Appendix C.

LEGEND:
- (X) = Study Intersection
- XXXX = Average Daily Traffic Volume
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 18
BUILD-OUT WITH PROJECT TRAFFIC VOLUMES

TABLE 15
SUMMARY OF INTERSECTION OPERATION
BUILD-OUT WITH PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Project Impact	Impact Sig?	Without Project		With Project		Project Impact	Impact Sig?
			Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	Alder Avenue at Casmalia Street	S	26.0	C	26.5	C	0.5	No	30.0	C	30.6	C	0.6	No
2	Alder Avenue at SR-210 WB Ramps	S	82.5	F	83.6	F	1.1	Yes	72.6	E	82.6	F	10.0	Yes
3	Alder Avenue at SR-210 EB Ramps	S	66.9	E	67.1	E	0.2	No	88.9	F	88.8	F	-0.1	No
4	Locust Avenue at Vineyard Avenue	U	35.4	E	46.9	E	11.5	No	39.8	E	151.4	F	111.6	Yes
5	Locust Avenue at Casmalia St	S	30.7	C	40.0	D	9.3	Yes	24.1	C	27.3	C	3.2	No
6	Maple Avenue at Bohnert Avenue	U	10.8	B	12.3	B	1.5	No	7.6	A	7.8	A	0.2	No
7	Ayala Drive at Casmalia Street	S	63.1	E	70.7	E	7.6	Yes	35.1	D	38.1	D	3.0	No
8	Ayala Drive at I-210 WB Ramps	S	33.9	C	35.5	D	1.6	No	30.8	C	32.6	C	1.8	No
9	Ayala Drive at I-210 EB Ramps	S	21.8	C	22.0	C	0.2	No	33.2	C	35.3	D	2.1	No
D1	Maple Avenue at North Driveway	U	N/A	-	8.8	A	N/A	-	N/A	-	8.8	A	N/A	-
D2	Maple Avenue at South Driveway	U	N/A	-	8.6	A	N/A	-	N/A	-	8.6	A	N/A	-

Notes:
- Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst (highest delay) movement.
- Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.

S = Signalized
U = Unsignalized

TABLE 16
SUMMARY OF ROADWAY ANALYSIS
BUILD-OUT WITH PROJECT

Roadway	Segment	General Plan LOS **D** Capacity	Build-Out ADT [1]	Daily Project Traffic	Build-Out + Project ADT	LOS
Casmalia Street	Alder Avenue to Locust Avenue	32,999	18,839	936	19,775	B or better
	Linden Avenue to Ayala Drive	32,999	11,122	586	11,708	B or better
Locust Avenue	Vineyard Avenue to Casmalia Street	21,999	17,002	1,602	18,604	C or better

Notes: LOS = Level of Service
ADT = Average Daily Traffic
[1] Build-Out ADT for Casmalia Street is based on the Year 2035 Volumes from the Renaissance Specific Plan Amendment TIA (dated September, 2016). Build-Out ADT for Locust Avenue was calculated by applying a 10% growth from Opening Year 2020 Cumulative ADT.

IV. MITIGATION MEASURES

A. Intersection Improvements

Based on the impact criteria in the City's *Traffic Impact Analysis Report Guidelines and Requirements* (Exhibit F), the project-related impact would be considered significant at the following intersections:

- #2 – Alder Avenue at SR-210 Westbound Ramps
- #4 – Locust Avenue at Vineyard Avenue
- #5 – Locust Avenue at Casmalia Street
- #7 – Ayala Drive at Casmalia Street

Note: Although Intersection #5 (Locust Avenue at Casmalia Street) would operate at LOS D, the project impact would be an increase of 9.3 seconds in the AM peak hour, and therefore, would be considered a significant impact based on the sliding scale shown on page 5.

Implementation of the following improvement would mitigate the project impact:

#2 – Alder Avenue at SR-210 Westbound Ramps: Add a second northbound left-turn lane. With this improvement, the intersection would operate at an acceptable Level of Service in both peak hours. The project will contribute on a fair-share basis to this improvement.

#4 – Locust Avenue at Vineyard Avenue:

A signal warrant analysis was conducted for the intersection of Locust Avenue at Vineyard Avenue. As mentioned earlier, since the east leg of Vineyard Avenue will end in a cul-de-sac at the project boundary, the only traffic on the westbound leg of Vineyard Avenue at Locust Avenue will be project traffic from this proposed project, and from the warehouse project immediately adjacent to the west (PPD2107-0068). The forecasted volumes for the westbound approach on Vineyard Avenue would be 12 vehicles (29 PCE) in the morning peak hour and 44 vehicles (117 PCE) in the evening peak hour.

The signal warrant analysis shows that the future PCE volumes at this intersection would satisfy only the One-Hour Signal Warrant, and only during the evening peak hour under Opening Year 2020 Cumulative Plus Project conditions. The intersection would not warrant a signal during the morning peak hour, and would not satisfy the Four-Hour or Eight-Hour Signal Warrants.

The California Manual on Uniform Traffic Control Devices (MUTCD) specifically states that, "The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal." The reference document goes on to state a number of other factors to take into account when considering a signal for a specific location, including whether or not a signal would improve the overall safety of the intersection, whether it would benefit or disrupt progressive traffic flow (in this case, on Locust Avenue), and consideration of site-specific characteristics such as queuing, signal spacing, and overall delay to the main street through movements.

The decision to install a traffic signal should be based on engineering judgment, and not solely upon satisfying a single peak hour warrant. It is recommended that the intersection be monitored once the project is completed to observe actual peak hour operation, and a decision about signalization should be made based on those observations as well as engineering judgment, based on the factors listed above.

#5 – Locust Avenue at Casmalia Street: Add a second eastbound left-turn lane. The intersection is forecasted to operate at an acceptable Level of Service under all scenarios. This improvement would be consistent with the ultimate lane configuration shown in the Renaissance Specific Plan Amendment, and would more than offset the project-related increase in delay. The project will contribute on a fair-share basis to this improvement.

#7 – Ayala Drive at Casmalia Street: Implement right-turn overlap for the eastbound approach. With this improvement, the intersection would operate at an acceptable Level of Service in both peak hours. The project will contribute on a fair-share basis to this improvement.

A summary of the intersection operation before and after implementation of these mitigation measures is provided on Table 17. The project fair share proportion of the improvements are shown on Table 18, and the estimated costs of the proposed improvements, as derived from the Citywide Development Impact Fee Program, and the Congestion Management Program (CMP) Appendix G, are shown on Table 19.

B. Roadway Improvements

The project would not have a significant impact on any of the study roadway segments.

TABLE 17
SUMMARY OF INTERSECTION OPERATIONS WITH PROPOSED MITIGATION MEASURES

Int. #	Intersection	AM Peak Hour				PM Peak Hour			
		Without Mitigation		With Mitigation		Without Mitigation		With Mitigation	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
2	Alder Avenue at SR-210 WB Ramps								
	Add 2nd NB Left-Turn Lane	83.6	F	51.8	D	82.6	F	38.8	D
4	Locust Avenue at Vineyard Avenue								
	Monitor when project is complete	44.6	E	n/a	n/a	129.2	F	n/a	n/a
5	Locust Avenue at Casmalia St								
	Add 2nd EB Left-Turn Lane	40.0	D	29.4	C	26.3	C	22.8	C
7	Ayala Drive at Casmalia Street								
	Add EB Right-Turn Overlap	71.0	E	41.1	D	38.2	D	26.5	C

Notes:
- Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst (highest delay) movement.
- Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.

TABLE 18

SUMMARY OF PROJECT FAIR SHARE FOR MITIGATION MEASURES

Intersection	AM Peak Hour					PM Peak Hour				
	Total Volume		Total	Project		Total Volume		Total	Project	
	2018	2020	Growth	Trips	%-age	2018	2020	Growth	Trips	%-age
#2 - Alder Avenue at SR-210 WB Ramps	2,060	3,329	1,269	78	6.1%	1,774	3,080	1,306	85	6.5%
#5 - Locust Avenue at Casmalia Street	1,422	2,007	585	135	23.1%	1,470	2,115	645	146	22.6%
#7 - Ayala Drive at Casmalia Street	1,577	2,598	1,021	73	7.1%	1,370	2,350	980	77	7.9%

TABLE 19
TRAFFIC IMPACT MITIGATION FAIR-SHARE COST

#2 - Alder Avenue at SR-210 WB Ramps	Unit Cost	Quantity	Total
Add 2nd NB Left-Turn Lane	$ 134,600 [2]	1	$ 134,600
Project Fair Share percentage[1]			6.5%
Project Cost			$ 8,760
#5 - Locust Avenue at Casmalia Street			
Add 2nd EB Left-Turn Lane	$ 50,000	1	$ 50,000
Project Fair Share percentage[1]			23.1%
Project Cost			$ 11,538
#7 - Ayala Drive at Casmalia Street			
Provide 2nd WB Through Lane	$ 110,000	1	$ 110,000
Project Fair Share percentage1			7.9%
Project Cost			$ 8,643
	Total Project Cost		**$** 28,942

[1] Higher of AM or PM project fair share percentage

[2] Source: Draft City of Rialto Transportation/Traffic Impact Fee Nexus Study. Note: This improvement to the westbound ramp intersection is part of the larger Alder Avenue Improvement Project that calls for roadway widening and intersection improvements between Casmalia Street and Renaissance Parkway.

V. FINDINGS AND RECOMMENDATIONS

A. Improvements

Off-site mitigation improvements were identified to mitigate the project's significant impacts at three deficient intersections:

- #2 – Alder Avenue at SR-210 Westbound Ramps
- #4 – Locust Avenue at Vineyard Avenue
- #5 – Locust Avenue at Casmalia Street

No project significant impacts were identified on the study roadway segments.

B. Traffic Signal Warrant Analysis

Each proposed site driveway was analyzed, and all are forecasted to operate at LOS A in both peak hours. The driveways would not require signalization.

A signal warrant analysis was conducted for the unsignalized intersection of Locust Avenue at Vineyard Avenue. The signal warrant analysis shows that the future volumes at this intersection would satisfy only the One-Hour Signal Warrant, and only during the evening peak hour under Opening Year 2020 Cumulative Plus Project conditions. The intersection would not warrant a signal during the morning peak hour, and would not satisfy the Four-Hour or Eight-Hour Signal Warrants.

The decision to install a traffic signal should be based on engineering judgment, and not solely upon satisfying a single peak hour warrant. It is recommended that the intersection be monitored once the project is completed to observe actual peak hour operation, and a decision about signalization should be made based on those observations as well as engineering judgment regarding the other factors listed above. A signal analysis worksheet for this intersection is provided in *Appendix G*.

C. Site Circulation

Vehicular access provisions for the project site would consist of the following:

- Two full-movement driveways on Maple Avenue
- One driveway on the west side of the building on Vineyard Avenue

Passenger vehicles would enter the site via the full-movement driveways on Maple Avenue, depending on which is closest to their parking area destination. Trucks would enter and exit the site via the Vineyard Avenue driveway only.

The cumulative intersection analysis for the With Project condition indicates that all project driveways will operate at acceptable Level of Service during both peak hour periods.

D. Safety and Operational Improvements

The site driveways and project improvements must be designed so that adequate sight distance for drivers entering and exiting the site is maintained. Renaissance Parkway has a compound curve across the project frontage so sight distance needs to be verified with final site design.

The line of sight – a straight line between the driver's eye and oncoming vehicles on the adjacent roadway defines the Limited Use Area. The Limited Use Area for each driveway must be kept clear of visual obstructions, including project signs, building structures, and landscaping, in order to maintain adequate sight distance.

E. Fair Share Calculations

The project fair share proportion of the improvements are shown on Table 18 (presented previously), and the estimated costs of the proposed improvements, are shown on Table 19 (presented previously).

F. Specific Plan Signalization

Not Applicable.

G. General Plan Conformance

The proposed Rialto Annexation Island 4 Industrial project is currently located in unincorporated San Bernardino County. The proposed project would require a General Plan Amendment (GPA) and a Zone Change to allow for the parcels within Annexation Island 4 Industrial to be rezoned from Single Residential (RS-1) to Planned Industrial Development (I PID) upon annexation to the City of Rialto.

H. Regional Funding Mechanisms

The project is subject to the City's city-wide traffic impact fee program. To the extent that a mitigation measure is included in an existing fee program, the project's payment of impact fees can be used to offset the costs of implementing the mitigation measures. In addition, the project may be required construct a needed improvement in advance of the City's receipt of full funding, in which case the improvement may be subject to a reimbursement agreement, to allow the project to recoup costs from future development.

APPENDIX A

APPROVED SCOPING AGREEMENT

Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT ANALYSIS

This following form shall be used to acknowledge preliminary approval of the scope for the traffic impact analysis (TIA) of the following project. The TIA must follow the City of Rialto Traffic Impact Analysis – Report Guidelines and Requirements, adopted by the City Council on _____.

City of Rialto

Traffic Impact Analysis

Scoping Agreement

Case No. _____

Related Cases -

SP No. _____

EIR No. _____

GPA No. _____

ZC No. _____

Project Name: Rialto Annexation Island 4 Industrial Project – ***See Attachment 1 – Site Plan***

Project Address: West side of Maple Avenue, approximately 225 feet south of Bohnert Avenue, approximately 650 feet north of Casmalia Street

Project Description: 382,018 SF Warehouse

	Consultant	Developer
Name:	Kimley-Horn and Associates, Inc.	Bridge Development Partners, LLC
Address:	765 The City Drive # 200	1600 E Franklin Avenue, Suite D
	Orange, CA 92868	El Segundo, CA 90245
Telephone:	(714) 939-1030	(213) 805-6350
Fax:	NA	NA

1. Trip Generation Source: ITE *Trip Generation Manual*, 9th Edition (2012)

Existing GP Land Use Generally Vacant

Proposed Land Use Warehouse (ITE 150)

Current Zoning: Single Residential (RS-1)

Proposed Zoning: Planned Industrial Development (I PID)

Total Daily Project Trips: 2,280 (with PCE) – ***See Attachment 2 – Trip Generation Table***

	Current Trip Generation			Proposed Trip Generation (with PCE)		
	In	Out	Total	In	Out	Total
AM Trips	NA	NA	NA	152	39	191
PM Trips	NA	NA	NA	52	154	206

Internal Trip Allowance Yes No X (0 % Trip Discount)

Pass-By Trip Allowance Yes No X (0 % Trip Discount)

(For appropriate land uses, a pass-by trip discount may be allowed not to exceed 25%. Discount trips shall be indicated on a report figure for intersections and access locations.)

2. Trip Geographic Distribution: N % S % E % W %

(Detailed exhibits of trip distribution must be attached with Trucks as a separate exhibit)

See Attachment 3 – Truck and Passenger Car Distribution

3. Background Growth Traffic

Project Completion Year: 2020 Annual Background Growth Rate: 2 %

Other Phase Years NA

Other area projects to be considered: We will request the current Cumulative Projects list from the Planning Department.

(Contact Planning for Lists. Correlate projects to exhibit map and also indicate which projects have been included in study area forecasts for existing + background growth + project + cumulative)

Model/Forecast methodology: Existing plus Growth plus Cum Project plus Project to Opening Year; Horizon Year using SBTAM model forecasts.

4. Study Intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies received.)

1. Alder Avenue / Casmalia Street
2. Alder Avenue / SR-210 WB Ramps
3. Alder Avenue / SR-210 EB Ramps
4. Locust Avenue / Vineyard Avenue
5. Locust Avenue / Casmalia Street
6. Maple Avenue / Bohnert Avenue
7. Ayala Drive / Casmalia Street
8. Ayala Drive / SR-210 WB Ramps
9. Ayala Drive / SR-210 EB Ramps
10. Maple Avenue / Project Driveways

5. Study Roadway Segments: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies received.)

1. Casmalia Street – Alder Avenue to Locust Avenue
2. Casmalia Street – Locust Avenue to Linden Avenue
3. Locust Avenue – Vineyard Avenue to Casmalia Street

6. Other Jurisdictional Impacts

Is this project within any other Agency's Sphere of Influence or within one-mile of another jurisdictional boundary? __X__YES _____NO

If so, name of Jurisdiction: __The City of Fontana, San Bernardino County_____

7. Site Plan (please attach 11" x 17" legible copy) – see ***Attachment 1*** – Site Plan

8. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (to be filled out by the City of Rialto Public Works Department) (NOTE: If the traffic study states that "a traffic signal is warranted" (or "a traffic signal appears to be warranted," or similar statement) at an existing un-signalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection.)

_____

_____

9. Existing Conditions

Traffic count data must be new or within one year. Provide traffic count dates if using other than new counts.

Date of counts: New Counts, some counts from June, 2018

NOTE: Fees are due and must be submitted with, or prior to submittal of this form. The City will not process the Scoping Agreement prior to the receipt of the processing fee.

Fees Paid: _____ Date _____

Recommended:

Scoping Agreement Submittal date August 13, 2018

Scoping Agreement Resubmittal date _____

Kimley-Horn and Associates, Inc.
Applicant/Engineer Date

Land Use Concurrence:

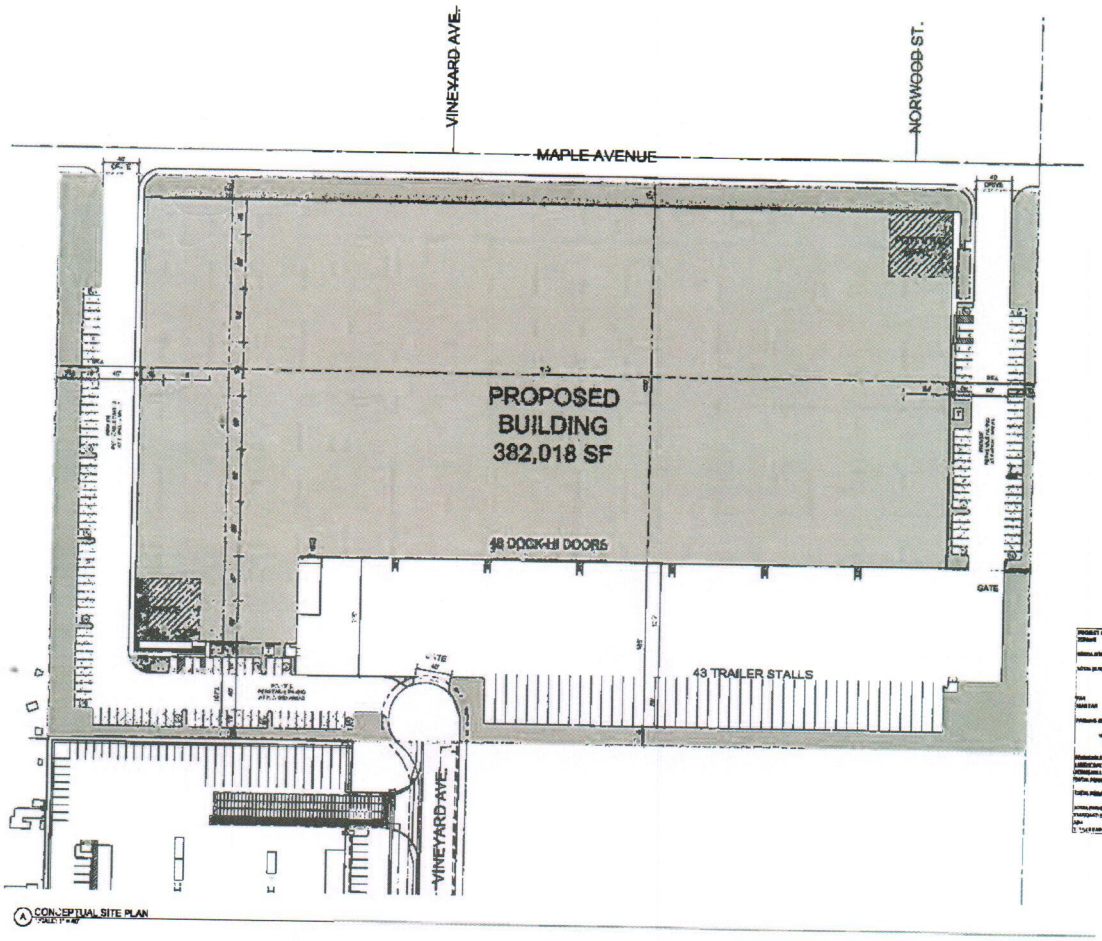
Development Services Department 8/17/18
Date

Approved by:

Public Works Department Gene R Klatt 8-15-18
Date

NOTE:

The Applicant/Engineer acknowledges that the Scoping Agreement is intended to assist in the preparation of any required TIA. It is preliminary in nature and the City does not have sufficient data to determine the ultimate conditions that may be imposed for the project. It does not provide nor limit the requirements imposed on the Project but is intended only to provide initial input into the parameters for review of the traffic generated by the Project and the initial areas to be considered and studied. Subsequent changes to scope of required analysis to be included in the TIA may be required by the Transportation Commission, Planning Commission, and/or the City Council upon Public Works Director/City Engineer review and approval.



A CONCEPTUAL SITE PLAN

PROJECT BRIDGE DEVELOPMENT
COUNTY OF SAN BERNARDINO, CA
SCHEME 14
SITE PLAN

BRIDGE

HERDMAN
ARCHITECTURE + DESIGN

CONCEPTUAL
SITE PLAN

Attachment 2 - Trip Generation Table

TABLE A
SUMMARY OF PROJECT TRIP GENERATION
RIALTO ANNEXATION ISLAND 4 INDUSTRIAL PROJECT

TRIP GENERATION RATES [1]

ITE Land Use	ITE Code	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Warehousing	150	KSF	3.560	0.237	0.063	0.300	0.080	0.240	0.320

PROJECT TRIP GENERATION

Project Land Use		Quantity	Unit	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Warehousing		382.018	KSF	1,360	91	24	115	31	92	123
Passenger Vehicles	60.00%			816	55	14	69	19	55	74
Trucks	40.00%			544	36	10	46	12	37	49

PROJECT TRIPS - PASSENGER CAR EQUIVALENTS (PCE)

Vehicle Type	Vehicle Mix [2]	Daily Vehicles	PCE Factor	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Passenger Vehicles	60.0%	816	1.0	816	55	14	69	19	55	74
2-Axle Trucks	0.8%	11	1.5	17	1	0	1	0	1	1
3-Axle Trucks	11.2%	152	2.0	304	20	5	25	7	21	28
4+ Axle Trucks	28.0%	381	3.0	1,143	76	20	96	26	77	103
Total Truck PCE Trips				1,464	97	25	122	33	99	132
Total Project PCE Trips				**2,280**	**152**	**39**	**191**	**52**	**154**	**206**

[1] Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition

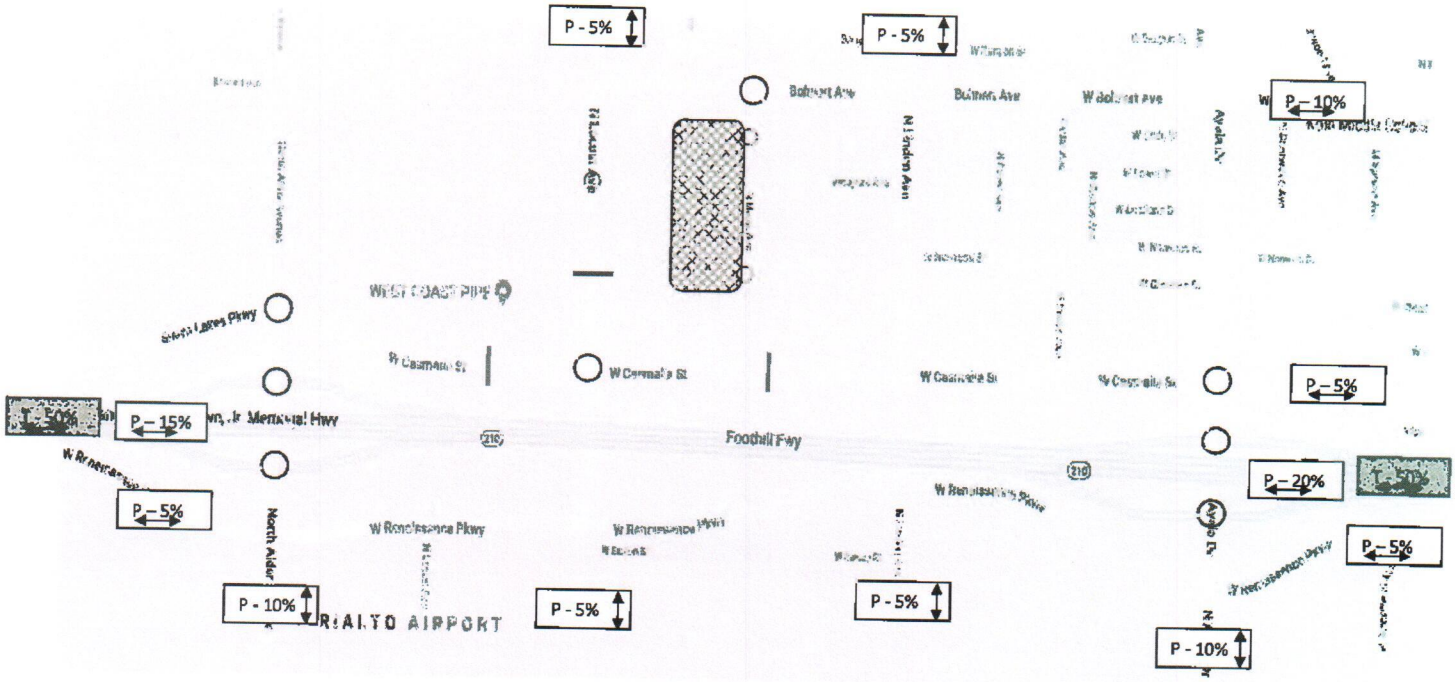
[2] Source: City of Rialto Traffic Impact Analysis Report Guidelines and Requirements, December, 2013

PCE = Passenger Car Equivalent

KSF = Thousand Square Feet

Attachment 3

RIALTO ANNEXATION ISLAND 4 INDUSTRIAL – TRIP DISTRIBUTION



PROJECT SITE

STUDY INTERSECTION

SITE ACCESS

STUDY ROADWAY SEGMENT

P - XX% **PASSENGER CAR DISTRIBUTION**

T - XX% **TRUCK DISTRIBUTION**

8/13/2018 2:08 PM

Kimley-Horn and Associates, Inc.

APPENDIX **B**

TRAFFIC COUNT DATA SHEETS

Prepared by National Data & Surveying Services

N Alder Ave & W Casmalia St

Peak Hour Turning Movement Count

ID: 18-06107-001
City: Rialto

Day: Wednesday
Date: 08/29/2018

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	NONE

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	NONE

N Alder Ave — SOUTHBOUND

AM	8	115	11	0	178	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

W Casmalia St — EASTBOUND

AM	NOON	PM		
275	0	0		
0	0	0	0	
13	0	0	1	
85	0	0	1.5	
50	0	0	0.5	
AM	NOON	PM		

WESTBOUND — W Casmalia St

0.5	0	0	17	
1.5	0	0	181	
2	0	0	305	
0	0	0	0	
	0	0	280	
	PM	NOON	AM	

N Alder Ave — NORTHBOUND

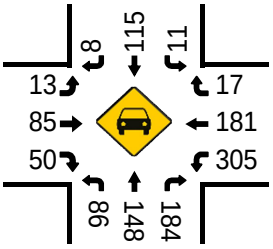
PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	470	0	86	148	184	AM

CONTROL

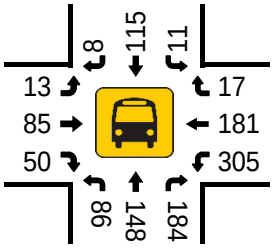
Signalized

TEV	1203	NOON	PM
	AM		
PHF	0.95		

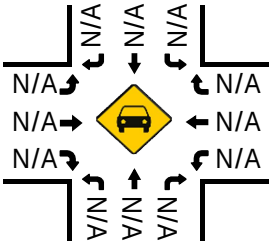
Total Vehicles (AM)



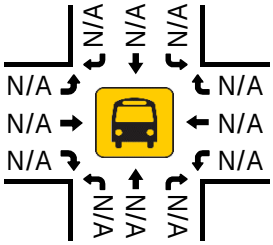
Total Vehicles (AM)



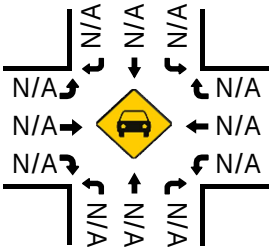
Total Vehicles (NOON)



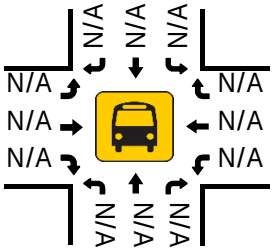
Total Vehicles (NOON)



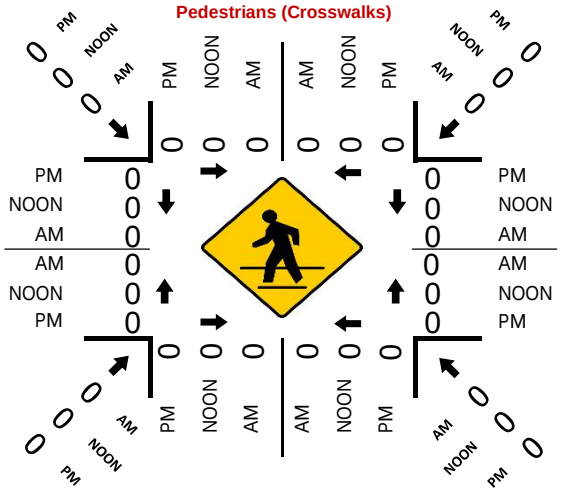
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: N Alder Ave & W Casmalia St
City: Rialto
Control: Signalized

Project ID: 18-06107-001
Date: 8/29/2018

Total

NS/EW Streets:	N Alder Ave				N Alder Ave				W Casmalia St				W Casmalia St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1	1.5	0.5	0	2	1.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	19	31	57	0	2	21	2	0	3	18	9	0	102	48	4	0	316
7:15 AM	27	33	37	0	4	29	1	0	0	23	7	0	87	62	7	0	317
7:30 AM	27	43	41	0	4	36	1	0	5	22	21	0	62	38	2	0	302
7:45 AM	13	41	49	0	1	29	4	0	5	22	13	0	54	33	4	0	268
8:00 AM	12	43	41	0	1	36	3	0	5	10	11	0	56	16	4	0	238
8:15 AM	13	30	48	0	5	34	2	0	3	14	11	0	58	24	3	0	245
8:30 AM	5	29	37	0	0	41	2	0	2	19	10	0	45	19	6	0	215
8:45 AM	8	39	38	0	1	29	5	0	2	18	14	0	43	27	6	0	230
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	124	289	348	0	18	255	20	0	25	146	96	0	507	267	36	0	2131
APPROACH %'s :	16.29%	37.98%	45.73%	0.00%	6.14%	87.03%	6.83%	0.00%	9.36%	54.68%	35.96%	0.00%	62.59%	32.96%	4.44%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	86	148	184	0	11	115	8	0	13	85	50	0	305	181	17	0	1203
PEAK HR FACTOR :	0.796	0.860	0.807	0.000	0.688	0.799	0.500	0.000	0.650	0.924	0.595	0.000	0.748	0.730	0.607	0.000	0.949
	0.941				0.817				0.771				0.806				

Prepared by National Data & Surveying Services

Alder Ave & Casmalia St

Peak Hour Turning Movement Count

ID: 18-06104-001
City: Rialto

Day: Thursday
Date: 08/16/2018

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Alder Ave — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	21	127	22	0	124	PM
	1	2	1	0		

Casmalia St — EASTBOUND

AM	NOON	PM	
0	0	275	
0	0	0	0
0	0	9	1
0	0	201	1.5
0	0	120	0.5
AM	NOON	PM	

CONTROL

Signalized

TEV	1442 AM	0 NOON	1397 PM
PHF	0.92		0.98

Casmalia St — WESTBOUND

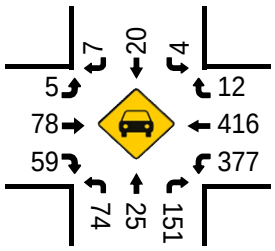
PM	NOON	AM	
20	0	0	0.5
171	0	0	1.5
279	0	0	2
0	0	0	0
472	0	0	
PM	NOON	AM	

0 1 2 0

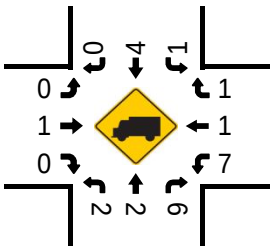
Alder Ave — NORTHBOUND

PM	526	0	83	95	249	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

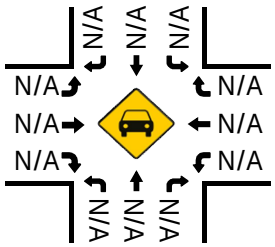
Cars (AM)



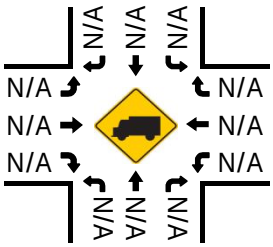
2axle (AM)



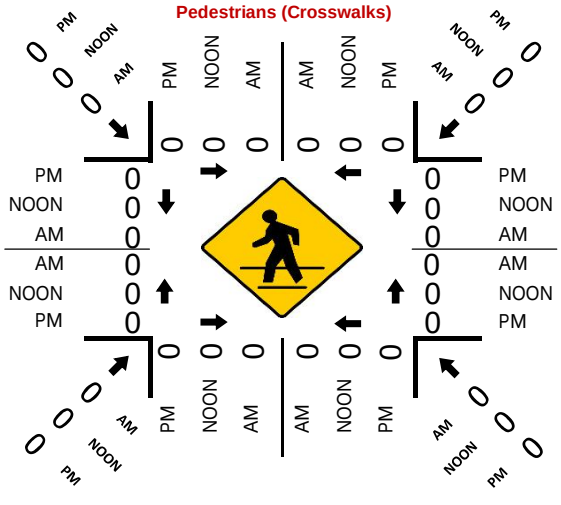
Cars (NOON)



2axle (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Alder Ave & Casmalia St
City: Rialto
Control: Signalized

Project ID: 18-06104-001
Date: 8/16/2018

Total

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1	1.5	0.5	0	2	1.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	22	26	76	0	3	36	10	0	1	55	27	0	63	36	3	0	358
4:15 PM	11	34	67	0	7	24	6	0	4	58	32	0	55	33	5	0	336
4:30 PM	18	21	50	0	7	37	1	0	3	48	34	0	82	51	4	0	356
4:45 PM	32	14	56	0	5	30	4	0	1	40	27	0	79	51	8	0	347
5:00 PM	28	17	25	0	7	35	8	0	2	56	34	0	67	49	2	0	330
5:15 PM	32	6	63	0	6	25	5	0	0	48	24	0	53	31	1	0	294
5:30 PM	25	7	44	0	3	23	3	0	0	52	34	0	48	44	0	0	283
5:45 PM	30	4	54	0	2	12	3	0	1	53	19	0	61	48	1	0	288
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	198	129	435	0	40	222	40	0	12	410	231	0	508	343	24	0	2592
APPROACH %'s :	25.98%	16.93%	57.09%	0.00%	13.25%	73.51%	13.25%	0.00%	1.84%	62.79%	35.38%	0.00%	58.06%	39.20%	2.74%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	83	95	249	0	22	127	21	0	9	201	120	0	279	171	20	0	1397
PEAK HR FACTOR :	0.648	0.699	0.819	0.000	0.786	0.858	0.525	0.000	0.563	0.866	0.882	0.000	0.851	0.838	0.625	0.000	0.976
	0.861				0.867				0.878				0.851				

Prepared by National Data & Surveying Services

N Alder Ave & SR-210 WB Ramps

Peak Hour Turning Movement Count

ID: 18-06107-002
City: Rialto

Day: Wednesday
Date: 08/29/2018

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	NONE

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	NONE

N Alder Ave — SOUTHBOUND

AM	314	163	0	0	422	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

SR-210 WB Ramps — EASTBOUND

AM	NOON	PM	
592	0	0	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

WESTBOUND — SR-210 WB Ramps

PM	NOON	AM	
0	0	128	0.5
0	0	10	0.5
0	0	317	1
0	0	0	0
PM	NOON	AM	
0	0	0	

N Alder Ave — NORTHBOUND

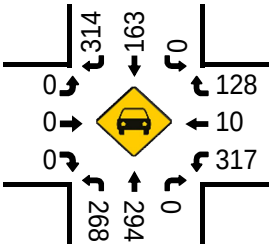
PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	480	0	268	294	0	AM

CONTROL: Signalized

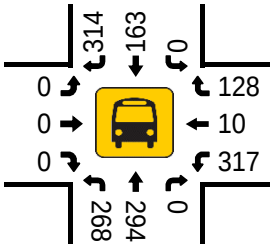
TEV	1494	NOON	PM
	AM		
PHF	0.95		

Turning movements at the intersection: 0 (EB left), 2 (SB through), 0 (SB right), 0 (SB left); 0.5 (WB left), 0.5 (WB through), 1 (WB right), 0 (WB U-turn); 0 (NB U-turn), 1 (NB left), 2 (NB through), 0 (NB right).

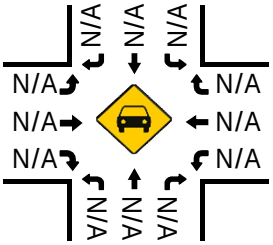
Total Vehicles (AM)



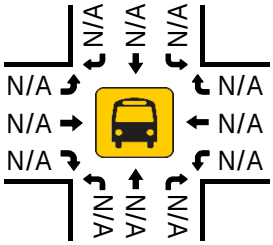
Total Vehicles (AM)



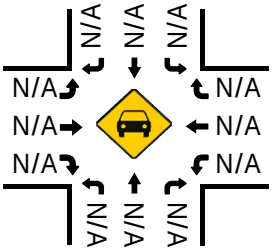
Total Vehicles (NOON)



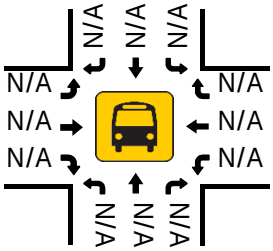
Total Vehicles (NOON)



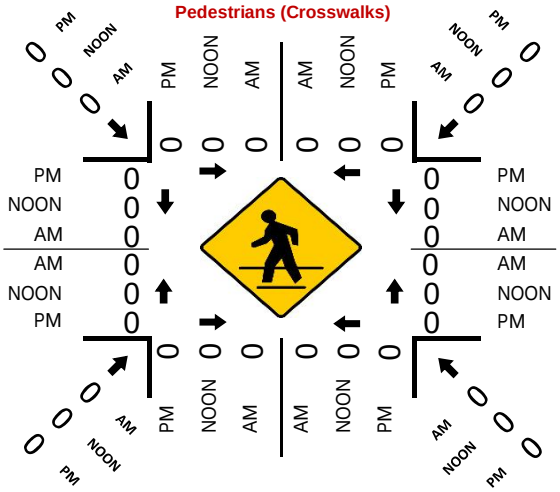
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: N Alder Ave & SR-210 WB Ramps
City: Rialto
Control: Signalized

Project ID: 18-06107-002
Date: 8/29/2018

Total

NS/EW Streets:	N Alder Ave				N Alder Ave				SR-210 WB Ramps				SR-210 WB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	89	89	0	0	0	32	103	0	0	0	0	0	65	0	15	0	393
7:15 AM	80	70	0	0	0	31	93	0	0	0	0	0	59	0	30	0	363
7:30 AM	51	64	0	0	0	59	61	0	0	0	0	0	99	8	44	0	386
7:45 AM	48	71	0	0	0	41	57	0	0	0	0	0	94	2	39	0	352
8:00 AM	55	62	0	0	0	39	53	0	0	0	0	0	71	0	32	0	312
8:15 AM	43	65	0	0	0	46	67	0	0	0	0	0	39	1	31	0	292
8:30 AM	59	43	0	0	0	40	54	0	0	0	0	0	40	1	27	0	264
8:45 AM	65	48	0	0	0	34	50	0	0	0	0	0	54	2	36	0	289
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	490	512	0	0	0	322	538	0	0	0	0	0	521	14	254	0	2651
APPROACH %'s :	48.90%	51.10%	0.00%	0.00%	0.00%	37.44%	62.56%	0.00%					66.03%	1.77%	32.19%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	268	294	0	0	0	163	314	0	0	0	0	0	317	10	128	0	1494
PEAK HR FACTOR :	0.753	0.826	0.000	0.000	0.000	0.691	0.762	0.000	0.000	0.000	0.000	0.000	0.801	0.313	0.727	0.000	0.950
	0.789				0.883								0.753				

Prepared by National Data & Surveying Services

Alder Ave & SR-210 WB Ramps

Peak Hour Turning Movement Count

ID: 18-06104-002
City: Rialto

Day: Thursday
Date: 08/16/2018

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Alder Ave — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	286	244	0	0	422	PM

SR-210 WB Ramps — EASTBOUND

AM	NOON	PM		
0	0	575	⇦	
0	0	0	↶	0
0	0	0	↱	0
0	0	0	→	0
0	0	0	↷	0
AM	NOON	PM		

CONTROL

Signalized

TEV	1415 AM	0 NOON	1457 PM
PHF	0.82		0.98

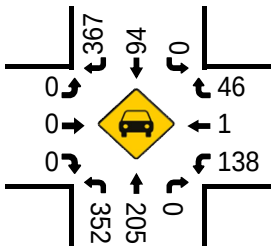
WESTBOUND — SR-210 WB Ramps

0.5	↰	124	0	0
0.5	←	2	0	0
1	↰	216	0	0
0	↶	0	0	0
	⇨	0	0	0
PM	NOON	AM		

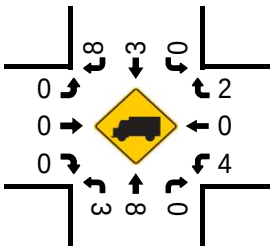
Alder Ave — NORTHBOUND

PM	460	0	287	298	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

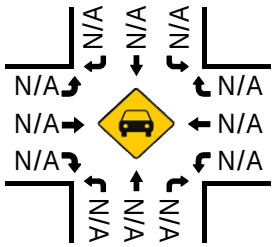
Cars (AM)



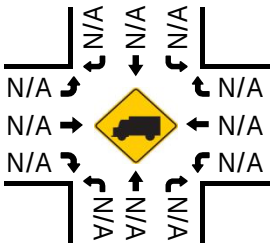
2axle (AM)



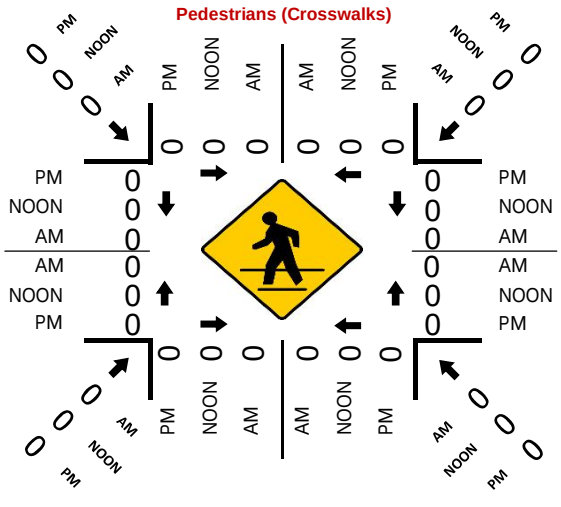
Cars (NOON)



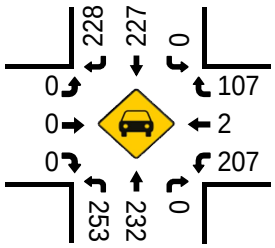
2axle (NOON)



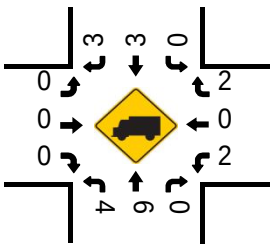
Pedestrians (Crosswalks)



Cars (PM)



2axle (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Alder Ave & SR-210 WB Ramps
City: Rialto
Control: Signalized

Project ID: 18-06104-002
Date: 8/16/2018

Total

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	74	92	0	0	0	58	64	0	0	0	0	0	43	1	26	0	358
4:15 PM	76	74	0	0	0	52	64	0	0	0	0	0	63	1	40	0	370
4:30 PM	72	69	0	0	0	69	85	0	0	0	0	0	54	0	24	0	373
4:45 PM	65	63	0	0	0	65	73	0	0	0	0	0	56	0	34	0	356
5:00 PM	64	53	0	0	0	57	74	0	0	0	0	0	53	0	21	0	322
5:15 PM	92	80	0	0	0	54	55	0	0	0	0	0	61	0	19	0	361
5:30 PM	71	58	0	0	0	49	51	0	0	0	0	0	62	3	17	0	311
5:45 PM	67	61	0	0	0	38	59	0	0	0	0	0	72	4	26	0	327
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	581	550	0	0	0	442	525	0	0	0	0	0	464	9	207	0	2778
APPROACH %'s :	51.37%	48.63%	0.00%	0.00%	0.00%	45.71%	54.29%	0.00%					68.24%	1.32%	30.44%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	287	298	0	0	0	244	286	0	0	0	0	0	216	2	124	0	1457
PEAK HR FACTOR :	0.944	0.810	0.000	0.000	0.000	0.884	0.841	0.000	0.000	0.000	0.000	0.000	0.857	0.500	0.775	0.000	0.977
	0.881				0.860								0.822				

Prepared by National Data & Surveying Services

N Alder Ave & SR-210 EB Ramps

Peak Hour Turning Movement Count

ID: 18-06107-003
City: Rialto

Day: Wednesday
Date: 08/29/2018

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	NONE

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	NONE

N Alder Ave — SOUTHBOUND

AM	0	401	78	0	559	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

SR-210 EB Ramps — EASTBOUND

AM	NOON	PM		
0	0	0		
0	0	0	0	
204	0	0	0.5	
2	0	0	0.5	
400	0	0	1	
AM	NOON	PM		

SR-210 EB Ramps — WESTBOUND

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	316	
PM	NOON	AM	

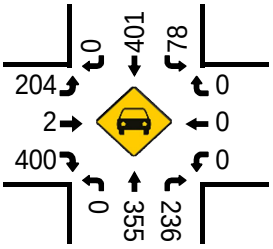
CONTROL: Signalized

TEV	1676	NOON	PM
	AM		
PHF	0.98		

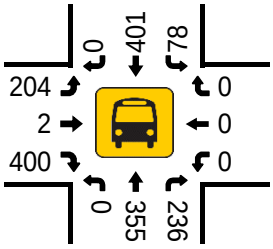
N Alder Ave — NORTHBOUND

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	801	0	0	355	236	AM

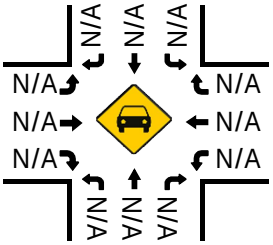
Total Vehicles (AM)



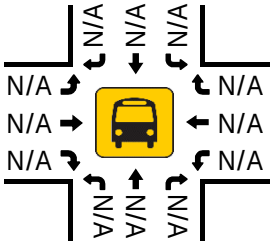
Total Vehicles (AM)



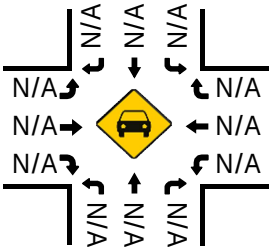
Total Vehicles (NOON)



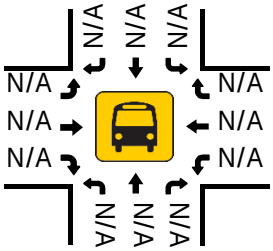
Total Vehicles (NOON)



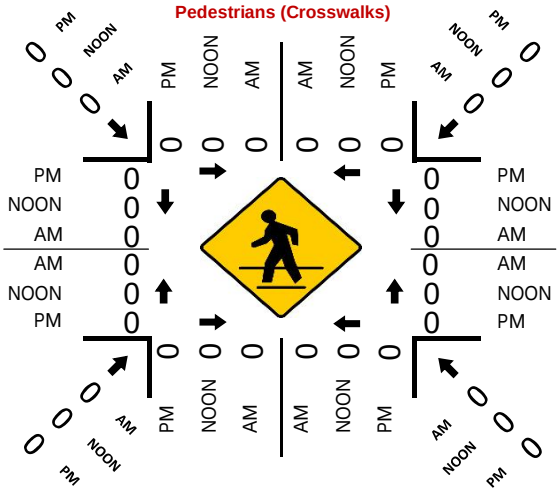
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0

National Data & Surveying Services

Intersection Turning Movement Count

Location: N Alder Ave & SR-210 EB Ramps
City: Rialto
Control: Signalized

Project ID: 18-06107-003
Date: 8/29/2018

Total

NS/EW Streets:	N Alder Ave				N Alder Ave				SR-210 EB Ramps				SR-210 EB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0.5	0.5	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	113	43	0	14	92	0	0	52	0	97	0	0	0	0	0	411
7:15 AM	0	109	63	0	14	78	0	0	54	1	96	0	0	0	0	0	415
7:30 AM	0	62	70	0	24	123	0	0	41	0	106	0	0	0	0	0	426
7:45 AM	0	71	60	0	26	108	0	0	57	1	101	0	0	0	0	0	424
8:00 AM	0	64	43	0	29	91	0	0	45	0	77	0	0	0	0	0	349
8:15 AM	0	74	42	0	26	52	0	0	43	0	80	0	0	0	0	0	317
8:30 AM	0	74	48	0	30	50	0	0	30	0	46	0	0	0	0	0	278
8:45 AM	0	84	51	0	24	72	0	0	23	3	60	0	0	0	0	0	317
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	651	420	0	187	666	0	0	345	5	663	0	0	0	0	0	2937
APPROACH %'s :	0.00%	60.78%	39.22%	0.00%	21.92%	78.08%	0.00%	0.00%	34.06%	0.49%	65.45%	0.00%					
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	355	236	0	78	401	0	0	204	2	400	0	0	0	0	0	1676
PEAK HR FACTOR :	0.000	0.785	0.843	0.000	0.750	0.815	0.000	0.000	0.895	0.500	0.943	0.000	0.000	0.000	0.000	0.000	0.984
		0.859				0.815				0.953							

Prepared by National Data & Surveying Services

Alder Ave & SR-210 EB Ramps

Peak Hour Turning Movement Count

ID: 18-06104-003
City: Rialto

Day: Thursday
Date: 08/16/2018

PEAK HOURS

AM: 07:00 AM - 08:00 AM
NOON: NONE
PM: 04:00 PM - 05:00 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

CONTROL: Signalized

	AM	NOON	PM
TEV	1509	0	1622
PHF	0.85		0.91

Alder Ave — SOUTHBOUND

	Left	Thru	Right	U-Turn	
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	329	134	0	PM

Approach: AM 0 | NOON 0 | PM 582

SR-210 EB Ramps — EASTBOUND

	AM	NOON	PM
Left	0	0	0
Thru	0	0	0
Right	0	0	182
Slight Right	0	0	0
U-Turn	0	0	320

Approach: AM 0 | NOON 0 | PM 649

SR-210 EB Ramps — WESTBOUND

	AM	NOON	PM
Left	0	0	0
Thru	0	0	0
Right	0	0	0
Slight Right	0	0	0
U-Turn	0	0	391

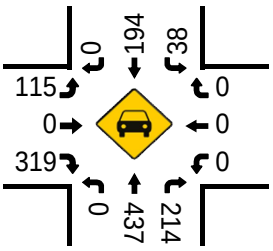
Approach: AM 0 | NOON 0 | PM 257

Alder Ave — NORTHBOUND

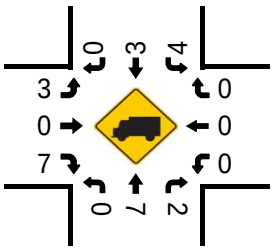
	Left	Thru	Right	U-Turn	
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	400	257	PM

Approach: AM 0 | NOON 0 | PM 649

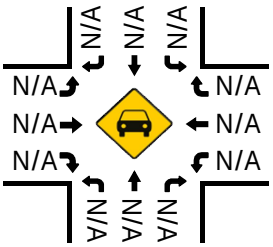
Cars (AM)



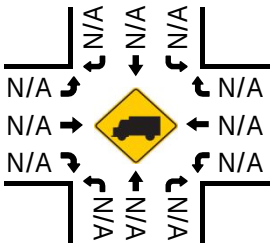
2axle (AM)



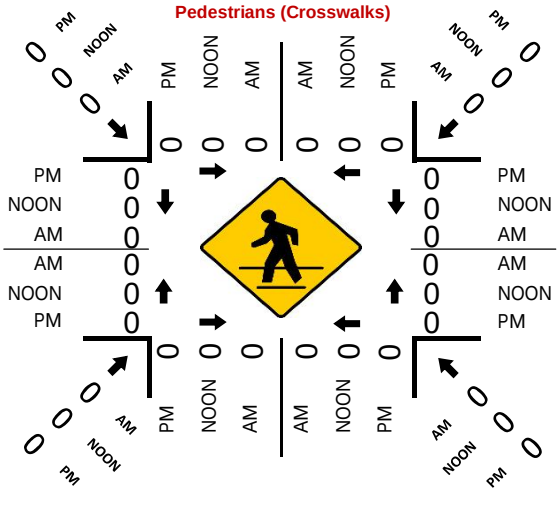
Cars (NOON)



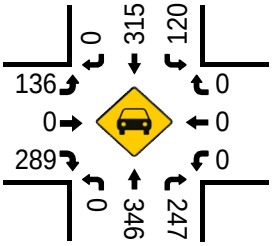
2axle (NOON)



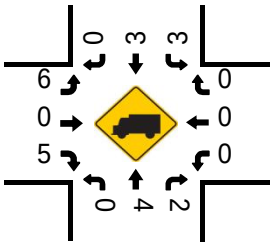
Pedestrians (Crosswalks)



Cars (PM)



2axle (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Alder Ave & SR-210 EB Ramps
City: Rialto
Control: Signalized

Project ID: 18-06104-003
Date: 8/16/2018

Total

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0.5	0.5	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	109	80	0	41	72	0	0	53	0	89	0	0	0	0	0	444
4:15 PM	0	105	55	0	22	87	0	0	49	0	75	0	0	0	0	0	393
4:30 PM	0	103	69	0	34	86	0	0	42	0	72	0	0	0	0	0	406
4:45 PM	0	83	53	0	37	84	0	0	38	0	84	0	0	0	0	0	379
5:00 PM	0	95	68	0	32	72	0	0	34	1	72	0	0	0	0	0	374
5:15 PM	0	108	62	0	33	88	0	0	52	0	79	0	0	0	0	0	422
5:30 PM	0	93	76	0	24	86	0	0	38	1	79	0	0	0	0	0	397
5:45 PM	0	98	66	0	23	85	0	0	33	0	86	0	0	0	0	0	391
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	794	529	0	246	660	0	0	339	2	636	0	0	0	0	0	3206
APPROACH %'s :	0.00%	60.02%	39.98%	0.00%	27.15%	72.85%	0.00%	0.00%	34.70%	0.20%	65.10%	0.00%					
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	400	257	0	134	329	0	0	182	0	320	0	0	0	0	0	1622
PEAK HR FACTOR :	0.000	0.917	0.803	0.000	0.817	0.945	0.000	0.000	0.858	0.000	0.899	0.000	0.000	0.000	0.000	0.000	0.913
		0.869				0.957				0.884							

Prepared by National Data & Surveying Services

N Locust Ave & W Casmalia St

Peak Hour Turning Movement Count

ID: 18-06107-004
City: Rialto

Day: Wednesday
Date: 08/29/2018

N Locust Ave — SOUTHBOUND

PEAK HOURS								COUNT PERIODS
07:00 AM - 08:00 AM	AM	229	220	46	0	378	AM	07:00 AM - 09:00 AM
NONE	NOON	0	0	0	0	0	NOON	NONE
NONE	PM	0	0	0	0	0	PM	NONE

W Casmalia St — EASTBOUND

AM	NOON	PM		
448	0	0	⇦	
0	0	0	↶	0
154	0	0	↱	1
47	0	0	→	1
38	0	0	↴	1
AM	NOON	PM		

W Casmalia St — WESTBOUND

PM	NOON	AM		
0	0	83	↷	0
0	0	145	←	1
0	0	19	↰	1
0	0	0	↩	0
0	0	100	⇨	
PM	NOON	AM		

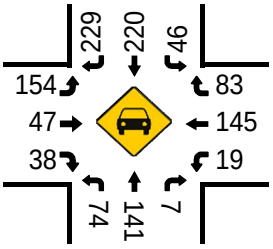
N Locust Ave — NORTHBOUND

PM	0	0	0	0	0	PM	
NOON	0	0	0	0	0	NOON	
AM	277	0	74	141	7	AM	⇩
		0	1	2	0		

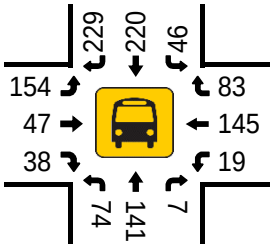
CONTROL: Signalized

		AM	NOON	PM
TEV	1203			
PHF	0.89			

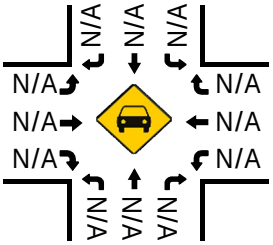
Total Vehicles (AM)



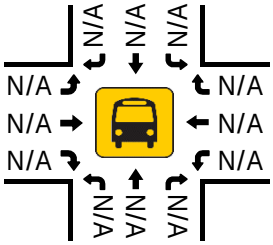
Total Vehicles (AM)



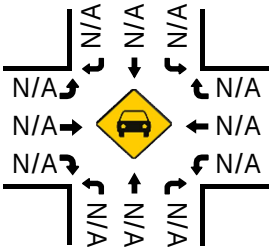
Total Vehicles (NOON)



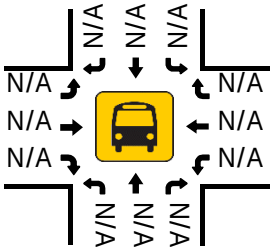
Total Vehicles (NOON)



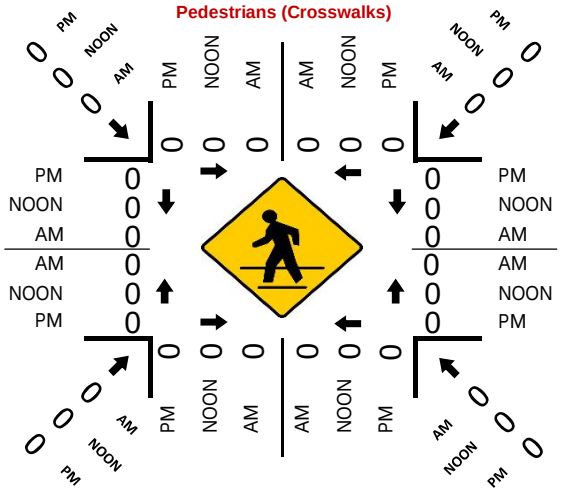
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: N Locust Ave & W Casmalia St
City: Rialto
Control: Signalized

Project ID: 18-06107-004
Date: 8/29/2018

Total

NS/EW Streets:	N Locust Ave				N Locust Ave				W Casmalia St				W Casmalia St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	1	1	0	1	1	1	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	23	37	2	0	10	54	71	0	42	13	8	0	10	45	23	0	338
7:15 AM	18	36	3	0	7	62	69	0	39	7	11	0	5	59	22	0	338
7:30 AM	13	31	1	0	14	48	49	0	35	14	9	0	3	28	17	0	262
7:45 AM	20	37	1	0	15	56	40	0	38	13	10	0	1	13	21	0	265
8:00 AM	4	40	3	0	9	52	49	0	27	15	2	0	6	17	22	0	246
8:15 AM	9	22	0	0	17	54	37	0	25	15	3	0	1	14	17	0	214
8:30 AM	8	13	2	0	12	29	31	0	26	14	4	0	2	23	8	0	172
8:45 AM	3	12	3	0	5	19	31	0	21	19	3	0	3	27	5	0	151
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	98	228	15	0	89	374	377	0	253	110	50	0	31	226	135	0	1986
APPROACH %'s :	28.74%	66.86%	4.40%	0.00%	10.60%	44.52%	44.88%	0.00%	61.26%	26.63%	12.11%	0.00%	7.91%	57.65%	34.44%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	74	141	7	0	46	220	229	0	154	47	38	0	19	145	83	0	1203
PEAK HR FACTOR :	0.804	0.953	0.583	0.000	0.767	0.887	0.806	0.000	0.917	0.839	0.864	0.000	0.475	0.614	0.902	0.000	0.890
	0.895				0.897				0.948				0.718				

Prepared by National Data & Surveying Services

Locust Ave & Casmalia St

Peak Hour Turning Movement Count

ID: 18-06104-004
City: Rialto

Day: Thursday
Date: 08/16/2018

PEAK HOURS

AM: 07:00 AM - 08:00 AM
NOON: NONE
PM: 04:00 PM - 05:00 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Locust Ave — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	197	213	109	0	404	PM

Casmalia St — EASTBOUND

AM	NOON	PM	
0	0	0	0
0	0	170	1
0	0	177	1
0	0	50	1
0	0	386	
AM	NOON	PM	

Casmalia St — WESTBOUND

PM	NOON	AM	
68	0	0	0
142	0	0	1
11	0	0	1
0	0	0	0
309	0	0	
PM	NOON	AM	

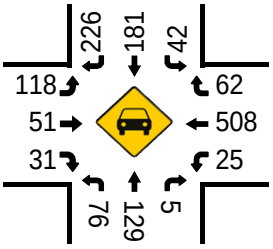
Locust Ave — NORTHBOUND

PM	274	0	47	166	23	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM
		0	1	2	0	

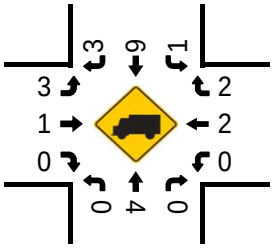
CONTROL: Signalized

TEV	0 AM	0 NOON	1373 PM
PHF	0.88		0.87

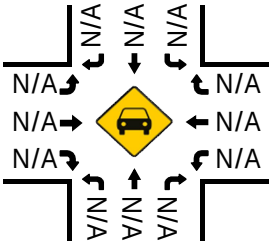
Cars (AM)



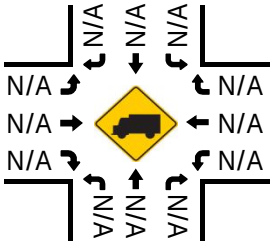
2axle (AM)



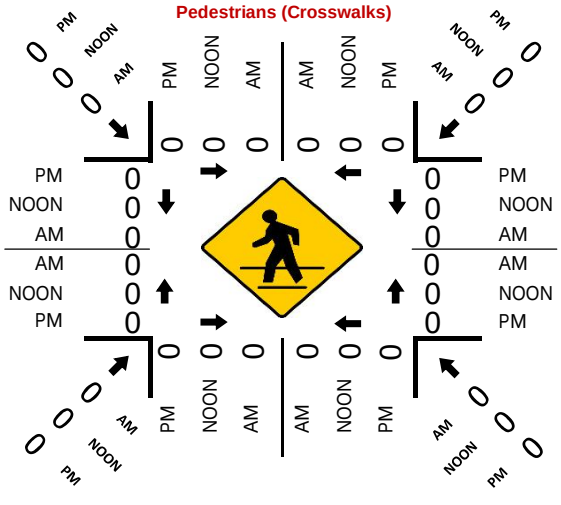
Cars (NOON)



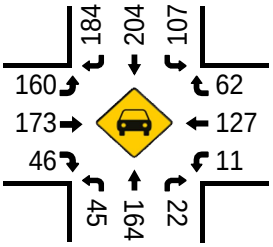
2axle (NOON)



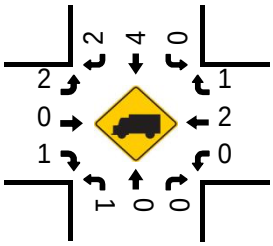
Pedestrians (Crosswalks)



Cars (PM)



2axle (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Locust Ave & Casmalia St
City: Rialto
Control: Signalized

Project ID: 18-06104-004
Date: 8/16/2018

Total

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	1	1	0	1	1	1	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	9	57	3	0	25	44	31	0	58	39	12	0	3	40	29	0	350
4:15 PM	17	40	7	0	16	35	34	0	39	50	6	0	4	39	20	0	307
4:30 PM	13	41	6	0	44	79	68	0	40	42	18	0	2	31	12	0	396
4:45 PM	8	28	7	0	24	55	64	0	33	46	14	0	2	32	7	0	320
5:00 PM	10	31	2	0	23	33	63	0	23	50	14	0	0	29	7	0	285
5:15 PM	12	32	3	0	10	34	29	0	43	37	12	0	0	28	11	0	251
5:30 PM	14	31	4	0	22	30	39	0	36	58	7	0	2	42	8	0	293
5:45 PM	7	29	3	0	10	37	39	0	43	46	9	0	2	36	9	0	270
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	90	289	35	0	174	347	367	0	315	368	92	0	15	277	103	0	2472
APPROACH %'s :	21.74%	69.81%	8.45%	0.00%	19.59%	39.08%	41.33%	0.00%	40.65%	47.48%	11.87%	0.00%	3.80%	70.13%	26.08%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	47	166	23	0	109	213	197	0	170	177	50	0	11	142	68	0	1373
PEAK HR FACTOR :	0.691	0.728	0.821	0.000	0.619	0.674	0.724	0.000	0.733	0.885	0.694	0.000	0.688	0.888	0.586	0.000	0.867
	0.855				0.679				0.911				0.767				

Prepared by National Data & Surveying Services

Maple Ave & Bohnert Ave

Peak Hour Turning Movement Count

ID: 18-06104-005
City: Rialto

Day: Thursday
Date: 08/16/2018

PEAK HOURS	
AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS	
AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Maple Ave — SOUTHBOUND

AM	73	1	58	0	69	AM
NOON	0	0	0	0	0	NOON
PM	35	1	18	0	58	PM

Bohnert Ave — EASTBOUND

AM	NOON	PM		
228	0	80	⇦	
0	0	0	↶	0
42	0	37	↱	0
45	0	49	→	1
0	0	1	↴	0
AM	NOON	PM		

WESTBOUND — Bohnert Ave

PM	NOON	AM		
21	0	26	↰	0
44	0	153	←	1
3	0	1	↰	0
1	0	0	↰	0
69	0	108	⇨	
PM	NOON	AM		

NORTHBOUND — Maple Ave

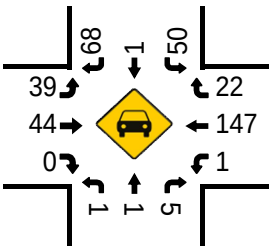
PM	5	0	1	0	1	PM
NOON	0	0	0	0	0	NOON
AM	2	0	2	1	5	AM

↶	←	↑	↱
0	0	1	0

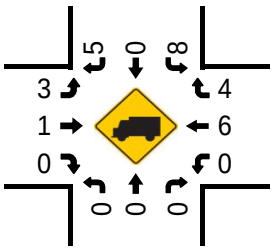
CONTROL: 4 Way Stop

TEV	407 AM	0 NOON	212 PM
PHF	0.57		0.87

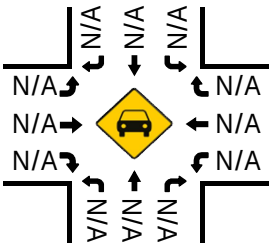
Cars (AM)



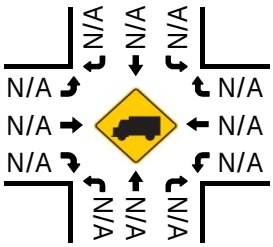
2axle (AM)



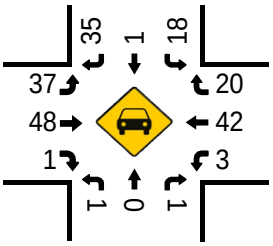
Cars (NOON)



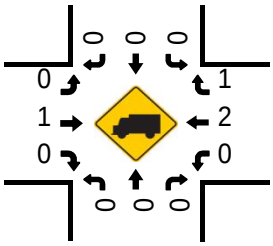
2axle (NOON)



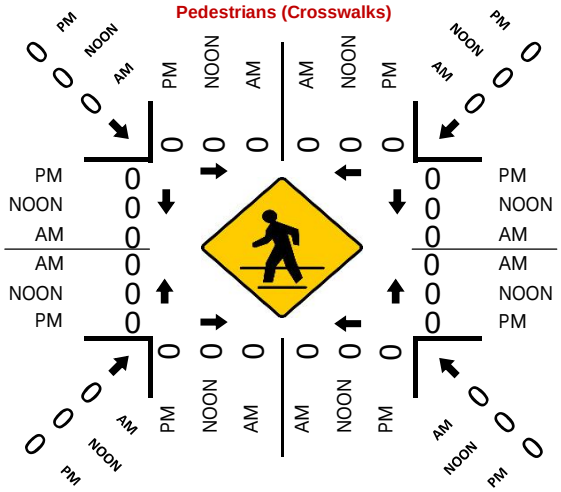
Cars (PM)



2axle (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Maple Ave & Bohnert Ave
City: Rialto
Control: 4 Way Stop

Project ID: 18-06104-005
Date: 8/16/2018

Total

NS/EW Streets:	Maple Ave				Maple Ave				Bohnert Ave				Bohnert Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	0	1	0	22	0	28	0	25	18	0	0	0	46	13	0	155
7:15 AM	0	0	2	0	23	1	31	0	17	13	0	0	1	79	10	0	177
7:30 AM	0	0	1	0	7	0	5	0	0	6	0	0	0	14	2	0	35
7:45 AM	0	1	1	0	6	0	9	0	0	8	0	0	0	14	1	0	40
8:00 AM	0	1	0	0	8	0	9	0	18	11	1	0	0	14	3	0	65
8:15 AM	1	0	0	0	8	0	13	0	6	13	2	0	0	6	2	0	51
8:30 AM	0	0	0	0	3	0	6	0	6	6	1	0	0	4	3	0	29
8:45 AM	0	0	0	0	3	0	12	0	3	6	0	0	0	2	1	0	27
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	2	5	0	80	1	113	0	75	81	4	0	1	179	35	0	579
APPROACH %'s :	30.00%	20.00%	50.00%	0.00%	41.24%	0.52%	58.25%	0.00%	46.88%	50.63%	2.50%	0.00%	0.47%	83.26%	16.28%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	2	1	5	0	58	1	73	0	42	45	0	0	1	153	26	0	407
PEAK HR FACTOR :	0.250	0.250	0.625	0.000	0.630	0.250	0.589	0.000	0.420	0.625	0.000	0.000	0.250	0.484	0.500	0.000	0.575
	0.667				0.600				0.506				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	6	0	12	0	11	12	0	0	1	10	8	1	61
4:15 PM	0	0	0	0	3	0	9	0	15	15	1	0	0	10	2	0	55
4:30 PM	0	0	1	0	2	0	5	0	4	12	0	0	2	15	7	0	48
4:45 PM	1	0	0	0	7	1	9	0	7	10	0	0	0	9	4	0	48
5:00 PM	0	0	0	0	1	0	0	0	5	8	0	0	0	7	3	0	24
5:15 PM	0	0	0	0	4	0	9	0	10	11	1	0	1	10	7	0	53
5:30 PM	0	0	2	0	9	0	4	0	4	4	0	0	0	7	11	0	41
5:45 PM	0	0	0	0	4	0	10	0	7	7	0	0	0	14	8	1	51
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	3	0	36	1	58	0	63	79	2	0	4	82	50	2	381
APPROACH %'s :	25.00%	0.00%	75.00%	0.00%	37.89%	1.05%	61.05%	0.00%	43.75%	54.86%	1.39%	0.00%	2.90%	59.42%	36.23%	1.45%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	1	0	1	0	18	1	35	0	37	49	1	0	3	44	21	1	212
PEAK HR FACTOR :	0.250	0.000	0.250	0.000	0.643	0.250	0.729	0.000	0.617	0.817	0.250	0.000	0.375	0.733	0.656	0.250	0.869
	0.500				0.750				0.702				0.719				

Prepared by National Data & Surveying Services

Ayala Dr & W Casmalia St

Peak Hour Turning Movement Count

ID: 18-06107-006
City: Rialto

Day: Wednesday
Date: 08/29/2018

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	NONE

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	NONE

Ayala Dr — SOUTHBOUND

AM	20	476	17	0	357	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

W Casmalia St — EASTBOUND

AM	NOON	PM		
226	0	0		
0	0	0	0	
11	0	0	1	
44	0	0	1	
189	0	0	1	
AM	NOON	PM		

W Casmalia St — WESTBOUND

PM	NOON	AM	
0	0	20	1
0	0	65	1
0	0	156	1
0	0	0	0
0	0	144	
PM	NOON	AM	

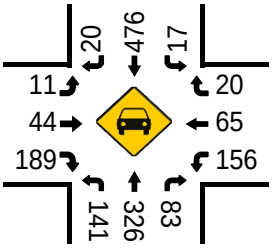
Ayala Dr — NORTHBOUND

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	822	1	141	326	83	AM

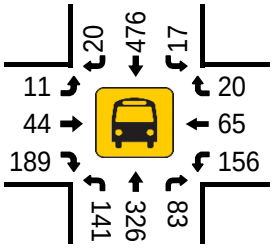
CONTROL: Signalized

TEV	1549	NOON	PM
PHF	0.81		

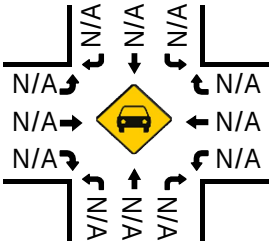
Total Vehicles (AM)



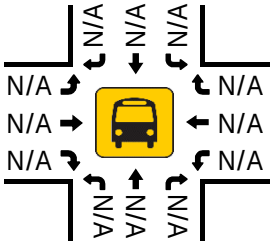
Total Vehicles (AM)



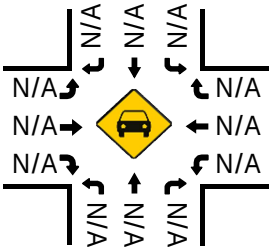
Total Vehicles (NOON)



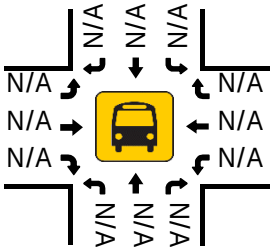
Total Vehicles (NOON)



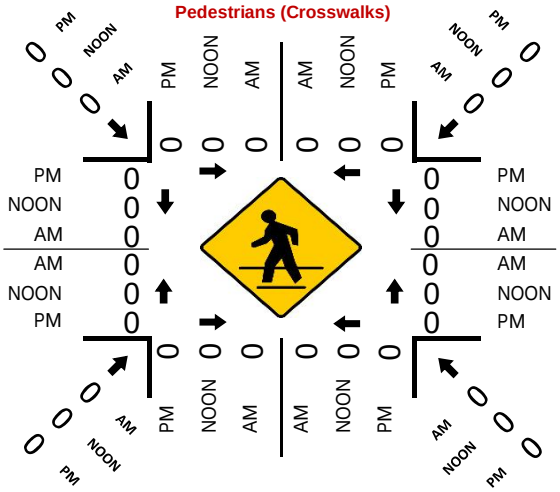
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Ayala Dr & W Casmalia St
City: Rialto
Control: Signalized

Project ID: 18-06107-006
Date: 8/29/2018

Total

NS/EW Streets:	Ayala Dr				Ayala Dr				W Casmalia St				W Casmalia St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	1	1	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	62	125	9	0	6	140	3	0	2	15	48	0	41	22	7	0	480
7:15 AM	35	86	20	0	5	145	8	0	2	13	54	0	39	29	8	0	444
7:30 AM	18	47	28	0	4	92	5	0	2	9	49	0	45	6	3	0	308
7:45 AM	26	68	26	1	2	99	4	0	5	7	38	0	31	8	2	0	317
8:00 AM	17	59	21	0	2	103	3	0	4	5	15	0	45	11	0	0	285
8:15 AM	23	56	15	0	1	85	4	0	0	7	28	0	23	3	2	0	247
8:30 AM	10	49	7	0	1	75	1	0	1	7	28	0	22	7	2	0	210
8:45 AM	9	44	10	1	1	59	1	0	1	7	27	0	24	11	3	0	198
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	200	534	136	2	22	798	29	0	17	70	287	0	270	97	27	0	2489
APPROACH %'s :	22.94%	61.24%	15.60%	0.23%	2.59%	93.99%	3.42%	0.00%	4.55%	18.72%	76.74%	0.00%	68.53%	24.62%	6.85%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	141	326	83	1	17	476	20	0	11	44	189	0	156	65	20	0	1549
PEAK HR FACTOR :	0.569	0.652	0.741	0.250	0.708	0.821	0.625	0.000	0.550	0.733	0.875	0.000	0.867	0.560	0.625	0.000	0.807
	0.703				0.812				0.884				0.793				

Prepared by National Data & Surveying Services

Ayala Dr & Casmalia St

Peak Hour Turning Movement Count

ID: 18-06104-006
City: Rialto

Day: Thursday
Date: 08/16/2018

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Ayala Dr — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	10	300	10	1	477	PM

Casmalia St — EASTBOUND

AM	NOON	PM	
0	0	128	
0	0	0	0
0	0	25	1
0	0	50	1
0	0	176	1
AM	NOON	PM	

CONTROL

Signalized

TEV	0 AM	0 NOON	1352 PM
PHF	0.86		0.88

Casmalia St — WESTBOUND

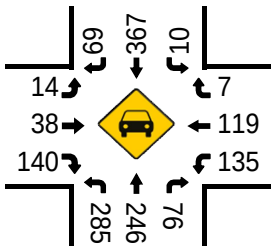
PM	NOON	AM	
13	0	0	1
33	0	0	1
87	0	0	1
0	0	0	0
183	0	0	
PM	NOON	AM	

Ayala Dr — NORTHBOUND

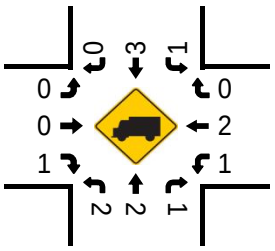
PM	564	1	85	438	123	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

0 2 1 0 (SB) — 1 1 1 0 (WB) — 0 1 2 0 (NB)

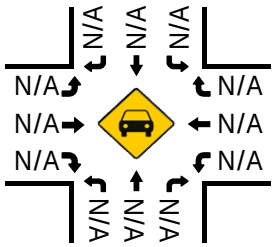
Cars (AM)



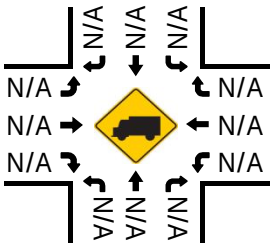
2axle (AM)



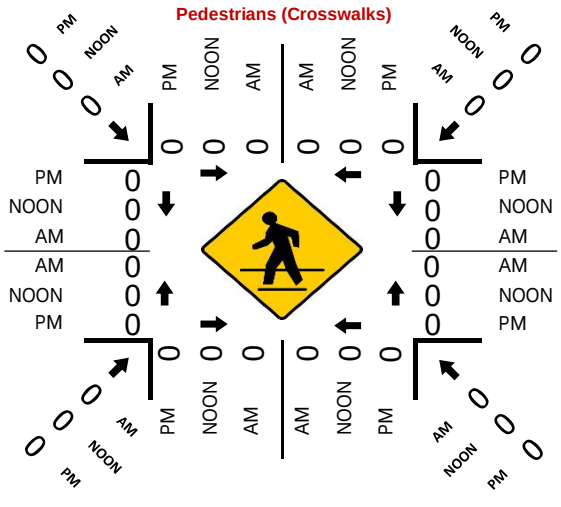
Cars (NOON)



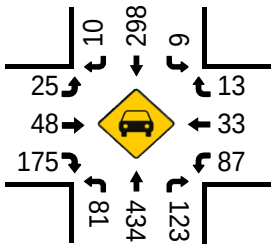
2axle (NOON)



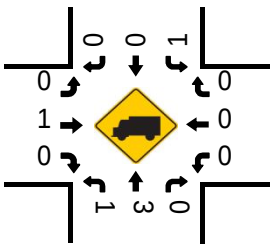
Pedestrians (Crosswalks)



Cars (PM)



2axle (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Ayala Dr & Casmalia St
City: Rialto
Control: Signalized

Project ID: 18-06104-006
Date: 8/16/2018

Total

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	1	1	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	19	69	15	0	2	36	1	0	1	11	23	0	19	6	2	0	204
4:15 PM	28	73	18	0	3	46	2	0	3	8	28	0	20	5	1	0	235
4:30 PM	23	106	22	0	2	66	1	0	4	16	54	0	29	7	4	0	334
4:45 PM	16	112	30	0	3	57	4	0	5	17	73	0	22	12	7	0	358
5:00 PM	16	80	32	1	3	67	2	0	6	13	53	0	22	6	5	0	306
5:15 PM	25	122	27	0	2	73	2	0	6	9	42	0	13	6	2	0	329
5:30 PM	17	100	27	0	5	78	3	1	7	14	39	0	28	12	1	0	332
5:45 PM	27	136	37	0	0	82	3	0	6	14	42	0	24	9	5	0	385
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	171	798	208	1	20	505	18	1	38	102	354	0	177	63	27	0	2483
APPROACH %'s :	14.52%	67.74%	17.66%	0.08%	3.68%	92.83%	3.31%	0.18%	7.69%	20.65%	71.66%	0.00%	66.29%	23.60%	10.11%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	85	438	123	1	10	300	10	1	25	50	176	0	87	33	13	0	1352
PEAK HR FACTOR :	0.787	0.805	0.831	0.250	0.500	0.915	0.833	0.250	0.893	0.893	0.830	0.000	0.777	0.688	0.650	0.000	0.878
	0.809				0.922				0.872				0.811				

Prepared by National Data & Surveying Services

Ayala Dr & SR-210 WB Ramps

Peak Hour Turning Movement Count

ID: 18-06084-001
City: Rialto

Day: Thursday
Date: 06/21/2018

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Ayala Dr — SOUTHBOUND

AM	245	303	0	0	302	AM
NOON	0	0	0	0	0	NOON
PM	155	365	0	0	564	PM

SR-210 WB Ramps — EASTBOUND

AM	NOON	PM	
790	0	572	⇦
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

WESTBOUND — SR-210 WB Ramps

PM	NOON	AM	
182	0	131	1.3
2	0	1	0.3
463	0	293	1.3
0	0	0	0
0	0	0	⇨
PM	NOON	AM	

CONTROL: Signalized

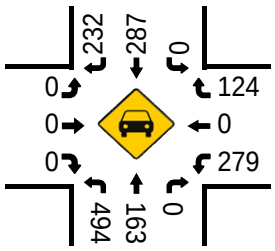
TEV	1688	0	1964
	AM	NOON	PM
PHF	0.92		0.95

Ayala Dr — NORTHBOUND

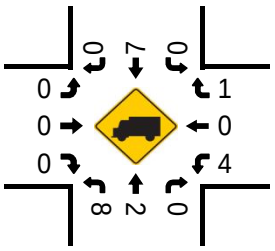
PM	828	0	415	382	0	PM
NOON	0	0	0	0	0	NOON
AM	596	0	544	171	0	AM

Turning movements at the intersection: 0 2 0 0 | 0 2 2 0

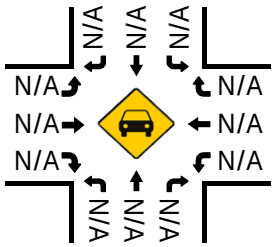
Cars (AM)



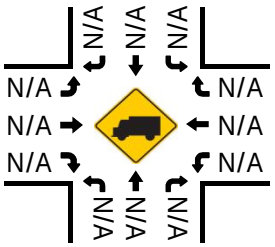
2axle (AM)



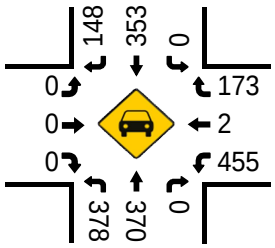
Cars (NOON)



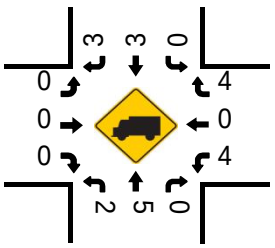
2axle (NOON)



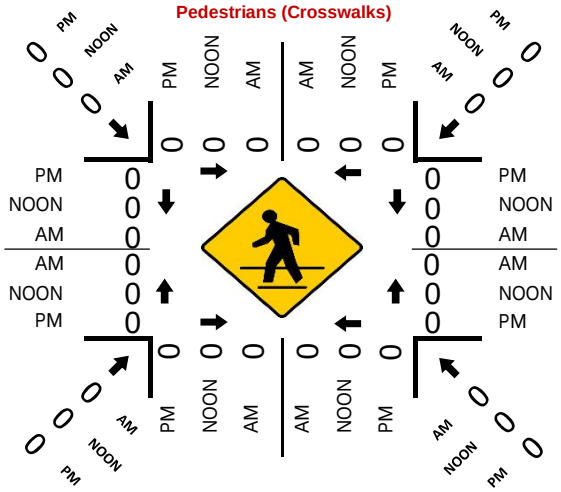
Cars (PM)



2axle (PM)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Ayala Dr & SR-210 WB Ramps
City: Rialto
Control: Signalized

Project ID: 18-06084-001
Date: 6/21/2018

Total

NS/EW Streets:	Ayala Dr				Ayala Dr				SR-210 WB Ramps				SR-210 WB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	0	2	0	0	0	0	0	0	1.3	0.3	1.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	146	40	0	0	0	62	78	0	0	0	0	0	83	0	29	0	438
7:15 AM	143	57	0	0	0	90	59	0	0	0	0	0	68	0	42	0	459
7:30 AM	128	35	0	0	0	91	59	0	0	0	0	0	73	1	29	0	416
7:45 AM	127	39	0	0	0	60	49	0	0	0	0	0	69	0	31	0	375
8:00 AM	124	32	0	0	0	66	48	0	0	0	0	0	53	0	31	0	354
8:15 AM	109	30	0	0	0	78	58	0	0	0	0	0	46	0	18	0	339
8:30 AM	118	33	0	0	0	54	50	0	0	0	0	0	49	0	24	0	328
8:45 AM	90	55	0	0	0	69	54	0	0	0	0	0	55	0	33	0	356
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	985	321	0	0	0	570	455	0	0	0	0	0	496	1	237	0	3065
APPROACH %'s :	75.42%	24.58%	0.00%	0.00%	0.00%	55.61%	44.39%	0.00%					67.57%	0.14%	32.29%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	544	171	0	0	0	303	245	0	0	0	0	0	293	1	131	0	1688
PEAK HR FACTOR :	0.932	0.750	0.000	0.000	0.000	0.832	0.785	0.000	0.000	0.000	0.000	0.000	0.883	0.250	0.780	0.000	0.919
	0.894				0.913								0.949				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	0	2	0	0	0	0	0	0	1.3	0.3	1.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	103	108	0	0	0	79	37	0	0	0	0	0	130	0	58	0	515
4:15 PM	107	92	0	0	0	80	42	0	0	0	0	0	146	2	50	0	519
4:30 PM	91	80	0	0	0	104	33	0	0	0	0	0	85	0	41	0	434
4:45 PM	114	102	0	0	0	102	43	0	0	0	0	0	102	0	33	0	496
5:00 PM	114	93	0	0	0	87	38	0	0	0	0	0	78	1	47	0	458
5:15 PM	121	88	0	0	0	70	47	0	0	0	0	0	107	5	52	0	490
5:30 PM	98	80	0	0	0	84	36	0	0	0	0	0	87	0	34	0	419
5:45 PM	83	102	0	0	0	63	39	0	0	0	0	0	100	1	51	0	439
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	831	745	0	0	0	669	315	0	0	0	0	0	835	9	366	0	3770
APPROACH %'s :	52.73%	47.27%	0.00%	0.00%	0.00%	67.99%	32.01%	0.00%					69.01%	0.74%	30.25%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	415	382	0	0	0	365	155	0	0	0	0	0	463	2	182	0	1964
PEAK HR FACTOR :	0.910	0.884	0.000	0.000	0.000	0.877	0.901	0.000	0.000	0.000	0.000	0.000	0.793	0.250	0.784	0.000	0.946
	0.922				0.897								0.817				

Prepared by National Data & Surveying Services

Ayala Dr & SR-210 EB Ramps

Peak Hour Turning Movement Count

ID: 18-06084-002
City: Rialto

Day: Thursday
Date: 06/21/2018

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Ayala Dr — SOUTHBOUND

AM	0	408	183	0	725	AM
NOON	0	0	0	0	0	NOON
PM	0	588	222	0	810	PM

SR-210 EB Ramps — EASTBOUND

AM	NOON	PM		
0	0	0		
0	0	0	0	
66	0	207	1.3	
2	0	3	0.3	
338	0	628	1.3	
AM	NOON	PM		

SR-210 EB Ramps — WESTBOUND

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
639	0	512	
PM	NOON	AM	

Ayala Dr — NORTHBOUND

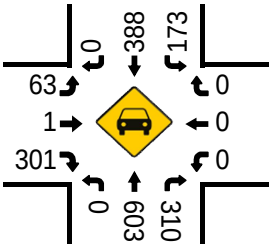
PM	1216	0	0	603	414	PM
NOON	0	0	0	0	0	NOON
AM	746	0	0	659	327	AM

0	2	2	0	
				0
				0
				0
				0
0	0	2	1	

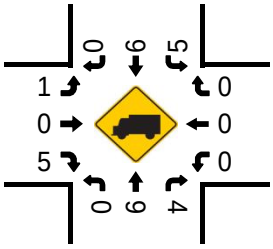
CONTROL: Signalized

TEV	1983	0	2665
	AM	NOON	PM
PHF	0.92		0.97

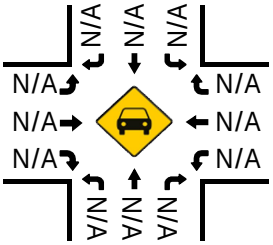
Cars (AM)



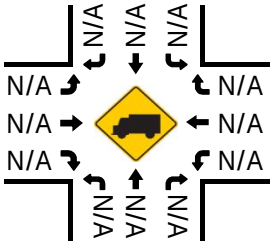
2axle (AM)



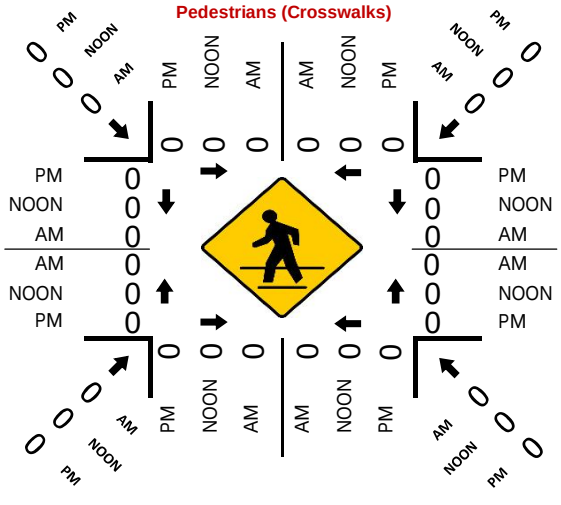
Cars (NOON)



2axle (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Ayala Dr & SR-210 EB Ramps
City: Rialto
Control: Signalized

Project ID: 18-06084-002
Date: 6/21/2018

Total

NS/EW Streets:	Ayala Dr				Ayala Dr				SR-210 EB Ramps				SR-210 EB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	2	2	0	0	1.3	0.3	1.3	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	179	80	0	42	96	0	0	8	0	77	0	0	0	0	0	482
7:15 AM	0	178	86	0	51	111	0	0	19	0	96	0	0	0	0	0	541
7:30 AM	0	148	92	0	63	97	0	0	18	1	87	0	0	0	0	0	506
7:45 AM	0	154	69	0	27	104	0	0	21	1	78	0	0	0	0	0	454
8:00 AM	0	141	76	0	37	85	0	0	18	0	75	0	0	0	0	0	432
8:15 AM	0	127	68	0	39	79	0	0	15	0	63	0	0	0	0	0	391
8:30 AM	0	128	68	0	29	74	0	0	16	0	67	0	0	0	0	0	382
8:45 AM	0	122	62	0	42	84	0	0	23	0	74	0	0	0	0	0	407
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1177	601	0	330	730	0	0	138	2	617	0	0	0	0	0	3595
APPROACH %'s :	0.00%	66.20%	33.80%	0.00%	31.13%	68.87%	0.00%	0.00%	18.23%	0.26%	81.51%	0.00%					
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	659	327	0	183	408	0	0	66	2	338	0	0	0	0	0	1983
PEAK HR FACTOR :	0.000	0.920	0.889	0.000	0.726	0.919	0.000	0.000	0.786	0.500	0.880	0.000	0.000	0.000	0.000	0.000	0.916
		0.934				0.912				0.883							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	2	2	0	0	1.3	0.3	1.3	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	153	107	0	49	158	0	0	57	1	159	0	0	0	0	0	684
4:15 PM	0	153	91	0	47	176	0	0	46	1	167	0	0	0	0	0	681
4:30 PM	0	134	100	0	63	126	0	0	45	1	164	0	0	0	0	0	633
4:45 PM	0	163	116	0	63	128	0	0	59	0	138	0	0	0	0	0	667
5:00 PM	0	149	88	0	64	110	0	0	55	1	149	0	0	0	0	0	616
5:15 PM	0	153	112	0	36	142	0	0	49	0	146	0	0	0	0	0	638
5:30 PM	0	137	113	0	55	116	0	0	47	0	146	0	0	0	0	0	614
5:45 PM	0	121	92	0	31	133	0	0	65	0	170	0	0	0	0	0	612
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1163	819	0	408	1089	0	0	423	4	1239	0	0	0	0	0	5145
APPROACH %'s :	0.00%	58.68%	41.32%	0.00%	27.25%	72.75%	0.00%	0.00%	25.39%	0.24%	74.37%	0.00%					
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	603	414	0	222	588	0	0	207	3	628	0	0	0	0	0	2665
PEAK HR FACTOR :	0.000	0.925	0.892	0.000	0.881	0.835	0.000	0.000	0.877	0.750	0.940	0.000	0.000	0.000	0.000	0.000	0.974
		0.911				0.908				0.965							

Prepared by National Data & Surveying Services

CLASSIFICATION

Casmalia St Bet. Alder Ave & Locust Ave

Day: Thursday
Date: 8/16/2018

City: Rialto
Project #: CA18_6105_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	63	5	0	0	0	0	2	0	0	0	0	0	70
01:00	0	88	2	0	2	0	0	0	0	0	1	0	0	93
02:00	0	40	1	0	6	0	0	2	2	0	0	0	0	51
03:00	1	119	11	0	11	2	0	1	1	0	0	0	0	146
04:00	0	149	29	1	28	0	0	4	4	0	0	0	0	215
05:00	0	242	41	5	33	1	0	12	2	0	0	0	0	336
06:00	2	360	49	2	78	3	0	17	4	0	2	0	0	517
07:00	1	744	112	5	90	4	1	18	6	0	4	0	0	985
08:00	2	279	52	6	51	4	0	21	7	0	3	0	0	425
09:00	2	256	44	11	76	2	0	17	5	0	1	0	0	414
10:00	0	287	52	6	71	6	0	29	9	0	1	0	0	461
11:00	2	335	75	5	99	3	0	26	5	0	2	0	0	552
12:00 PM	2	390	64	1	76	2	0	19	8	0	5	0	0	567
13:00	1	390	63	6	91	2	1	26	8	0	0	0	0	588
14:00	0	503	79	5	79	0	1	19	10	0	1	0	0	697
15:00	0	554	80	1	74	1	0	14	8	1	0	0	0	733
16:00	0	575	75	5	71	8	1	14	4	0	1	0	0	754
17:00	0	538	73	1	54	1	0	6	2	0	1	0	0	676
18:00	0	501	59	0	41	3	0	10	2	0	0	0	0	616
19:00	0	446	53	1	46	0	0	8	0	0	1	0	0	555
20:00	0	332	40	1	35	0	0	9	1	0	0	0	0	418
21:00	0	262	28	0	12	0	0	7	2	0	0	0	0	311
22:00	0	171	21	0	12	0	0	3	2	0	0	0	0	209
23:00	0	122	9	0	10	0	0	3	1	0	0	0	0	145
Totals	13	7746	1117	62	1146	42	4	287	93	1	23			10534
% of Totals	0%	74%	11%	1%	11%	0%	0%	3%	1%	0%	0%			100%
		7759			2325	42				408				
		1.0			1.5	2.0				3.0				
		7759			3488	84				1224				12555

AM Volumes	10	2962	473	41	545	25	1	149	45	0	14	0	0	4265
% AM	0%	28%	4%	0%	5%	0%	0%	1%	0%		0%			40%
AM Peak Hour	06:00	07:00	07:00	09:00	11:00	10:00	07:00	10:00	10:00		07:00			07:00
Volume	2	744	112	11	99	6	1	29	9		4			985
PM Volumes	3	4784	644	21	601	17	3	138	48	1	9	0	0	6269
% PM	0%	45%	6%	0%	6%	0%	0%	1%	0%	0%	0%			60%
PM Peak Hour	12:00	16:00	15:00	13:00	13:00	16:00	13:00	13:00	14:00	15:00	12:00			16:00
Volume	2	575	80	6	91	8	1	26	10	1	5			754

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	1410		13%	1155		11%	1430		14%	6539		62%

Classification Definitions

1 Motorcycles	4 Buses	7 > =4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Casmalia St Bet. Locust Ave & Linden Ave

Day: Thursday
Date: 8/16/2018

City: Rialto
Project #: CA18_6105_002

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	1	36	6	0	2	0	0	0	0	0	0	0	0	45
01:00	0	98	10	0	0	0	0	0	0	0	0	0	0	108
02:00	0	32	8	0	1	0	0	0	0	0	0	0	0	41
03:00	0	78	17	0	2	0	0	0	0	0	0	0	0	97
04:00	0	93	22	0	7	0	0	0	3	0	0	0	0	125
05:00	0	144	31	1	15	0	1	1	6	0	1	0	0	200
06:00	0	225	53	1	25	4	0	0	9	0	0	0	0	317
07:00	1	551	94	4	28	13	0	1	7	0	1	0	0	700
08:00	0	134	29	4	16	6	0	4	17	0	0	0	0	210
09:00	0	125	32	5	16	6	0	1	14	0	0	0	0	199
10:00	1	176	29	1	10	9	0	0	8	0	1	0	0	235
11:00	0	191	37	0	21	11	0	3	11	0	1	0	0	275
12:00 PM	0	197	41	1	26	7	0	3	12	0	2	0	0	289
13:00	1	231	47	2	25	6	0	1	12	0	0	0	0	325
14:00	0	314	66	3	32	6	0	2	18	0	0	0	0	441
15:00	1	373	66	2	26	2	0	2	10	0	0	0	0	482
16:00	1	387	66	1	21	14	0	2	7	0	0	0	0	499
17:00	2	343	49	0	22	5	0	0	5	0	1	0	0	427
18:00	1	271	33	0	13	0	0	4	2	0	0	0	0	324
19:00	0	227	32	0	9	0	0	2	3	0	0	0	0	273
20:00	0	180	16	0	11	4	0	0	3	0	0	0	0	214
21:00	0	131	17	0	3	2	1	1	2	0	0	0	0	157
22:00	0	84	12	0	5	3	0	0	2	0	0	0	0	106
23:00	0	64	5	0	1	0	0	0	1	0	0	0	0	71
Totals	9	4685	818	25	337	98	2	27	152		7			6160
% of Totals	0%	76%	13%	0%	5%	2%	0%	0%	2%		0%			100%
		4694			1180	98				188				
		1.0			1.5	2.0				3.0				
		4694			1770	196				564				7224

AM Volumes	3	1883	368	16	143	49	1	10	75	0	4	0	0	2552
% AM	0%	31%	6%	0%	2%	1%	0%	0%	1%		0%			41%
AM Peak Hour		07:00	07:00	09:00	07:00	07:00	05:00	08:00	08:00		05:00			07:00
Volume	1	551	94	5	28	13	1	4	17		1			700
PM Volumes	6	2802	450	9	194	49	1	17	77	0	3	0	0	3608
% PM	0%	45%	7%	0%	3%	1%	0%	0%	1%		0%			59%
PM Peak Hour	17:00	16:00	14:00	14:00	14:00	16:00	21:00	18:00	14:00		12:00			16:00
Volume	2	387	66	3	32	14	1	4	18		2			499

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	910		15%	614		10%	926		15%	3710		60%

Classification Definitions

1 Motorcycles	4 Buses	7 > =4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Locust Ave Bet. Casmalia St & Vineyard Ave

Day: Thursday
Date: 8/16/2018

City: Rialto
Project #: CA18_6105_003

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	68	7	0	8	0	0	0	4	0	0	0	0	87
01:00	0	108	16	0	6	0	0	0	3	0	0	0	0	133
02:00	0	77	14	0	7	0	0	0	5	0	2	0	0	105
03:00	1	214	25	0	14	0	0	1	3	0	0	0	0	258
04:00	1	218	51	1	23	1	0	0	11	0	0	0	0	306
05:00	2	367	77	0	24	1	1	11	14	0	0	0	0	497
06:00	3	383	67	9	45	2	0	11	25	1	4	0	0	550
07:00	4	656	92	12	57	4	0	12	21	0	0	0	0	858
08:00	2	392	85	7	45	4	0	13	17	1	2	0	0	568
09:00	2	270	51	5	50	2	1	19	21	0	4	0	0	425
10:00	1	308	67	6	57	5	1	13	25	0	2	0	0	485
11:00	3	348	66	8	69	7	0	11	32	0	1	0	0	545
12:00 PM	4	366	70	7	43	4	1	7	23	0	2	0	0	527
13:00	2	438	76	8	69	2	0	15	31	0	0	0	0	641
14:00	1	594	104	16	71	2	1	13	31	0	0	0	0	833
15:00	1	614	104	8	64	3	0	14	13	0	0	0	0	821
16:00	1	691	107	4	38	3	0	13	18	0	1	0	0	876
17:00	2	500	73	3	49	1	0	8	14	0	0	0	0	650
18:00	0	432	48	1	32	2	0	7	8	0	0	0	0	530
19:00	0	347	49	1	18	0	0	5	6	0	0	0	0	426
20:00	0	297	46	0	14	0	0	1	4	0	0	0	0	362
21:00	0	258	27	0	12	0	0	1	9	0	0	0	0	307
22:00	0	146	13	0	4	2	0	0	5	0	1	0	0	171
23:00	0	97	15	0	7	0	1	0	7	0	0	0	0	127
Totals	30	8189	1350	96	826	45	6	175	350	2	19			11088
% of Totals	0%	74%	12%	1%	7%	0%	0%	2%	3%	0%	0%			100%
		8219			2272	45				552				
		1.0			1.5	2.0				3.0				
		8219			3408	90				1656				13373

AM Volumes	19	3409	618	48	405	26	3	91	181	2	15	0	0	4817
% AM	0%	31%	6%	0%	4%	0%	0%	1%	2%	0%	0%			43%
AM Peak Hour	07:00	07:00	07:00	07:00	11:00	11:00	05:00	09:00	11:00	06:00	06:00			07:00
Volume	4	656	92	12	69	7	1	19	32	1	4			858
PM Volumes	11	4780	732	48	421	19	3	84	169	0	4	0	0	6271
% PM	0%	43%	7%	0%	4%	0%	0%	1%	2%		0%			57%
PM Peak Hour	12:00	16:00	16:00	14:00	14:00	12:00	12:00	13:00	13:00		12:00			16:00
Volume	4	691	107	16	71	4	1	15	31		2			876

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	1426		13%	1168		11%	1526		14%	6968		63%

Classification Definitions

1 Motorcycles	4 Buses	7 > =4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

APPENDIX C

PCE WORKSHEETS

Existing Peak Hour Volumes - Classification Counts

1 Alder Avenue at Casmalia Street

	AM Peak Hour Volumes									PM Peak Hour Volumes								
		Truck Volumes							Total		Truck Volumes							Total
	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume
NL	85	0	1	0	1	1.2%	2	2.0	87	83	0	0	0	0	0.0%	0	0.0	83
NT	32	3	35	78	116	78.4%	309	2.7	341	31	3	25	36	64	67.4%	163	2.5	194
NR	151	6	2	25	33	17.9%	88	2.7	239	230	5	3	11	19	7.6%	47	2.5	277
SL	3	2	2	4	8	72.7%	19	2.4	22	11	1	7	3	11	50.0%	25	2.3	36
ST	7	2	11	95	108	93.9%	310	2.9	317	82	0	20	25	45	35.4%	115	2.6	197
SR	4	0	3	1	4	50.0%	9	2.3	13	10	0	0	11	11	52.4%	33	3.0	43
EL	4	1	5	3	9	69.2%	21	2.3	25	7	0	1	1	2	22.2%	5	2.5	12
ET	82	1	2	0	3	3.5%	6	2.0	88	199	0	0	2	2	1.0%	6	3.0	205
ER	49	0	0	1	1	2.0%	3	3.0	52	115	1	1	3	5	4.2%	13	2.6	128
WL	272	7	1	25	33	10.8%	88	2.7	360	254	4	3	18	25	9.0%	66	2.6	320
WT	174	4	1	2	7	3.9%	14	2.0	188	165	4	0	2	6	3.5%	12	2.0	177
WR	9	0	2	6	8	47.1%	22	2.8	31	7	0	12	1	13	65.0%	27	2.1	34
									1,763									1,706
North Leg Volumes																		
Approach	14	4	16	100	120		338		352	103	1	27	39	67		173		276
Depart	45	4	42	87	133		352		397	45	3	38	38	79		195		240
Total	59	8	58	187	253	81.1%	690	2.7	749	148	4	65	77	146	49.7%	368	2.5	516
South Leg Volumes																		
Approach	268	9	38	103	150		399		667	344	8	28	47	83		210		554
Depart	328	9	12	121	142		401		729	451	5	24	46	75		194		645
Total	596	18	50	224	292	32.9%	800	2.7	1,396	795	13	52	93	158	16.6%	404	2.6	1,199
East Leg Volumes																		
Approach	455	11	4	33	48		124		579	426	8	15	21	44		105		531
Depart	236	9	6	29	44		113		349	440	6	10	16	32		78		518
Total	691	20	10	62	92	11.7%	237	2.6	928	866	14	25	37	76	8.1%	183	2.4	1,049
West Leg Volumes																		
Approach	135	2	7	4	13		30		165	321	1	2	6	9		24		345
Depart	263	4	5	3	12		25		288	258	4	0	13	17		45		303
Total	398	6	12	7	25	5.9%	55	2.2	453	579	5	2	19	26	4.3%	69	2.7	648
All Legs																		
Approach	872	26	65	240	331		891		1,763	1,194	18	72	113	203		512		1,706
Depart	872	26	65	240	331		891		1,763	1,194	18	72	113	203		512		1,706
Total	1,744	52	130	480	662	27.5%	1,782	2.7	3,526	2,388	36	144	226	406	14.5%	1,024	2.5	3,412

Existing Peak Hour Volumes - Classification Counts

2 Alder Avenue at SR-210 WB Ramps

	AM Peak Hour Volumes									PM Peak Hour Volumes								
		Truck Volumes							Total		Truck Volumes							Total
	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume
NL	250	4	1	13	18	6.7%	47	2.6	297	253	4	3	27	34	11.8%	93	2.7	346
NT	186	7	36	65	108	36.7%	278	2.6	464	232	6	26	34	66	22.1%	163	2.5	395
NR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
SL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ST	90	3	3	67	73	44.8%	212	2.9	302	227	3	6	8	17	7.0%	41	2.4	268
SR	240	6	9	59	74	23.6%	204	2.8	444	228	3	17	38	58	20.3%	153	2.6	381
EL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ET	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ER	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WL	304	4	0	9	13	4.1%	33	2.5	337	207	2	2	5	9	4.2%	22	2.4	229
WT	10	0	0	0	0	0.0%	0	0.0	10	2	0	0	0	0	0.0%	0	0.0	2
WR	86	2	3	37	42	32.8%	120	2.9	206	107	2	2	13	17	13.7%	46	2.7	153
									2,060									1,774
North Leg Volumes																		
Approach	330	9	12	126	147		416		746	455	6	23	46	75		194		649
Depart	272	9	39	102	150		398		670	339	8	28	47	83		209		548
Total	602	18	51	228	297	33.0%	814	2.7	1,416	794	14	51	93	158	16.6%	403	2.6	1,197
South Leg Volumes																		
Approach	436	11	37	78	126		325		761	485	10	29	61	100		256		741
Depart	394	7	3	76	86		245		639	434	5	8	13	26		63		497
Total	830	18	40	154	212	20.3%	570	2.7	1,400	919	15	37	74	126	12.1%	319	2.5	1,238
East Leg Volumes																		
Approach	400	6	3	46	55		153		553	316	4	4	18	26		68		384
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	400	6	3	46	55	12.1%	153	2.8	553	316	4	4	18	26	7.6%	68	2.6	384
West Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	500	10	10	72	92		251		751	483	7	20	65	92		246		729
Total	500	10	10	72	92	15.5%	251	2.7	751	483	7	20	65	92	16.0%	246	2.7	729
All Legs																		
Approach	1,166	26	52	250	328		894		2,060	1,256	20	56	125	201		518		1,774
Depart	1,166	26	52	250	328		894		2,060	1,256	20	56	125	201		518		1,774
Total	2,332	52	104	500	656	22.0%	1,788	2.7	4,120	2,512	40	112	250	402	13.8%	1,036	2.6	3,548

Existing Peak Hour Volumes - Classification Counts

3 Alder Avenue at SR-210 EB Ramps

	AM Peak Hour Volumes									PM Peak Hour Volumes								
		Truck Volumes							Total		Truck Volumes							Total
	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume
NL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
NT	316	5	15	19	39	11.0%	95	2.4	411	346	4	18	32	54	13.5%	138	2.6	484
NR	225	1	1	9	11	4.7%	31	2.8	256	247	2	1	7	10	3.9%	26	2.6	273
SL	32	2	1	43	46	59.0%	134	2.9	166	120	3	3	8	14	10.4%	35	2.5	155
ST	366	4	0	31	35	8.7%	99	2.8	465	315	3	5	6	14	4.3%	33	2.4	348
SR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
EL	115	6	22	61	89	43.6%	236	2.7	351	136	6	11	29	46	25.3%	118	2.6	254
ET	2	0	0	0	0	0.0%	0	0.0	2	0	0	0	0	0	0.0%	0	0.0	0
ER	364	5	3	28	36	9.0%	98	2.7	462	289	5	5	21	31	9.7%	81	2.6	370
WL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WT	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
									2,113									1,884
North Leg Volumes																		
Approach	398	6	1	74	81		233		631	435	6	8	14	28		68		503
Depart	431	11	37	80	128		331		762	482	10	29	61	100		256		738
Total	829	17	38	154	209	20.1%	564	2.7	1,393	917	16	37	75	128	12.2%	324	2.5	1,241
South Leg Volumes																		
Approach	541	6	16	28	50		126		667	593	6	19	39	64		164		757
Depart	730	9	3	59	71		197		927	604	8	10	27	45		114		718
Total	1,271	15	19	87	121	8.7%	323	2.7	1,594	1,197	14	29	66	109	8.3%	278	2.6	1,475
East Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	259	3	2	52	57		165		424	367	5	4	15	24		61		428
Total	259	3	2	52	57	18.0%	165	2.9	424	367	5	4	15	24	6.1%	61	2.5	428
West Leg Volumes																		
Approach	481	11	25	89	125		334		815	425	11	16	50	77		199		624
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	481	11	25	89	125	20.6%	334	2.7	815	425	11	16	50	77	15.3%	199	2.6	624
All Legs																		
Approach	1,420	23	42	191	256		693		2,113	1,453	23	43	103	169		431		1,884
Depart	1,420	23	42	191	256		693		2,113	1,453	23	43	103	169		431		1,884
Total	2,840	46	84	382	512	15.3%	1,386	2.7	4,226	2,906	46	86	206	338	10.4%	862	2.6	3,768

Existing Peak Hour Volumes - Classification Counts

4 Locust Avenue at Casmalia St

	AM Peak Hour Volumes									PM Peak Hour Volumes								
		Truck Volumes							Total		Truck Volumes							Total
	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume
NL	68	1	1	4	6	8.1%	16	2.7	84	45	1	1	0	2	4.3%	4	2.0	49
NT	130	6	0	5	11	7.8%	24	2.2	154	164	0	0	2	2	1.2%	6	3.0	170
NR	7	0	0	0	0	0.0%	0	0.0	7	22	0	0	1	1	4.3%	3	3.0	25
SL	38	1	0	7	8	17.4%	23	2.9	61	107	0	0	2	2	1.8%	6	3.0	113
ST	198	9	0	13	22	10.0%	53	2.4	251	204	4	1	4	9	4.2%	20	2.2	224
SR	206	4	1	18	23	10.0%	62	2.7	268	184	2	1	10	13	6.6%	35	2.7	219
EL	128	3	4	19	26	16.9%	70	2.7	198	160	2	1	7	10	5.9%	26	2.6	186
ET	42	0	4	1	5	10.6%	11	2.2	53	173	0	3	1	4	2.3%	9	2.3	182
ER	34	1	1	2	4	10.5%	10	2.5	44	46	1	2	1	4	8.0%	9	2.3	55
WL	16	1	0	2	3	15.8%	8	2.7	24	11	0	0	0	0	0.0%	0	0.0	11
WT	134	4	1	6	11	7.6%	26	2.4	160	127	2	11	2	15	10.6%	31	2.1	158
WR	63	3	1	16	20	24.1%	55	2.8	118	62	1	1	4	6	8.8%	16	2.7	78
									1,422									1,470
North Leg Volumes																		
Approach	442	14	1	38	53		138		580	495	6	2	16	24		61		556
Depart	321	12	5	40	57		149		470	386	3	2	13	18		48		434
Total	763	26	6	78	110	12.6%	287	2.6	1,050	881	9	4	29	42	4.6%	109	2.6	990
South Leg Volumes																		
Approach	205	7	1	9	17		40		245	231	1	1	3	5		13		244
Depart	248	11	1	17	29		71		319	261	5	3	5	13		29		290
Total	453	18	2	26	46	9.2%	111	2.4	564	492	6	4	8	18	3.5%	42	2.3	534
East Leg Volumes																		
Approach	213	8	2	24	34		89		302	200	3	12	6	21		47		247
Depart	87	1	4	8	13		34		121	302	0	3	4	7		18		320
Total	300	9	6	32	47	13.5%	123	2.6	423	502	3	15	10	28	5.3%	65	2.3	567
West Leg Volumes																		
Approach	204	4	9	22	35		91		295	379	3	6	9	18		44		423
Depart	408	9	3	28	40		104		512	356	5	13	12	30		70		426
Total	612	13	12	50	75	10.9%	195	2.6	807	735	8	19	21	48	6.1%	114	2.4	849
All Legs																		
Approach	1,064	33	13	93	139		358		1,422	1,305	13	21	34	68		165		1,470
Depart	1,064	33	13	93	139		358		1,422	1,305	13	21	34	68		165		1,470
Total	2,128	66	26	186	278	11.6%	716	2.6	2,844	2,610	26	42	68	136	5.0%	330	2.4	2,940

Existing Peak Hour Volumes - Classification Counts

5 Maple Avenue at Bohnert Avenue

	AM Peak Hour Volumes									PM Peak Hour Volumes								
		Truck Volumes							Total		Truck Volumes							Total
	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume
NL	1	0	1	0	1	50.0%	2	2.0	3	1	0	0	0	0	0.0%	0	0.0	1
NT	1	0	0	0	0	0.0%	0	0.0	1	0	0	0	0	0	0.0%	0	0.0	0
NR	5	0	0	0	0	0.0%	0	0.0	5	1	0	0	0	0	0.0%	0	0.0	1
SL	50	8	0	0	8	13.8%	12	1.5	62	18	0	0	0	0	0.0%	0	0.0	18
ST	1	0	0	0	0	0.0%	0	0.0	1	1	0	0	0	0	0.0%	0	0.0	1
SR	68	5	0	0	5	6.8%	8	1.6	76	35	0	0	0	0	0.0%	0	0.0	35
EL	39	3	0	0	3	7.1%	5	1.7	44	37	0	0	0	0	0.0%	0	0.0	37
ET	44	1	0	0	1	2.2%	2	2.0	46	48	1	0	0	1	2.0%	2	2.0	50
ER	0	0	0	0	0	0.0%	0	0.0	0	1	0	0	0	0	0.0%	0	0.0	1
WL	1	0	0	0	0	0.0%	0	0.0	1	4	0	0	0	0	0.0%	0	0.0	4
WT	147	6	0	0	6	3.9%	9	1.5	156	42	2	0	0	2	4.5%	3	1.5	45
WR	22	4	0	0	4	15.4%	6	1.5	28	20	1	0	0	1	4.8%	2	2.0	22
									423									215
North Leg Volumes																		
Approach	119	13	0	0	13		20		139	54	0	0	0	0		0		54
Depart	62	7	0	0	7		11		73	57	1	0	0	1		2		59
Total	181	20	0	0	20	10.0%	31	1.6	212	111	1	0	0	1	0.9%	2	2.0	113
South Leg Volumes																		
Approach	7	0	1	0	1		2		9	2	0	0	0	0		0		2
Depart	2	0	0	0	0		0		2	6	0	0	0	0		0		6
Total	9	0	1	0	1	10.0%	2	2.0	11	8	0	0	0	0	0.0%	0	0.0	8
East Leg Volumes																		
Approach	170	10	0	0	10		15		185	66	3	0	0	3		5		71
Depart	99	9	0	0	9		14		113	67	1	0	0	1		2		69
Total	269	19	0	0	19	6.6%	29	1.5	298	133	4	0	0	4	2.9%	7	1.8	140
West Leg Volumes																		
Approach	83	4	0	0	4		7		90	86	1	0	0	1		2		88
Depart	216	11	1	0	12		19		235	78	2	0	0	2		3		81
Total	299	15	1	0	16	5.1%	26	1.6	325	164	3	0	0	3	1.8%	5	1.7	169
All Legs																		
Approach	379	27	1	0	28		44		423	208	4	0	0	4		7		215
Depart	379	27	1	0	28		44		423	208	4	0	0	4		7		215
Total	758	54	2	0	56	6.9%	88	1.6	846	416	8	0	0	8	1.9%	14	1.8	430

Existing Peak Hour Volumes - Classification Counts

6 Ayala Drive at Casmalia Street

	AM Peak Hour Volumes									PM Peak Hour Volumes								
		Truck Volumes							Total		Truck Volumes							Total
	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume
NL	137	1	2	2	5	3.5%	12	2.4	149	82	1	1	2	4	4.7%	10	2.5	92
NT	316	8	1	1	10	3.1%	17	1.7	333	434	3	1	0	4	0.9%	7	1.8	441
NR	83	0	0	0	0	0.0%	0	0.0	83	123	0	0	0	0	0.0%	0	0.0	123
SL	17	0	0	0	0	0.0%	0	0.0	17	10	1	0	0	1	9.1%	2	2.0	12
ST	470	4	1	1	6	1.3%	11	1.8	481	298	0	1	1	2	0.7%	5	2.5	303
SR	18	2	0	0	2	10.0%	3	1.5	21	10	0	0	0	0	0.0%	0	0.0	10
EL	11	0	0	0	0	0.0%	0	0.0	11	25	0	0	0	0	0.0%	0	0.0	25
ET	42	2	0	0	2	4.5%	3	1.5	45	48	1	0	1	2	4.0%	5	2.5	53
ER	185	4	0	0	4	2.1%	6	1.5	191	175	0	0	1	1	0.6%	3	3.0	178
WL	153	1	1	1	3	1.9%	7	2.3	160	87	0	0	0	0	0.0%	0	0.0	87
WT	63	2	0	0	2	3.1%	3	1.5	66	33	0	0	0	0	0.0%	0	0.0	33
WR	20	0	0	0	0	0.0%	0	0.0	20	13	0	0	0	0	0.0%	0	0.0	13
									1,577									1,370
North Leg Volumes																		
Approach	505	6	1	1	8		14		519	318	1	1	1	3		7		325
Depart	347	8	1	1	10		17		364	472	3	1	0	4		7		479
Total	852	14	2	2	18	2.1%	31	1.7	883	790	4	2	1	7	0.9%	14	2.0	804
South Leg Volumes																		
Approach	536	9	3	3	15		29		565	639	4	2	2	8		17		656
Depart	808	9	2	2	13		24		832	560	0	1	2	3		8		568
Total	1,344	18	5	5	28	2.0%	53	1.9	1,397	1,199	4	3	4	11	0.9%	25	2.3	1,224
East Leg Volumes																		
Approach	236	3	1	1	5		10		246	133	0	0	0	0		0		133
Depart	142	2	0	0	2		3		145	181	2	0	1	3		7		188
Total	378	5	1	1	7	1.8%	13	1.9	391	314	2	0	1	3	0.9%	7	2.3	321
West Leg Volumes																		
Approach	238	6	0	0	6		9		247	248	1	0	2	3		8		256
Depart	218	5	2	2	9		18		236	125	1	1	2	4		10		135
Total	456	11	2	2	15	3.2%	27	1.8	483	373	2	1	4	7	1.8%	18	2.6	391
All Legs																		
Approach	1,515	24	5	5	34		62		1,577	1,338	6	3	5	14		32		1,370
Depart	1,515	24	5	5	34		62		1,577	1,338	6	3	5	14		32		1,370
Total	3,030	48	10	10	68	2.2%	124	1.8	3,154	2,676	12	6	10	28	1.0%	64	2.3	2,740

Existing Peak Hour Volumes - Classification Counts

7 Ayala Drive at I-210 WB Ramps

	AM Peak Hour Volumes									PM Peak Hour Volumes								
		Truck Volumes							Total		Truck Volumes							Total
	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume
NL	494	8	0	42	50	9.2%	138	2.8	632	378	2	0	35	37	8.9%	108	2.9	486
NT	163	2	1	5	8	4.7%	20	2.5	183	370	5	3	4	12	3.1%	26	2.2	396
NR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
SL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ST	287	7	0	9	16	5.3%	38	2.4	325	353	3	0	9	12	3.3%	32	2.7	385
SR	232	0	0	13	13	5.3%	39	3.0	271	148	3	0	4	7	4.5%	17	2.4	165
EL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ET	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ER	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WL	279	4	2	8	14	4.8%	34	2.4	313	455	4	1	3	8	1.7%	17	2.1	472
WT	0	0	0	1	1	100.0%	3	3.0	3	2	0	0	0	0	0.0%	0	0.0	2
WR	124	1	0	6	7	5.3%	20	2.9	144	173	4	0	5	9	4.9%	21	2.3	194
									1,871									2,100
North Leg Volumes																		
Approach	519	7	0	22	29		77		596	501	6	0	13	19		49		550
Depart	287	3	1	11	15		40		327	543	9	3	9	21		47		590
Total	806	10	1	33	44	5.2%	117	2.7	923	1,044	15	3	22	40	3.7%	96	2.4	1,140
South Leg Volumes																		
Approach	657	10	1	47	58		158		815	748	7	3	39	49		134		882
Depart	566	11	2	17	30		72		638	808	7	1	12	20		49		857
Total	1,223	21	3	64	88	6.7%	230	2.6	1,453	1,556	14	4	51	69	4.2%	183	2.7	1,739
East Leg Volumes																		
Approach	403	5	2	15	22		57		460	630	8	1	8	17		38		668
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	403	5	2	15	22	5.2%	57	2.6	460	630	8	1	8	17	2.6%	38	2.2	668
West Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	726	8	0	56	64		180		906	528	5	0	39	44		125		653
Total	726	8	0	56	64	8.1%	180	2.8	906	528	5	0	39	44	7.7%	125	2.8	653
All Legs																		
Approach	1,579	22	3	84	109		292		1,871	1,879	21	4	60	85		221		2,100
Depart	1,579	22	3	84	109		292		1,871	1,879	21	4	60	85		221		2,100
Total	3,158	44	6	168	218	6.5%	584	2.7	3,742	3,758	42	8	120	170	4.3%	442	2.6	4,200

Existing Peak Hour Volumes - Classification Counts

8 Ayala Drive at I-210 EB Ramps

	AM Peak Hour Volumes									PM Peak Hour Volumes								
		Truck Volumes							Total		Truck Volumes							Total
	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume
NL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
NT	603	9	1	46	56	8.5%	154	2.8	757	557	5	3	38	46	7.6%	128	2.8	685
NR	310	4	9	4	17	5.2%	36	2.1	346	408	2	2	2	6	1.4%	13	2.2	421
SL	173	5	0	5	10	5.5%	23	2.3	196	216	3	0	3	6	2.7%	14	2.3	230
ST	388	6	2	12	20	4.9%	49	2.5	437	574	3	1	10	14	2.4%	37	2.6	611
SR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
EL	63	1	1	1	3	4.5%	7	2.3	70	203	3	0	1	4	1.9%	8	2.0	211
ET	1	0	0	1	1	50.0%	3	3.0	4	3	0	0	0	0	0.0%	0	0.0	3
ER	301	5	1	31	37	10.9%	103	2.8	404	587	6	3	32	41	6.5%	111	2.7	698
WL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WT	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
									2,214									2,859
North Leg Volumes																		
Approach	561	11	2	17	30		72		633	790	6	1	13	20		51		841
Depart	666	10	2	47	59		161		827	760	8	3	39	50		136		896
Total	1,227	21	4	64	89	6.8%	233	2.6	1,460	1,550	14	4	52	70	4.3%	187	2.7	1,737
South Leg Volumes																		
Approach	913	13	10	50	73		190		1,103	965	7	5	40	52		141		1,106
Depart	689	11	3	43	57		152		841	1,161	9	4	42	55		148		1,309
Total	1,602	24	13	93	130	7.5%	342	2.6	1,944	2,126	16	9	82	107	4.8%	289	2.7	2,415
East Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	484	9	9	10	28		62		546	627	5	2	5	12		27		654
Total	484	9	9	10	28	5.5%	62	2.2	546	627	5	2	5	12	1.9%	27	2.3	654
West Leg Volumes																		
Approach	365	6	2	33	41		113		478	793	9	3	33	45		119		912
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	365	6	2	33	41	10.1%	113	2.8	478	793	9	3	33	45	5.4%	119	2.6	912
All Legs																		
Approach	1,839	30	14	100	144		375		2,214	2,548	22	9	86	117		311		2,859
Depart	1,839	30	14	100	144		375		2,214	2,548	22	9	86	117		311		2,859
Total	3,678	60	28	200	288	7.3%	750	2.6	4,428	5,096	44	18	172	234	4.4%	622	2.7	5,718

Int	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
1	87	341	239	22	317	13	25	88	52	360	188	31	Alder Avenue at Casmalia Street
2	297	464	0	0	302	444	0	0	0	337	10	206	Alder Avenue at SR-210 WB Ramps
3	0	411	256	166	465	0	351	2	462	0	0	0	Alder Avenue at SR-210 EB Ramps
4	84	154	7	61	251	268	198	53	44	24	160	118	Locust Avenue at Casmalia St
5	3	1	5	62	1	76	44	46	0	1	156	28	Maple Avenue at Bohnert Avenue
6	149	333	83	17	481	21	11	45	191	160	66	20	Ayala Drive at Casmalia Street
7	632	183	0	0	325	271	0	0	0	313	3	144	Ayala Drive at I-210 WB Ramps
8	0	757	346	196	437	0	70	4	404	0	0	0	Ayala Drive at I-210 EB Ramps
9	8	462	0	0	580	0	0	0	1	0	0	0	Locust Avenue at Vineyard Avenue

Int	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
1	83	194	277	36	197	43	12	205	128	320	177	34	Alder Avenue at Casmalia Street
2	346	395	0	0	268	381	0	0	0	229	2	153	Alder Avenue at SR-210 WB Ramps
3	0	484	273	155	348	0	254	0	370	0	0	0	Alder Avenue at SR-210 EB Ramps
4	49	170	25	113	224	219	186	182	55	11	158	78	Locust Avenue at Casmalia St
5	1	0	1	18	1	35	37	50	1	4	45	22	Maple Avenue at Bohnert Avenue
6	92	441	123	12	303	10	25	53	178	87	33	13	Ayala Drive at Casmalia Street
7	486	396	0	0	385	165	0	0	0	472	2	194	Ayala Drive at I-210 WB Ramps
8	0	685	421	230	611	0	211	3	698	0	0	0	Ayala Drive at I-210 EB Ramps
9	4	430	0	0	556	0	2	0	11	0	0	0	Locust Avenue at Vineyard Avenue

APPENDIX **D**

INTERSECTION ANALYSIS WORKSHEETS

APPENDIX D-1

INTERSECTION ANALYSIS WORKSHEETS - EXISTING CONDITIONS

Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex AM.vistro
Report File: K:\...\1 EX AM.pdf

Scenario 19 EX AM
9/24/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	NB Left	0.410	24.9	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	NB Left	0.760	25.0	C
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.677	24.1	C
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.000	24.4	C
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	WB Left	0.758	22.5	C
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	WB Thru	0.419	10.4	B
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	EB Left	0.636	28.0	C
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	WB Right	0.565	27.6	C
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.499	18.0	B

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	24.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.410

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	87	341	239	22	317	13	25	88	52	360	188	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	87	341	239	22	317	13	25	88	52	360	188	31
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	90	63	6	84	3	7	23	14	95	50	8
Total Analysis Volume [veh/h]	92	359	252	23	334	14	26	93	55	379	198	33
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	12	19	0	41	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	52	52	3	48	48	3	7	7	13	16	16
g / C, Green / Cycle	0.07	0.57	0.57	0.03	0.54	0.54	0.04	0.08	0.08	0.14	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.05	0.17	0.17	0.01	0.09	0.01	0.01	0.04	0.04	0.11	0.06	0.06
s, saturation flow rate [veh/h]	1810	1900	1644	1810	3618	1615	1810	1900	1675	3514	1900	1807
c, Capacity [veh/h]	129	1085	938	64	1936	864	70	146	129	490	338	321
d1, Uniform Delay [s]	40.99	10.02	10.05	42.49	10.73	9.83	42.28	40.02	40.17	37.43	32.51	32.53
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.18	0.71	0.83	3.35	0.19	0.03	3.26	2.83	3.82	2.64	0.62	0.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.72	0.30	0.30	0.36	0.17	0.02	0.37	0.52	0.56	0.77	0.35	0.35
d, Delay for Lane Group [s/veh]	48.17	10.73	10.88	45.84	10.92	9.86	45.54	42.85	43.98	40.07	33.13	33.18
Lane Group LOS	D	B	B	D	B	A	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.21	3.20	2.83	0.55	1.61	0.13	0.62	1.69	1.65	4.10	2.26	2.17
50th-Percentile Queue Length [ft/ln]	55.24	80.04	70.85	13.75	40.33	3.20	15.41	42.23	41.26	102.40	56.42	54.13
95th-Percentile Queue Length [veh/ln]	3.98	5.76	5.10	0.99	2.90	0.23	1.11	3.04	2.97	7.37	4.06	3.90
95th-Percentile Queue Length [ft/ln]	99.43	144.06	127.54	24.75	72.60	5.76	27.73	76.01	74.28	184.33	101.56	97.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.17	10.75	10.88	45.84	10.92	9.86	45.54	43.06	43.98	40.07	33.15	33.18
Movement LOS	D	B	B	D	B	A	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	15.69			13.05			43.72			37.45		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	24.93											
Intersection LOS	C											
Intersection V/C	0.410											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.760

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	297	464	0	0	302	444	0	0	0	337	10	206
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	297	464	0	0	302	444	0	0	0	337	10	206
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	122	0	0	79	117	0	0	0	89	3	54
Total Analysis Volume [veh/h]	313	488	0	0	318	467	0	0	0	355	11	217
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	33	52	0	0	19	0	0	0	0	0	38	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	18	62	40	40		20	20
g / C, Green / Cycle	0.20	0.68	0.44	0.44		0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.17	0.13	0.17	0.29		0.20	0.14
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1627
c, Capacity [veh/h]	357	2477	842	716		410	368
d1, Uniform Delay [s]	35.10	5.17	16.77	19.64		33.51	31.33
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	6.95	0.18	1.29	4.59		5.62	1.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

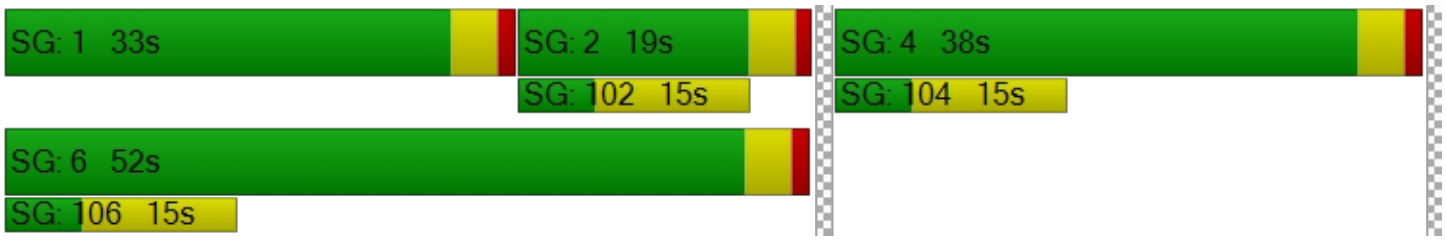
X, volume / capacity	0.88	0.20	0.38	0.65		0.87	0.62
d, Delay for Lane Group [s/veh]	42.05	5.35	18.06	24.22		39.14	33.03
Lane Group LOS	D	A	B	C		D	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	7.11	1.41	4.43	8.01		7.81	4.48
50th-Percentile Queue Length [ft/ln]	177.80	35.17	110.71	200.26		195.27	111.98
95th-Percentile Queue Length [veh/ln]	11.49	2.53	7.88	12.65		12.39	7.95
95th-Percentile Queue Length [ft/ln]	287.13	63.30	197.00	316.30		309.86	198.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.05	5.35	0.00	0.00	18.06	24.22	0.00	0.00	0.00	39.14	33.03	33.03
Movement LOS	D	A			B	C				D	C	C
d_A, Approach Delay [s/veh]	19.69			21.73			0.00			36.75		
Approach LOS	B			C			A			D		
d_I, Intersection Delay [s/veh]	25.01											
Intersection LOS	C											
Intersection V/C	0.760											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.677

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	411	256	166	465	0	351	2	462	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	411	256	166	465	0	351	2	462	0	0	0
Peak Hour Factor	1.0000	0.9840	0.9840	0.9840	0.9840	1.0000	0.9840	0.9840	0.9840	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	104	65	42	118	0	89	1	117	0	0	0
Total Analysis Volume [veh/h]	0	418	260	169	473	0	357	2	470	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	16	35	0	0	55	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	39	39	10	53	29	29	
g / C, Green / Cycle	0.43	0.43	0.11	0.59	0.33	0.33	
(v / s)_i Volume / Saturation Flow Rate	0.18	0.20	0.09	0.13	0.20	0.29	
s, saturation flow rate [veh/h]	1900	1673	1810	3618	1810	1615	
c, Capacity [veh/h]	814	717	205	2120	589	525	
d1, Uniform Delay [s]	17.91	18.46	39.05	8.88	25.58	28.92	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.57	2.23	8.08	0.24	1.03	5.64	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

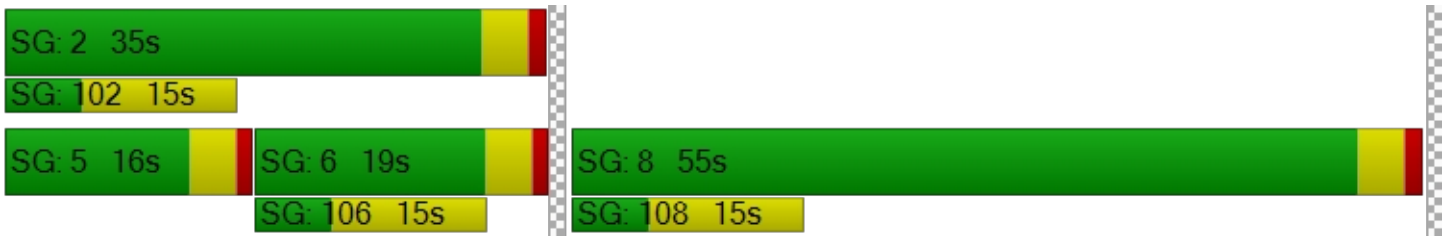
X, volume / capacity	0.42	0.47	0.82	0.22	0.61	0.89	
d, Delay for Lane Group [s/veh]	19.48	20.69	47.13	9.12	26.60	34.56	
Lane Group LOS	B	C	D	A	C	C	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	4.97	5.20	4.02	2.04	6.33	9.95	
50th-Percentile Queue Length [ft/ln]	124.15	129.88	100.38	51.04	158.34	248.73	
95th-Percentile Queue Length [veh/ln]	8.62	8.93	7.23	3.67	10.46	15.12	
95th-Percentile Queue Length [ft/ln]	215.52	223.33	180.69	91.86	261.52	378.06	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	19.71	20.69	47.13	9.12	0.00	26.60	26.60	34.56	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	C	C			
d_A, Approach Delay [s/veh]	20.09			19.13			31.11			0.00		
Approach LOS	C			B			C			A		
d_I, Intersection Delay [s/veh]	24.05											
Intersection LOS	C											
Intersection V/C	0.677											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	24.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	8	462	0	0	580	0	0	0	1	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	462	0	0	580	0	0	0	1	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	122	0	0	153	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	8	486	0	0	611	0	0	0	1	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.71	0.00	0.00	8.31	0.00	0.00	24.38	22.33	12.25	24.41	22.32	11.15
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.62	0.62	0.00	0.00	0.00	0.00	0.15	0.15	0.15	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.14			0.00			12.25			19.29		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.07											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	22.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.758

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	84	154	7	61	251	268	198	53	44	24	160	118
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	84	154	7	61	251	268	198	53	44	24	160	118
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	43	2	17	71	75	56	15	12	7	45	33
Total Analysis Volume [veh/h]	94	173	8	69	282	301	222	60	49	27	180	133
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	22	0	18	29	0	21	32	0	18	29	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	55	55	55	55	55	55	55	55	55	55	55
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	14	14	5	13	13	9	18	18	2	12
g / C, Green / Cycle	0.10	0.25	0.25	0.08	0.24	0.24	0.16	0.33	0.33	0.04	0.22
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.05	0.04	0.15	0.19	0.12	0.03	0.03	0.01	0.18
s, saturation flow rate [veh/h]	1810	1900	1871	1810	1900	1615	1810	1900	1615	1810	1767
c, Capacity [veh/h]	176	478	471	151	452	384	287	631	537	79	384
d1, Uniform Delay [s]	23.78	16.26	16.27	24.17	18.87	19.75	22.33	12.73	12.72	25.70	20.59
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.51	0.19	0.20	2.16	1.42	3.54	4.47	0.06	0.07	2.57	4.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

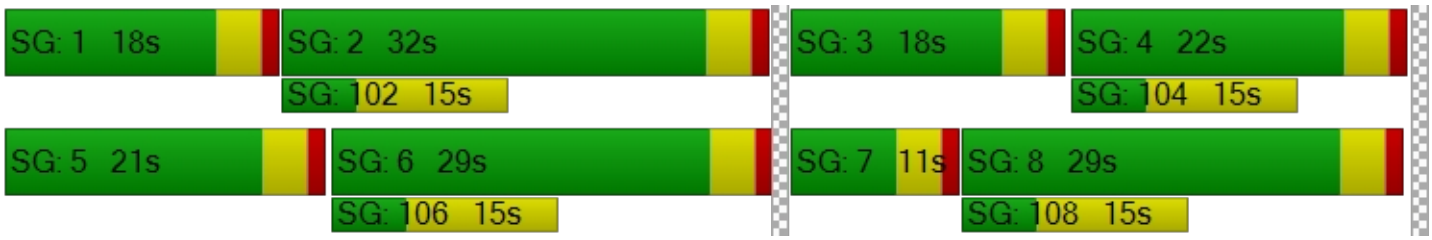
X, volume / capacity	0.53	0.19	0.19	0.46	0.62	0.78	0.77	0.10	0.09	0.34	0.81
d, Delay for Lane Group [s/veh]	26.29	16.46	16.47	26.33	20.29	23.29	26.80	12.80	12.79	28.27	24.82
Lane Group LOS	C	B	B	C	C	C	C	B	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.19	0.82	0.82	0.88	3.02	3.55	2.83	0.45	0.37	0.37	3.83
50th-Percentile Queue Length [ft/ln]	29.65	20.57	20.43	21.88	75.42	88.73	70.83	11.32	9.28	9.32	95.81
95th-Percentile Queue Length [veh/ln]	2.13	1.48	1.47	1.58	5.43	6.39	5.10	0.82	0.67	0.67	6.90
95th-Percentile Queue Length [ft/ln]	53.36	37.02	36.78	39.38	135.76	159.71	127.49	20.38	16.70	16.77	172.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.29	16.46	16.47	26.33	20.29	23.29	26.80	12.80	12.79	28.27	24.82	24.82
Movement LOS	C	B	B	C	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	19.82			22.31			22.19			25.10		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	22.45											
Intersection LOS	C											
Intersection V/C	0.758											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.419

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	3	1	5	62	1	76	44	46	0	1	156	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	5	62	1	76	44	46	0	1	156	28
Peak Hour Factor	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	2	27	0	33	19	20	0	0	68	12
Total Analysis Volume [veh/h]	5	2	9	108	2	132	77	80	0	2	271	49
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	696	742	710	768
Degree of Utilization, x	0.02	0.33	0.22	0.42

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.07	1.42	0.84	2.09
95th-Percentile Queue Length [ft]	1.76	35.49	21.04	52.18
Approach Delay [s/veh]	8.29	10.18	9.50	11.03
Approach LOS	A	B	A	B
Intersection Delay [s/veh]	10.37			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	28.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.636

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	149	333	83	17	481	21	11	45	191	160	66	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	149	333	83	17	481	21	11	45	191	160	66	20
Peak Hour Factor	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	103	26	5	149	7	3	14	59	50	20	6
Total Analysis Volume [veh/h]	185	413	103	21	596	26	14	56	237	198	82	25
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	24	0	21	26	0	11	26	0	19	34	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	44	44	3	36	36	2	15	15	12	25	25
g / C, Green / Cycle	0.12	0.49	0.49	0.03	0.40	0.40	0.02	0.17	0.17	0.13	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.10	0.14	0.14	0.01	0.16	0.17	0.01	0.03	0.15	0.11	0.04	0.02
s, saturation flow rate [veh/h]	1810	1900	1771	1810	1900	1872	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	224	924	862	60	752	741	44	327	278	237	529	450
d1, Uniform Delay [s]	38.56	13.83	13.84	42.64	19.70	19.71	43.25	31.86	36.24	38.23	24.53	23.84
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.52	0.79	0.85	3.44	1.69	1.72	4.04	0.25	7.37	7.55	0.13	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.29	0.29	0.35	0.42	0.42	0.32	0.17	0.85	0.84	0.15	0.06
d, Delay for Lane Group [s/veh]	46.08	14.61	14.69	46.08	21.39	21.43	47.29	32.11	43.61	45.78	24.67	23.89
Lane Group LOS	D	B	B	D	C	C	D	C	D	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.35	3.21	3.02	0.51	4.84	4.78	0.35	1.04	5.46	4.64	1.30	0.39
50th-Percentile Queue Length [ft/ln]	108.71	80.18	75.55	12.64	121.00	119.60	8.76	25.98	136.58	116.09	32.53	9.65
95th-Percentile Queue Length [veh/ln]	7.77	5.77	5.44	0.91	8.45	8.37	0.63	1.87	9.30	8.18	2.34	0.69
95th-Percentile Queue Length [ft/ln]	194.20	144.33	135.99	22.76	211.20	209.28	15.77	46.77	232.41	204.44	58.56	17.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.08	14.64	14.69	46.08	21.41	21.43	47.29	32.11	43.61	45.78	24.67	23.89
Movement LOS	D	B	B	D	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	22.94			22.22			41.68			38.31		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	28.04											
Intersection LOS	C											
Intersection V/C	0.636											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	27.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.565

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	632	183	0	0	325	271	0	0	0	313	3	144
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	632	183	0	0	325	271	0	0	0	313	3	144
Peak Hour Factor	0.9190	0.9190	1.0000	1.0000	0.9190	0.9190	1.0000	1.0000	1.0000	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	172	50	0	0	88	74	0	0	0	85	1	39
Total Analysis Volume [veh/h]	688	199	0	0	354	295	0	0	0	341	3	157
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	52	71	0	0	19	0	0	0	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	21	71	46	46		11	11	11
g / C, Green / Cycle	0.23	0.79	0.51	0.51		0.12	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.20	0.06	0.17	0.20		0.10	0.10	0.10
s, saturation flow rate [veh/h]	3514	3618	1900	1637		1810	1808	1615
c, Capacity [veh/h]	819	2853	971	837		222	222	198
d1, Uniform Delay [s]	32.93	2.13	12.98	13.42		38.33	38.33	38.33
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	2.42	0.05	0.93	1.36		5.89	5.89	6.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

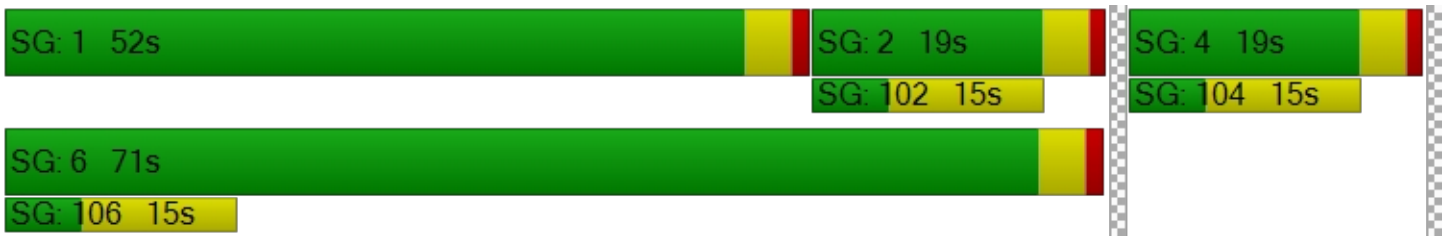
X, volume / capacity	0.84	0.07	0.33	0.39		0.78	0.78	0.78
d, Delay for Lane Group [s/veh]	35.35	2.18	13.91	14.78		44.22	44.22	44.89
Lane Group LOS	D	A	B	B		D	D	D
Critical Lane Group	Yes	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.15	0.25	3.81	4.00		3.97	3.97	3.58
50th-Percentile Queue Length [ft/ln]	178.75	6.18	95.33	100.00		99.30	99.23	89.56
95th-Percentile Queue Length [veh/ln]	11.54	0.45	6.86	7.20		7.15	7.14	6.45
95th-Percentile Queue Length [ft/ln]	288.38	11.13	171.59	179.99		178.74	178.61	161.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.35	2.18	0.00	0.00	13.98	14.78	0.00	0.00	0.00	44.22	44.22	44.89
Movement LOS	D	A			B	B				D	D	D
d_A, Approach Delay [s/veh]	27.91			14.34			0.00			44.43		
Approach LOS	C			B			A			D		
d_I, Intersection Delay [s/veh]	27.65											
Intersection LOS	C											
Intersection V/C	0.565											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	18.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.499

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	757	346	196	437	0	70	4	404	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	757	346	196	437	0	70	4	404	0	0	0
Peak Hour Factor	1.0000	0.9160	0.9160	0.9160	0.9160	1.0000	0.9160	0.9160	0.9160	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	207	94	53	119	0	19	1	110	0	0	0
Total Analysis Volume [veh/h]	0	826	378	214	477	0	76	4	441	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	11	30	0	0	60	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	56	56	7	67	15	15	15	
g / C, Green / Cycle	0.62	0.62	0.08	0.74	0.17	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.23	0.06	0.13	0.04	0.14	0.14	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1619	1615	
c, Capacity [veh/h]	2234	997	277	2679	309	276	275	
d1, Uniform Delay [s]	8.54	8.60	40.69	3.49	32.33	35.92	35.92	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.47	1.10	4.59	0.15	0.41	5.52	5.54	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

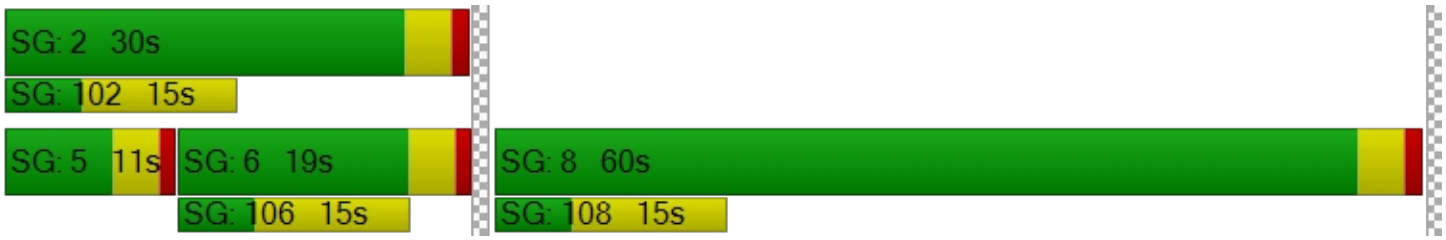
X, volume / capacity	0.37	0.38	0.77	0.18	0.25	0.81	0.81	
d, Delay for Lane Group [s/veh]	9.01	9.70	45.28	3.64	32.74	41.44	41.45	
Lane Group LOS	A	A	D	A	C	D	D	
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	3.59	3.48	2.45	0.98	1.43	4.98	4.97	
50th-Percentile Queue Length [ft/ln]	89.83	87.06	61.21	24.51	35.86	124.49	124.19	
95th-Percentile Queue Length [veh/ln]	6.47	6.27	4.41	1.76	2.58	8.64	8.62	
95th-Percentile Queue Length [ft/ln]	161.69	156.70	110.17	44.12	64.54	215.98	215.57	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	9.01	9.70	45.28	3.64	0.00	32.74	41.44	41.45	0.00	0.00	0.00
Movement LOS		A	A	D	A		C	D	D			
d_A, Approach Delay [s/veh]	9.23			16.53			40.18			0.00		
Approach LOS	A			B			D			A		
d_I, Intersection Delay [s/veh]	17.99											
Intersection LOS	B											
Intersection V/C	0.499											

Sequence

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



Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex PM.vistro
Report File: K:\...\1 EX PM.pdf

Scenario 19 EX PM
10/9/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	EB Left	0.472	28.5	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	WB Left	0.654	23.6	C
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.681	23.7	C
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.000	22.8	C
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	WB Left	0.706	18.6	B
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	EB Thru	0.119	7.5	A
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	WB Left	0.443	22.9	C
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	WB Left	0.524	25.9	C
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.643	21.8	C

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	28.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.472

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	83	194	277	36	197	43	12	205	128	320	177	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	194	277	36	197	43	12	205	128	320	177	34
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	50	71	9	50	11	3	53	33	82	45	9
Total Analysis Volume [veh/h]	85	199	284	37	202	44	12	210	131	328	181	35
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	35	0	11	33	0	11	22	0	22	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	48	48	4	46	46	2	11	11	11	20	20
g / C, Green / Cycle	0.07	0.53	0.53	0.05	0.51	0.51	0.02	0.13	0.13	0.12	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.18	0.02	0.06	0.03	0.01	0.09	0.10	0.09	0.06	0.06
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1665	3514	1900	1795
c, Capacity [veh/h]	126	1002	852	87	1831	817	39	240	210	424	428	404
d1, Uniform Delay [s]	40.95	11.25	12.22	41.69	11.65	11.31	43.45	37.97	38.18	38.46	28.73	28.75
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.14	0.44	1.05	3.22	0.12	0.13	4.36	4.44	6.14	3.05	0.32	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.20	0.33	0.42	0.11	0.05	0.31	0.74	0.78	0.77	0.26	0.26
d, Delay for Lane Group [s/veh]	47.09	11.69	13.27	44.91	11.77	11.43	47.81	42.41	44.31	41.51	29.05	29.09
Lane Group LOS	D	B	B	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.02	2.05	3.24	0.86	1.02	0.45	0.31	3.97	3.76	3.60	1.95	1.86
50th-Percentile Queue Length [ft/ln]	50.38	51.32	80.99	21.52	25.42	11.13	7.64	99.18	94.10	90.00	48.70	46.59
95th-Percentile Queue Length [veh/ln]	3.63	3.69	5.83	1.55	1.83	0.80	0.55	7.14	6.77	6.48	3.51	3.35
95th-Percentile Queue Length [ft/ln]	90.68	92.37	145.78	38.74	45.75	20.03	13.76	178.52	169.37	162.00	87.66	83.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.09	11.69	13.27	44.91	11.77	11.43	47.81	42.70	44.31	41.51	29.07	29.09
Movement LOS	D	B	B	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	17.78			16.05			43.47			36.57		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	28.54											
Intersection LOS	C											
Intersection V/C	0.472											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	23.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.654

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	346	395	0	0	268	381	0	0	0	229	2	153
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	346	395	0	0	268	381	0	0	0	229	2	153
Peak Hour Factor	0.9770	0.9770	1.0000	1.0000	0.9770	0.9770	1.0000	1.0000	1.0000	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	101	0	0	69	97	0	0	0	59	1	39
Total Analysis Volume [veh/h]	354	404	0	0	274	390	0	0	0	234	2	157
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	52	71	0	0	19	0	0	0	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	20	68	45	45		14	14
g / C, Green / Cycle	0.22	0.76	0.49	0.49		0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.20	0.11	0.14	0.24		0.13	0.10
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1618
c, Capacity [veh/h]	401	2750	939	798		273	245
d1, Uniform Delay [s]	33.94	2.92	13.45	15.18		37.26	35.98
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	6.57	0.11	0.79	2.13		7.56	2.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

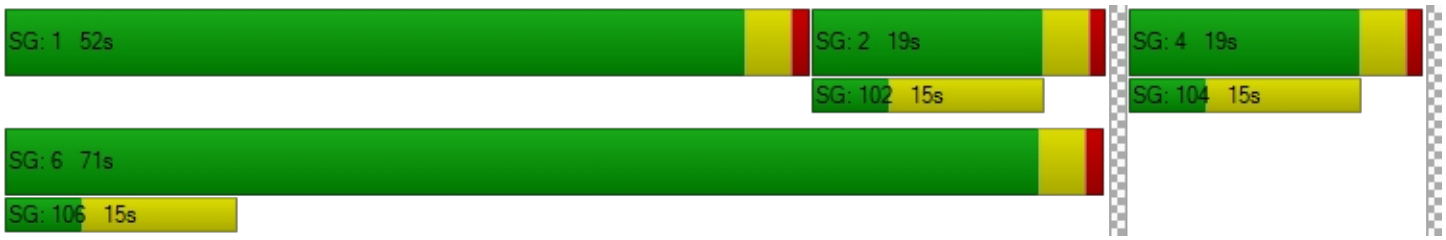
X, volume / capacity	0.88	0.15	0.29	0.49		0.86	0.65
d, Delay for Lane Group [s/veh]	40.50	3.03	14.24	17.31		44.82	38.88
Lane Group LOS	D	A	B	B		D	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	7.93	0.70	3.26	5.37		5.44	3.39
50th-Percentile Queue Length [ft/ln]	198.32	17.47	81.38	134.27		136.12	84.82
95th-Percentile Queue Length [veh/ln]	12.55	1.26	5.86	9.17		9.27	6.11
95th-Percentile Queue Length [ft/ln]	313.80	31.45	146.48	229.29		231.79	152.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.50	3.03	0.00	0.00	14.24	17.31	0.00	0.00	0.00	44.82	38.88	38.88
Movement LOS	D	A			B	B				D	D	D
d_A, Approach Delay [s/veh]	20.53			16.05			0.00			42.42		
Approach LOS	C			B			A			D		
d_I, Intersection Delay [s/veh]	23.63											
Intersection LOS	C											
Intersection V/C	0.654											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	23.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.681

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	484	273	155	348	0	254	0	370	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	484	273	155	348	0	254	0	370	0	0	0
Peak Hour Factor	1.0000	0.9130	0.9130	0.9130	0.9130	1.0000	0.9130	0.9130	0.9130	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	133	75	42	95	0	70	0	101	0	0	0
Total Analysis Volume [veh/h]	0	530	299	170	381	0	278	0	405	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	20	39	0	0	51	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	42	42	10	57	25	25	
g / C, Green / Cycle	0.47	0.47	0.11	0.63	0.28	0.28	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.25	0.09	0.11	0.15	0.25	
s, saturation flow rate [veh/h]	1900	1685	1810	3618	1810	1615	
c, Capacity [veh/h]	891	790	208	2273	512	457	
d1, Uniform Delay [s]	16.24	16.84	38.93	6.96	27.35	30.90	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.75	2.48	7.68	0.16	0.90	5.94	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

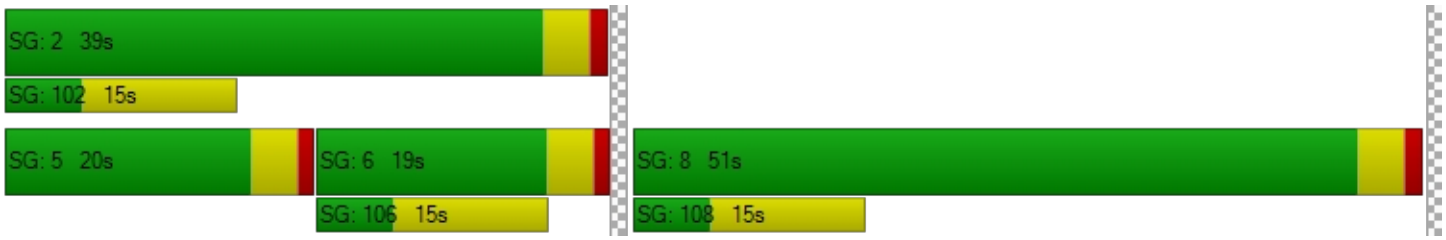
X, volume / capacity	0.47	0.52	0.82	0.17	0.54	0.89	
d, Delay for Lane Group [s/veh]	17.99	19.32	46.61	7.12	28.25	36.84	
Lane Group LOS	B	B	D	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.82	6.13	4.01	1.37	5.00	8.77	
50th-Percentile Queue Length [ft/ln]	145.44	153.23	100.35	34.17	124.92	219.19	
95th-Percentile Queue Length [veh/ln]	9.77	10.19	7.23	2.46	8.66	13.62	
95th-Percentile Queue Length [ft/ln]	244.34	254.74	180.63	61.51	216.58	340.59	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	18.28	19.32	46.61	7.12	0.00	28.25	28.25	36.84	0.00	0.00	0.00
Movement LOS		B	B	D	A		C	C	D			
d_A, Approach Delay [s/veh]	18.66			19.30			33.34			0.00		
Approach LOS	B			B			C			A		
d_I, Intersection Delay [s/veh]	23.69											
Intersection LOS	C											
Intersection V/C	0.681											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	22.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	4	430	0	0	556	0	2	0	11	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	430	0	0	556	0	2	0	11	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	113	0	0	146	0	1	0	3	0	0	0
Total Analysis Volume [veh/h]	4	453	0	0	585	0	2	0	12	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.62	0.00	0.00	8.22	0.00	0.00	22.65	21.01	12.28	22.77	20.72	10.89
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.30	0.30	0.00	0.00	0.00	0.00	2.55	2.55	2.55	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.08			0.00			13.76			18.13		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.22											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	49	170	25	113	224	219	186	182	55	11	158	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	49	170	25	113	224	219	186	182	55	11	158	78
Peak Hour Factor	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	49	7	33	65	63	54	52	16	3	46	22
Total Analysis Volume [veh/h]	57	196	29	130	258	253	215	210	63	13	182	90
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	24	0	15	28	0	23	21	0	30	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	46	46	46	46	46	46	46	46	46	46	46
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	8	8	6	10	10	7	15	15	1	9
g / C, Green / Cycle	0.08	0.17	0.17	0.12	0.22	0.22	0.16	0.33	0.33	0.02	0.20
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.06	0.07	0.14	0.16	0.12	0.11	0.04	0.01	0.15
s, saturation flow rate [veh/h]	1810	1900	1816	1810	1900	1615	1810	1900	1615	1810	1795
c, Capacity [veh/h]	144	328	314	225	413	351	286	628	534	43	352
d1, Uniform Delay [s]	20.05	16.69	16.71	18.94	16.25	16.65	18.44	11.55	10.69	22.00	17.46
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.76	0.63	0.68	2.34	1.56	2.80	3.98	0.31	0.10	3.93	3.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.35	0.35	0.58	0.62	0.72	0.75	0.33	0.12	0.30	0.77
d, Delay for Lane Group [s/veh]	21.80	17.31	17.39	21.28	17.80	19.45	22.42	11.86	10.79	25.93	21.09
Lane Group LOS	C	B	B	C	B	B	C	B	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.57	0.95	0.94	1.27	2.22	2.32	2.17	1.33	0.37	0.17	2.63
50th-Percentile Queue Length [ft/ln]	14.37	23.80	23.39	31.68	55.40	58.02	54.13	33.20	9.20	4.20	65.75
95th-Percentile Queue Length [veh/ln]	1.03	1.71	1.68	2.28	3.99	4.18	3.90	2.39	0.66	0.30	4.73
95th-Percentile Queue Length [ft/ln]	25.87	42.84	42.09	57.02	99.72	104.43	97.44	59.76	16.57	7.57	118.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.80	17.35	17.39	21.28	17.80	19.45	22.42	11.86	10.79	25.93	21.09	21.09
Movement LOS	C	B	B	C	B	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	18.25			19.16			16.37			21.31		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	18.57											
Intersection LOS	B											
Intersection V/C	0.706											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	7.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.119

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	1	0	1	18	1	35	37	50	1	4	45	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	1	18	1	35	37	50	1	4	45	22
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	5	0	10	11	14	0	1	13	6
Total Analysis Volume [veh/h]	1	0	1	21	1	40	43	58	1	5	52	25
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	867	905	859	908
Degree of Utilization, x	0.00	0.07	0.12	0.09

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.01	0.22	0.40	0.30
95th-Percentile Queue Length [ft]	0.17	5.50	10.06	7.42
Approach Delay [s/veh]	7.16	7.27	7.75	7.36
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.50			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	92	441	123	12	303	10	25	53	178	87	33	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	441	123	12	303	10	25	53	178	87	33	13
Peak Hour Factor	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	126	35	3	86	3	7	15	51	25	9	4
Total Analysis Volume [veh/h]	105	502	140	14	345	11	28	60	203	99	38	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	28	0	11	19	0	19	39	0	12	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	52	52	2	47	47	4	14	14	6	17	17
g / C, Green / Cycle	0.08	0.58	0.58	0.02	0.52	0.52	0.04	0.15	0.15	0.07	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.06	0.18	0.18	0.01	0.09	0.09	0.02	0.03	0.13	0.05	0.02	0.01
s, saturation flow rate [veh/h]	1810	1900	1759	1810	1900	1879	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	138	1090	1009	44	992	981	73	289	246	131	350	297
d1, Uniform Delay [s]	40.87	9.94	9.95	43.25	11.38	11.38	42.16	33.46	37.06	41.04	30.63	30.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.46	0.72	0.79	4.04	0.40	0.40	3.22	0.35	6.87	8.53	0.14	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

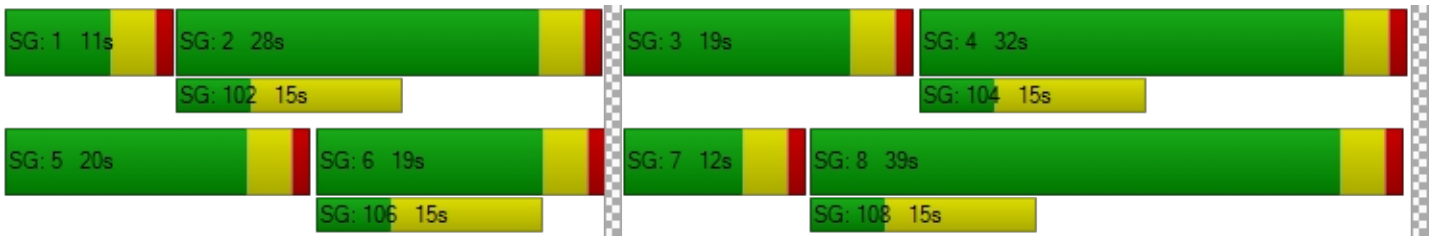
X, volume / capacity	0.76	0.31	0.31	0.32	0.18	0.18	0.38	0.21	0.83	0.76	0.11	0.05
d, Delay for Lane Group [s/veh]	49.32	10.67	10.74	47.29	11.77	11.79	45.38	33.81	43.93	49.57	30.77	30.37
Lane Group LOS	D	B	B	D	B	B	D	C	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.56	3.25	3.04	0.35	1.85	1.84	0.66	1.15	4.68	2.42	0.68	0.27
50th-Percentile Queue Length [ft/ln]	63.89	81.32	76.08	8.76	46.18	45.92	16.52	28.77	116.90	60.43	17.12	6.70
95th-Percentile Queue Length [veh/ln]	4.60	5.85	5.48	0.63	3.32	3.31	1.19	2.07	8.22	4.35	1.23	0.48
95th-Percentile Queue Length [ft/ln]	115.00	146.37	136.94	15.77	83.12	82.66	29.73	51.78	205.56	108.77	30.81	12.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.32	10.69	10.74	47.29	11.78	11.79	45.38	33.81	43.93	49.57	30.77	30.37
Movement LOS	D	B	B	D	B	B	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	16.13			13.12			41.99			42.98		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	22.86											
Intersection LOS	C											
Intersection V/C	0.443											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.524

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	486	396	0	0	385	165	0	0	0	472	2	194
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	486	396	0	0	385	165	0	0	0	472	2	194
Peak Hour Factor	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	128	105	0	0	102	44	0	0	0	125	1	51
Total Analysis Volume [veh/h]	514	419	0	0	407	174	0	0	0	499	2	205
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	45	64	0	0	19	0	0	0	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	16	67	47	47		15	15	15
g / C, Green / Cycle	0.18	0.74	0.52	0.52		0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.15	0.12	0.15	0.17		0.14	0.14	0.13
s, saturation flow rate [veh/h]	3514	3618	1900	1718		1810	1810	1615
c, Capacity [veh/h]	632	2680	981	888		308	308	275
d1, Uniform Delay [s]	35.46	3.42	12.43	12.67		35.98	35.98	35.50
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	2.59	0.12	0.77	0.98		5.17	5.16	4.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

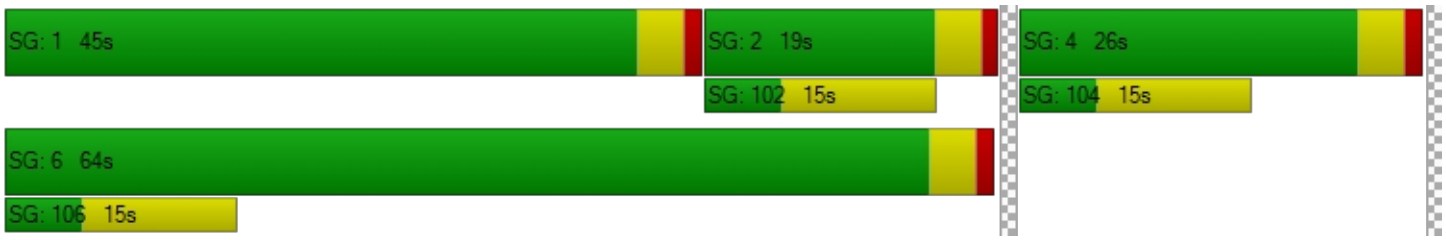
X, volume / capacity	0.81	0.16	0.30	0.33		0.81	0.81	0.75
d, Delay for Lane Group [s/veh]	38.05	3.54	13.19	13.65		41.14	41.14	39.51
Lane Group LOS	D	A	B	B		D	D	D
Critical Lane Group	Yes	No	No	Yes		Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.47	0.84	3.29	3.38		5.57	5.57	4.45
50th-Percentile Queue Length [ft/ln]	136.64	21.08	82.15	84.46		139.28	139.32	111.22
95th-Percentile Queue Length [veh/ln]	9.30	1.52	5.91	6.08		9.44	9.44	7.91
95th-Percentile Queue Length [ft/ln]	232.49	37.95	147.87	152.03		236.06	236.10	197.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.05	3.54	0.00	0.00	13.32	13.65	0.00	0.00	0.00	41.14	41.14	39.51
Movement LOS	D	A			B	B				D	D	D
d_A, Approach Delay [s/veh]	22.55			13.42			0.00			40.67		
Approach LOS	C			B			A			D		
d_I, Intersection Delay [s/veh]	25.92											
Intersection LOS	C											
Intersection V/C	0.524											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.643

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	685	421	230	611	0	211	3	698	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	685	421	230	611	0	211	3	698	0	0	0
Peak Hour Factor	1.0000	0.9740	0.9740	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	176	108	59	157	0	54	1	179	0	0	0
Total Analysis Volume [veh/h]	0	703	432	236	627	0	217	3	717	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	12	31	0	0	59	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	46	46	8	58	24	24	24	
g / C, Green / Cycle	0.52	0.52	0.09	0.65	0.26	0.26	0.26	
(v / s)_i Volume / Saturation Flow Rate	0.19	0.27	0.07	0.17	0.12	0.22	0.22	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1617	1615	
c, Capacity [veh/h]	1862	831	311	2343	477	426	426	
d1, Uniform Delay [s]	13.16	14.48	40.10	6.77	27.74	31.41	31.42	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.59	2.32	3.81	0.28	0.68	4.65	4.68	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

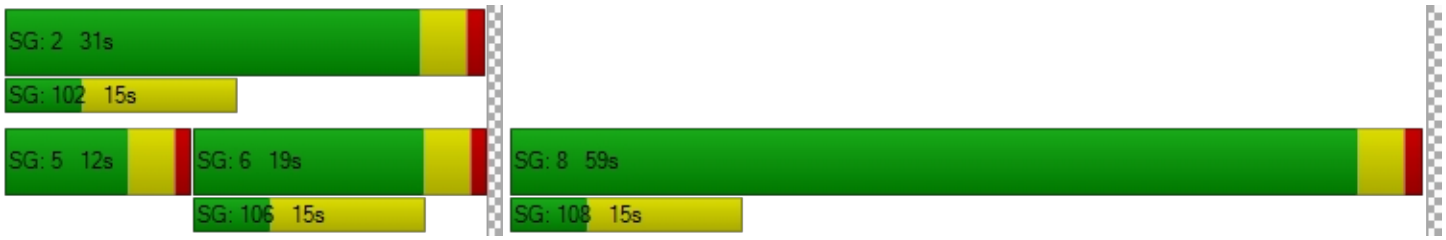
X, volume / capacity	0.38	0.52	0.76	0.27	0.45	0.84	0.85	
d, Delay for Lane Group [s/veh]	13.75	16.80	43.91	7.05	28.42	36.06	36.10	
Lane Group LOS	B	B	D	A	C	D	D	
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	4.08	5.85	2.66	2.25	3.86	7.64	7.64	
50th-Percentile Queue Length [ft/ln]	102.10	146.29	66.39	56.32	96.61	191.01	191.11	
95th-Percentile Queue Length [veh/ln]	7.35	9.82	4.78	4.06	6.96	12.17	12.18	
95th-Percentile Queue Length [ft/ln]	183.78	245.47	119.49	101.38	173.89	304.34	304.47	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	13.75	16.80	43.91	7.05	0.00	28.42	36.06	36.08	0.00	0.00	0.00
Movement LOS		B	B	D	A		C	D	D			
d_A, Approach Delay [s/veh]	14.91			17.13			34.30			0.00		
Approach LOS	B			B			C			A		
d_I, Intersection Delay [s/veh]	21.75											
Intersection LOS	C											
Intersection V/C	0.643											

Sequence

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



APPENDIX D-2

INTERSECTION ANALYSIS WORKSHEETS - OPENING YEAR 2020 EXISTING PLUS GROWTH

Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex AM.vistro
Report File: K:\...\3 OY AM.pdf

Scenario 15 OY 2020 AM
9/24/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	NB Left	0.426	25.1	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	NB Left	0.789	25.7	C
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.704	24.5	C
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.000	25.8	D
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	WB Left	0.773	23.5	C
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	WB Thru	0.440	10.7	B
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	EB Left	0.662	28.6	C
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	WB Right	0.588	27.8	C
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.519	18.3	B

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	25.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.426

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	87	341	239	22	317	13	25	88	52	360	188	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	355	249	23	330	14	26	92	54	374	196	32
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	94	66	6	87	4	7	24	14	99	52	8
Total Analysis Volume [veh/h]	95	374	262	24	348	15	27	97	57	394	207	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	12	19	0	41	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	51	51	3	48	48	4	7	7	13	16	16
g / C, Green / Cycle	0.07	0.57	0.57	0.04	0.53	0.53	0.04	0.08	0.08	0.14	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.05	0.18	0.18	0.01	0.10	0.01	0.01	0.04	0.04	0.11	0.06	0.07
s, saturation flow rate [veh/h]	1810	1900	1644	1810	3618	1615	1810	1900	1676	3514	1900	1808
c, Capacity [veh/h]	130	1073	929	66	1917	856	72	146	129	506	345	328
d1, Uniform Delay [s]	41.01	10.39	10.41	42.42	11.03	10.06	42.22	40.07	40.22	37.21	32.30	32.32
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.72	0.77	0.91	3.31	0.21	0.04	3.24	3.04	4.12	2.63	0.63	0.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.73	0.32	0.32	0.36	0.18	0.02	0.38	0.54	0.58	0.78	0.36	0.36
d, Delay for Lane Group [s/veh]	48.73	11.17	11.32	45.73	11.24	10.10	45.46	43.11	44.34	39.84	32.93	32.98
Lane Group LOS	D	B	B	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.30	3.43	3.03	0.57	1.72	0.14	0.64	1.77	1.72	4.25	2.35	2.25
50th-Percentile Queue Length [ft/ln]	57.42	85.79	75.77	14.30	42.88	3.49	15.96	44.14	43.11	106.26	58.71	56.30
95th-Percentile Queue Length [veh/ln]	4.13	6.18	5.46	1.03	3.09	0.25	1.15	3.18	3.10	7.63	4.23	4.05
95th-Percentile Queue Length [ft/ln]	103.36	154.42	136.39	25.74	77.18	6.28	28.73	79.45	77.60	190.79	105.68	101.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.73	11.18	11.32	45.73	11.24	10.10	45.46	43.34	44.34	39.84	32.95	32.98
Movement LOS	D	B	B	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	16.11			13.33			43.97			37.23		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	25.09											
Intersection LOS	C											
Intersection V/C	0.426											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.789

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	297	464	0	0	302	444	0	0	0	337	10	206
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	309	483	0	0	314	462	0	0	0	350	10	214
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	81	127	0	0	83	122	0	0	0	92	3	56
Total Analysis Volume [veh/h]	325	508	0	0	331	486	0	0	0	368	11	225
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	32	51	0	0	19	0	0	0	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	18	61	39	39		21	21
g / C, Green / Cycle	0.20	0.68	0.43	0.43		0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.18	0.14	0.17	0.30		0.20	0.15
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1626
c, Capacity [veh/h]	368	2450	816	693		423	381
d1, Uniform Delay [s]	34.82	5.46	17.76	20.98		33.16	30.90
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.27	0.19	1.50	5.83		5.58	1.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

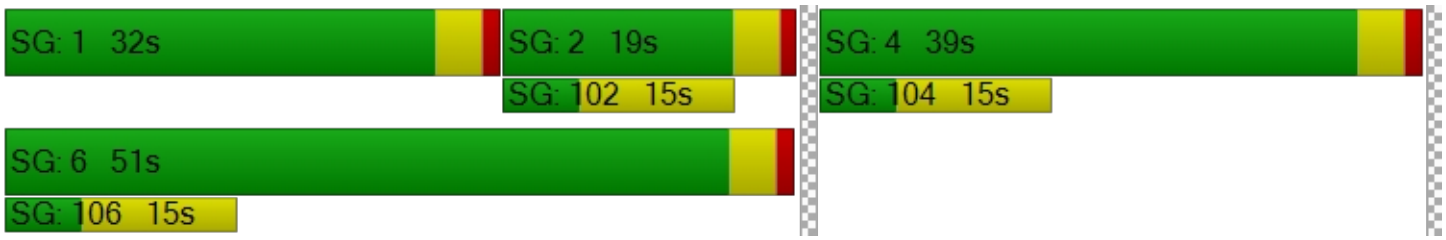
X, volume / capacity	0.88	0.21	0.41	0.70		0.87	0.62
d, Delay for Lane Group [s/veh]	42.09	5.65	19.26	26.81		38.74	32.56
Lane Group LOS	D	A	B	C		D	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	7.40	1.53	4.81	8.88		8.07	4.61
50th-Percentile Queue Length [ft/ln]	185.09	38.26	120.24	221.90		201.74	115.13
95th-Percentile Queue Length [veh/ln]	11.87	2.75	8.41	13.76		12.73	8.12
95th-Percentile Queue Length [ft/ln]	296.66	68.87	210.15	344.05		318.21	203.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.09	5.65	0.00	0.00	19.26	26.81	0.00	0.00	0.00	38.74	32.56	32.56
Movement LOS	D	A			B	C				D	C	C
d_A, Approach Delay [s/veh]	19.87			23.75			0.00			36.32		
Approach LOS	B			C			A			D		
d_I, Intersection Delay [s/veh]	25.68											
Intersection LOS	C											
Intersection V/C	0.789											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	411	256	166	465	0	351	2	462	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	427	266	173	484	0	365	2	480	0	0	0
Peak Hour Factor	1.0000	0.9840	0.9840	0.9840	0.9840	1.0000	0.9840	0.9840	0.9840	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	108	68	44	123	0	93	1	122	0	0	0
Total Analysis Volume [veh/h]	0	434	270	176	492	0	371	2	488	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	15	34	0	0	56	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	37	37	10	52	30	30	
g / C, Green / Cycle	0.41	0.41	0.12	0.57	0.34	0.34	
(v / s)_i Volume / Saturation Flow Rate	0.19	0.21	0.10	0.14	0.21	0.30	
s, saturation flow rate [veh/h]	1900	1673	1810	3618	1810	1615	
c, Capacity [veh/h]	785	692	211	2078	609	544	
d1, Uniform Delay [s]	19.02	19.63	38.90	9.43	24.95	28.39	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.85	2.67	8.25	0.27	1.00	5.73	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

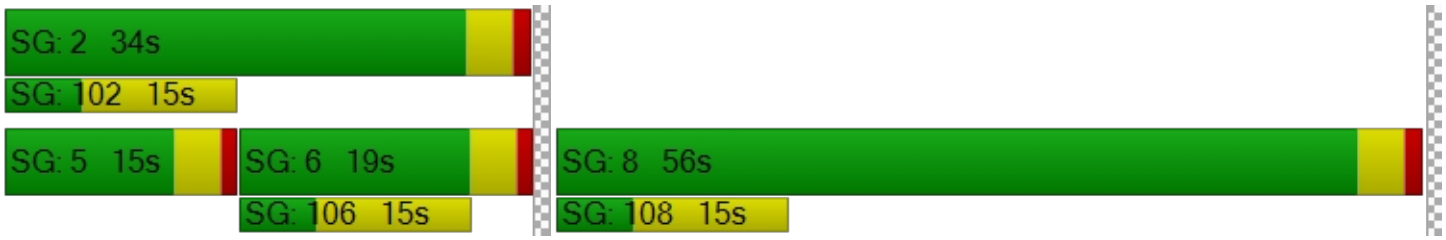
X, volume / capacity	0.45	0.51	0.83	0.24	0.61	0.90	
d, Delay for Lane Group [s/veh]	20.87	22.29	47.15	9.70	25.96	34.12	
Lane Group LOS	C	C	D	A	C	C	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.39	5.66	4.19	2.22	6.50	10.29	
50th-Percentile Queue Length [ft/ln]	134.84	141.52	104.63	55.51	162.58	257.32	
95th-Percentile Queue Length [veh/ln]	9.20	9.56	7.53	4.00	10.69	15.55	
95th-Percentile Queue Length [ft/ln]	230.06	239.07	188.33	99.92	267.13	388.86	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	21.14	22.29	47.15	9.70	0.00	25.96	25.96	34.12	0.00	0.00	0.00
Movement LOS		C	C	D	A		C	C	C			
d_A, Approach Delay [s/veh]	21.58			19.57			30.58			0.00		
Approach LOS	C			B			C			A		
d_I, Intersection Delay [s/veh]	24.45											
Intersection LOS	C											
Intersection V/C	0.704											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	25.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	8	462	0	0	580	0	0	0	1	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	480	0	0	603	0	0	0	1	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	126	0	0	159	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	8	505	0	0	635	0	0	0	1	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.79	0.00	0.00	8.36	0.00	0.00	25.75	23.39	12.48	25.78	23.37	11.30
Movement LOS	A	A	A	A	A	A	D	C	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.63	0.63	0.00	0.00	0.00	0.00	0.16	0.16	0.16	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.14			0.00			12.48			20.15		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.07											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	84	154	7	61	251	268	198	53	44	24	160	118
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	87	160	7	63	261	279	206	55	46	25	166	123
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	45	2	18	73	78	58	15	13	7	47	35
Total Analysis Volume [veh/h]	98	180	8	71	293	313	231	62	52	28	187	138
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	22	0	18	29	0	21	32	0	18	29	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	58	58	58	58	58	58	58	58	58	58	58
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	15	15	5	14	14	9	20	20	3	13
g / C, Green / Cycle	0.10	0.26	0.26	0.08	0.24	0.24	0.16	0.34	0.34	0.04	0.22
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.05	0.04	0.15	0.19	0.13	0.03	0.03	0.02	0.18
s, saturation flow rate [veh/h]	1810	1900	1872	1810	1900	1615	1810	1900	1615	1810	1768
c, Capacity [veh/h]	174	488	480	150	462	393	295	648	551	80	394
d1, Uniform Delay [s]	25.11	16.90	16.91	25.46	19.69	20.65	23.36	13.04	13.03	26.97	21.52
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.84	0.19	0.20	2.33	1.45	3.74	4.58	0.06	0.07	2.59	4.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

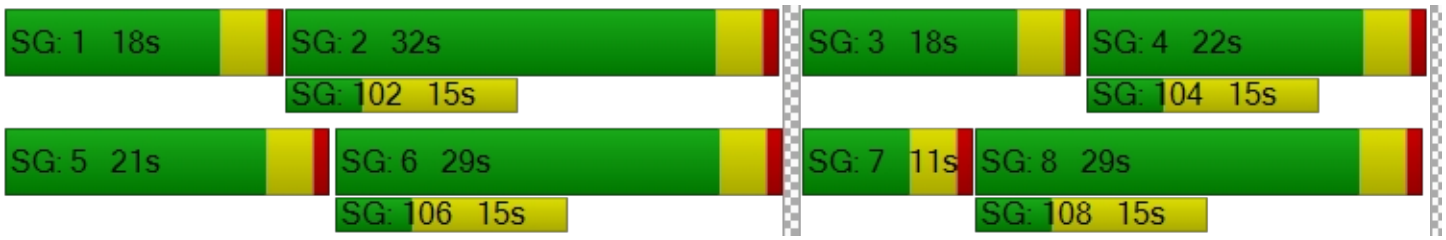
X, volume / capacity	0.56	0.19	0.19	0.47	0.63	0.80	0.78	0.10	0.09	0.35	0.83
d, Delay for Lane Group [s/veh]	27.95	17.09	17.11	27.78	21.13	24.39	27.94	13.10	13.11	29.56	25.94
Lane Group LOS	C	B	B	C	C	C	C	B	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.32	0.91	0.90	0.96	3.33	3.93	3.12	0.49	0.41	0.41	4.23
50th-Percentile Queue Length [ft/ln]	33.08	22.65	22.50	23.96	83.29	98.33	78.06	12.31	10.36	10.17	105.78
95th-Percentile Queue Length [veh/ln]	2.38	1.63	1.62	1.73	6.00	7.08	5.62	0.89	0.75	0.73	7.60
95th-Percentile Queue Length [ft/ln]	59.54	40.76	40.49	43.13	149.92	177.00	140.51	22.16	18.65	18.31	190.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.95	17.10	17.11	27.78	21.13	24.39	27.94	13.10	13.11	29.56	25.94	25.94
Movement LOS	C	B	B	C	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	20.82			23.34			23.04			26.23		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	23.46											
Intersection LOS	C											
Intersection V/C	0.773											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.440

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	3	1	5	62	1	76	44	46	0	1	156	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	5	64	1	79	46	48	0	1	162	29
Peak Hour Factor	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	2	28	0	34	20	21	0	0	70	13
Total Analysis Volume [veh/h]	5	2	9	111	2	137	80	83	0	2	282	50
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	683	732	701	759
Degree of Utilization, x	0.02	0.34	0.23	0.44

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.07	1.52	0.90	2.26
95th-Percentile Queue Length [ft]	1.80	37.94	22.43	56.49
Approach Delay [s/veh]	8.40	10.45	9.69	11.41
Approach LOS	A	B	A	B
Intersection Delay [s/veh]	10.66			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	28.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	149	333	83	17	481	21	11	45	191	160	66	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	155	346	86	18	500	22	11	47	199	166	69	21
Peak Hour Factor	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	107	27	6	155	7	3	15	62	51	21	7
Total Analysis Volume [veh/h]	192	429	107	22	620	27	14	58	247	206	86	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	22	0	22	24	0	11	28	0	18	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	43	43	3	34	34	2	16	16	12	26	26
g / C, Green / Cycle	0.13	0.48	0.48	0.03	0.38	0.38	0.02	0.18	0.18	0.13	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.11	0.15	0.15	0.01	0.17	0.17	0.01	0.03	0.15	0.11	0.05	0.02
s, saturation flow rate [veh/h]	1810	1900	1771	1810	1900	1872	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	232	903	841	62	725	714	44	339	288	244	549	466
d1, Uniform Delay [s]	38.36	14.55	14.56	42.56	20.83	20.83	43.25	31.41	35.95	38.07	23.89	23.18
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.43	0.88	0.95	3.39	2.01	2.05	4.04	0.24	7.33	7.72	0.13	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.31	0.31	0.35	0.45	0.45	0.32	0.17	0.86	0.84	0.16	0.06
d, Delay for Lane Group [s/veh]	45.78	15.43	15.51	45.95	22.84	22.88	47.29	31.65	43.28	45.79	24.02	23.23
Lane Group LOS	D	B	B	D	C	C	D	C	D	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.50	3.46	3.25	0.53	5.25	5.19	0.35	1.07	5.68	4.84	1.34	0.39
50th-Percentile Queue Length [ft/ln]	112.50	86.43	81.35	13.20	131.30	129.76	8.76	26.68	141.98	120.90	33.59	9.87
95th-Percentile Queue Length [veh/ln]	7.98	6.22	5.86	0.95	9.01	8.93	0.63	1.92	9.59	8.44	2.42	0.71
95th-Percentile Queue Length [ft/ln]	199.48	155.58	146.43	23.75	225.26	223.17	15.77	48.03	239.69	211.06	60.47	17.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.78	15.46	15.51	45.95	22.86	22.88	47.29	31.65	43.28	45.79	24.02	23.23
Movement LOS	D	B	B	D	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	23.46			23.62			41.34			38.05		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	28.60											
Intersection LOS	C											
Intersection V/C	0.662											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	27.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	632	183	0	0	325	271	0	0	0	313	3	144
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	657	190	0	0	338	282	0	0	0	326	3	150
Peak Hour Factor	0.9190	0.9190	1.0000	1.0000	0.9190	0.9190	1.0000	1.0000	1.0000	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	179	52	0	0	92	77	0	0	0	89	1	41
Total Analysis Volume [veh/h]	715	207	0	0	368	307	0	0	0	355	3	163
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	52	71	0	0	19	0	0	0	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	22	71	45	45		11	11	11
g / C, Green / Cycle	0.24	0.79	0.50	0.50		0.13	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.20	0.06	0.18	0.21		0.10	0.10	0.10
s, saturation flow rate [veh/h]	3514	3618	1900	1637		1810	1808	1615
c, Capacity [veh/h]	848	2839	949	817		229	228	204
d1, Uniform Delay [s]	32.55	2.21	13.73	14.22		38.17	38.17	38.17
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	2.39	0.05	1.04	1.54		5.95	5.96	6.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

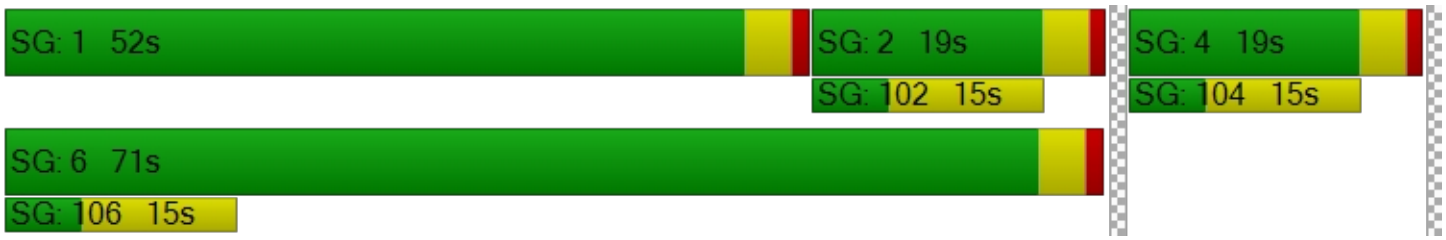
X, volume / capacity	0.84	0.07	0.36	0.41		0.79	0.79	0.79
d, Delay for Lane Group [s/veh]	34.94	2.26	14.77	15.76		44.12	44.12	44.81
Lane Group LOS	C	A	B	B		D	D	D
Critical Lane Group	Yes	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.40	0.27	4.13	4.35		4.13	4.13	3.72
50th-Percentile Queue Length [ft/ln]	185.09	6.70	103.34	108.67		103.19	103.13	93.12
95th-Percentile Queue Length [veh/ln]	11.87	0.48	7.44	7.77		7.43	7.43	6.70
95th-Percentile Queue Length [ft/ln]	296.65	12.06	186.01	194.15		185.75	185.64	167.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.94	2.26	0.00	0.00	14.86	15.76	0.00	0.00	0.00	44.12	44.12	44.81
Movement LOS	C	A			B	B				D	D	D
d_A, Approach Delay [s/veh]	27.60			15.27			0.00			44.33		
Approach LOS	C			B			A			D		
d_I, Intersection Delay [s/veh]	27.79											
Intersection LOS	C											
Intersection V/C	0.588											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	18.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.519

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	757	346	196	437	0	70	4	404	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	787	360	204	454	0	73	4	420	0	0	0
Peak Hour Factor	1.0000	0.9160	0.9160	0.9160	0.9160	1.0000	0.9160	0.9160	0.9160	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	215	98	56	124	0	20	1	115	0	0	0
Total Analysis Volume [veh/h]	0	859	393	223	496	0	80	4	459	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	11	30	0	0	60	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	55	55	7	66	16	16	16	
g / C, Green / Cycle	0.61	0.61	0.08	0.73	0.18	0.18	0.18	
(v / s)_i Volume / Saturation Flow Rate	0.24	0.24	0.06	0.14	0.04	0.14	0.14	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1619	1615	
c, Capacity [veh/h]	2212	988	277	2658	319	286	285	
d1, Uniform Delay [s]	8.91	8.98	40.80	3.67	31.94	35.63	35.63	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.52	1.20	5.49	0.16	0.41	5.48	5.50	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

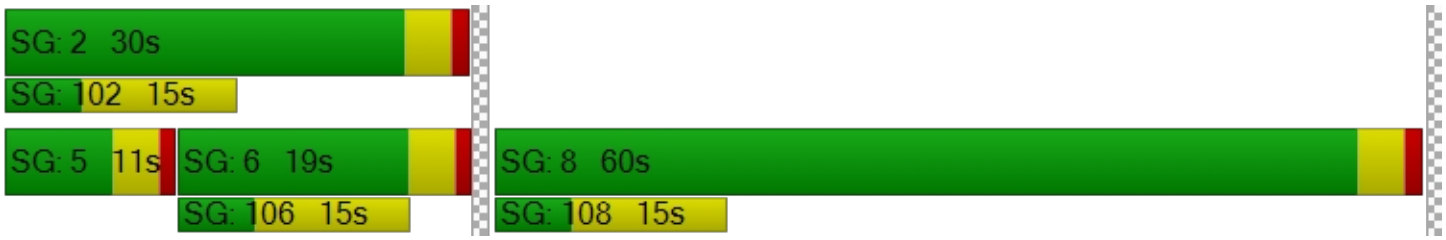
X, volume / capacity	0.39	0.40	0.81	0.19	0.25	0.81	0.81	
d, Delay for Lane Group [s/veh]	9.43	10.18	46.30	3.83	32.35	41.11	41.13	
Lane Group LOS	A	B	D	A	C	D	D	
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	3.87	3.75	2.58	1.07	1.50	5.17	5.15	
50th-Percentile Queue Length [ft/ln]	96.75	93.79	64.62	26.74	37.49	129.14	128.84	
95th-Percentile Queue Length [veh/ln]	6.97	6.75	4.65	1.92	2.70	8.89	8.88	
95th-Percentile Queue Length [ft/ln]	174.15	168.82	116.32	48.12	67.48	222.32	221.91	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	9.43	10.18	46.30	3.83	0.00	32.35	41.11	41.12	0.00	0.00	0.00
Movement LOS		A	B	D	A		C	D	D			
d_A, Approach Delay [s/veh]	9.67			17.00			39.83			0.00		
Approach LOS	A			B			D			A		
d_I, Intersection Delay [s/veh]	18.28											
Intersection LOS	B											
Intersection V/C	0.519											

Sequence

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



Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex PM.vistro
Report File: K:\...\3 OY PM.pdf

Scenario 15 OY 2020 PM
10/9/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	EB Left	0.490	28.6	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	WB Left	0.680	24.0	C
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.709	24.2	C
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.000	24.0	C
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	WB Left	0.716	19.2	B
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	EB Thru	0.122	7.5	A
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	WB Left	0.460	23.1	C
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	WB Left	0.545	26.0	C
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.704	22.1	C

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	28.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.490

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	83	194	277	36	197	43	12	205	128	320	177	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	86	202	288	37	205	45	12	213	133	333	184	35
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	52	74	9	53	12	3	55	34	85	47	9
Total Analysis Volume [veh/h]	88	207	295	38	210	46	12	218	136	341	189	36
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	35	0	11	33	0	11	22	0	22	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	47	47	4	45	45	2	12	12	11	21	21
g / C, Green / Cycle	0.07	0.52	0.52	0.05	0.50	0.50	0.02	0.13	0.13	0.12	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.05	0.11	0.18	0.02	0.06	0.03	0.01	0.10	0.10	0.10	0.06	0.06
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1665	3514	1900	1796
c, Capacity [veh/h]	127	986	838	89	1801	804	39	247	216	437	442	418
d1, Uniform Delay [s]	40.97	11.70	12.76	41.65	12.07	11.70	43.45	37.80	38.01	38.29	28.26	28.27
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.55	0.48	1.16	3.23	0.13	0.14	4.36	4.46	6.15	3.06	0.31	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.21	0.35	0.43	0.12	0.06	0.31	0.75	0.78	0.78	0.26	0.26
d, Delay for Lane Group [s/veh]	47.52	12.18	13.92	44.88	12.20	11.83	47.81	42.26	44.16	41.35	28.56	28.60
Lane Group LOS	D	B	B	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.10	2.20	3.48	0.88	1.08	0.48	0.31	4.12	3.90	3.74	2.01	1.92
50th-Percentile Queue Length [ft/ln]	52.43	54.91	86.92	22.08	27.07	11.91	7.64	102.95	97.44	93.47	50.27	48.06
95th-Percentile Queue Length [veh/ln]	3.77	3.95	6.26	1.59	1.95	0.86	0.55	7.41	7.02	6.73	3.62	3.46
95th-Percentile Queue Length [ft/ln]	94.37	98.84	156.46	39.75	48.73	21.43	13.76	185.32	175.39	168.25	90.48	86.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.52	12.18	13.92	44.88	12.20	11.83	47.81	42.56	44.16	41.35	28.58	28.60
Movement LOS	D	B	B	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	18.32			16.36			43.32			36.28		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	28.64											
Intersection LOS	C											
Intersection V/C	0.490											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.680

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	346	395	0	0	268	381	0	0	0	229	2	153
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	360	411	0	0	279	396	0	0	0	238	2	159
Peak Hour Factor	0.9770	0.9770	1.0000	1.0000	0.9770	0.9770	1.0000	1.0000	1.0000	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	105	0	0	71	101	0	0	0	61	1	41
Total Analysis Volume [veh/h]	368	421	0	0	286	405	0	0	0	244	2	163
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	52	71	0	0	19	0	0	0	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	21	68	43	43		14	14
g / C, Green / Cycle	0.23	0.76	0.48	0.48		0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.20	0.12	0.15	0.25		0.13	0.10
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1618
c, Capacity [veh/h]	415	2732	915	778		282	252
d1, Uniform Delay [s]	33.58	3.06	14.25	16.15		37.07	35.71
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	6.55	0.12	0.89	2.49		7.77	2.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

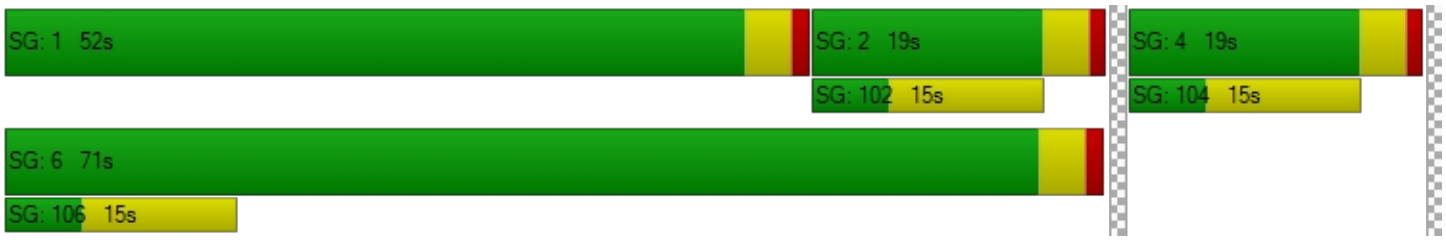
X, volume / capacity	0.89	0.15	0.31	0.52		0.86	0.65
d, Delay for Lane Group [s/veh]	40.13	3.18	15.14	18.64		44.84	38.56
Lane Group LOS	D	A	B	B		D	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	8.22	0.76	3.54	5.86		5.69	3.51
50th-Percentile Queue Length [ft/ln]	205.59	19.05	88.53	146.47		142.16	87.69
95th-Percentile Queue Length [veh/ln]	12.93	1.37	6.37	9.83		9.60	6.31
95th-Percentile Queue Length [ft/ln]	323.17	34.29	159.35	245.71		239.92	157.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.13	3.18	0.00	0.00	15.14	18.64	0.00	0.00	0.00	44.84	38.56	38.56
Movement LOS	D	A			B	B				D	D	D
d_A, Approach Delay [s/veh]	20.41			17.19			0.00			42.31		
Approach LOS	C			B			A			D		
d_I, Intersection Delay [s/veh]	23.97											
Intersection LOS	C											
Intersection V/C	0.680											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.709

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	484	273	155	348	0	254	0	370	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	503	284	161	362	0	264	0	385	0	0	0
Peak Hour Factor	1.0000	0.9130	0.9130	0.9130	0.9130	1.0000	0.9130	0.9130	0.9130	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	138	78	44	99	0	72	0	105	0	0	0
Total Analysis Volume [veh/h]	0	551	311	176	396	0	289	0	422	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	20	39	0	0	51	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	41	41	11	56	26	26	
g / C, Green / Cycle	0.46	0.46	0.12	0.62	0.29	0.29	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.26	0.10	0.11	0.16	0.26	
s, saturation flow rate [veh/h]	1900	1685	1810	3618	1810	1615	
c, Capacity [veh/h]	864	766	214	2234	531	474	
d1, Uniform Delay [s]	17.31	17.99	38.77	7.40	26.73	30.41	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.05	2.97	7.67	0.17	0.87	5.91	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

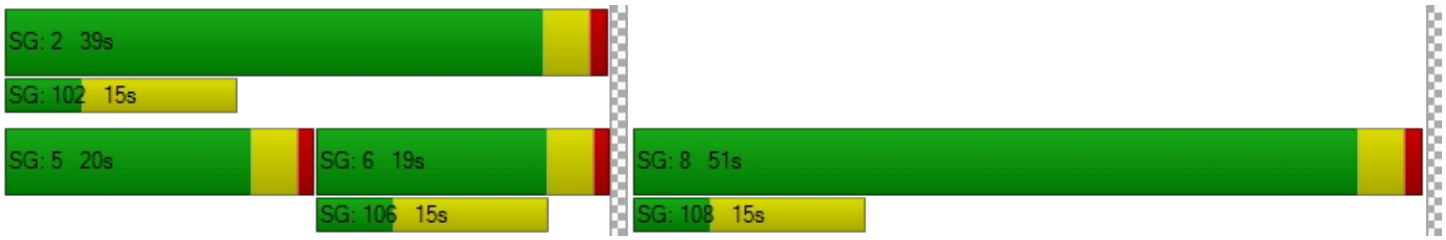
X, volume / capacity	0.50	0.56	0.82	0.18	0.54	0.89	
d, Delay for Lane Group [s/veh]	19.37	20.96	46.44	7.57	27.60	36.32	
Lane Group LOS	B	C	D	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.35	6.72	4.15	1.49	5.13	9.09	
50th-Percentile Queue Length [ft/ln]	158.85	168.03	103.74	37.21	128.36	227.34	
95th-Percentile Queue Length [veh/ln]	10.49	10.97	7.47	2.68	8.85	14.04	
95th-Percentile Queue Length [ft/ln]	262.20	274.32	186.72	66.98	221.26	350.98	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	19.71	20.96	46.44	7.57	0.00	27.60	27.60	36.32	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	C	D			
d_A, Approach Delay [s/veh]	20.16			19.53			32.77			0.00		
Approach LOS	C			B			C			A		
d_I, Intersection Delay [s/veh]	24.17											
Intersection LOS	C											
Intersection V/C	0.709											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	24.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	4	430	0	0	556	0	2	0	11	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	447	0	0	578	0	2	0	11	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	118	0	0	152	0	1	0	3	0	0	0
Total Analysis Volume [veh/h]	4	471	0	0	608	0	2	0	12	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.69	0.00	0.00	8.27	0.00	0.00	23.83	21.93	12.52	23.97	21.62	11.03
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00	0.11	0.11	0.11	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.31	0.31	0.00	0.00	0.00	0.00	2.66	2.66	2.66	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.07			0.00			14.14			18.87		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.21											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.716

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	49	170	25	113	224	219	186	182	55	11	158	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	177	26	118	233	228	193	189	57	11	164	81
Peak Hour Factor	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	51	7	34	67	66	56	54	16	3	47	23
Total Analysis Volume [veh/h]	59	204	30	136	269	263	223	218	66	13	189	93
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	24	0	15	28	0	23	21	0	30	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	48	48	48	48	48	48	48	48	48	48	48
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	9	9	6	11	11	8	16	16	1	10
g / C, Green / Cycle	0.08	0.18	0.18	0.12	0.22	0.22	0.16	0.34	0.34	0.02	0.20
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.06	0.08	0.14	0.16	0.12	0.11	0.04	0.01	0.16
s, saturation flow rate [veh/h]	1810	1900	1817	1810	1900	1615	1810	1900	1615	1810	1796
c, Capacity [veh/h]	145	340	325	223	421	358	294	646	549	43	361
d1, Uniform Delay [s]	20.90	17.18	17.21	19.88	16.87	17.30	19.13	11.77	10.86	22.96	18.11
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.82	0.61	0.66	2.71	1.62	2.94	4.01	0.31	0.10	3.96	3.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.35	0.36	0.61	0.64	0.73	0.76	0.34	0.12	0.31	0.78
d, Delay for Lane Group [s/veh]	22.72	17.79	17.87	22.59	18.49	20.23	23.14	12.07	10.96	26.92	21.82
Lane Group LOS	C	B	B	C	B	C	C	B	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.63	1.04	1.02	1.42	2.44	2.55	2.36	1.44	0.40	0.18	2.87
50th-Percentile Queue Length [ft/ln]	15.66	25.94	25.46	35.42	61.10	63.81	58.93	36.07	10.06	4.39	71.80
95th-Percentile Queue Length [veh/ln]	1.13	1.87	1.83	2.55	4.40	4.59	4.24	2.60	0.72	0.32	5.17
95th-Percentile Queue Length [ft/ln]	28.18	46.68	45.83	63.76	109.98	114.86	106.08	64.93	18.12	7.89	129.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.72	17.82	17.87	22.59	18.49	20.23	23.14	12.07	10.96	26.92	21.82	21.82
Movement LOS	C	B	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	18.81			20.01			16.79			22.05		
Approach LOS	B			C			B			C		
d_I, Intersection Delay [s/veh]	19.23											
Intersection LOS	B											
Intersection V/C	0.716											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	7.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.122

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	1	0	1	18	1	35	37	50	1	4	45	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	1	19	1	36	38	52	1	4	47	23
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	5	0	10	11	15	0	1	14	7
Total Analysis Volume [veh/h]	1	0	1	22	1	41	44	60	1	5	54	26
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	863	902	858	907
Degree of Utilization, x	0.00	0.07	0.12	0.09

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.01	0.23	0.42	0.31
95th-Percentile Queue Length [ft]	0.17	5.72	10.41	7.74
Approach Delay [s/veh]	7.18	7.30	7.78	7.38
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.52			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	23.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	92	441	123	12	303	10	25	53	178	87	33	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	459	128	12	315	10	26	55	185	90	34	14
Peak Hour Factor	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	131	36	3	90	3	7	16	53	26	10	4
Total Analysis Volume [veh/h]	109	523	146	14	359	11	30	63	211	103	39	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	28	0	11	19	0	19	39	0	12	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	51	51	2	46	46	4	14	14	7	17	17
g / C, Green / Cycle	0.08	0.57	0.57	0.02	0.52	0.52	0.04	0.16	0.16	0.07	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.06	0.18	0.18	0.01	0.10	0.10	0.02	0.03	0.13	0.06	0.02	0.01
s, saturation flow rate [veh/h]	1810	1900	1759	1810	1900	1880	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	141	1081	1001	43	978	967	76	298	253	132	358	304
d1, Uniform Delay [s]	40.75	10.25	10.26	43.27	11.77	11.77	42.06	33.12	36.84	41.03	30.31	29.98
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.64	0.79	0.85	4.33	0.43	0.44	3.34	0.35	7.01	9.43	0.13	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

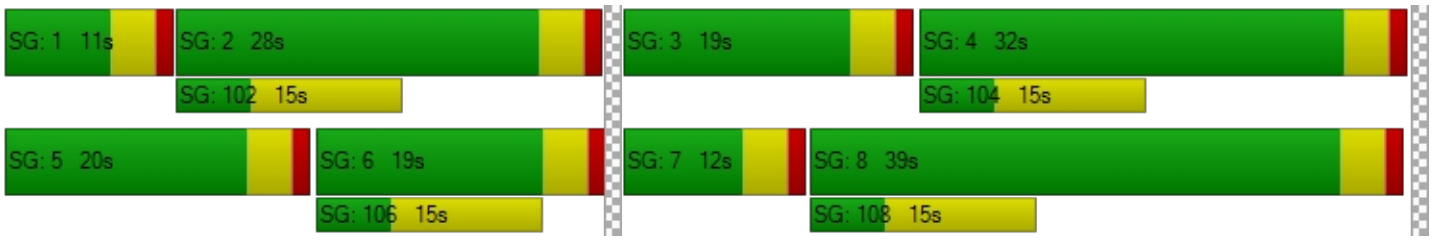
X, volume / capacity	0.77	0.32	0.32	0.33	0.19	0.19	0.40	0.21	0.83	0.78	0.11	0.05
d, Delay for Lane Group [s/veh]	49.39	11.03	11.11	47.60	12.20	12.21	45.40	33.47	43.84	50.47	30.44	30.05
Lane Group LOS	D	B	B	D	B	B	D	C	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.65	3.48	3.25	0.35	1.97	1.96	0.71	1.20	4.86	2.54	0.70	0.28
50th-Percentile Queue Length [ft/ln]	66.35	87.09	81.37	8.81	49.27	48.99	17.67	30.02	121.46	63.50	17.45	7.10
95th-Percentile Queue Length [veh/ln]	4.78	6.27	5.86	0.63	3.55	3.53	1.27	2.16	8.47	4.57	1.26	0.51
95th-Percentile Queue Length [ft/ln]	119.42	156.76	146.47	15.86	88.68	88.19	31.80	54.04	211.83	114.30	31.42	12.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.39	11.06	11.11	47.60	12.20	12.21	45.40	33.47	43.84	50.47	30.44	30.05
Movement LOS	D	B	B	D	B	B	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	16.44			13.50			41.85			43.46		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	23.13											
Intersection LOS	C											
Intersection V/C	0.460											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	486	396	0	0	385	165	0	0	0	472	2	194
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	505	412	0	0	400	172	0	0	0	491	2	202
Peak Hour Factor	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	133	109	0	0	106	45	0	0	0	130	1	53
Total Analysis Volume [veh/h]	534	436	0	0	423	182	0	0	0	519	2	214
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	45	64	0	0	19	0	0	0	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	17	66	45	45		16	16	16
g / C, Green / Cycle	0.19	0.74	0.51	0.51		0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.15	0.12	0.16	0.18		0.14	0.14	0.13
s, saturation flow rate [veh/h]	3514	3618	1900	1718		1810	1810	1615
c, Capacity [veh/h]	654	2660	959	867		318	318	284
d1, Uniform Delay [s]	35.17	3.58	13.12	13.39		35.73	35.73	35.26
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	2.57	0.13	0.86	1.11		5.20	5.19	4.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

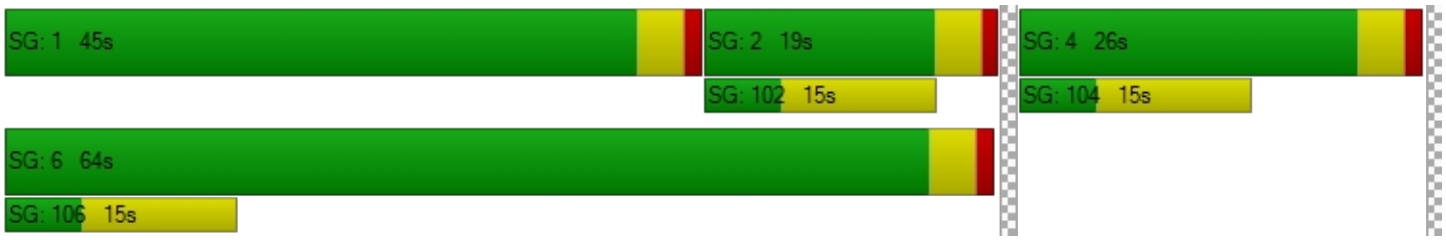
X, volume / capacity	0.82	0.16	0.32	0.35		0.82	0.82	0.75
d, Delay for Lane Group [s/veh]	37.75	3.72	13.99	14.50		40.93	40.92	39.31
Lane Group LOS	D	A	B	B		D	D	D
Critical Lane Group	Yes	No	No	Yes		Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.66	0.92	3.56	3.67		5.79	5.79	4.64
50th-Percentile Queue Length [ft/ln]	141.60	22.92	89.03	91.67		144.64	144.67	115.94
95th-Percentile Queue Length [veh/ln]	9.57	1.65	6.41	6.60		9.73	9.73	8.17
95th-Percentile Queue Length [ft/ln]	239.18	41.26	160.25	165.00		243.25	243.29	204.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.75	3.72	0.00	0.00	14.13	14.50	0.00	0.00	0.00	40.92	40.92	39.31
Movement LOS	D	A			B	B				D	D	D
d_A, Approach Delay [s/veh]	22.45			14.24			0.00			40.45		
Approach LOS	C			B			A			D		
d_I, Intersection Delay [s/veh]	26.03											
Intersection LOS	C											
Intersection V/C	0.545											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	685	421	230	611	0	211	3	698	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	712	438	239	635	0	219	3	726	0	0	0
Peak Hour Factor	1.0000	0.9740	0.9740	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	183	112	61	163	0	56	1	186	0	0	0
Total Analysis Volume [veh/h]	0	731	450	245	652	0	225	3	745	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	12	31	0	0	59	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	43	43	8	55	27	27	27	
g / C, Green / Cycle	0.48	0.48	0.09	0.61	0.30	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.20	0.28	0.07	0.18	0.12	0.26	0.20	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1617	1615	
c, Capacity [veh/h]	1719	767	315	2205	546	488	487	
d1, Uniform Delay [s]	15.54	17.19	40.10	8.38	25.07	29.75	27.47	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.77	3.27	4.12	0.34	0.50	4.86	1.57	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

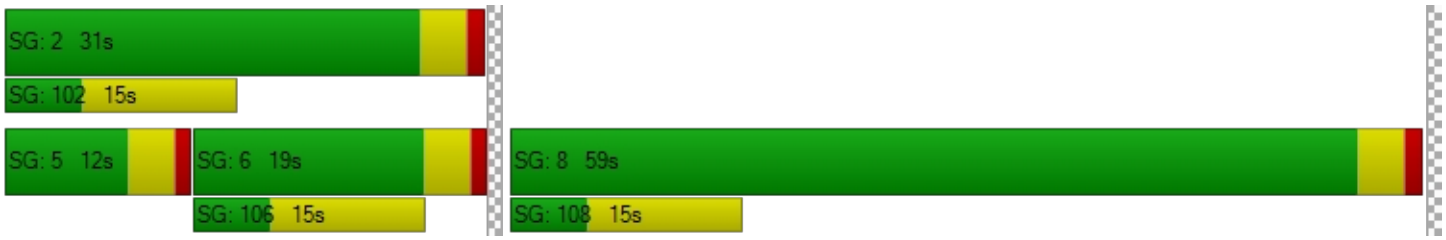
X, volume / capacity	0.43	0.59	0.78	0.30	0.41	0.87	0.67	
d, Delay for Lane Group [s/veh]	16.31	20.46	44.22	8.72	25.57	34.61	29.04	
Lane Group LOS	B	C	D	A	C	C	C	
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	
50th-Percentile Queue Length [veh/ln]	4.76	6.93	2.77	2.75	3.76	8.90	6.04	
50th-Percentile Queue Length [ft/ln]	119.11	173.34	69.24	68.77	94.09	222.49	150.95	
95th-Percentile Queue Length [veh/ln]	8.34	11.25	4.99	4.95	6.77	13.79	10.07	
95th-Percentile Queue Length [ft/ln]	208.60	281.30	124.63	123.79	169.37	344.81	251.70	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	16.31	20.46	44.22	8.72	0.00	25.57	34.61	32.18	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	C	C			
d_A, Approach Delay [s/veh]	17.89			18.42			30.66			0.00		
Approach LOS	B			B			C			A		
d_I, Intersection Delay [s/veh]	22.12											
Intersection LOS	C											
Intersection V/C	0.704											

Sequence

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



APPENDIX D-3

INTERSECTION ANALYSIS WORKSHEETS - OPENING YEAR 2020 EXISTING PLUS GROWTH PLUS PROJECT

Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex AM.vistro
Report File: K:\...\4 OY WP AM.pdf

Scenario 16 OY + Proj AM
10/10/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	NB Left	0.460	24.9	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	NB Left	0.800	25.3	C
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.705	24.7	C
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.145	31.4	D
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	WB Left	0.825	28.3	C
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	WB Thru	0.546	12.1	B
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	EB Left	0.704	29.8	C
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	WB Right	0.605	28.3	C
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.523	18.6	B
10	Maple Ave / North Dwy	Two-way stop	HCM 2010	EB Left	0.011	8.8	A
11	Maple Ave / South Dwy	Two-way stop	HCM 2010	EB Left	0.003	8.6	A

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	24.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	87	341	239	22	317	13	25	88	52	360	188	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	63	0	0	0	0	0	0	15	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	355	312	23	330	14	26	92	54	389	196	32
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	94	82	6	87	4	7	24	14	102	52	8
Total Analysis Volume [veh/h]	95	374	329	24	348	15	27	97	57	410	207	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	12	19	0	41	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	51	51	3	47	47	4	7	7	13	17	17
g / C, Green / Cycle	0.07	0.56	0.56	0.04	0.53	0.53	0.04	0.08	0.08	0.15	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.05	0.20	0.20	0.01	0.10	0.01	0.01	0.04	0.04	0.12	0.06	0.07
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1676	3514	1900	1808
c, Capacity [veh/h]	130	1064	905	66	1899	848	72	146	129	523	354	337
d1, Uniform Delay [s]	41.01	10.86	10.96	42.42	11.26	10.27	42.22	40.07	40.22	36.98	31.92	31.93
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.72	0.91	1.13	3.31	0.21	0.04	3.24	3.04	4.12	2.62	0.58	0.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

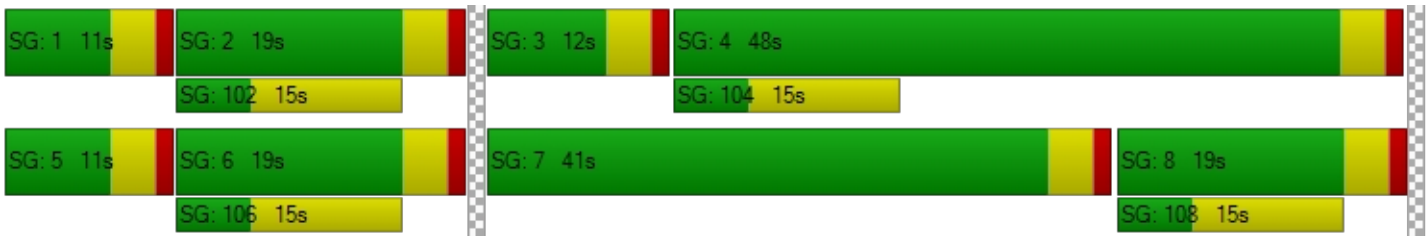
X, volume / capacity	0.73	0.35	0.36	0.36	0.18	0.02	0.38	0.54	0.58	0.78	0.35	0.35
d, Delay for Lane Group [s/veh]	48.73	11.78	12.09	45.73	11.47	10.31	45.46	43.11	44.34	39.59	32.51	32.55
Lane Group LOS	D	B	B	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.30	3.93	3.53	0.57	1.74	0.14	0.64	1.77	1.72	4.41	2.33	2.23
50th-Percentile Queue Length [ft/ln]	57.42	98.26	88.31	14.30	43.48	3.53	15.96	44.14	43.11	110.36	58.27	55.83
95th-Percentile Queue Length [veh/ln]	4.13	7.07	6.36	1.03	3.13	0.25	1.15	3.18	3.10	7.86	4.20	4.02
95th-Percentile Queue Length [ft/ln]	103.36	176.86	158.95	25.74	78.27	6.36	28.73	79.45	77.60	196.51	104.88	100.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.73	11.78	12.09	45.73	11.47	10.31	45.46	43.34	44.34	39.59	32.52	32.55
Movement LOS	D	B	B	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	16.31			13.55			43.97			36.98		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	24.93											
Intersection LOS	C											
Intersection V/C	0.460											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.800

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	297	464	0	0	302	444	0	0	0	337	10	206
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	63	0	0	1	14	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	309	546	0	0	315	476	0	0	0	350	10	214
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	81	144	0	0	83	125	0	0	0	92	3	56
Total Analysis Volume [veh/h]	325	575	0	0	332	501	0	0	0	368	11	225
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	32	51	0	0	19	0	0	0	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	18	61	39	39		21	21
g / C, Green / Cycle	0.20	0.68	0.43	0.43		0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.18	0.16	0.17	0.31		0.20	0.15
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1626
c, Capacity [veh/h]	368	2450	816	693		423	381
d1, Uniform Delay [s]	34.82	5.58	17.77	21.26		33.16	30.90
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.27	0.23	1.51	6.43		5.58	1.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

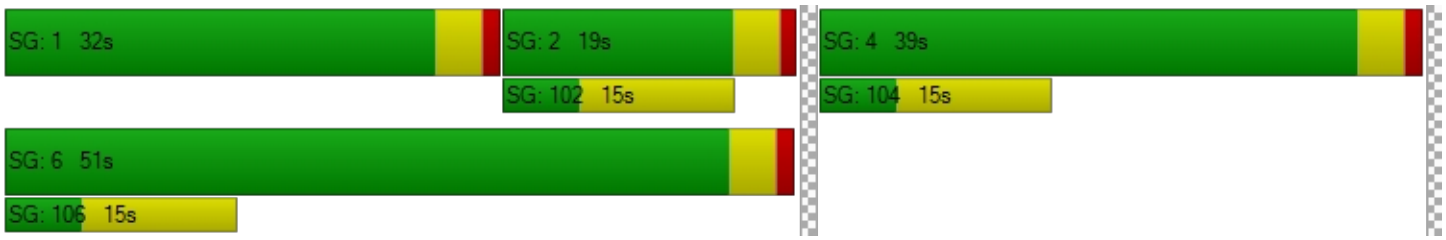
X, volume / capacity	0.88	0.23	0.41	0.72		0.87	0.62
d, Delay for Lane Group [s/veh]	42.09	5.80	19.27	27.69		38.74	32.56
Lane Group LOS	D	A	B	C		D	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	7.40	1.77	4.83	9.34		8.07	4.61
50th-Percentile Queue Length [ft/ln]	185.09	44.29	120.69	233.46		201.74	115.13
95th-Percentile Queue Length [veh/ln]	11.87	3.19	8.43	14.35		12.73	8.12
95th-Percentile Queue Length [ft/ln]	296.66	79.71	210.77	358.75		318.21	203.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.09	5.80	0.00	0.00	19.27	27.69	0.00	0.00	0.00	38.74	32.56	32.56
Movement LOS	D	A			B	C				D	C	C
d_A, Approach Delay [s/veh]	18.91			24.34			0.00			36.32		
Approach LOS	B			C			A			D		
d_I, Intersection Delay [s/veh]	25.34											
Intersection LOS	C											
Intersection V/C	0.800											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	411	256	166	465	0	351	2	462	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	0	1	0	57	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	433	266	173	485	0	422	2	480	0	0	0
Peak Hour Factor	1.0000	0.9840	0.9840	0.9840	0.9840	1.0000	0.9840	0.9840	0.9840	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	110	68	44	123	0	107	1	122	0	0	0
Total Analysis Volume [veh/h]	0	440	270	176	493	0	429	2	488	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	15	34	0	0	56	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	37	37	10	52	30	30	
g / C, Green / Cycle	0.41	0.41	0.12	0.57	0.34	0.34	
(v / s)_i Volume / Saturation Flow Rate	0.19	0.21	0.10	0.14	0.24	0.30	
s, saturation flow rate [veh/h]	1900	1675	1810	3618	1810	1615	
c, Capacity [veh/h]	783	690	211	2073	612	546	
d1, Uniform Delay [s]	19.15	19.76	38.90	9.50	25.89	28.27	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.90	2.73	8.25	0.27	1.50	5.53	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

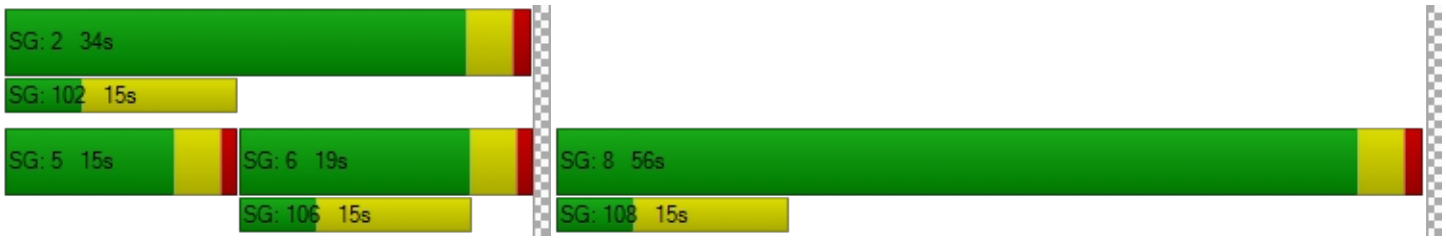
X, volume / capacity	0.45	0.51	0.83	0.24	0.70	0.89	
d, Delay for Lane Group [s/veh]	21.05	22.49	47.15	9.77	27.39	33.80	
Lane Group LOS	C	C	D	A	C	C	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.47	5.74	4.19	2.24	7.86	10.24	
50th-Percentile Queue Length [ft/ln]	136.75	143.56	104.63	55.90	196.52	256.02	
95th-Percentile Queue Length [veh/ln]	9.31	9.67	7.53	4.02	12.46	15.49	
95th-Percentile Queue Length [ft/ln]	232.64	241.81	188.33	100.62	311.48	387.22	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	21.33	22.49	47.15	9.77	0.00	27.39	27.39	33.80	0.00	0.00	0.00
Movement LOS		C	C	D	A		C	C	C			
d_A, Approach Delay [s/veh]	21.77			19.60			30.79			0.00		
Approach LOS	C			B			C			A		
d_I, Intersection Delay [s/veh]	24.75											
Intersection LOS	C											
Intersection V/C	0.705											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	31.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.145

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	8	462	0	0	580	0	0	0	1	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	20	88	10	5	0	0	0	0	22	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	500	88	10	608	0	0	0	1	22	0	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	132	23	3	160	0	0	0	0	6	0	1
Total Analysis Volume [veh/h]	8	526	93	11	640	0	0	0	1	23	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.15	0.00	0.01
d_M, Delay for Movement [s/veh]	8.81	0.00	0.00	8.75	0.00	0.00	29.55	27.71	12.53	31.38	28.63	15.14
Movement LOS	A	A	A	A	A	A	D	D	B	D	D	C
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.03	0.03	0.00	0.01	0.01	0.01	0.52	0.52	0.52
95th-Percentile Queue Length [ft/ln]	0.63	0.63	0.00	0.78	0.78	0.00	0.16	0.16	0.16	12.93	12.93	12.93
d_A, Approach Delay [s/veh]	0.11			0.15			12.53			29.50		
Approach LOS	A			A			B			D		
d_I, Intersection Delay [s/veh]	0.73											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	28.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.825

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	84	154	7	61	251	268	198	53	44	24	160	118
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	10	2	15	63	0	0	0	0	39
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	87	166	7	73	263	294	269	55	46	25	166	162
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	47	2	21	74	83	76	15	13	7	47	46
Total Analysis Volume [veh/h]	98	187	8	82	296	330	302	62	52	28	187	182
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	22	0	18	29	0	21	32	0	18	29	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	17	17	6	17	17	14	28	28	3	17
g / C, Green / Cycle	0.09	0.25	0.25	0.08	0.24	0.24	0.20	0.40	0.40	0.04	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.05	0.05	0.16	0.20	0.17	0.03	0.03	0.02	0.21
s, saturation flow rate [veh/h]	1810	1900	1873	1810	1900	1615	1810	1900	1615	1810	1748
c, Capacity [veh/h]	154	475	468	144	465	395	360	760	646	76	426
d1, Uniform Delay [s]	31.05	20.82	20.83	31.13	23.73	25.18	27.05	13.06	13.05	32.70	25.45
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.29	0.21	0.22	3.47	1.46	4.71	5.28	0.05	0.05	2.91	5.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

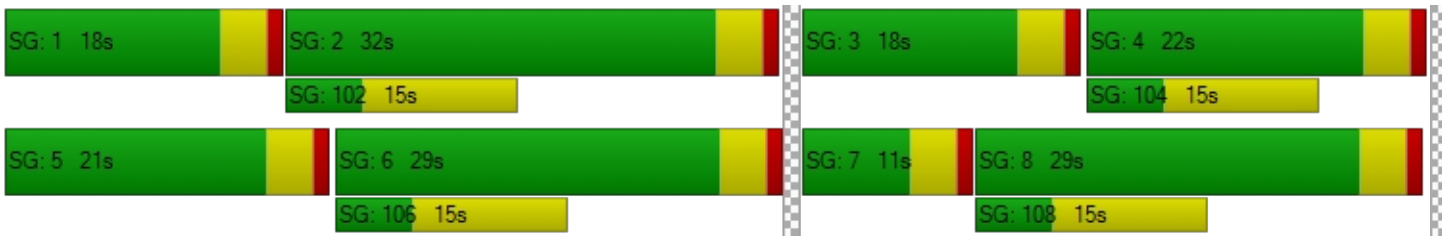
X, volume / capacity	0.64	0.21	0.21	0.57	0.64	0.84	0.84	0.08	0.08	0.37	0.87
d, Delay for Lane Group [s/veh]	35.34	21.03	21.05	34.60	25.19	29.89	32.33	13.10	13.10	35.62	30.89
Lane Group LOS	D	C	C	C	C	C	C	B	B	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.71	1.21	1.21	1.41	4.25	5.32	5.05	0.56	0.47	0.50	6.07
50th-Percentile Queue Length [ft/ln]	42.63	30.33	30.13	35.24	106.31	133.10	126.31	13.97	11.74	12.58	151.84
95th-Percentile Queue Length [veh/ln]	3.07	2.18	2.17	2.54	7.63	9.11	8.74	1.01	0.85	0.91	10.12
95th-Percentile Queue Length [ft/ln]	76.74	54.59	54.23	63.44	190.85	227.70	218.47	25.14	21.14	22.65	252.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.34	21.04	21.05	34.60	25.19	29.89	32.33	13.10	13.10	35.62	30.89	30.89
Movement LOS	D	C	C	C	C	C	C	B	B	D	C	C
d_A, Approach Delay [s/veh]	25.82			28.47			27.06			31.22		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.32											
Intersection LOS	C											
Intersection V/C	0.825											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.546

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	3	1	5	62	1	76	44	46	0	1	156	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	8	0	0	0	0	0	23	35	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	1	13	64	1	79	46	48	23	36	162	29
Peak Hour Factor	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	6	28	0	34	20	21	10	16	70	13
Total Analysis Volume [veh/h]	16	2	23	111	2	137	80	83	40	63	282	50
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	638	685	688	724
Degree of Utilization, x	0.06	0.37	0.30	0.55

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.21	1.67	1.23	3.33
95th-Percentile Queue Length [ft]	5.14	41.86	30.80	83.30
Approach Delay [s/veh]	9.03	11.25	10.42	13.78
Approach LOS	A	B	B	B
Intersection Delay [s/veh]	12.08			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	29.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	149	333	83	17	481	21	11	45	191	160	66	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	39	17	0	1	3	0	0	0	10	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	194	363	86	19	503	22	11	47	209	166	69	24
Peak Hour Factor	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	112	27	6	156	7	3	15	65	51	21	7
Total Analysis Volume [veh/h]	240	450	107	24	623	27	14	58	259	206	86	30
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	22	0	22	24	0	11	28	0	18	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	42	42	3	32	32	2	17	17	12	27	27
g / C, Green / Cycle	0.15	0.47	0.47	0.04	0.35	0.35	0.02	0.18	0.18	0.13	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.13	0.15	0.15	0.01	0.17	0.17	0.01	0.03	0.16	0.11	0.05	0.02
s, saturation flow rate [veh/h]	1810	1900	1776	1810	1900	1872	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	278	887	829	65	664	654	43	352	299	243	562	478
d1, Uniform Delay [s]	37.21	15.08	15.08	42.44	23.03	23.04	43.27	30.86	35.63	38.09	23.40	22.76
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.87	0.97	1.04	3.48	2.61	2.65	4.33	0.22	7.50	7.94	0.12	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.32	0.32	0.37	0.49	0.49	0.33	0.16	0.87	0.85	0.15	0.06
d, Delay for Lane Group [s/veh]	45.08	16.05	16.12	45.92	25.64	25.69	47.60	31.07	43.13	46.02	23.52	22.82
Lane Group LOS	D	B	B	D	C	C	D	C	D	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.61	3.70	3.48	0.57	5.67	5.61	0.35	1.06	5.95	4.85	1.33	0.45
50th-Percentile Queue Length [ft/ln]	140.19	92.39	86.96	14.35	141.87	140.22	8.81	26.38	148.82	121.20	33.16	11.27
95th-Percentile Queue Length [veh/ln]	9.49	6.65	6.26	1.03	9.58	9.49	0.63	1.90	9.95	8.46	2.39	0.81
95th-Percentile Queue Length [ft/ln]	237.28	166.31	156.52	25.82	239.54	237.32	15.86	47.48	248.85	211.47	59.69	20.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.08	16.07	16.12	45.92	25.66	25.69	47.60	31.07	43.13	46.02	23.52	22.82
Movement LOS	D	B	B	D	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	24.82			26.39			41.21			37.85		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	29.84											
Intersection LOS	C											
Intersection V/C	0.704											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	28.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.605

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	632	183	0	0	325	271	0	0	0	313	3	144
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	0	13	0	0	0	0	0	0	50
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	657	196	0	0	351	282	0	0	0	326	3	200
Peak Hour Factor	0.9190	0.9190	1.0000	1.0000	0.9190	0.9190	1.0000	1.0000	1.0000	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	179	53	0	0	95	77	0	0	0	89	1	54
Total Analysis Volume [veh/h]	715	213	0	0	382	307	0	0	0	355	3	218
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	52	71	0	0	19	0	0	0	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	22	70	44	44		12	12	12
g / C, Green / Cycle	0.24	0.77	0.49	0.49		0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.20	0.06	0.18	0.21		0.11	0.11	0.11
s, saturation flow rate [veh/h]	3514	3618	1900	1642		1810	1769	1615
c, Capacity [veh/h]	848	2800	928	802		248	243	221
d1, Uniform Delay [s]	32.55	2.44	14.39	14.91		37.70	37.70	37.71
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	2.39	0.05	1.14	1.68		6.15	6.30	6.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

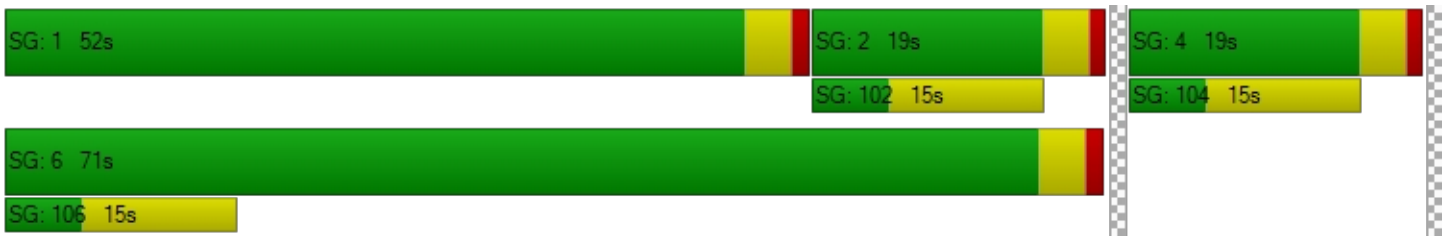
X, volume / capacity	0.84	0.08	0.37	0.43		0.81	0.81	0.81
d, Delay for Lane Group [s/veh]	34.94	2.50	15.53	16.59		43.85	44.00	44.66
Lane Group LOS	C	A	B	B		D	D	D
Critical Lane Group	Yes	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.40	0.31	4.36	4.59		4.59	4.50	4.16
50th-Percentile Queue Length [ft/ln]	185.09	7.68	109.10	114.77		114.69	112.46	103.96
95th-Percentile Queue Length [veh/ln]	11.87	0.55	7.79	8.10		8.10	7.98	7.48
95th-Percentile Queue Length [ft/ln]	296.65	13.83	194.75	202.62		202.51	199.42	187.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.94	2.50	0.00	0.00	15.64	16.59	0.00	0.00	0.00	43.92	44.00	44.58
Movement LOS	C	A			B	B				D	D	D
d_A, Approach Delay [s/veh]	27.49			16.06			0.00			44.16		
Approach LOS	C			B			A			D		
d_I, Intersection Delay [s/veh]	28.28											
Intersection LOS	C											
Intersection V/C	0.605											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.523

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		35.00			35.00			35.00			35.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			Yes			Yes			Yes	

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	757	346	196	437	0	70	4	404	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	12	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	793	360	216	455	0	73	4	420	0	0	0
Peak Hour Factor	1.0000	0.9160	0.9160	0.9160	0.9160	1.0000	0.9160	0.9160	0.9160	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	216	98	59	124	0	20	1	115	0	0	0
Total Analysis Volume [veh/h]	0	866	393	236	497	0	80	4	459	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	11	30	0	0	60	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	55	55	7	66	16	16	16	
g / C, Green / Cycle	0.61	0.61	0.08	0.73	0.18	0.18	0.18	
(v / s)_i Volume / Saturation Flow Rate	0.24	0.24	0.07	0.14	0.04	0.14	0.14	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1619	1615	
c, Capacity [veh/h]	2212	988	277	2658	319	286	285	
d1, Uniform Delay [s]	8.94	8.98	40.96	3.68	31.94	35.63	35.63	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.52	1.20	7.34	0.16	0.41	5.48	5.50	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

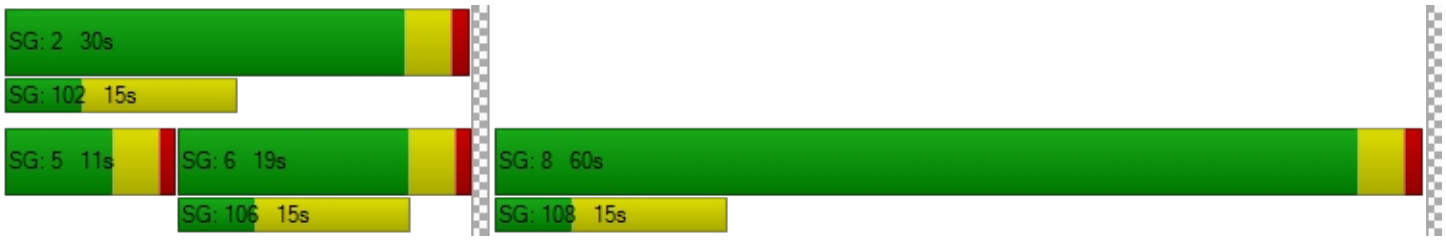
X, volume / capacity	0.39	0.40	0.85	0.19	0.25	0.81	0.81	
d, Delay for Lane Group [s/veh]	9.46	10.18	48.30	3.83	32.35	41.11	41.13	
Lane Group LOS	A	B	D	A	C	D	D	
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	3.91	3.75	2.80	1.07	1.50	5.17	5.15	
50th-Percentile Queue Length [ft/ln]	97.79	93.79	70.11	26.80	37.49	129.14	128.84	
95th-Percentile Queue Length [veh/ln]	7.04	6.75	5.05	1.93	2.70	8.89	8.88	
95th-Percentile Queue Length [ft/ln]	176.03	168.82	126.19	48.24	67.48	222.32	221.91	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	9.46	10.18	48.30	3.83	0.00	32.35	41.11	41.12	0.00	0.00	0.00
Movement LOS		A	B	D	A		C	D	D			
d_A, Approach Delay [s/veh]	9.68			18.15			39.83			0.00		
Approach LOS	A			B			D			A		
d_I, Intersection Delay [s/veh]	18.59											
Intersection LOS	B											
Intersection V/C	0.523											

Sequence

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



Intersection Level Of Service Report
Intersection 10: Maple Ave / North Dwy

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Maple Ave		Maple Ave		North Dwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Maple Ave		Maple Ave		North Dwy	
Base Volume Input [veh/h]	0	9	2	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	12	46	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	12	14	46	11	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	4	12	3	0
Total Analysis Volume [veh/h]	0	12	14	46	11	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	0.00	8.79	8.52
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.87	0.87
d_A, Approach Delay [s/veh]	0.00		0.00		8.79	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.17					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 11: Maple Ave / South Dwy

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Maple Ave		Maple Ave		South Dwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Maple Ave		Maple Ave		South Dwy	
Base Volume Input [veh/h]	0	9	2	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	12	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	9	2	12	3	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	1	3	1	0
Total Analysis Volume [veh/h]	0	9	2	12	3	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.24	0.00	0.00	0.00	8.61	8.36
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.23	0.23
d_A, Approach Delay [s/veh]	0.00		0.00		8.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.99					
Intersection LOS	A					

Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex PM.vistro
Report File: K:\...\4 OY WP PM.pdf

Scenario 16 OY + Proj PM
10/10/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	EB Left	0.529	29.1	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	WB Left	0.722	24.0	C
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.709	24.2	C
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.525	45.3	E
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	WB Left	0.763	22.0	C
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	EB Thru	0.137	7.7	A
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	WB Left	0.498	24.6	C
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	WB Right	0.562	26.1	C
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.721	23.5	C
10	Maple Ave / North Dwy	Two-way stop	HCM 2010	EB Left	0.044	8.8	A
11	Maple Ave / South Dwy	Two-way stop	HCM 2010	EB Left	0.012	8.6	A

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	83	194	277	36	197	43	12	205	128	320	177	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	22	0	0	0	0	0	0	63	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	86	202	310	37	205	45	12	213	133	396	184	35
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	52	79	9	53	12	3	55	34	101	47	9
Total Analysis Volume [veh/h]	88	207	318	38	210	46	12	218	136	406	189	36
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	35	0	11	33	0	11	22	0	22	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	45	45	4	43	43	2	12	12	13	23	23
g / C, Green / Cycle	0.07	0.50	0.50	0.05	0.48	0.48	0.02	0.13	0.13	0.14	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.05	0.11	0.20	0.02	0.06	0.03	0.01	0.10	0.10	0.12	0.06	0.06
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1665	3514	1900	1796
c, Capacity [veh/h]	127	952	809	89	1736	775	39	246	216	502	477	450
d1, Uniform Delay [s]	40.97	12.60	13.98	41.65	12.95	12.56	43.45	37.83	38.04	37.46	26.94	26.95
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.55	0.52	1.43	3.23	0.14	0.15	4.36	4.52	6.23	3.17	0.26	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.22	0.39	0.43	0.12	0.06	0.31	0.75	0.79	0.81	0.24	0.24
d, Delay for Lane Group [s/veh]	47.52	13.12	15.41	44.88	13.09	12.70	47.81	42.35	44.27	40.63	27.20	27.23
Lane Group LOS	D	B	B	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.10	2.31	4.02	0.88	1.13	0.50	0.31	4.12	3.90	4.43	1.95	1.86
50th-Percentile Queue Length [ft/ln]	52.43	57.70	100.48	22.08	28.37	12.47	7.64	103.07	97.58	110.84	48.87	46.57
95th-Percentile Queue Length [veh/ln]	3.77	4.15	7.23	1.59	2.04	0.90	0.55	7.42	7.03	7.89	3.52	3.35
95th-Percentile Queue Length [ft/ln]	94.37	103.85	180.86	39.75	51.06	22.45	13.76	185.53	175.64	197.17	87.96	83.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.52	13.12	15.41	44.88	13.09	12.70	47.81	42.65	44.27	40.63	27.21	27.23
Movement LOS	D	B	B	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	19.25			17.14			43.42			35.85		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	29.07											
Intersection LOS	C											
Intersection V/C	0.529											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.722

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	346	395	0	0	268	381	0	0	0	229	2	153
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	22	0	0	6	57	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	360	433	0	0	285	453	0	0	0	238	2	159
Peak Hour Factor	0.9770	0.9770	1.0000	1.0000	0.9770	0.9770	1.0000	1.0000	1.0000	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	111	0	0	73	116	0	0	0	61	1	41
Total Analysis Volume [veh/h]	368	443	0	0	292	464	0	0	0	244	2	163
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	52	71	0	0	19	0	0	0	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	21	68	43	43		14	14
g / C, Green / Cycle	0.23	0.76	0.48	0.48		0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.20	0.12	0.15	0.29		0.13	0.10
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1618
c, Capacity [veh/h]	415	2732	915	778		282	252
d1, Uniform Delay [s]	33.58	3.08	14.30	16.98		37.07	35.71
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	6.55	0.13	0.92	3.36		7.77	2.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

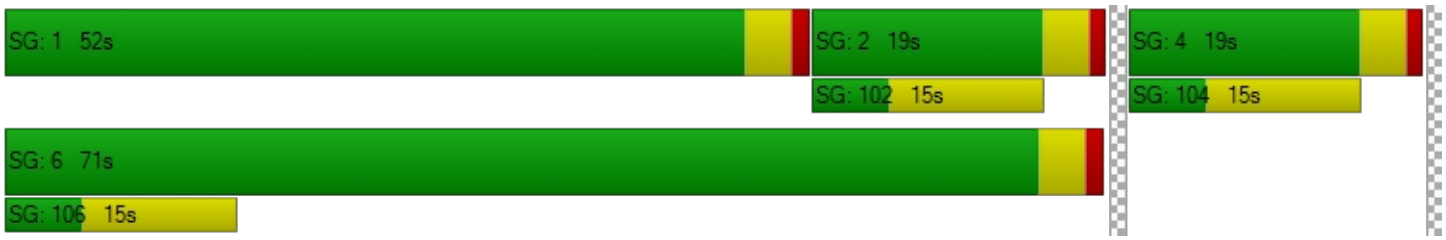
X, volume / capacity	0.89	0.16	0.32	0.60		0.86	0.65
d, Delay for Lane Group [s/veh]	40.13	3.20	15.22	20.34		44.84	38.56
Lane Group LOS	D	A	B	C		D	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	8.22	0.81	3.63	7.14		5.69	3.51
50th-Percentile Queue Length [ft/ln]	205.59	20.19	90.76	178.39		142.16	87.69
95th-Percentile Queue Length [veh/ln]	12.93	1.45	6.53	11.52		9.60	6.31
95th-Percentile Queue Length [ft/ln]	323.17	36.33	163.36	287.91		239.92	157.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.13	3.20	0.00	0.00	15.22	20.34	0.00	0.00	0.00	44.84	38.56	38.56
Movement LOS	D	A			B	C				D	D	D
d_A, Approach Delay [s/veh]	19.96			18.36			0.00			42.31		
Approach LOS	B			B			A			D		
d_I, Intersection Delay [s/veh]	23.98											
Intersection LOS	C											
Intersection V/C	0.722											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.709

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	484	273	155	348	0	254	0	370	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	6	0	20	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	505	284	161	368	0	284	0	385	0	0	0
Peak Hour Factor	1.0000	0.9130	0.9130	0.9130	0.9130	1.0000	0.9130	0.9130	0.9130	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	138	78	44	101	0	78	0	105	0	0	0
Total Analysis Volume [veh/h]	0	553	311	176	403	0	311	0	422	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	19	38	0	0	52	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	41	41	11	56	26	26	
g / C, Green / Cycle	0.45	0.45	0.12	0.62	0.29	0.29	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.26	0.10	0.11	0.17	0.26	
s, saturation flow rate [veh/h]	1900	1686	1810	3618	1810	1615	
c, Capacity [veh/h]	863	766	214	2232	532	475	
d1, Uniform Delay [s]	17.35	18.02	38.79	7.44	27.08	30.36	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.07	2.99	7.75	0.18	1.02	5.81	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

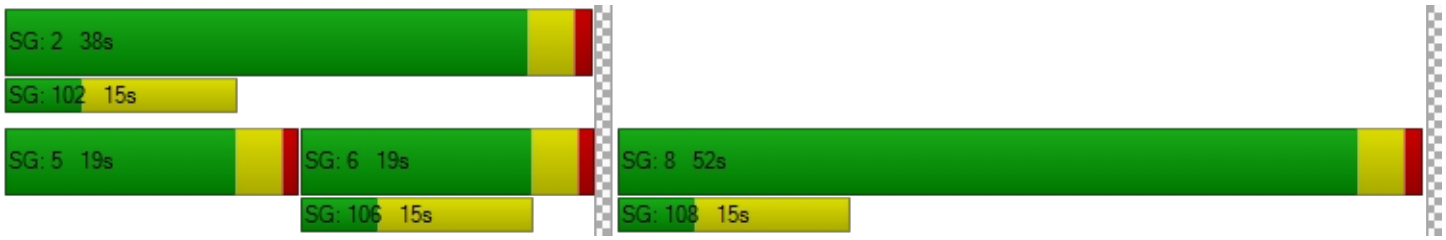
X, volume / capacity	0.50	0.56	0.82	0.18	0.58	0.89	
d, Delay for Lane Group [s/veh]	19.42	21.01	46.55	7.61	28.10	36.17	
Lane Group LOS	B	C	D	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.38	6.75	4.16	1.52	5.61	9.07	
50th-Percentile Queue Length [ft/ln]	159.48	168.71	103.88	38.03	140.29	226.86	
95th-Percentile Queue Length [veh/ln]	10.52	11.01	7.48	2.74	9.50	14.01	
95th-Percentile Queue Length [ft/ln]	263.03	275.22	186.98	68.46	237.42	350.37	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	19.76	21.01	46.55	7.61	0.00	28.10	28.10	36.17	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	C	D			
d_A, Approach Delay [s/veh]	20.21			19.45			32.75			0.00		
Approach LOS	C			B			C			A		
d_I, Intersection Delay [s/veh]	24.23											
Intersection LOS	C											
Intersection V/C	0.709											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	45.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.525

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	4	430	0	0	556	0	2	0	11	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	30	3	20	0	0	0	0	89	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	454	30	3	598	0	2	0	11	89	0	10
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	119	8	1	157	0	1	0	3	23	0	3
Total Analysis Volume [veh/h]	4	478	32	3	629	0	2	0	12	94	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	0.52	0.00	0.02
d_M, Delay for Movement [s/veh]	8.75	0.00	0.00	8.39	0.00	0.00	25.82	23.61	12.76	45.26	42.66	31.26
Movement LOS	A	A	A	A	A	A	D	C	B	E	E	D
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.01	0.01	0.00	0.11	0.11	0.11	2.84	2.84	2.84
95th-Percentile Queue Length [ft/ln]	0.31	0.31	0.00	0.21	0.21	0.00	2.80	2.80	2.80	70.95	70.95	70.95
d_A, Approach Delay [s/veh]	0.07			0.04			14.62			43.80		
Approach LOS	A			A			B			E		
d_I, Intersection Delay [s/veh]	3.84											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	22.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.763

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	49	170	25	113	224	219	186	182	55	11	158	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	40	6	63	22	0	0	0	0	13
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	179	26	158	239	291	215	189	57	11	164	94
Peak Hour Factor	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670	0.8670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	52	7	46	69	84	62	54	16	3	47	27
Total Analysis Volume [veh/h]	59	206	30	182	276	336	248	218	66	13	189	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	24	0	16	29	0	23	21	0	29	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	56	56	56	56	56	56	56	56	56	56	56
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	11	11	7	14	14	10	20	20	1	11
g / C, Green / Cycle	0.08	0.20	0.20	0.13	0.26	0.26	0.17	0.36	0.36	0.02	0.21
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.06	0.10	0.15	0.21	0.14	0.11	0.04	0.01	0.17
s, saturation flow rate [veh/h]	1810	1900	1818	1810	1900	1615	1810	1900	1615	1810	1785
c, Capacity [veh/h]	137	384	367	239	491	418	315	677	576	42	367
d1, Uniform Delay [s]	24.69	19.00	19.03	23.40	17.97	19.40	22.10	13.08	12.07	26.87	21.16
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.14	0.46	0.49	4.92	1.01	3.67	4.38	0.27	0.09	4.14	4.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

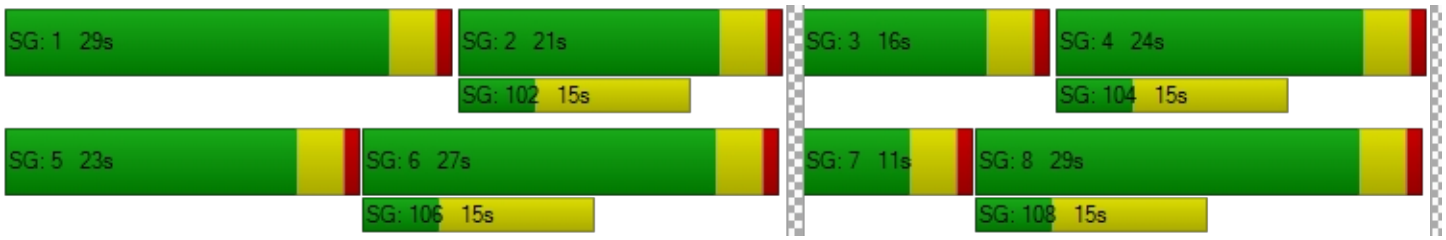
X, volume / capacity	0.43	0.31	0.32	0.76	0.56	0.80	0.79	0.32	0.11	0.31	0.81
d, Delay for Lane Group [s/veh]	26.83	19.46	19.52	28.32	18.98	23.07	26.48	13.35	12.16	31.01	25.45
Lane Group LOS	C	B	B	C	B	C	C	B	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.76	1.23	1.20	2.42	2.84	3.98	3.17	1.74	0.49	0.21	3.71
50th-Percentile Queue Length [ft/ln]	19.12	30.68	30.08	60.45	71.06	99.50	79.17	43.54	12.16	5.14	92.85
95th-Percentile Queue Length [veh/ln]	1.38	2.21	2.17	4.35	5.12	7.16	5.70	3.13	0.88	0.37	6.68
95th-Percentile Queue Length [ft/ln]	34.42	55.22	54.15	108.80	127.90	179.09	142.51	78.37	21.88	9.25	167.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.83	19.48	19.52	28.32	18.98	23.07	26.48	13.35	12.16	31.01	25.45	25.45
Movement LOS	C	B	B	C	B	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	20.95			22.85			19.32			25.68		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	22.04											
Intersection LOS	C											
Intersection V/C	0.763											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	7.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.137

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	1	0	1	18	1	35	37	50	1	4	45	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	0	32	0	0	0	0	0	8	12	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	0	33	19	1	36	38	52	9	16	47	23
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	0	9	5	0	10	11	15	3	5	14	7
Total Analysis Volume [veh/h]	28	0	38	22	1	41	44	60	10	18	54	26
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	861	872	835	860
Degree of Utilization, x	0.08	0.07	0.14	0.11

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.25	0.24	0.47	0.38
95th-Percentile Queue Length [ft]	6.21	5.93	11.80	9.61
Approach Delay [s/veh]	7.53	7.46	7.99	7.72
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.73			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	24.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.498

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	92	441	123	12	303	10	25	53	178	87	33	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	6	0	3	14	0	0	0	40	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	465	128	15	329	10	26	55	225	90	34	15
Peak Hour Factor	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	132	36	4	94	3	7	16	64	26	10	4
Total Analysis Volume [veh/h]	124	530	146	17	375	11	30	63	256	103	39	17
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	35	0	11	32	0	20	31	0	13	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	48	48	2	43	43	4	17	17	7	19	19
g / C, Green / Cycle	0.09	0.54	0.54	0.03	0.48	0.48	0.04	0.18	0.18	0.07	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.07	0.18	0.18	0.01	0.10	0.10	0.02	0.03	0.16	0.06	0.02	0.01
s, saturation flow rate [veh/h]	1810	1900	1761	1810	1900	1881	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	158	1018	943	51	906	897	77	351	298	134	411	349
d1, Uniform Delay [s]	40.33	11.92	11.93	42.97	13.74	13.75	42.04	31.01	35.62	41.00	28.29	28.00
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.32	0.93	1.00	3.71	0.54	0.55	3.20	0.24	7.12	8.96	0.10	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.34	0.35	0.33	0.21	0.21	0.39	0.18	0.86	0.77	0.09	0.05
d, Delay for Lane Group [s/veh]	48.66	12.85	12.93	46.68	14.28	14.29	45.24	31.25	42.74	49.96	28.39	28.06
Lane Group LOS	D	B	B	D	B	B	D	C	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.99	3.90	3.64	0.42	2.28	2.27	0.70	1.15	5.85	2.53	0.67	0.29
50th-Percentile Queue Length [ft/ln]	74.84	97.53	91.12	10.43	56.99	56.67	17.62	28.78	146.36	63.15	16.73	7.23
95th-Percentile Queue Length [veh/ln]	5.39	7.02	6.56	0.75	4.10	4.08	1.27	2.07	9.82	4.55	1.20	0.52
95th-Percentile Queue Length [ft/ln]	134.72	175.55	164.01	18.77	102.58	102.00	31.72	51.81	245.56	113.67	30.11	13.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.66	12.87	12.93	46.68	14.29	14.29	45.24	31.25	42.74	49.96	28.39	28.06
Movement LOS	D	B	B	D	B	B	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	18.43			15.65			40.88			42.33		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	24.58											
Intersection LOS	C											
Intersection V/C	0.498											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	26.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.562

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	486	396	0	0	385	165	0	0	0	472	2	194
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	54	0	0	0	0	0	0	17
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	505	414	0	0	454	172	0	0	0	491	2	219
Peak Hour Factor	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	133	109	0	0	120	45	0	0	0	130	1	58
Total Analysis Volume [veh/h]	534	438	0	0	480	182	0	0	0	519	2	232
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	44	63	0	0	19	0	0	0	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	17	66	45	45		16	16	16
g / C, Green / Cycle	0.19	0.73	0.50	0.50		0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.15	0.12	0.17	0.19		0.14	0.14	0.14
s, saturation flow rate [veh/h]	3514	3618	1900	1732		1810	1810	1615
c, Capacity [veh/h]	654	2656	957	873		320	320	286
d1, Uniform Delay [s]	35.18	3.62	13.42	13.71		35.63	35.63	35.61
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	2.58	0.13	0.99	1.26		5.00	4.99	5.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

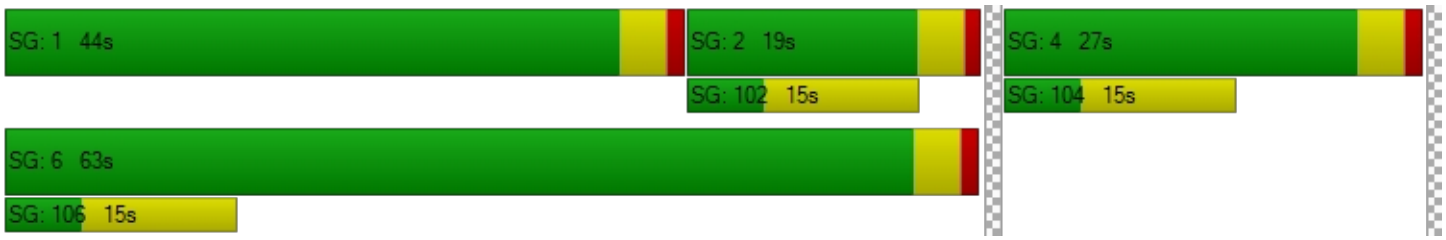
X, volume / capacity	0.82	0.16	0.35	0.38		0.81	0.81	0.81
d, Delay for Lane Group [s/veh]	37.76	3.75	14.42	14.96		40.62	40.62	41.12
Lane Group LOS	D	A	B	B		D	D	D
Critical Lane Group	Yes	No	No	Yes		Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.66	0.93	3.99	4.11		5.76	5.76	5.17
50th-Percentile Queue Length [ft/ln]	141.62	23.23	99.66	102.63		144.04	144.07	129.30
95th-Percentile Queue Length [veh/ln]	9.57	1.67	7.18	7.39		9.70	9.70	8.90
95th-Percentile Queue Length [ft/ln]	239.21	41.82	179.39	184.73		242.45	242.49	222.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.76	3.75	0.00	0.00	14.58	14.96	0.00	0.00	0.00	40.62	40.62	41.12
Movement LOS	D	A			B	B				D	D	D
d_A, Approach Delay [s/veh]	22.43			14.69			0.00			40.77		
Approach LOS	C			B			A			D		
d_I, Intersection Delay [s/veh]	26.07											
Intersection LOS	C											
Intersection V/C	0.562											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.721

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		35.00			35.00			35.00			35.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			Yes			Yes			Yes	

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	685	421	230	611	0	211	3	698	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	48	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	714	438	287	641	0	219	3	726	0	0	0
Peak Hour Factor	1.0000	0.9740	0.9740	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	183	112	74	165	0	56	1	186	0	0	0
Total Analysis Volume [veh/h]	0	733	450	295	658	0	225	3	745	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	33	0	12	45	0	0	45	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	43	43	8	55	27	27	27	
g / C, Green / Cycle	0.48	0.48	0.09	0.61	0.30	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.20	0.28	0.08	0.18	0.12	0.26	0.20	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1617	1615	
c, Capacity [veh/h]	1725	770	316	2211	543	485	485	
d1, Uniform Delay [s]	15.45	17.08	40.72	8.33	25.19	29.89	27.60	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.15	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.77	3.23	12.42	0.34	0.51	6.69	1.61	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.42	0.58	0.93	0.30	0.41	0.87	0.67	
d, Delay for Lane Group [s/veh]	16.22	20.31	53.14	8.67	25.69	36.58	29.20	
Lane Group LOS	B	C	D	A	C	D	C	
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	
50th-Percentile Queue Length [veh/ln]	4.76	6.90	3.71	2.76	3.78	9.17	6.06	
50th-Percentile Queue Length [ft/ln]	119.02	172.57	92.76	69.12	94.38	229.15	151.46	
95th-Percentile Queue Length [veh/ln]	8.34	11.21	6.68	4.98	6.80	14.13	10.09	
95th-Percentile Queue Length [ft/ln]	208.48	280.28	166.96	124.42	169.88	353.28	252.37	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	16.22	20.31	53.14	8.67	0.00	25.69	36.58	33.36	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	D	C			
d_A, Approach Delay [s/veh]	17.78			22.44			31.60			0.00		
Approach LOS	B			C			C			A		
d_I, Intersection Delay [s/veh]	23.53											
Intersection LOS	C											
Intersection V/C	0.721											

Sequence

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



Intersection Level Of Service Report
Intersection 10: Maple Ave / North Dwy

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.044

Intersection Setup

Name	Maple Ave		Maple Ave		North Dwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Maple Ave		Maple Ave		North Dwy	
Base Volume Input [veh/h]	0	2	6	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	4	16	43	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	14	10	16	43	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	3	4	11	0
Total Analysis Volume [veh/h]	0	14	10	16	43	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	7.27	0.00	0.00	0.00	8.83	8.56
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.14	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	3.43	3.43
d_A, Approach Delay [s/veh]	0.00		0.00		8.83	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.58					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 11: Maple Ave / South Dwy

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Maple Ave		Maple Ave		South Dwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Maple Ave		Maple Ave		South Dwy	
Base Volume Input [veh/h]	0	2	6	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	12	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2	6	4	12	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	2	1	3	0
Total Analysis Volume [veh/h]	0	2	6	4	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	7.24	0.00	0.00	0.00	8.61	8.39
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.90	0.90
d_A, Approach Delay [s/veh]	0.00		0.00		8.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.30					
Intersection LOS	A					

APPENDIX D-4

INTERSECTION ANALYSIS WORKSHEETS - OPENING YEAR 2020 CUMULATIVE

Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex AM.vistro
Report File: K:\...\5 OY CUM AM.pdf

Scenario 17 OY Plus Cum AM
10/10/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	NB Left	0.657	26.2	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	NB Left	1.193	82.5	F
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	1.136	66.9	E
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.033	35.4	E
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	NB Left	0.839	30.7	C
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	WB Thru	0.444	10.7	B
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	EB Right	1.030	63.2	E
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	WB Right	0.890	33.9	C
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.770	21.8	C

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	26.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	87	341	239	22	317	13	25	88	52	360	188	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	12	245	0	17	0	0	17	0	143	14	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	367	494	23	347	14	26	109	54	517	210	32
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	97	130	6	91	4	7	29	14	136	55	8
Total Analysis Volume [veh/h]	95	387	521	24	366	15	27	115	57	545	221	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	12	19	0	41	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	47	47	3	44	44	4	7	7	17	21	21
g / C, Green / Cycle	0.07	0.52	0.52	0.04	0.48	0.48	0.04	0.08	0.08	0.19	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.05	0.20	0.32	0.01	0.10	0.01	0.01	0.05	0.05	0.16	0.07	0.07
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1697	3514	1900	1813
c, Capacity [veh/h]	130	985	837	66	1749	781	72	148	132	667	433	413
d1, Uniform Delay [s]	41.01	13.13	15.43	42.42	13.39	12.15	42.22	40.22	40.36	35.02	28.86	28.86
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.72	1.18	3.47	3.31	0.27	0.05	3.24	3.80	5.06	2.52	0.39	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

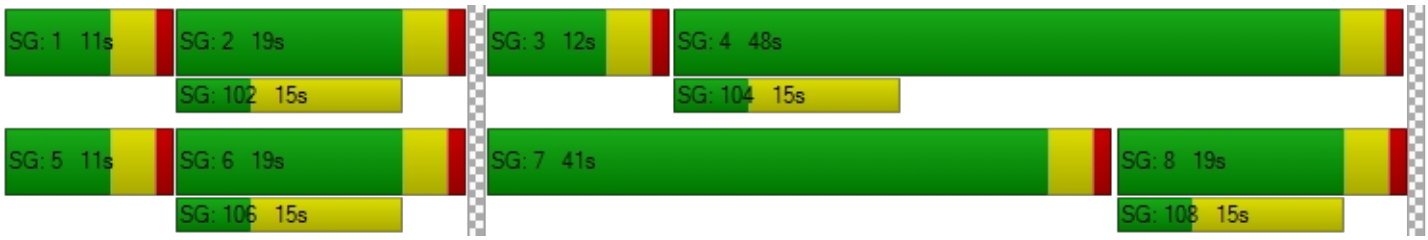
X, volume / capacity	0.73	0.39	0.62	0.36	0.21	0.02	0.38	0.60	0.64	0.82	0.30	0.30
d, Delay for Lane Group [s/veh]	48.73	14.30	18.90	45.73	13.66	12.19	45.46	44.02	45.42	37.54	29.24	29.27
Lane Group LOS	D	B	B	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.30	4.65	7.65	0.57	2.06	0.16	0.64	2.00	1.95	5.77	2.32	2.22
50th-Percentile Queue Length [ft/ln]	57.42	116.19	191.30	14.30	51.45	3.95	15.96	49.91	48.86	144.33	57.93	55.41
95th-Percentile Queue Length [veh/ln]	4.13	8.18	12.19	1.03	3.70	0.28	1.15	3.59	3.52	9.71	4.17	3.99
95th-Percentile Queue Length [ft/ln]	103.36	204.57	304.72	25.74	92.61	7.11	28.73	89.83	87.95	242.85	104.28	99.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.73	14.30	18.90	45.73	13.66	12.19	45.46	44.35	45.42	37.54	29.25	29.27
Movement LOS	D	B	B	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	19.95			15.51			44.81			34.90		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	26.23											
Intersection LOS	C											
Intersection V/C	0.657											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	82.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.193

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	297	464	0	0	302	444	0	0	0	337	10	206
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	199	336	0	0	153	88	0	0	0	303	0	30
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	508	819	0	0	467	550	0	0	0	653	10	244
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	134	216	0	0	123	145	0	0	0	172	3	64
Total Analysis Volume [veh/h]	535	862	0	0	492	579	0	0	0	687	11	257
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	26	57	0	0	31	0	0	0	0	0	33	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	22	53	27	27		29	29
g / C, Green / Cycle	0.24	0.59	0.30	0.30		0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.30	0.24	0.26	0.36		0.38	0.16
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1625
c, Capacity [veh/h]	443	2132	570	484		583	523
d1, Uniform Delay [s]	34.02	9.98	29.79	31.54		30.54	24.80
k, delay calibration	0.37	0.50	0.50	0.50		0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	108.32	0.57	15.86	106.61		97.44	0.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	1.21	0.40	0.86	1.20		1.18	0.51
d, Delay for Lane Group [s/veh]	142.34	10.55	45.65	138.15		127.99	25.58
Lane Group LOS	F	B	D	F		F	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	22.60	4.23	12.07	24.31		27.67	4.56
50th-Percentile Queue Length [ft/ln]	564.88	105.63	301.76	607.73		691.69	113.91
95th-Percentile Queue Length [veh/ln]	33.65	7.60	17.77	35.96		40.17	8.06
95th-Percentile Queue Length [ft/ln]	841.17	189.91	444.20	899.10		1004.19	201.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	142.34	10.55	0.00	0.00	45.65	138.15	0.00	0.00	0.00	127.99	25.58	25.58
Movement LOS	F	B			D	F				F	C	C
d_A, Approach Delay [s/veh]	61.02			95.65			0.00			99.25		
Approach LOS	E			F			A			F		
d_I, Intersection Delay [s/veh]	82.52											
Intersection LOS	F											
Intersection V/C	1.193											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	66.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.136

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	411	256	166	465	0	351	2	462	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	335	112	36	445	0	199	0	357	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	762	378	209	929	0	564	2	837	0	0	0
Peak Hour Factor	1.0000	0.9840	0.9840	0.9840	0.9840	1.0000	0.9840	0.9840	0.9840	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	194	96	53	236	0	143	1	213	0	0	0
Total Analysis Volume [veh/h]	0	774	384	212	944	0	573	2	851	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	31	0	13	44	0	0	46	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	27	27	9	40	42	42	
g / C, Green / Cycle	0.30	0.30	0.10	0.45	0.47	0.47	
(v / s)_i Volume / Saturation Flow Rate	0.30	0.34	0.12	0.26	0.32	0.53	
s, saturation flow rate [veh/h]	1900	1701	1810	3618	1810	1615	
c, Capacity [veh/h]	571	511	184	1616	840	750	
d1, Uniform Delay [s]	31.50	31.50	40.46	18.65	18.94	24.13	
k, delay calibration	0.50	0.50	0.11	0.50	0.23	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	41.03	81.41	81.71	1.55	2.07	76.62	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

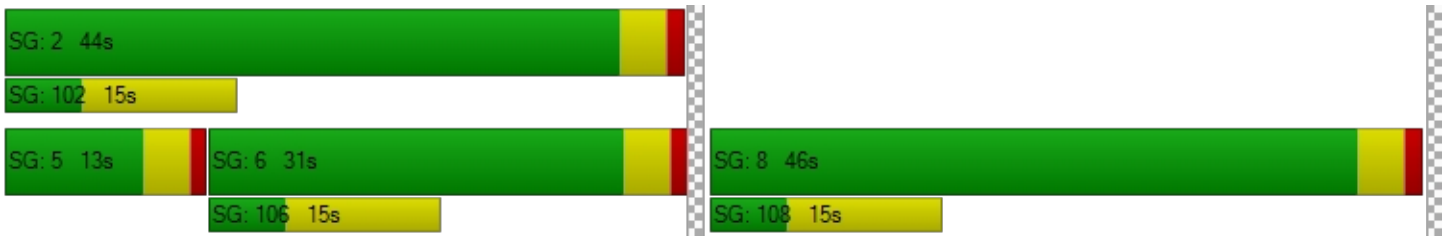
X, volume / capacity	1.01	1.13	1.15	0.58	0.68	1.13	
d, Delay for Lane Group [s/veh]	72.53	112.91	122.18	20.20	21.01	100.75	
Lane Group LOS	F	F	F	C	C	F	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	18.27	22.09	8.15	7.22	9.13	30.33	
50th-Percentile Queue Length [ft/ln]	456.73	552.30	203.72	180.43	228.20	758.13	
95th-Percentile Queue Length [veh/ln]	25.50	32.13	13.51	11.62	14.08	43.12	
95th-Percentile Queue Length [ft/ln]	637.45	803.21	337.66	290.57	352.07	1077.91	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	82.70	112.91	122.18	20.20	0.00	21.01	21.01	100.75	0.00	0.00	0.00
Movement LOS		F	F	F	C		C	C	F			
d_A, Approach Delay [s/veh]	92.72			38.90			68.60			0.00		
Approach LOS	F			D			E			A		
d_I, Intersection Delay [s/veh]	66.89											
Intersection LOS	E											
Intersection V/C	1.136											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	35.4
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.033

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	8	462	0	0	580	0	0	0	1	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	151	18	0	56	0	0	0	0	4	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	631	18	0	659	0	0	0	1	4	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	166	5	0	173	0	0	0	0	1	0	0
Total Analysis Volume [veh/h]	8	664	19	0	694	0	0	0	1	4	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	8.99	0.00	0.00	8.92	0.00	0.00	34.80	30.54	13.09	35.39	30.85	13.75
Movement LOS	A	A	A	A	A	A	D	D	B	E	D	B
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.10	0.10	0.10
95th-Percentile Queue Length [ft/ln]	0.66	0.66	0.00	0.00	0.00	0.00	0.17	0.17	0.17	2.52	2.52	2.52
d_A, Approach Delay [s/veh]	0.10			0.00			13.09			35.39		
Approach LOS	A			A			B			E		
d_I, Intersection Delay [s/veh]	0.16											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	30.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.839

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	84	154	7	61	251	268	198	53	44	24	160	118
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	2	13	5	26	22	8	58	83	4	19	74	80
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	173	12	89	283	287	264	138	50	44	240	203
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	46	3	23	74	76	69	36	13	12	63	53
Total Analysis Volume [veh/h]	94	182	13	94	298	302	278	145	53	46	253	214
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	17	25	0	21	24	0	30	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	74	74	74	74	74	74	74	74	74	74	74
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	17	17	6	17	17	14	31	31	4	22
g / C, Green / Cycle	0.08	0.22	0.22	0.08	0.22	0.22	0.18	0.42	0.42	0.06	0.30
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.05	0.05	0.16	0.19	0.15	0.08	0.03	0.03	0.27
s, saturation flow rate [veh/h]	1810	1900	1856	1810	1900	1615	1810	1900	1615	1810	1758
c, Capacity [veh/h]	146	427	417	146	427	363	332	800	680	105	520
d1, Uniform Delay [s]	33.11	23.54	23.55	33.11	26.48	27.46	29.28	13.49	12.88	33.83	25.11
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.20
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.64	0.27	0.28	4.64	2.07	4.95	5.62	0.11	0.05	2.86	10.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

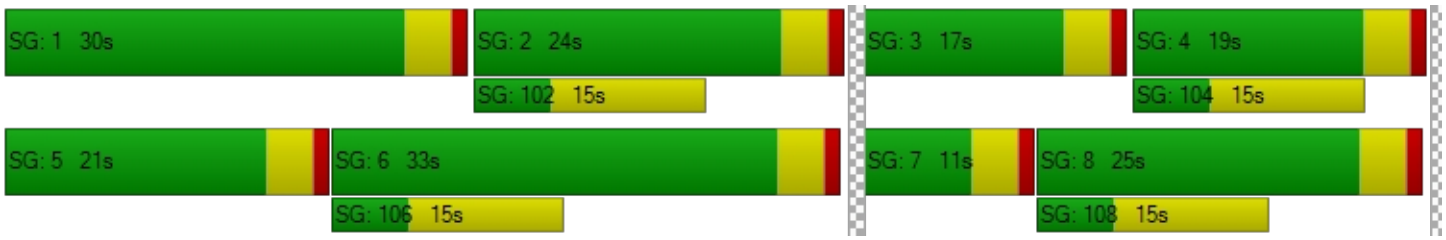
X, volume / capacity	0.64	0.23	0.23	0.64	0.70	0.83	0.84	0.18	0.08	0.44	0.90
d, Delay for Lane Group [s/veh]	37.75	23.81	23.84	37.75	28.54	32.41	34.90	13.60	12.93	36.69	35.19
Lane Group LOS	D	C	C	D	C	C	C	B	B	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.76	1.36	1.35	1.76	4.79	5.28	5.02	1.41	0.49	0.85	8.71
50th-Percentile Queue Length [ft/ln]	43.94	34.05	33.69	43.94	119.76	131.92	125.58	35.24	12.32	21.31	217.69
95th-Percentile Queue Length [veh/ln]	3.16	2.45	2.43	3.16	8.38	9.04	8.70	2.54	0.89	1.53	13.55
95th-Percentile Queue Length [ft/ln]	79.09	61.30	60.65	79.09	209.49	226.11	217.48	63.43	22.18	38.36	338.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.75	23.82	23.84	37.75	28.54	32.41	34.90	13.60	12.93	36.69	35.19	35.19
Movement LOS	D	C	C	D	C	C	C	B	B	D	D	D
d_A, Approach Delay [s/veh]	28.35			31.47			25.97			35.32		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	30.69											
Intersection LOS	C											
Intersection V/C	0.839											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.444

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	3	1	5	62	1	76	44	46	0	1	156	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	2	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	5	64	1	79	46	48	0	1	164	29
Peak Hour Factor	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	2	28	0	34	20	21	0	0	71	13
Total Analysis Volume [veh/h]	5	2	9	111	2	137	80	83	0	2	285	50
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	682	731	701	759
Degree of Utilization, x	0.02	0.34	0.23	0.44

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.07	1.52	0.90	2.30
95th-Percentile Queue Length [ft]	1.80	38.03	22.46	57.40
Approach Delay [s/veh]	8.41	10.46	9.69	11.48
Approach LOS	A	B	A	B
Intersection Delay [s/veh]	10.70			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	63.2
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.030

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	149	333	83	17	481	21	11	45	191	160	66	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	339	106	0	0	190	17	14	10	198	0	11	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	494	452	86	18	690	39	25	57	397	166	80	21
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	119	23	5	182	10	7	15	104	44	21	6
Total Analysis Volume [veh/h]	520	476	91	19	726	41	26	60	418	175	84	22
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	29	40	0	11	22	0	12	26	0	13	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	40	40	3	18	18	3	22	22	9	28	28
g / C, Green / Cycle	0.28	0.45	0.45	0.03	0.20	0.20	0.04	0.24	0.24	0.10	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.29	0.15	0.15	0.01	0.20	0.20	0.01	0.03	0.26	0.10	0.04	0.01
s, saturation flow rate [veh/h]	1810	1900	1795	1810	1900	1865	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	503	854	807	53	383	375	67	462	393	181	581	494
d1, Uniform Delay [s]	32.51	16.10	16.11	42.84	35.94	35.94	42.32	26.63	34.07	40.35	22.69	21.99
k, delay calibration	0.35	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.29	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	42.81	1.09	1.15	3.97	48.94	49.56	3.57	0.13	52.94	23.98	0.11	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.03	0.34	0.34	0.36	1.01	1.01	0.39	0.13	1.06	0.97	0.14	0.04
d, Delay for Lane Group [s/veh]	75.32	17.19	17.26	46.81	84.88	85.50	45.89	26.75	87.01	64.33	22.80	22.02
Lane Group LOS	F	B	B	D	F	F	D	C	F	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	16.38	3.93	3.73	0.47	13.28	13.10	0.62	0.99	13.97	4.96	1.27	0.32
50th-Percentile Queue Length [ft/ln]	409.46	98.22	93.25	11.63	332.09	327.50	15.49	24.87	349.16	124.06	31.72	8.06
95th-Percentile Queue Length [veh/ln]	23.50	7.07	6.71	0.84	19.38	19.16	1.12	1.79	20.81	8.62	2.28	0.58
95th-Percentile Queue Length [ft/ln]	587.51	176.80	167.86	20.93	484.52	479.04	27.89	44.77	520.37	215.39	57.09	14.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	75.32	17.22	17.26	46.81	85.17	85.50	45.89	26.75	87.01	64.33	22.80	22.02
Movement LOS	F	B	B	D	F	F	D	C	F	E	C	C
d_A, Approach Delay [s/veh]	45.01			84.26			77.71			48.60		
Approach LOS	D			F			E			D		
d_I, Intersection Delay [s/veh]	63.20											
Intersection LOS	E											
Intersection V/C	1.030											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	33.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.890

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	632	183	0	0	325	271	0	0	0	313	3	144
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	63	202	0	0	284	122	0	0	0	166	0	307
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	720	392	0	0	622	404	0	0	0	492	3	457
Peak Hour Factor	0.9190	0.9190	1.0000	1.0000	0.9190	0.9190	1.0000	1.0000	1.0000	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	196	107	0	0	169	110	0	0	0	134	1	124
Total Analysis Volume [veh/h]	783	427	0	0	677	440	0	0	0	535	3	497
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	27	63	0	0	36	0	0	0	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	22	61	34	34		22	22	22
g / C, Green / Cycle	0.24	0.67	0.38	0.38		0.24	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.22	0.12	0.29	0.33		0.19	0.20	0.21
s, saturation flow rate [veh/h]	3514	3618	1900	1668		1810	1719	1615
c, Capacity [veh/h]	860	2431	727	639		433	411	386
d1, Uniform Delay [s]	33.05	5.49	24.29	25.78		32.20	32.60	33.14
k, delay calibration	0.11	0.50	0.50	0.50		0.14	0.16	0.19
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	4.18	0.16	7.62	15.43		4.27	6.64	11.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

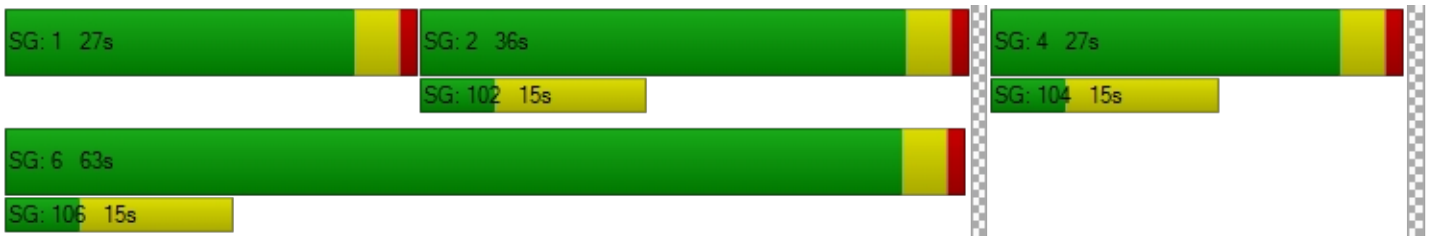
X, volume / capacity	0.91	0.18	0.77	0.87		0.80	0.84	0.89
d, Delay for Lane Group [s/veh]	37.23	5.65	31.91	41.20		36.47	39.24	44.87
Lane Group LOS	D	A	C	D		D	D	D
Critical Lane Group	Yes	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	8.45	1.29	11.28	13.08		7.30	7.63	8.24
50th-Percentile Queue Length [ft/ln]	211.21	32.13	282.02	326.88		182.47	190.73	206.06
95th-Percentile Queue Length [veh/ln]	13.22	2.31	16.79	19.01		11.73	12.16	12.95
95th-Percentile Queue Length [ft/ln]	330.38	57.83	419.73	475.14		293.23	303.98	323.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.23	5.65	0.00	0.00	33.54	41.20	0.00	0.00	0.00	37.45	39.24	43.15
Movement LOS	D	A			C	D				D	D	D
d_A, Approach Delay [s/veh]	26.08			36.56			0.00			40.19		
Approach LOS	C			D			A			D		
d_I, Intersection Delay [s/veh]	33.91											
Intersection LOS	C											
Intersection V/C	0.890											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.770

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	757	346	196	437	0	70	4	404	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	181	207	167	284	0	83	0	76	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	968	567	371	738	0	156	4	496	0	0	0
Peak Hour Factor	1.0000	0.9160	0.9160	0.9160	0.9160	1.0000	0.9160	0.9160	0.9160	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	264	155	101	201	0	43	1	135	0	0	0
Total Analysis Volume [veh/h]	0	1057	619	405	806	0	170	4	541	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	21	40	0	0	50	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	47	47	13	64	18	18	18	
g / C, Green / Cycle	0.52	0.52	0.14	0.71	0.21	0.21	0.21	
(v / s)_i Volume / Saturation Flow Rate	0.29	0.38	0.12	0.22	0.09	0.17	0.17	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1619	1615	
c, Capacity [veh/h]	1882	840	496	2554	371	332	332	
d1, Uniform Delay [s]	14.63	16.79	37.54	5.01	31.38	34.20	34.20	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.22	5.71	3.36	0.32	0.88	5.05	5.07	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

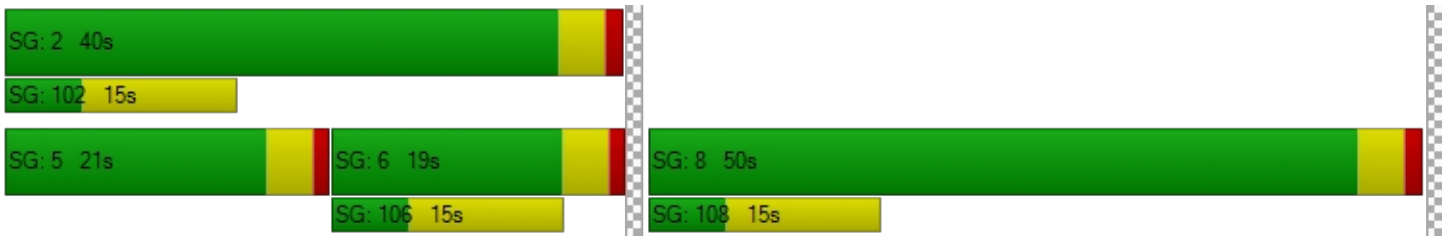
X, volume / capacity	0.56	0.74	0.82	0.32	0.46	0.82	0.82	
d, Delay for Lane Group [s/veh]	15.85	22.51	40.90	5.34	32.26	39.25	39.27	
Lane Group LOS	B	C	D	A	C	D	D	
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.94	10.24	4.44	2.31	3.24	5.97	5.96	
50th-Percentile Queue Length [ft/ln]	173.58	255.99	110.93	57.85	80.92	149.14	148.93	
95th-Percentile Queue Length [veh/ln]	11.26	15.49	7.89	4.17	5.83	9.97	9.96	
95th-Percentile Queue Length [ft/ln]	281.62	387.19	197.29	104.13	145.65	249.28	249.00	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	15.85	22.51	40.90	5.34	0.00	32.26	39.25	39.26	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	D	D			
d_A, Approach Delay [s/veh]	18.31			17.23			37.59			0.00		
Approach LOS	B			B			D			A		
d_I, Intersection Delay [s/veh]	21.78											
Intersection LOS	C											
Intersection V/C	0.770											

Sequence

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



Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex PM.vistro
Report File: K:\...\5 OY CUM PM.pdf

Scenario 17 OY Plus Cum PM
10/10/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	EB Left	0.677	29.9	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	SB Right	1.145	72.6	E
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	1.219	88.9	F
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.148	38.0	E
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	WB Left	0.765	22.9	C
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	EB Thru	0.125	7.5	A
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	WB Left	0.812	35.1	D
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	SB Right	0.863	31.0	C
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	EB Thru	0.969	33.2	C

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	29.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.677

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	83	194	277	36	197	43	12	205	128	320	177	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	14	133	0	11	0	0	13	0	228	12	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	86	216	421	37	216	45	12	226	133	561	196	35
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	55	108	9	55	12	3	58	34	144	50	9
Total Analysis Volume [veh/h]	88	221	431	38	221	46	12	232	136	575	201	36
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	40	19	0	41	20	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	40	40	4	38	38	2	12	12	18	28	28
g / C, Green / Cycle	0.07	0.44	0.44	0.05	0.42	0.42	0.02	0.13	0.13	0.20	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.05	0.12	0.27	0.02	0.06	0.03	0.01	0.10	0.11	0.16	0.06	0.06
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1673	3514	1900	1801
c, Capacity [veh/h]	126	839	713	88	1520	678	38	255	225	697	592	561
d1, Uniform Delay [s]	40.97	15.91	19.17	41.66	16.14	15.59	43.47	37.55	37.75	34.61	22.80	22.80
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.76	0.77	3.78	3.35	0.20	0.19	4.71	4.42	5.99	2.55	0.17	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.70	0.26	0.60	0.43	0.15	0.07	0.32	0.75	0.79	0.82	0.21	0.21
d, Delay for Lane Group [s/veh]	47.73	16.67	22.96	45.02	16.34	15.79	48.19	41.97	43.74	37.15	22.97	22.98
Lane Group LOS	D	B	C	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.10	2.89	7.12	0.89	1.38	0.57	0.31	4.27	4.03	6.07	1.86	1.77
50th-Percentile Queue Length [ft/ln]	52.55	72.24	178.04	22.13	34.53	14.37	7.70	106.63	100.83	151.80	46.52	44.20
95th-Percentile Queue Length [veh/ln]	3.78	5.20	11.50	1.59	2.49	1.03	0.55	7.65	7.26	10.11	3.35	3.18
95th-Percentile Queue Length [ft/ln]	94.60	130.03	287.46	39.83	62.16	25.87	13.85	191.31	181.49	252.84	83.74	79.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.73	16.67	22.96	45.02	16.34	15.79	48.19	42.28	43.74	37.15	22.97	22.98
Movement LOS	D	B	C	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	24.03			19.83			42.99			33.02		
Approach LOS	C			B			D			C		
d_I, Intersection Delay [s/veh]	29.94											
Intersection LOS	C											
Intersection V/C	0.677											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	72.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.145

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	346	395	0	0	268	381	0	0	0	229	2	153
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	347	233	0	0	174	214	0	0	0	125	0	57
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	707	644	0	0	453	610	0	0	0	363	2	216
Peak Hour Factor	0.9770	0.9770	1.0000	1.0000	0.9770	0.9770	1.0000	1.0000	1.0000	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	181	165	0	0	116	156	0	0	0	93	1	55
Total Analysis Volume [veh/h]	724	659	0	0	464	624	0	0	0	372	2	221
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	36	70	0	0	34	0	0	0	0	0	20	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	32	66	30	30		16	16
g / C, Green / Cycle	0.36	0.73	0.33	0.33		0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.40	0.18	0.24	0.39		0.21	0.14
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1617
c, Capacity [veh/h]	643	2651	633	538		323	288
d1, Uniform Delay [s]	29.03	3.93	26.49	30.02		37.00	35.26
k, delay calibration	0.50	0.50	0.50	0.50		0.17	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	75.55	0.22	7.36	91.06		80.99	4.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

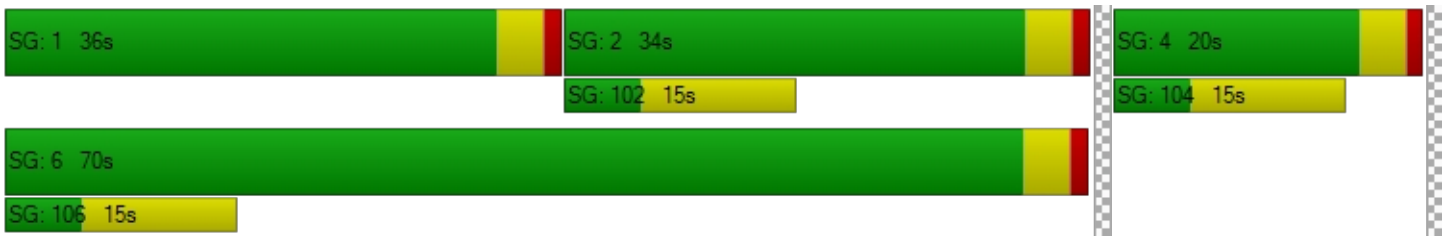
X, volume / capacity	1.13	0.25	0.73	1.16		1.15	0.77
d, Delay for Lane Group [s/veh]	104.58	4.15	33.85	121.08		117.99	39.68
Lane Group LOS	F	A	C	F		F	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	26.46	1.52	9.62	24.55		14.11	4.87
50th-Percentile Queue Length [ft/ln]	661.58	37.96	240.50	613.81		352.68	121.64
95th-Percentile Queue Length [veh/ln]	37.73	2.73	14.71	35.84		21.69	8.48
95th-Percentile Queue Length [ft/ln]	943.35	68.33	367.66	895.88		542.22	212.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	104.58	4.15	0.00	0.00	33.85	121.08	0.00	0.00	0.00	117.99	39.68	39.68
Movement LOS	F	A			C	F				F	D	D
d_A, Approach Delay [s/veh]	56.73			83.88			0.00			88.64		
Approach LOS	E			F			A			F		
d_I, Intersection Delay [s/veh]	72.55											
Intersection LOS	E											
Intersection V/C	1.145											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	88.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.219

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	484	273	155	348	0	254	0	370	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	486	322	22	284	0	93	0	241	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	989	606	183	646	0	357	0	626	0	0	0
Peak Hour Factor	1.0000	0.9130	0.9130	0.9130	0.9130	1.0000	0.9130	0.9130	0.9130	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	271	166	50	177	0	98	0	171	0	0	0
Total Analysis Volume [veh/h]	0	1083	664	200	708	0	391	0	686	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	43	0	12	55	0	0	35	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	39	39	8	51	31	31	
g / C, Green / Cycle	0.43	0.43	0.09	0.57	0.34	0.34	
(v / s)_i Volume / Saturation Flow Rate	0.46	0.52	0.11	0.20	0.22	0.42	
s, saturation flow rate [veh/h]	1900	1675	1810	3618	1810	1615	
c, Capacity [veh/h]	821	724	164	2052	622	556	
d1, Uniform Delay [s]	25.58	25.58	40.96	10.49	24.73	29.55	
k, delay calibration	0.50	0.50	0.11	0.50	0.18	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	49.84	105.77	110.14	0.46	1.73	120.59	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

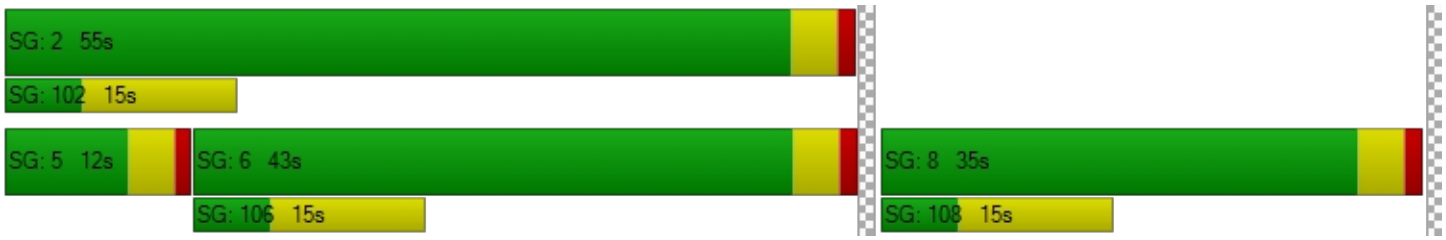
X, volume / capacity	1.06	1.21	1.22	0.35	0.63	1.23	
d, Delay for Lane Group [s/veh]	75.42	131.35	151.10	10.95	26.45	150.14	
Lane Group LOS	F	F	F	B	C	F	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	27.38	35.39	8.57	3.53	6.93	29.87	
50th-Percentile Queue Length [ft/ln]	684.56	884.76	214.24	88.25	173.21	746.65	
95th-Percentile Queue Length [veh/ln]	37.65	51.29	14.30	6.35	11.25	44.15	
95th-Percentile Queue Length [ft/ln]	941.23	1282.18	357.39	158.85	281.13	1103.68	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	86.24	131.35	151.10	10.95	0.00	26.45	26.45	150.14	0.00	0.00	0.00
Movement LOS		F	F	F	B		C	C	F			
d_A, Approach Delay [s/veh]	103.39			41.82			105.23			0.00		
Approach LOS	F			D			F			A		
d_I, Intersection Delay [s/veh]	88.94											
Intersection LOS	F											
Intersection V/C	1.219											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	38.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.148

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	4	430	0	0	556	0	2	0	11	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	77	6	0	155	0	0	0	0	18	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	524	6	0	733	0	2	0	11	18	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	138	2	0	193	0	1	0	3	5	0	0
Total Analysis Volume [veh/h]	4	552	6	0	772	0	2	0	12	19	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00	0.02	0.00	0.03	0.15	0.00	0.00
d_M, Delay for Movement [s/veh]	9.25	0.00	0.00	8.52	0.00	0.00	32.96	29.02	14.48	37.96	33.12	16.54
Movement LOS	A	A	A	A	A	A	D	D	B	E	D	C
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00	0.14	0.14	0.14	0.50	0.50	0.50
95th-Percentile Queue Length [ft/ln]	0.35	0.35	0.00	0.00	0.00	0.00	3.52	3.52	3.52	12.61	12.61	12.61
d_A, Approach Delay [s/veh]	0.07			0.00			17.12			37.96		
Approach LOS	A			A			C			E		
d_I, Intersection Delay [s/veh]	0.73											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.765

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	49	170	25	113	224	219	186	182	55	11	158	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	10	33	13	95	27	33	25	56	8	12	110	19
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	210	39	213	260	261	218	245	65	23	274	100
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	55	10	56	68	69	57	64	17	6	72	26
Total Analysis Volume [veh/h]	64	221	41	224	274	275	229	258	68	24	288	105
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	20	0	19	28	0	20	21	0	30	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	57	57	57	57	57	57	57	57	57	57	57
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	8	8	9	12	12	9	21	21	2	15
g / C, Green / Cycle	0.08	0.14	0.14	0.16	0.22	0.22	0.16	0.38	0.38	0.04	0.26
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.07	0.12	0.14	0.17	0.13	0.14	0.04	0.01	0.22
s, saturation flow rate [veh/h]	1810	1900	1799	1810	1900	1615	1810	1900	1615	1810	1814
c, Capacity [veh/h]	143	266	252	287	418	355	293	722	614	71	467
d1, Uniform Delay [s]	24.94	22.56	22.60	22.89	20.17	20.80	22.80	12.61	11.38	26.53	19.97
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.20	1.46	1.61	4.56	1.76	3.63	4.53	0.30	0.08	2.78	4.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.50	0.51	0.78	0.66	0.77	0.78	0.36	0.11	0.34	0.84
d, Delay for Lane Group [s/veh]	27.14	24.02	24.21	27.46	21.92	24.43	27.33	12.91	11.46	29.31	24.17
Lane Group LOS	C	C	C	C	C	C	C	B	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.84	1.60	1.56	2.95	3.13	3.39	3.01	2.04	0.48	0.35	4.84
50th-Percentile Queue Length [ft/ln]	21.03	39.90	38.96	73.72	78.34	84.78	75.17	51.05	12.12	8.66	121.02
95th-Percentile Queue Length [veh/ln]	1.51	2.87	2.81	5.31	5.64	6.10	5.41	3.68	0.87	0.62	8.45
95th-Percentile Queue Length [ft/ln]	37.85	71.81	70.13	132.70	141.01	152.61	135.31	91.88	21.81	15.58	211.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.14	24.10	24.21	27.46	21.92	24.43	27.33	12.91	11.46	29.31	24.17	24.17
Movement LOS	C	C	C	C	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	24.71			24.42			18.68			24.46		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	22.94											
Intersection LOS	C											
Intersection V/C	0.765											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	7.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.125

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	1	0	1	18	1	35	37	50	1	4	45	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	2	0	0	1	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	1	19	1	36	38	54	1	4	48	23
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	5	0	10	11	16	0	1	14	7
Total Analysis Volume [veh/h]	1	0	1	22	1	41	44	62	1	5	55	26
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	862	901	858	906
Degree of Utilization, x	0.00	0.07	0.12	0.09

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.01	0.23	0.43	0.31
95th-Percentile Queue Length [ft]	0.17	5.73	10.64	7.84
Approach Delay [s/veh]	7.19	7.30	7.79	7.39
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.53			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	35.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.812

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	92	441	123	12	303	10	25	53	178	87	33	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	212	167	0	0	152	13	13	9	274	0	9	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	308	626	128	12	467	23	39	64	459	90	43	14
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	81	165	34	3	123	6	10	17	121	24	11	4
Total Analysis Volume [veh/h]	324	659	135	13	492	24	41	67	483	95	45	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	27	0	14	19	0	24	38	0	11	25	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	37	37	2	21	21	5	29	29	6	31	31
g / C, Green / Cycle	0.20	0.41	0.41	0.02	0.23	0.23	0.05	0.32	0.32	0.07	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.18	0.22	0.22	0.01	0.14	0.14	0.02	0.04	0.30	0.05	0.02	0.01
s, saturation flow rate [veh/h]	1810	1900	1789	1810	1900	1869	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	359	773	728	42	440	432	93	610	519	130	649	552
d1, Uniform Delay [s]	35.29	20.21	20.22	43.35	30.86	30.87	41.53	21.54	29.65	41.01	20.03	19.73
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.30	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.63	2.58	2.75	4.19	5.73	5.87	3.28	0.08	17.74	7.72	0.04	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

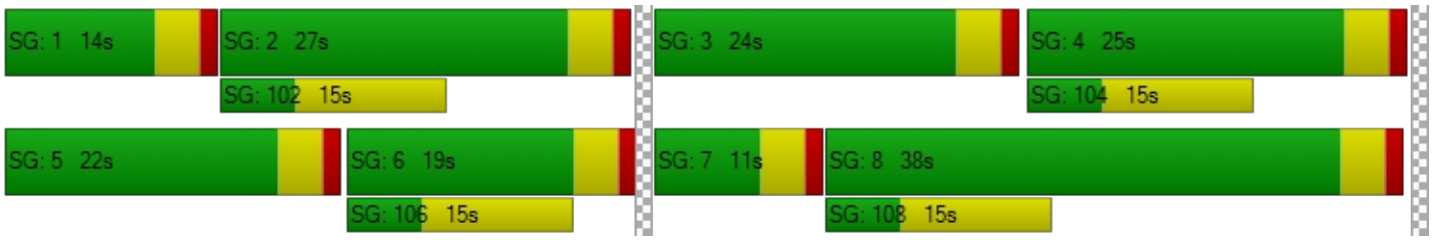
X, volume / capacity	0.90	0.53	0.53	0.31	0.59	0.59	0.44	0.11	0.93	0.73	0.07	0.03
d, Delay for Lane Group [s/veh]	43.91	22.79	22.97	47.54	36.59	36.75	44.80	21.62	47.39	48.73	20.07	19.75
Lane Group LOS	D	C	C	D	D	D	D	C	D	D	C	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.55	6.66	6.32	0.33	5.55	5.50	0.95	0.98	12.10	2.30	0.62	0.20
50th-Percentile Queue Length [ft/ln]	188.84	166.59	157.96	8.20	138.81	137.44	23.77	24.38	302.52	57.42	15.57	5.12
95th-Percentile Queue Length [veh/ln]	12.06	10.90	10.44	0.59	9.42	9.34	1.71	1.76	17.81	4.13	1.12	0.37
95th-Percentile Queue Length [ft/ln]	301.53	272.43	261.02	14.76	235.42	233.57	42.78	43.89	445.14	103.36	28.03	9.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.91	22.86	22.97	47.54	36.66	36.75	44.80	21.62	47.39	48.73	20.07	19.75
Movement LOS	D	C	C	D	D	D	D	C	D	D	C	B
d_A, Approach Delay [s/veh]	28.97			36.94			44.29			37.61		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	35.08											
Intersection LOS	D											
Intersection V/C	0.812											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	31.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	486	396	0	0	385	165	0	0	0	472	2	194
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	88	275	0	0	394	98	0	0	0	243	0	197
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	593	687	0	0	794	270	0	0	0	734	2	399
Peak Hour Factor	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	157	182	0	0	210	71	0	0	0	194	1	105
Total Analysis Volume [veh/h]	627	726	0	0	839	285	0	0	0	776	2	422
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	27	53	0	0	26	0	0	0	0	0	37	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	19	56	34	34		26	26	26
g / C, Green / Cycle	0.21	0.62	0.37	0.37		0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.18	0.20	0.30	0.32		0.22	0.22	0.25
s, saturation flow rate [veh/h]	3514	3618	1900	1744		1810	1798	1615
c, Capacity [veh/h]	727	2259	709	651		519	515	463
d1, Uniform Delay [s]	34.48	7.94	25.10	26.08		29.42	29.47	30.46
k, delay calibration	0.11	0.50	0.50	0.50		0.16	0.16	0.22
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	3.20	0.38	8.84	14.17		3.66	3.85	9.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.32	0.79	0.86		0.77	0.78	0.86
d, Delay for Lane Group [s/veh]	37.68	8.32	33.94	40.25		33.08	33.32	39.73
Lane Group LOS	D	A	C	D		C	C	D
Critical Lane Group	Yes	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.71	2.97	11.76	12.97		8.09	8.13	9.03
50th-Percentile Queue Length [ft/ln]	167.68	74.19	293.94	324.25		202.33	203.25	225.63
95th-Percentile Queue Length [veh/ln]	10.95	5.34	17.38	18.88		12.76	12.81	13.95
95th-Percentile Queue Length [ft/ln]	273.86	133.54	434.53	471.91		318.97	320.16	348.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.68	8.32	0.00	0.00	36.02	40.25	0.00	0.00	0.00	33.20	33.32	39.39
Movement LOS	D	A			D	D				C	C	D
d_A, Approach Delay [s/veh]	21.93			37.10			0.00			35.38		
Approach LOS	C			D			A			D		
d_I, Intersection Delay [s/veh]	30.95											
Intersection LOS	C											
Intersection V/C	0.863											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	33.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.969

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	685	421	230	611	0	211	3	698	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	236	227	257	381	0	127	0	86	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	948	665	496	1016	0	346	3	812	0	0	0
Peak Hour Factor	1.0000	0.9740	0.9740	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	243	171	127	261	0	89	1	208	0	0	0
Total Analysis Volume [veh/h]	0	973	683	509	1043	0	355	3	834	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	43	0	18	61	0	0	29	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	39	39	14	57	25	25	25	
g / C, Green / Cycle	0.43	0.43	0.16	0.63	0.28	0.28	0.28	
(v / s)_i Volume / Saturation Flow Rate	0.27	0.42	0.14	0.29	0.20	0.27	0.25	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1617	1615	
c, Capacity [veh/h]	1565	699	549	2291	503	449	449	
d1, Uniform Delay [s]	19.82	25.11	37.49	8.51	29.21	32.25	31.14	
k, delay calibration	0.50	0.50	0.11	0.50	0.15	0.32	0.26	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.87	28.94	7.39	0.65	2.51	28.97	12.85	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.62	0.98	0.93	0.46	0.71	0.98	0.89	
d, Delay for Lane Group [s/veh]	21.69	54.05	44.88	9.16	31.72	61.22	43.99	
Lane Group LOS	C	D	D	A	C	E	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	
50th-Percentile Queue Length [veh/ln]	7.77	18.72	5.92	4.65	6.95	12.64	9.48	
50th-Percentile Queue Length [ft/ln]	194.28	467.92	147.99	116.20	173.82	316.05	236.98	
95th-Percentile Queue Length [veh/ln]	12.34	25.81	9.91	8.18	11.28	18.47	14.53	
95th-Percentile Queue Length [ft/ln]	308.58	645.29	247.75	204.59	281.93	461.83	363.21	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	21.69	54.05	44.88	9.16	0.00	31.72	61.22	53.01	0.00	0.00	0.00
Movement LOS		C	D	D	A		C	E	D			
d_A, Approach Delay [s/veh]	35.03			20.88			46.69			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	33.20											
Intersection LOS	C											
Intersection V/C	0.969											

Sequence

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



APPENDIX D-5

INTERSECTION ANALYSIS WORKSHEETS - OPENING YEAR 2020 CUMULATIVE PLUS PROJECT

Rialto Annexation Island 4 Industrial

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Report File: K:\...\6 OY CUM WP AM.pdf

Scenario 18 OY + Cum + Proj AM
10/10/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	NB Left	0.712	26.8	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	SB Right	1.204	83.6	F
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	1.138	67.1	E
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.242	46.9	E
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	WB Right	0.888	40.0	D
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	WB Thru	0.550	12.1	B
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	NB Left	1.066	71.0	E
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	SB Right	0.907	35.5	D
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.774	22.0	C
10	Maple Ave / North Dwy	Two-way stop	HCM 2010	EB Left	0.011	8.8	A
11	Maple Ave / South Dwy	Two-way stop	HCM 2010	EB Left	0.003	8.6	A

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	26.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.712

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	87	341	239	22	317	13	25	88	52	360	188	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	12	245	0	17	0	0	17	0	143	14	0
Site-Generated Trips [veh/h]	0	0	63	0	0	0	0	0	0	15	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	367	557	23	347	14	26	109	54	532	210	32
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	97	147	6	91	4	7	29	14	140	55	8
Total Analysis Volume [veh/h]	95	387	587	24	366	15	27	115	57	561	221	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	12	19	0	41	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	46	46	3	43	43	4	7	7	17	21	21
g / C, Green / Cycle	0.07	0.52	0.52	0.04	0.48	0.48	0.04	0.08	0.08	0.19	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.05	0.20	0.36	0.01	0.10	0.01	0.01	0.05	0.05	0.16	0.07	0.07
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1697	3514	1900	1813
c, Capacity [veh/h]	130	976	830	66	1731	773	72	148	132	684	442	422
d1, Uniform Delay [s]	41.01	13.39	16.75	42.42	13.64	12.38	42.22	40.22	40.36	34.79	28.50	28.50
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.72	1.21	5.06	3.31	0.28	0.05	3.24	3.80	5.06	2.51	0.37	0.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

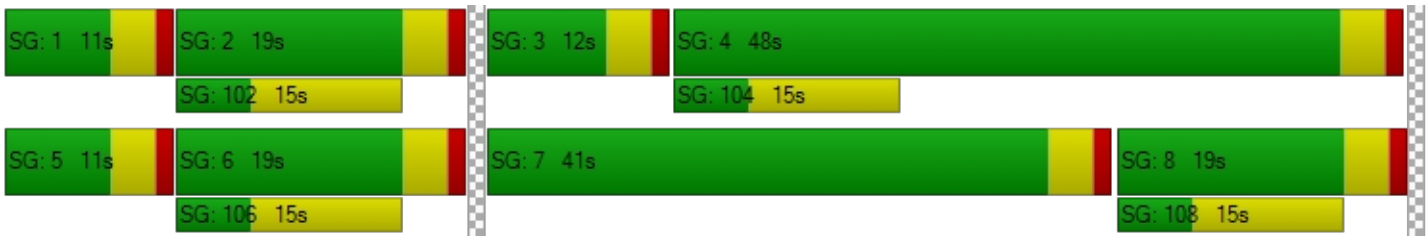
X, volume / capacity	0.73	0.40	0.71	0.36	0.21	0.02	0.38	0.60	0.64	0.82	0.29	0.30
d, Delay for Lane Group [s/veh]	48.73	14.60	21.81	45.73	13.92	12.42	45.46	44.02	45.42	37.30	28.87	28.89
Lane Group LOS	D	B	C	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.30	4.71	9.48	0.57	2.08	0.16	0.64	2.00	1.95	5.93	2.30	2.20
50th-Percentile Queue Length [ft/ln]	57.42	117.78	237.10	14.30	52.08	4.00	15.96	49.91	48.86	148.28	57.49	54.97
95th-Percentile Queue Length [veh/ln]	4.13	8.27	14.53	1.03	3.75	0.29	1.15	3.59	3.52	9.93	4.14	3.96
95th-Percentile Queue Length [ft/ln]	103.36	206.77	363.37	25.74	93.75	7.19	28.73	89.83	87.95	248.14	103.47	98.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.73	14.60	21.81	45.73	13.92	12.42	45.46	44.35	45.42	37.30	28.87	28.89
Movement LOS	D	B	C	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	21.59			15.75			44.81			34.67		
Approach LOS	C			B			D			C		
d_I, Intersection Delay [s/veh]	26.78											
Intersection LOS	C											
Intersection V/C	0.712											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	83.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.204

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	297	464	0	0	302	444	0	0	0	337	10	206
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	199	336	0	0	153	88	0	0	0	303	0	30
Site-Generated Trips [veh/h]	0	63	0	0	1	14	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	508	882	0	0	468	564	0	0	0	653	10	244
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	134	232	0	0	123	148	0	0	0	172	3	64
Total Analysis Volume [veh/h]	535	928	0	0	493	594	0	0	0	687	11	257
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	26	57	0	0	31	0	0	0	0	0	33	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	22	53	27	27		29	29
g / C, Green / Cycle	0.24	0.59	0.30	0.30		0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.30	0.26	0.26	0.37		0.38	0.16
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1625
c, Capacity [veh/h]	443	2132	570	484		583	523
d1, Uniform Delay [s]	34.02	10.22	29.81	31.54		30.54	24.80
k, delay calibration	0.37	0.50	0.50	0.50		0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	108.32	0.65	16.02	119.02		97.44	0.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	1.21	0.44	0.87	1.23		1.18	0.51
d, Delay for Lane Group [s/veh]	142.34	10.87	45.83	150.56		127.99	25.58
Lane Group LOS	F	B	D	F		F	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	22.60	4.67	12.12	25.98		27.67	4.56
50th-Percentile Queue Length [ft/ln]	564.88	116.65	303.06	649.49		691.69	113.91
95th-Percentile Queue Length [veh/ln]	33.65	8.21	17.83	38.63		40.17	8.06
95th-Percentile Queue Length [ft/ln]	841.17	205.21	445.81	965.81		1004.19	201.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	142.34	10.87	0.00	0.00	45.83	150.56	0.00	0.00	0.00	127.99	25.58	25.58
Movement LOS	F	B			D	F				F	C	C
d_A, Approach Delay [s/veh]	58.95			103.06			0.00			99.25		
Approach LOS	E			F			A			F		
d_I, Intersection Delay [s/veh]	83.61											
Intersection LOS	F											
Intersection V/C	1.204											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	67.1
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.138

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	411	256	166	465	0	351	2	462	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	335	112	36	445	0	199	0	357	0	0	0
Site-Generated Trips [veh/h]	0	6	0	0	1	0	57	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	768	378	209	930	0	621	2	837	0	0	0
Peak Hour Factor	1.0000	0.9840	0.9840	0.9840	0.9840	1.0000	0.9840	0.9840	0.9840	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	195	96	53	236	0	158	1	213	0	0	0
Total Analysis Volume [veh/h]	0	780	384	212	945	0	631	2	851	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	31	0	13	44	0	0	46	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	27	27	9	40	42	42	
g / C, Green / Cycle	0.30	0.30	0.10	0.45	0.47	0.47	
(v / s)_i Volume / Saturation Flow Rate	0.31	0.34	0.12	0.26	0.35	0.53	
s, saturation flow rate [veh/h]	1900	1702	1810	3618	1810	1615	
c, Capacity [veh/h]	571	512	184	1616	841	750	
d1, Uniform Delay [s]	31.50	31.50	40.46	18.66	19.87	24.13	
k, delay calibration	0.50	0.50	0.11	0.50	0.28	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	42.47	83.42	81.71	1.55	3.51	76.57	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

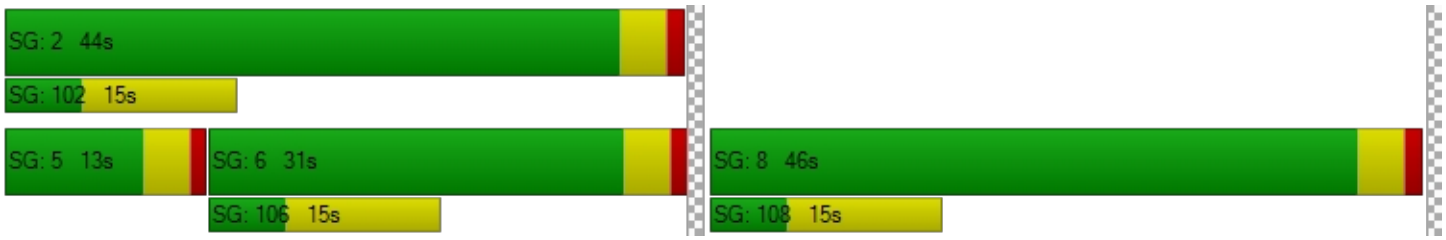
X, volume / capacity	1.02	1.14	1.15	0.58	0.75	1.13	
d, Delay for Lane Group [s/veh]	73.97	114.92	122.18	20.22	23.39	100.70	
Lane Group LOS	F	F	F	C	C	F	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	18.49	22.39	8.15	7.23	10.81	30.32	
50th-Percentile Queue Length [ft/ln]	462.35	559.64	203.72	180.71	270.16	757.97	
95th-Percentile Queue Length [veh/ln]	25.86	32.59	13.51	11.64	16.20	43.11	
95th-Percentile Queue Length [ft/ln]	646.41	814.71	337.66	290.94	404.94	1077.65	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	84.37	114.92	122.18	20.22	0.00	23.39	23.39	100.70	0.00	0.00	0.00
Movement LOS		F	F	F	C		C	C	F			
d_A, Approach Delay [s/veh]	94.45			38.90			67.72			0.00		
Approach LOS	F			D			E			A		
d_I, Intersection Delay [s/veh]	67.13											
Intersection LOS	E											
Intersection V/C	1.138											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	46.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.242

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	8	462	0	0	580	0	0	0	1	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	151	18	0	56	0	0	0	0	4	0	0
Site-Generated Trips [veh/h]	0	20	88	10	5	0	0	0	0	22	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	651	106	10	664	0	0	0	1	26	0	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	171	28	3	175	0	0	0	0	7	0	1
Total Analysis Volume [veh/h]	8	685	112	11	699	0	0	0	1	27	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.24	0.00	0.01
d_M, Delay for Movement [s/veh]	9.00	0.00	0.00	9.37	0.00	0.00	40.46	36.78	13.14	46.87	41.77	22.58
Movement LOS	A	A	A	A	A	A	E	E	B	E	E	C
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.04	0.04	0.00	0.01	0.01	0.01	0.92	0.92	0.92
95th-Percentile Queue Length [ft/ln]	0.67	0.67	0.00	0.91	0.91	0.00	0.17	0.17	0.17	22.96	22.96	22.96
d_A, Approach Delay [s/veh]	0.09			0.15			13.14			44.44		
Approach LOS	A			A			B			E		
d_I, Intersection Delay [s/veh]	0.98											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	40.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.888

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	84	154	7	61	251	268	198	53	44	24	160	118
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	2	13	5	26	22	8	58	83	4	19	74	80
Site-Generated Trips [veh/h]	0	6	0	10	2	15	63	0	0	0	0	39
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	179	12	99	285	302	327	138	50	44	240	242
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	47	3	26	75	79	86	36	13	12	63	64
Total Analysis Volume [veh/h]	94	188	13	104	300	318	344	145	53	46	253	255
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	17	25	0	21	24	0	30	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	20	20	7	20	20	19	43	43	5	28
g / C, Green / Cycle	0.07	0.22	0.22	0.08	0.23	0.23	0.21	0.47	0.47	0.05	0.31
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.05	0.06	0.16	0.20	0.19	0.08	0.03	0.03	0.29
s, saturation flow rate [veh/h]	1810	1900	1857	1810	1900	1615	1810	1900	1615	1810	1745
c, Capacity [veh/h]	127	422	413	136	431	367	388	897	763	96	543
d1, Uniform Delay [s]	41.17	28.85	28.87	40.98	32.04	33.60	34.39	13.61	13.00	41.53	30.24
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.15	0.14	0.11	0.11	0.11	0.36
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.10	0.29	0.30	8.63	2.03	8.53	8.44	0.08	0.04	3.63	20.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

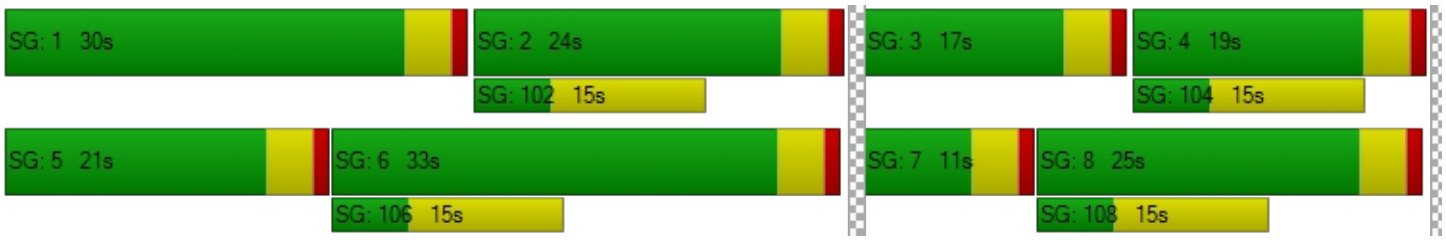
X, volume / capacity	0.74	0.24	0.24	0.77	0.70	0.87	0.89	0.16	0.07	0.48	0.94
d, Delay for Lane Group [s/veh]	49.27	29.14	29.17	49.61	34.07	42.13	42.83	13.70	13.04	45.16	50.68
Lane Group LOS	D	C	C	D	C	D	D	B	B	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.29	1.78	1.76	2.54	6.03	7.30	7.95	1.61	0.56	1.07	13.22
50th-Percentile Queue Length [ft/ln]	57.16	44.54	44.07	63.47	150.82	182.59	198.63	40.20	14.05	26.74	330.50
95th-Percentile Queue Length [veh/ln]	4.12	3.21	3.17	4.57	10.06	11.74	12.57	2.89	1.01	1.93	19.18
95th-Percentile Queue Length [ft/ln]	102.88	80.18	79.33	114.24	251.53	293.40	314.20	72.36	25.30	48.13	479.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.27	29.16	29.17	49.61	34.07	42.13	42.83	13.70	13.04	45.16	50.68	50.68
Movement LOS	D	C	C	D	C	D	D	B	B	D	D	D
d_A, Approach Delay [s/veh]	35.57			39.86			32.12			50.22		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	39.99											
Intersection LOS	D											
Intersection V/C	0.888											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.550

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	3	1	5	62	1	76	44	46	0	1	156	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	2	0
Site-Generated Trips [veh/h]	6	0	8	0	0	0	0	0	23	35	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	1	13	64	1	79	46	48	23	36	164	29
Peak Hour Factor	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	6	28	0	34	20	21	10	16	71	13
Total Analysis Volume [veh/h]	16	2	23	111	2	137	80	83	40	63	285	50
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	637	683	687	723
Degree of Utilization, x	0.06	0.37	0.30	0.55

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.21	1.68	1.23	3.38
95th-Percentile Queue Length [ft]	5.15	41.96	30.85	84.62
Approach Delay [s/veh]	9.04	11.27	10.43	13.88
Approach LOS	A	B	B	B
Intersection Delay [s/veh]	12.14			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	71.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.066

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	149	333	83	17	481	21	11	45	191	160	66	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	339	106	0	0	190	17	14	10	198	0	11	0
Site-Generated Trips [veh/h]	39	17	0	1	3	0	0	0	10	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	533	469	86	19	693	39	25	57	407	166	80	24
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	140	123	23	5	182	10	7	15	107	44	21	6
Total Analysis Volume [veh/h]	561	494	91	20	729	41	26	60	428	175	84	25
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	29	40	0	11	22	0	12	26	0	13	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	40	40	3	18	18	3	22	22	9	28	28
g / C, Green / Cycle	0.28	0.45	0.45	0.03	0.20	0.20	0.04	0.24	0.24	0.10	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.31	0.16	0.16	0.01	0.20	0.20	0.01	0.03	0.27	0.10	0.04	0.02
s, saturation flow rate [veh/h]	1810	1900	1799	1810	1900	1865	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	503	852	806	56	383	375	67	462	393	181	581	494
d1, Uniform Delay [s]	32.51	16.26	16.27	42.76	35.94	35.94	42.32	26.62	34.06	40.35	22.69	22.03
k, delay calibration	0.40	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.30	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	72.20	1.15	1.21	3.88	49.99	50.61	3.57	0.13	62.27	23.98	0.11	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.12	0.35	0.35	0.36	1.02	1.02	0.39	0.13	1.09	0.97	0.14	0.05
d, Delay for Lane Group [s/veh]	104.70	17.41	17.48	46.64	85.94	86.55	45.89	26.75	96.34	64.33	22.80	22.07
Lane Group LOS	F	B	B	D	F	F	D	C	F	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	20.48	4.09	3.89	0.49	13.39	13.21	0.62	0.99	14.99	4.96	1.27	0.37
50th-Percentile Queue Length [ft/ln]	512.02	102.13	97.24	12.18	334.86	330.23	15.49	24.87	374.63	124.06	31.71	9.18
95th-Percentile Queue Length [veh/ln]	29.78	7.35	7.00	0.88	19.56	19.34	1.12	1.79	22.38	8.62	2.28	0.66
95th-Percentile Queue Length [ft/ln]	744.57	183.84	175.03	21.92	488.99	483.43	27.89	44.77	559.55	215.39	57.09	16.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	104.70	17.44	17.48	46.64	86.22	86.55	45.89	26.75	96.34	64.33	22.80	22.07
Movement LOS	F	B	B	D	F	F	D	C	F	E	C	C
d_A, Approach Delay [s/veh]	60.16			85.24			85.66			48.33		
Approach LOS	E			F			F			D		
d_I, Intersection Delay [s/veh]	70.97											
Intersection LOS	E											
Intersection V/C	1.066											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	35.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.907

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	632	183	0	0	325	271	0	0	0	313	3	144
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	63	202	0	0	284	122	0	0	0	166	0	307
Site-Generated Trips [veh/h]	0	6	0	0	13	0	0	0	0	0	0	50
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	720	398	0	0	635	404	0	0	0	492	3	507
Peak Hour Factor	0.9190	0.9190	1.0000	1.0000	0.9190	0.9190	1.0000	1.0000	1.0000	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	196	108	0	0	173	110	0	0	0	134	1	138
Total Analysis Volume [veh/h]	783	433	0	0	691	440	0	0	0	535	3	552
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	27	63	0	0	36	0	0	0	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	22	60	34	34		22	22	22
g / C, Green / Cycle	0.24	0.66	0.37	0.37		0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.22	0.12	0.30	0.34		0.20	0.21	0.22
s, saturation flow rate [veh/h]	3514	3618	1900	1671		1810	1704	1615
c, Capacity [veh/h]	860	2401	712	626		448	421	400
d1, Uniform Delay [s]	33.05	5.78	25.07	26.61		31.91	32.42	32.91
k, delay calibration	0.11	0.50	0.50	0.50		0.16	0.19	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	4.18	0.16	8.91	18.79		5.19	8.73	14.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

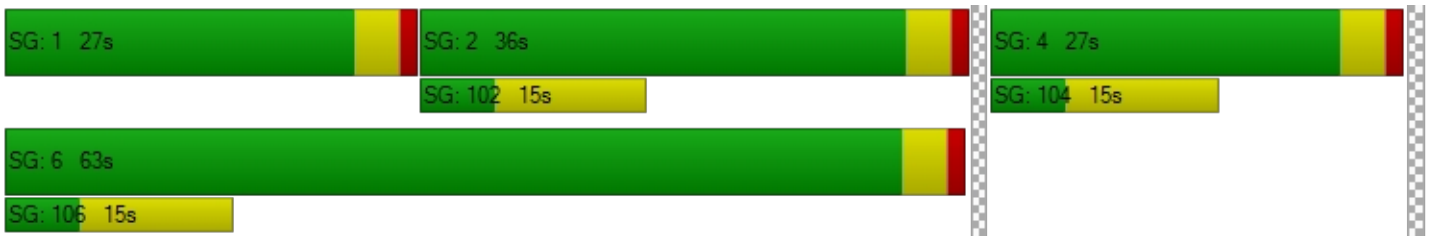
X, volume / capacity	0.91	0.18	0.79	0.90		0.81	0.86	0.91
d, Delay for Lane Group [s/veh]	37.23	5.95	33.98	45.40		37.10	41.15	47.14
Lane Group LOS	D	A	C	D		D	D	D
Critical Lane Group	Yes	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	8.45	1.36	11.84	13.97		7.79	8.28	8.95
50th-Percentile Queue Length [ft/ln]	211.21	33.92	296.03	349.21		194.73	206.98	223.67
95th-Percentile Queue Length [veh/ln]	13.22	2.44	17.48	20.10		12.37	13.00	13.85
95th-Percentile Queue Length [ft/ln]	330.38	61.06	437.12	502.45		309.16	324.95	346.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.23	5.95	0.00	0.00	36.05	45.40	0.00	0.00	0.00	38.40	41.15	45.09
Movement LOS	D	A			D	D				D	D	D
d_A, Approach Delay [s/veh]	26.09			39.69			0.00			41.80		
Approach LOS	C			D			A			D		
d_I, Intersection Delay [s/veh]	35.55											
Intersection LOS	D											
Intersection V/C	0.907											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.774

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	757	346	196	437	0	70	4	404	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	181	207	167	284	0	83	0	76	0	0	0
Site-Generated Trips [veh/h]	0	6	0	12	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	974	567	383	739	0	156	4	496	0	0	0
Peak Hour Factor	1.0000	0.9160	0.9160	0.9160	0.9160	1.0000	0.9160	0.9160	0.9160	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	266	155	105	202	0	43	1	135	0	0	0
Total Analysis Volume [veh/h]	0	1063	619	418	807	0	170	4	541	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	21	40	0	0	50	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	47	47	13	64	18	18	18	
g / C, Green / Cycle	0.52	0.52	0.14	0.71	0.21	0.21	0.21	
(v / s)_i Volume / Saturation Flow Rate	0.29	0.38	0.12	0.22	0.09	0.17	0.17	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1619	1615	
c, Capacity [veh/h]	1870	835	508	2554	371	332	332	
d1, Uniform Delay [s]	14.88	17.04	37.39	5.01	31.38	34.20	34.20	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.26	5.89	3.40	0.33	0.88	5.05	5.07	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

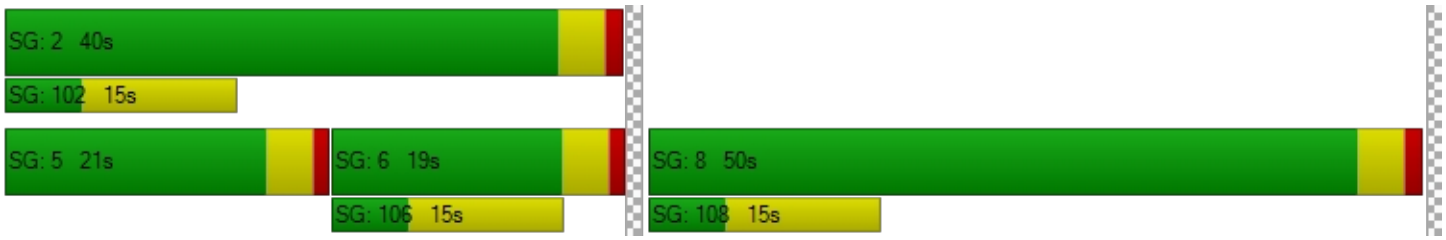
X, volume / capacity	0.57	0.74	0.82	0.32	0.46	0.82	0.82	
d, Delay for Lane Group [s/veh]	16.15	22.93	40.79	5.34	32.26	39.25	39.27	
Lane Group LOS	B	C	D	A	C	D	D	
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.07	10.36	4.58	2.32	3.24	5.97	5.96	
50th-Percentile Queue Length [ft/ln]	176.81	259.02	114.44	57.94	80.92	149.14	148.93	
95th-Percentile Queue Length [veh/ln]	11.43	15.64	8.09	4.17	5.83	9.97	9.96	
95th-Percentile Queue Length [ft/ln]	285.85	390.99	202.16	104.30	145.65	249.28	249.00	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	16.15	22.93	40.79	5.34	0.00	32.26	39.25	39.26	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	D	D			
d_A, Approach Delay [s/veh]	18.64			17.44			37.59			0.00		
Approach LOS	B			B			D			A		
d_I, Intersection Delay [s/veh]	21.98											
Intersection LOS	C											
Intersection V/C	0.774											

Sequence

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



Intersection Level Of Service Report
Intersection 10: Maple Ave / North Dwy

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Maple Ave		Maple Ave		North Dwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Maple Ave		Maple Ave		North Dwy	
Base Volume Input [veh/h]	0	9	2	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	12	46	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	12	14	46	11	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	4	12	3	0
Total Analysis Volume [veh/h]	0	12	14	46	11	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	0.00	8.79	8.52
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.87	0.87
d_A, Approach Delay [s/veh]	0.00		0.00		8.79	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.17					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 11: Maple Ave / South Dwy

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Maple Ave		Maple Ave		South Dwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Maple Ave		Maple Ave		South Dwy	
Base Volume Input [veh/h]	0	9	2	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	12	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	9	2	12	3	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	1	3	1	0
Total Analysis Volume [veh/h]	0	9	2	12	3	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.24	0.00	0.00	0.00	8.61	8.36
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.23	0.23
d_A, Approach Delay [s/veh]	0.00		0.00		8.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.99					
Intersection LOS	A					

Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex PM.vistro
Report File: K:\...\6 OY CUM WP PM.pdf

Scenario 18 OY + Cum + Proj PM
10/10/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	EB Left	0.717	30.5	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	SB Right	1.187	82.6	F
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	1.220	88.8	F
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.937	135.1	F
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	WB Left	0.806	26.3	C
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	EB Thru	0.139	7.7	A
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	WB Left	0.858	38.2	D
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	SB Right	0.885	32.6	C
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	EB Thru	0.985	35.3	D
10	Maple Ave / North Dwy	Two-way stop	HCM 2010	EB Left	0.044	8.8	A
11	Maple Ave / South Dwy	Two-way stop	HCM 2010	EB Left	0.012	8.6	A

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	30.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.717

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	83	194	277	36	197	43	12	205	128	320	177	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	14	133	0	11	0	0	13	0	228	12	0
Site-Generated Trips [veh/h]	0	0	22	0	0	0	0	0	0	63	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	86	216	443	37	216	45	12	226	133	624	196	35
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	55	113	9	55	12	3	58	34	160	50	9
Total Analysis Volume [veh/h]	88	221	454	38	221	46	12	232	136	639	201	36
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	40	19	0	41	20	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	38	38	4	36	36	2	12	12	20	30	30
g / C, Green / Cycle	0.07	0.42	0.42	0.05	0.40	0.40	0.02	0.13	0.13	0.22	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.05	0.12	0.28	0.02	0.06	0.03	0.01	0.10	0.11	0.18	0.06	0.06
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1673	3514	1900	1801
c, Capacity [veh/h]	126	802	682	88	1450	647	38	255	224	765	629	596
d1, Uniform Delay [s]	40.97	17.02	20.92	41.66	17.22	16.64	43.47	37.56	37.75	33.70	21.55	21.55
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.76	0.85	5.09	3.35	0.22	0.21	4.71	4.44	6.01	2.50	0.15	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.70	0.28	0.67	0.43	0.15	0.07	0.32	0.75	0.79	0.84	0.19	0.19
d, Delay for Lane Group [s/veh]	47.73	17.87	26.00	45.02	17.44	16.85	48.19	42.00	43.77	36.20	21.70	21.71
Lane Group LOS	D	B	C	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.10	3.02	8.11	0.89	1.44	0.60	0.31	4.27	4.03	6.70	1.80	1.71
50th-Percentile Queue Length [ft/ln]	52.55	75.51	202.79	22.13	36.00	14.99	7.70	106.67	100.87	167.40	44.94	42.65
95th-Percentile Queue Length [veh/ln]	3.78	5.44	12.78	1.59	2.59	1.08	0.55	7.65	7.26	10.94	3.24	3.07
95th-Percentile Queue Length [ft/ln]	94.60	135.91	319.56	39.83	64.80	26.98	13.85	191.36	181.57	273.50	80.90	76.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.73	17.87	26.00	45.02	17.44	16.85	48.19	42.31	43.77	36.20	21.70	21.71
Movement LOS	D	B	C	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	26.15			20.79			43.02			32.28		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	30.52											
Intersection LOS	C											
Intersection V/C	0.717											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	82.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.187

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	346	395	0	0	268	381	0	0	0	229	2	153
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	347	233	0	0	174	214	0	0	0	125	0	57
Site-Generated Trips [veh/h]	0	22	0	0	6	57	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	707	666	0	0	459	667	0	0	0	363	2	216
Peak Hour Factor	0.9770	0.9770	1.0000	1.0000	0.9770	0.9770	1.0000	1.0000	1.0000	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	181	170	0	0	117	171	0	0	0	93	1	55
Total Analysis Volume [veh/h]	724	682	0	0	470	683	0	0	0	372	2	221
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	36	70	0	0	34	0	0	0	0	0	20	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	32	66	30	30		16	16
g / C, Green / Cycle	0.36	0.73	0.33	0.33		0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.40	0.19	0.25	0.42		0.21	0.14
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1617
c, Capacity [veh/h]	643	2651	633	538		323	288
d1, Uniform Delay [s]	29.03	3.96	26.60	30.02		37.00	35.26
k, delay calibration	0.50	0.50	0.50	0.50		0.17	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	75.55	0.23	7.69	135.35		80.99	4.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

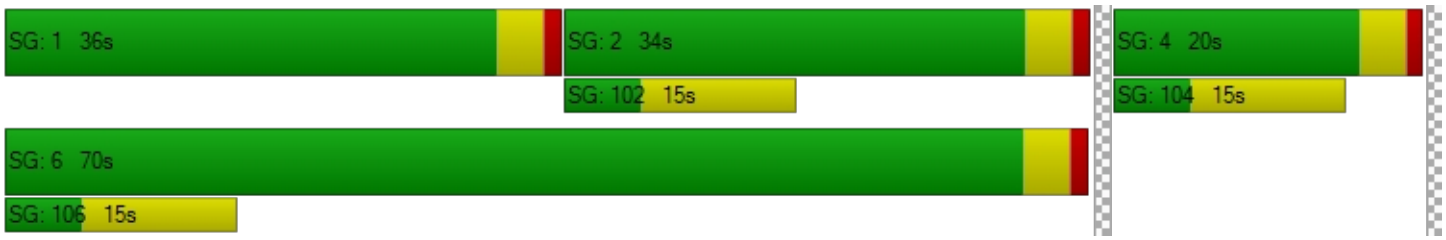
X, volume / capacity	1.13	0.26	0.74	1.27		1.15	0.77
d, Delay for Lane Group [s/veh]	104.58	4.19	34.29	165.37		117.99	39.68
Lane Group LOS	F	A	C	F		F	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	26.46	1.58	9.82	31.17		14.11	4.87
50th-Percentile Queue Length [ft/ln]	661.58	39.60	245.53	779.29		352.68	121.64
95th-Percentile Queue Length [veh/ln]	37.73	2.85	14.96	46.43		21.69	8.48
95th-Percentile Queue Length [ft/ln]	943.35	71.28	374.03	1160.81		542.22	212.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	104.58	4.19	0.00	0.00	34.29	165.37	0.00	0.00	0.00	117.99	39.68	39.68
Movement LOS	F	A			C	F				F	D	D
d_A, Approach Delay [s/veh]	55.89			111.94			0.00			88.64		
Approach LOS	E			F			A			F		
d_I, Intersection Delay [s/veh]	82.55											
Intersection LOS	F											
Intersection V/C	1.187											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	88.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.220

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	484	273	155	348	0	254	0	370	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	486	322	22	284	0	93	0	241	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	6	0	20	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	991	606	183	652	0	377	0	626	0	0	0
Peak Hour Factor	1.0000	0.9130	0.9130	0.9130	0.9130	1.0000	0.9130	0.9130	0.9130	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	271	166	50	179	0	103	0	171	0	0	0
Total Analysis Volume [veh/h]	0	1085	664	200	714	0	413	0	686	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	43	0	12	55	0	0	35	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	39	39	8	51	31	31	
g / C, Green / Cycle	0.43	0.43	0.09	0.57	0.34	0.34	
(v / s)_i Volume / Saturation Flow Rate	0.46	0.52	0.11	0.20	0.23	0.42	
s, saturation flow rate [veh/h]	1900	1675	1810	3618	1810	1615	
c, Capacity [veh/h]	821	724	164	2052	622	556	
d1, Uniform Delay [s]	25.58	25.58	40.96	10.51	25.12	29.55	
k, delay calibration	0.50	0.50	0.11	0.50	0.20	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	50.24	106.27	110.14	0.47	2.30	120.59	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

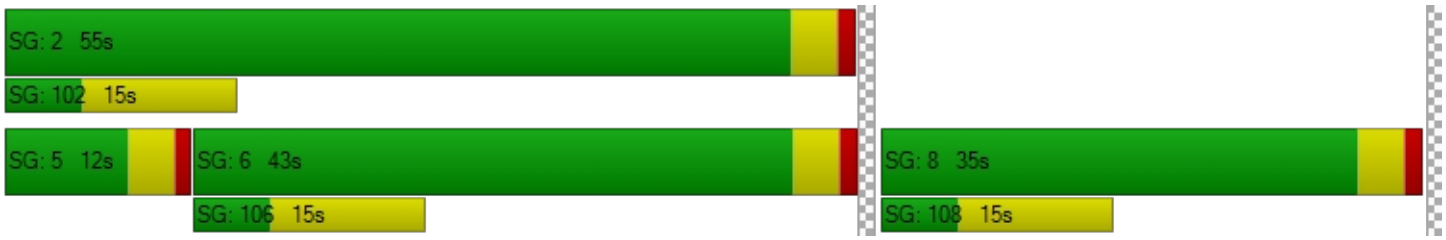
X, volume / capacity	1.07	1.21	1.22	0.35	0.66	1.23	
d, Delay for Lane Group [s/veh]	75.83	131.85	151.10	10.98	27.42	150.14	
Lane Group LOS	F	F	F	B	C	F	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	27.47	35.50	8.57	3.57	7.51	29.87	
50th-Percentile Queue Length [ft/ln]	686.86	887.39	214.24	89.19	187.76	746.65	
95th-Percentile Queue Length [veh/ln]	37.79	51.45	14.30	6.42	12.00	44.15	
95th-Percentile Queue Length [ft/ln]	944.78	1286.36	357.39	160.54	300.12	1103.68	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	86.70	131.85	151.10	10.98	0.00	27.42	27.42	150.14	0.00	0.00	0.00
Movement LOS		F	F	F	B		C	C	F			
d_A, Approach Delay [s/veh]	103.84			41.64			104.02			0.00		
Approach LOS	F			D			F			A		
d_I, Intersection Delay [s/veh]	88.78											
Intersection LOS	F											
Intersection V/C	1.220											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	135.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.937

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	4	430	0	0	556	0	2	0	11	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	77	6	0	155	0	0	0	0	18	0	0
Site-Generated Trips [veh/h]	0	7	30	3	20	0	0	0	0	89	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	531	36	3	753	0	2	0	11	107	0	10
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	140	9	1	198	0	1	0	3	28	0	3
Total Analysis Volume [veh/h]	4	559	38	3	793	0	2	0	12	113	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00	0.02	0.00	0.03	0.94	0.00	0.02
d_M, Delay for Movement [s/veh]	9.32	0.00	0.00	8.65	0.00	0.00	36.05	31.48	14.80	135.05	129.76	111.98
Movement LOS	A	A	A	A	A	A	E	D	B	F	F	F
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.01	0.01	0.00	0.15	0.15	0.15	6.48	6.48	6.48
95th-Percentile Queue Length [ft/ln]	0.36	0.36	0.00	0.23	0.23	0.00	3.73	3.73	3.73	162.04	162.04	162.04
d_A, Approach Delay [s/veh]	0.06			0.03			17.84			133.01		
Approach LOS	A			A			C			F		
d_I, Intersection Delay [s/veh]	10.95											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	26.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.806

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	49	170	25	113	224	219	186	182	55	11	158	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	10	33	13	95	27	33	25	56	8	12	110	19
Site-Generated Trips [veh/h]	0	2	0	40	6	63	22	0	0	0	0	13
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	212	39	253	266	324	240	245	65	23	274	113
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	56	10	67	70	85	63	64	17	6	72	30
Total Analysis Volume [veh/h]	64	223	41	266	280	341	253	258	68	24	288	119
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	20	0	19	28	0	20	21	0	30	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	66	66	66	66	66	66	66	66	66	66	66
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	10	10	12	17	17	11	26	26	3	17
g / C, Green / Cycle	0.07	0.15	0.15	0.18	0.25	0.25	0.17	0.39	0.39	0.04	0.26
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.07	0.15	0.15	0.21	0.14	0.14	0.04	0.01	0.23
s, saturation flow rate [veh/h]	1810	1900	1800	1810	1900	1615	1810	1900	1615	1810	1807
c, Capacity [veh/h]	133	279	265	325	482	409	312	749	637	69	470
d1, Uniform Delay [s]	29.57	26.00	26.05	26.19	21.71	23.47	26.46	14.10	12.72	31.15	23.48
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.69	1.28	1.41	5.04	1.12	4.47	5.07	0.27	0.07	3.00	4.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.48	0.49	0.82	0.58	0.83	0.81	0.34	0.11	0.35	0.87
d, Delay for Lane Group [s/veh]	32.26	27.28	27.46	31.23	22.83	27.94	31.52	14.37	12.80	34.15	28.44
Lane Group LOS	C	C	C	C	C	C	C	B	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.02	1.91	1.87	4.19	3.64	5.11	4.01	2.46	0.58	0.41	6.17
50th-Percentile Queue Length [ft/ln]	25.61	47.86	46.68	104.84	91.03	127.63	100.14	61.46	14.60	10.31	154.26
95th-Percentile Queue Length [veh/ln]	1.84	3.45	3.36	7.55	6.55	8.81	7.21	4.43	1.05	0.74	10.24
95th-Percentile Queue Length [ft/ln]	46.10	86.15	84.03	188.71	163.85	220.27	180.26	110.63	26.28	18.55	256.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.26	27.35	27.46	31.23	22.83	27.94	31.52	14.37	12.80	34.15	28.44	28.44
Movement LOS	C	C	C	C	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	28.32			27.31			21.68			28.76		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	26.28											
Intersection LOS	C											
Intersection V/C	0.806											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	7.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.139

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	1	0	1	18	1	35	37	50	1	4	45	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	2	0	0	1	0
Site-Generated Trips [veh/h]	23	0	32	0	0	0	0	0	8	12	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	0	33	19	1	36	38	54	9	16	48	23
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	0	9	5	0	10	11	16	3	5	14	7
Total Analysis Volume [veh/h]	28	0	38	22	1	41	44	62	10	18	55	26
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	859	871	835	859
Degree of Utilization, x	0.08	0.07	0.14	0.12

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.25	0.24	0.48	0.39
95th-Percentile Queue Length [ft]	6.22	5.94	12.04	9.73
Approach Delay [s/veh]	7.54	7.46	8.01	7.73
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.74			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	38.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.858

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	92	441	123	12	303	10	25	53	178	87	33	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	212	167	0	0	152	13	13	9	274	0	9	0
Site-Generated Trips [veh/h]	13	6	0	3	14	0	0	0	40	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	321	632	128	15	481	23	39	64	499	90	43	15
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	84	166	34	4	127	6	10	17	131	24	11	4
Total Analysis Volume [veh/h]	338	665	135	16	506	24	41	67	525	95	45	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	27	0	14	19	0	24	38	0	11	25	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	34	34	2	18	18	5	31	31	6	33	33
g / C, Green / Cycle	0.20	0.38	0.38	0.03	0.21	0.21	0.05	0.35	0.35	0.07	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.19	0.22	0.22	0.01	0.14	0.14	0.02	0.04	0.33	0.05	0.02	0.01
s, saturation flow rate [veh/h]	1810	1900	1790	1810	1900	1870	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	362	722	680	47	391	385	91	657	558	128	696	591
d1, Uniform Delay [s]	35.43	22.10	22.11	43.09	33.03	33.05	41.55	19.99	28.57	41.02	18.53	18.27
k, delay calibration	0.13	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.34	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.62	3.25	3.46	4.19	9.26	9.49	3.46	0.07	20.05	8.12	0.04	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

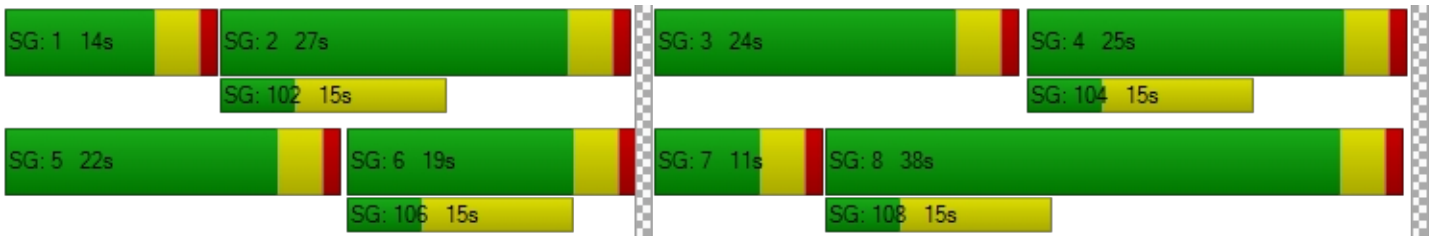
X, volume / capacity	0.93	0.57	0.57	0.34	0.68	0.68	0.45	0.10	0.94	0.74	0.06	0.03
d, Delay for Lane Group [s/veh]	48.05	25.36	25.57	47.28	42.29	42.53	45.02	20.05	48.62	49.14	18.56	18.29
Lane Group LOS	D	C	C	D	D	D	D	C	D	D	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.29	7.17	6.81	0.40	6.21	6.15	0.95	0.93	13.41	2.31	0.59	0.21
50th-Percentile Queue Length [ft/ln]	207.27	179.21	170.17	9.95	155.15	153.74	23.84	23.30	335.19	57.68	14.85	5.22
95th-Percentile Queue Length [veh/ln]	13.01	11.56	11.09	0.72	10.29	10.22	1.72	1.68	19.41	4.15	1.07	0.38
95th-Percentile Queue Length [ft/ln]	325.33	288.98	277.13	17.90	257.29	255.41	42.91	41.93	485.32	103.82	26.73	9.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.05	25.44	25.57	47.28	42.41	42.53	45.02	20.05	48.62	49.14	18.56	18.29
Movement LOS	D	C	C	D	D	D	D	C	D	D	B	B
d_A, Approach Delay [s/veh]	32.17			42.56			45.36			37.16		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	38.15											
Intersection LOS	D											
Intersection V/C	0.858											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	32.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	486	396	0	0	385	165	0	0	0	472	2	194
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.00	1.00	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.04
In-Process Volume [veh/h]	88	275	0	0	394	98	0	0	0	243	0	197
Site-Generated Trips [veh/h]	0	2	0	0	54	0	0	0	0	0	0	17
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	593	689	0	0	848	270	0	0	0	734	2	416
Peak Hour Factor	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	157	182	0	0	224	71	0	0	0	194	1	110
Total Analysis Volume [veh/h]	627	728	0	0	896	285	0	0	0	776	2	440
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	27	53	0	0	26	0	0	0	0	0	37	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	19	56	33	33		26	26	26
g / C, Green / Cycle	0.21	0.62	0.37	0.37		0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.18	0.20	0.31	0.34		0.22	0.23	0.25
s, saturation flow rate [veh/h]	3514	3618	1900	1751		1810	1792	1615
c, Capacity [veh/h]	727	2246	703	647		525	520	469
d1, Uniform Delay [s]	34.48	8.10	25.95	26.98		29.25	29.33	30.30
k, delay calibration	0.11	0.50	0.50	0.50		0.17	0.17	0.22
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	3.20	0.38	11.62	19.36		3.80	4.10	9.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.32	0.84	0.91		0.77	0.78	0.87
d, Delay for Lane Group [s/veh]	37.68	8.48	37.57	46.35		33.04	33.43	39.88
Lane Group LOS	D	A	D	D		C	C	D
Critical Lane Group	Yes	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.71	3.02	13.10	14.75		8.22	8.28	9.19
50th-Percentile Queue Length [ft/ln]	167.68	75.50	327.45	368.64		205.47	206.96	229.71
95th-Percentile Queue Length [veh/ln]	10.95	5.44	19.03	21.04		12.92	13.00	14.16
95th-Percentile Queue Length [ft/ln]	273.86	135.90	475.84	526.08		323.01	324.93	353.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.68	8.48	0.00	0.00	40.56	46.35	0.00	0.00	0.00	33.23	33.43	39.38
Movement LOS	D	A			D	D				C	C	D
d_A, Approach Delay [s/veh]	21.99			41.96			0.00			35.45		
Approach LOS	C			D			A			D		
d_I, Intersection Delay [s/veh]	32.64											
Intersection LOS	C											
Intersection V/C	0.885											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	35.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.985

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		35.00			35.00			35.00			35.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			Yes			Yes			Yes	

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	685	421	230	611	0	211	3	698	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	236	227	257	381	0	127	0	86	0	0	0
Site-Generated Trips [veh/h]	0	2	0	48	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	950	665	544	1022	0	346	3	812	0	0	0
Peak Hour Factor	1.0000	0.9740	0.9740	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	244	171	140	262	0	89	1	208	0	0	0
Total Analysis Volume [veh/h]	0	975	683	559	1049	0	355	3	834	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	43	0	18	61	0	0	29	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	39	39	14	57	25	25	25	
g / C, Green / Cycle	0.43	0.43	0.16	0.63	0.28	0.28	0.28	
(v / s)_i Volume / Saturation Flow Rate	0.27	0.42	0.16	0.29	0.20	0.27	0.25	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1617	1615	
c, Capacity [veh/h]	1565	699	549	2291	503	449	449	
d1, Uniform Delay [s]	19.83	25.11	37.99	8.53	29.21	32.25	31.14	
k, delay calibration	0.50	0.50	0.11	0.50	0.15	0.32	0.26	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.88	28.94	22.69	0.66	2.51	28.97	12.85	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.62	0.98	1.02	0.46	0.71	0.98	0.89	
d, Delay for Lane Group [s/veh]	21.71	54.05	60.68	9.19	31.72	61.22	43.99	
Lane Group LOS	C	D	F	A	C	E	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	
50th-Percentile Queue Length [veh/ln]	7.79	18.72	7.58	4.69	6.95	12.64	9.48	
50th-Percentile Queue Length [ft/ln]	194.86	467.92	189.55	117.15	173.82	316.05	236.98	
95th-Percentile Queue Length [veh/ln]	12.37	25.81	12.20	8.24	11.28	18.47	14.53	
95th-Percentile Queue Length [ft/ln]	309.32	645.29	304.98	205.91	281.93	461.83	363.21	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	21.71	54.05	60.68	9.19	0.00	31.72	61.22	53.01	0.00	0.00	0.00
Movement LOS		C	D	F	A		C	E	D			
d_A, Approach Delay [s/veh]	35.03			27.09			46.69			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	35.28											
Intersection LOS	D											
Intersection V/C	0.985											

Sequence

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



Intersection Level Of Service Report
Intersection 10: Maple Ave / North Dwy

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.044

Intersection Setup

Name	Maple Ave		Maple Ave		North Dwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Maple Ave		Maple Ave		North Dwy	
Base Volume Input [veh/h]	0	2	6	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	4	16	43	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	14	10	16	43	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	3	4	11	0
Total Analysis Volume [veh/h]	0	14	10	16	43	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	7.27	0.00	0.00	0.00	8.83	8.56
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.14	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	3.43	3.43
d_A, Approach Delay [s/veh]	0.00		0.00		8.83	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.58					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 11: Maple Ave / South Dwy

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Maple Ave		Maple Ave		South Dwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Maple Ave		Maple Ave		South Dwy	
Base Volume Input [veh/h]	0	2	6	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	12	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2	6	4	12	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	2	1	3	0
Total Analysis Volume [veh/h]	0	2	6	4	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	7.24	0.00	0.00	0.00	8.61	8.39
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.90	0.90
d_A, Approach Delay [s/veh]	0.00		0.00		8.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.30					
Intersection LOS	A					

APPENDIX D-6

INTERSECTION ANALYSIS WORKSHEETS – BUILD-OUT WITHOUT PROJECT

Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex AM.vistro
Report File: K:\...\7 GP AM.pdf

Scenario 20 GP 2035 AM
10/10/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	NB Left	0.660	26.0	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	NB Left	1.193	82.5	F
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	1.136	66.9	E
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.033	35.4	E
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	NB Left	0.839	30.7	C
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	WB Thru	0.447	10.8	B
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	SB Right	1.032	63.1	E
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	WB Right	0.890	33.9	C
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.770	21.8	C

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.660

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	90	412	494	23	410	14	26	109	61	517	210	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	412	494	23	410	14	26	109	61	517	210	32
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	109	130	6	108	4	7	29	16	136	55	8
Total Analysis Volume [veh/h]	95	434	521	24	432	15	27	115	64	545	221	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	12	19	0	41	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	47	47	3	44	44	4	7	7	17	21	21
g / C, Green / Cycle	0.07	0.52	0.52	0.04	0.48	0.48	0.04	0.08	0.08	0.19	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.05	0.23	0.32	0.01	0.12	0.01	0.01	0.05	0.05	0.16	0.07	0.07
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1682	3514	1900	1813
c, Capacity [veh/h]	130	985	837	66	1748	780	72	148	131	667	434	414
d1, Uniform Delay [s]	41.01	13.56	15.45	42.42	13.68	12.16	42.22	40.28	40.44	35.02	28.84	28.84
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.72	1.43	3.47	3.31	0.34	0.05	3.24	4.17	5.72	2.52	0.39	0.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

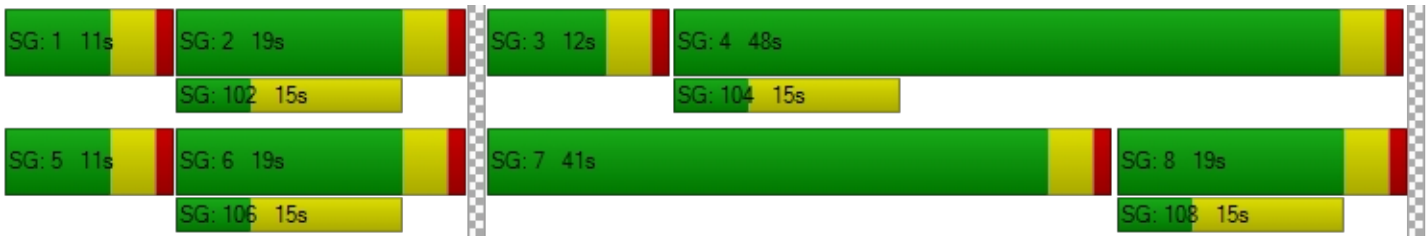
X, volume / capacity	0.73	0.44	0.62	0.36	0.25	0.02	0.38	0.62	0.67	0.82	0.30	0.30
d, Delay for Lane Group [s/veh]	48.73	15.00	18.92	45.73	14.02	12.20	45.46	44.45	46.15	37.54	29.23	29.25
Lane Group LOS	D	B	B	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.30	5.40	7.66	0.57	2.48	0.16	0.64	2.09	2.05	5.77	2.32	2.22
50th-Percentile Queue Length [ft/ln]	57.42	135.02	191.43	14.30	62.07	3.95	15.96	52.37	51.22	144.33	57.91	55.39
95th-Percentile Queue Length [veh/ln]	4.13	9.21	12.20	1.03	4.47	0.28	1.15	3.77	3.69	9.71	4.17	3.99
95th-Percentile Queue Length [ft/ln]	103.36	230.30	304.88	25.74	111.73	7.11	28.73	94.27	92.20	242.85	104.25	99.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.73	15.00	18.92	45.73	14.02	12.20	45.46	44.80	46.15	37.54	29.23	29.25
Movement LOS	D	B	B	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	20.00			15.58			45.31			34.90		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	25.95											
Intersection LOS	C											
Intersection V/C	0.660											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	82.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.193

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	508	819	0	0	467	550	0	0	0	653	10	244
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	508	819	0	0	467	550	0	0	0	653	10	244
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	134	216	0	0	123	145	0	0	0	172	3	64
Total Analysis Volume [veh/h]	535	862	0	0	492	579	0	0	0	687	11	257
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	26	57	0	0	31	0	0	0	0	0	33	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	22	53	27	27		29	29
g / C, Green / Cycle	0.24	0.59	0.30	0.30		0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.30	0.24	0.26	0.36		0.38	0.16
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1625
c, Capacity [veh/h]	443	2132	570	484		583	523
d1, Uniform Delay [s]	34.02	9.98	29.79	31.54		30.54	24.80
k, delay calibration	0.37	0.50	0.50	0.50		0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	108.32	0.57	15.86	106.61		97.44	0.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	1.21	0.40	0.86	1.20		1.18	0.51
d, Delay for Lane Group [s/veh]	142.34	10.55	45.65	138.15		127.99	25.58
Lane Group LOS	F	B	D	F		F	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	22.60	4.23	12.07	24.31		27.67	4.56
50th-Percentile Queue Length [ft/ln]	564.88	105.63	301.76	607.73		691.69	113.91
95th-Percentile Queue Length [veh/ln]	33.65	7.60	17.77	35.96		40.17	8.06
95th-Percentile Queue Length [ft/ln]	841.17	189.91	444.20	899.10		1004.19	201.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	142.34	10.55	0.00	0.00	45.65	138.15	0.00	0.00	0.00	127.99	25.58	25.58
Movement LOS	F	B			D	F				F	C	C
d_A, Approach Delay [s/veh]	61.02			95.65			0.00			99.25		
Approach LOS	E			F			A			F		
d_I, Intersection Delay [s/veh]	82.52											
Intersection LOS	F											
Intersection V/C	1.193											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	66.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.136

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	762	378	209	929	0	564	2	837	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	762	378	209	929	0	564	2	837	0	0	0
Peak Hour Factor	1.0000	0.9840	0.9840	0.9840	0.9840	1.0000	0.9840	0.9840	0.9840	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	194	96	53	236	0	143	1	213	0	0	0
Total Analysis Volume [veh/h]	0	774	384	212	944	0	573	2	851	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	31	0	13	44	0	0	46	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	27	27	9	40	42	42	
g / C, Green / Cycle	0.30	0.30	0.10	0.45	0.47	0.47	
(v / s)_i Volume / Saturation Flow Rate	0.30	0.34	0.12	0.26	0.32	0.53	
s, saturation flow rate [veh/h]	1900	1701	1810	3618	1810	1615	
c, Capacity [veh/h]	571	511	184	1616	840	750	
d1, Uniform Delay [s]	31.50	31.50	40.46	18.65	18.94	24.13	
k, delay calibration	0.50	0.50	0.11	0.50	0.23	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	41.03	81.41	81.71	1.55	2.07	76.62	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

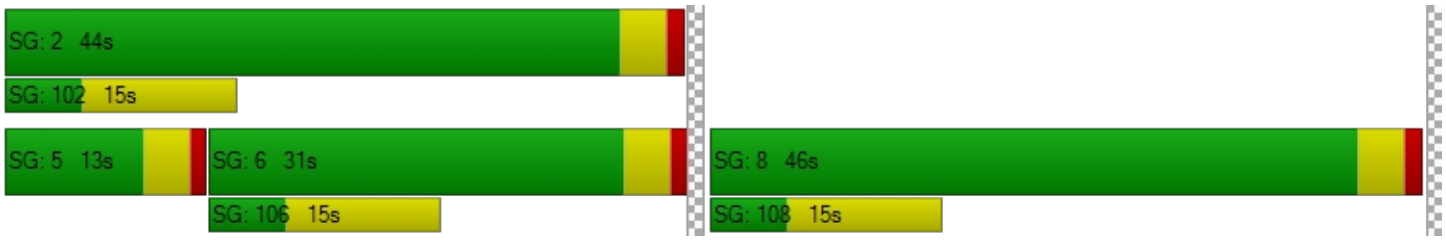
X, volume / capacity	1.01	1.13	1.15	0.58	0.68	1.13	
d, Delay for Lane Group [s/veh]	72.53	112.91	122.18	20.20	21.01	100.75	
Lane Group LOS	F	F	F	C	C	F	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	18.27	22.09	8.15	7.22	9.13	30.33	
50th-Percentile Queue Length [ft/ln]	456.73	552.30	203.72	180.43	228.20	758.13	
95th-Percentile Queue Length [veh/ln]	25.50	32.13	13.51	11.62	14.08	43.12	
95th-Percentile Queue Length [ft/ln]	637.45	803.21	337.66	290.57	352.07	1077.91	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	82.70	112.91	122.18	20.20	0.00	21.01	21.01	100.75	0.00	0.00	0.00
Movement LOS		F	F	F	C		C	C	F			
d_A, Approach Delay [s/veh]	92.72			38.90			68.60			0.00		
Approach LOS	F			D			E			A		
d_I, Intersection Delay [s/veh]	66.89											
Intersection LOS	E											
Intersection V/C	1.136											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	35.4
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.033

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	8	631	18	0	659	0	0	0	1	4	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	631	18	0	659	0	0	0	1	4	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	166	5	0	173	0	0	0	0	1	0	0
Total Analysis Volume [veh/h]	8	664	19	0	694	0	0	0	1	4	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	8.99	0.00	0.00	8.92	0.00	0.00	34.80	30.54	13.09	35.39	30.85	13.75
Movement LOS	A	A	A	A	A	A	D	D	B	E	D	B
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.10	0.10	0.10
95th-Percentile Queue Length [ft/ln]	0.66	0.66	0.00	0.00	0.00	0.00	0.17	0.17	0.17	2.52	2.52	2.52
d_A, Approach Delay [s/veh]	0.10			0.00			13.09			35.39		
Approach LOS	A			A			B			E		
d_I, Intersection Delay [s/veh]	0.16											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	30.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.839

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	89	173	12	89	283	287	264	138	50	44	240	203
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	173	12	89	283	287	264	138	50	44	240	203
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	46	3	23	74	76	69	36	13	12	63	53
Total Analysis Volume [veh/h]	94	182	13	94	298	302	278	145	53	46	253	214
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	17	25	0	21	24	0	30	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	74	74	74	74	74	74	74	74	74	74	74
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	17	17	6	17	17	14	31	31	4	22
g / C, Green / Cycle	0.08	0.22	0.22	0.08	0.22	0.22	0.18	0.42	0.42	0.06	0.30
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.05	0.05	0.16	0.19	0.15	0.08	0.03	0.03	0.27
s, saturation flow rate [veh/h]	1810	1900	1856	1810	1900	1615	1810	1900	1615	1810	1758
c, Capacity [veh/h]	146	427	417	146	427	363	332	800	680	105	520
d1, Uniform Delay [s]	33.11	23.54	23.55	33.11	26.48	27.46	29.28	13.49	12.88	33.83	25.11
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.20
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.64	0.27	0.28	4.64	2.07	4.95	5.62	0.11	0.05	2.86	10.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

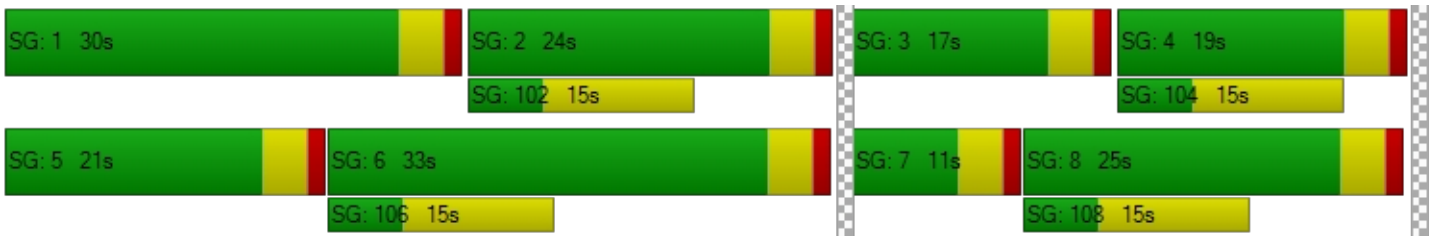
X, volume / capacity	0.64	0.23	0.23	0.64	0.70	0.83	0.84	0.18	0.08	0.44	0.90
d, Delay for Lane Group [s/veh]	37.75	23.81	23.84	37.75	28.54	32.41	34.90	13.60	12.93	36.69	35.19
Lane Group LOS	D	C	C	D	C	C	C	B	B	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.76	1.36	1.35	1.76	4.79	5.28	5.02	1.41	0.49	0.85	8.71
50th-Percentile Queue Length [ft/ln]	43.94	34.05	33.69	43.94	119.76	131.92	125.58	35.24	12.32	21.31	217.69
95th-Percentile Queue Length [veh/ln]	3.16	2.45	2.43	3.16	8.38	9.04	8.70	2.54	0.89	1.53	13.55
95th-Percentile Queue Length [ft/ln]	79.09	61.30	60.65	79.09	209.49	226.11	217.48	63.43	22.18	38.36	338.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.75	23.82	23.84	37.75	28.54	32.41	34.90	13.60	12.93	36.69	35.19	35.19
Movement LOS	D	C	C	D	C	C	C	B	B	D	D	D
d_A, Approach Delay [s/veh]	28.35			31.47			25.97			35.32		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	30.69											
Intersection LOS	C											
Intersection V/C	0.839											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	3	1	5	64	1	79	56	48	0	1	164	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	5	64	1	79	56	48	0	1	164	29
Peak Hour Factor	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	2	28	0	34	24	21	0	0	71	13
Total Analysis Volume [veh/h]	5	2	9	111	2	137	97	83	0	2	285	50
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	674	724	697	754
Degree of Utilization, x	0.02	0.35	0.26	0.45

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.07	1.54	1.03	2.32
95th-Percentile Queue Length [ft]	1.82	38.56	25.68	58.04
Approach Delay [s/veh]	8.47	10.57	9.95	11.58
Approach LOS	A	B	A	B
Intersection Delay [s/veh]	10.82			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	63.1
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.032

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	494	452	86	18	690	46	25	57	397	166	144	21
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	494	452	86	18	690	46	25	57	397	166	144	21
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	119	23	5	182	12	7	15	104	44	38	6
Total Analysis Volume [veh/h]	520	476	91	19	726	48	26	60	418	175	152	22
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	29	40	0	11	22	0	16	26	0	13	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	40	40	3	18	18	3	22	22	9	28	28
g / C, Green / Cycle	0.28	0.45	0.45	0.03	0.20	0.20	0.04	0.24	0.24	0.10	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.29	0.15	0.15	0.01	0.21	0.21	0.01	0.03	0.26	0.10	0.08	0.01
s, saturation flow rate [veh/h]	1810	1900	1795	1810	1900	1859	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	503	854	807	53	383	374	67	462	393	181	581	494
d1, Uniform Delay [s]	32.51	16.10	16.11	42.84	35.94	35.94	42.32	26.63	34.07	40.35	23.57	21.99
k, delay calibration	0.35	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.29	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	42.81	1.09	1.15	3.97	51.79	52.51	3.57	0.13	52.94	23.98	0.24	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.03	0.34	0.34	0.36	1.02	1.02	0.39	0.13	1.06	0.97	0.26	0.04
d, Delay for Lane Group [s/veh]	75.32	17.19	17.26	46.81	87.74	88.45	45.89	26.75	87.01	64.33	23.81	22.02
Lane Group LOS	F	B	B	D	F	F	D	C	F	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	16.38	3.93	3.73	0.47	13.59	13.37	0.62	0.99	13.97	4.96	2.39	0.32
50th-Percentile Queue Length [ft/ln]	409.46	98.22	93.25	11.63	339.68	334.18	15.49	24.87	349.16	124.06	59.72	8.06
95th-Percentile Queue Length [veh/ln]	23.50	7.07	6.71	0.84	19.87	19.60	1.12	1.79	20.81	8.62	4.30	0.58
95th-Percentile Queue Length [ft/ln]	587.51	176.80	167.86	20.93	496.68	490.06	27.89	44.77	520.37	215.39	107.50	14.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	75.32	17.22	17.26	46.81	88.07	88.45	45.89	26.75	87.01	64.33	23.81	22.02
Movement LOS	F	B	B	D	F	F	D	C	F	E	C	C
d_A, Approach Delay [s/veh]	45.01			87.10			77.71			44.02		
Approach LOS	D			F			E			D		
d_I, Intersection Delay [s/veh]	63.13											
Intersection LOS	E											
Intersection V/C	1.032											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	33.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.890

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	720	392	0	0	622	404	0	0	0	492	3	457
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	720	392	0	0	622	404	0	0	0	492	3	457
Peak Hour Factor	0.9190	0.9190	1.0000	1.0000	0.9190	0.9190	1.0000	1.0000	1.0000	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	196	107	0	0	169	110	0	0	0	134	1	124
Total Analysis Volume [veh/h]	783	427	0	0	677	440	0	0	0	535	3	497
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	27	63	0	0	36	0	0	0	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	22	61	34	34		22	22	22
g / C, Green / Cycle	0.24	0.67	0.38	0.38		0.24	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.22	0.12	0.29	0.33		0.19	0.20	0.21
s, saturation flow rate [veh/h]	3514	3618	1900	1668		1810	1719	1615
c, Capacity [veh/h]	860	2431	727	639		433	411	386
d1, Uniform Delay [s]	33.05	5.49	24.29	25.78		32.20	32.60	33.14
k, delay calibration	0.11	0.50	0.50	0.50		0.14	0.16	0.19
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	4.18	0.16	7.62	15.43		4.27	6.64	11.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

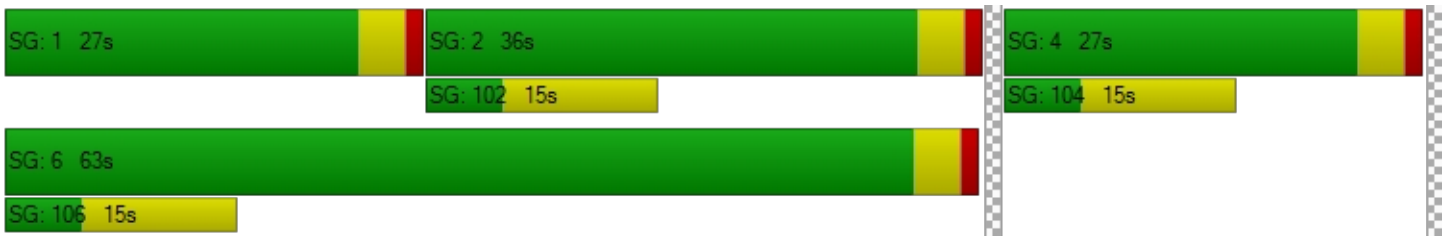
X, volume / capacity	0.91	0.18	0.77	0.87		0.80	0.84	0.89
d, Delay for Lane Group [s/veh]	37.23	5.65	31.91	41.20		36.47	39.24	44.87
Lane Group LOS	D	A	C	D		D	D	D
Critical Lane Group	Yes	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	8.45	1.29	11.28	13.08		7.30	7.63	8.24
50th-Percentile Queue Length [ft/ln]	211.21	32.13	282.02	326.88		182.47	190.73	206.06
95th-Percentile Queue Length [veh/ln]	13.22	2.31	16.79	19.01		11.73	12.16	12.95
95th-Percentile Queue Length [ft/ln]	330.38	57.83	419.73	475.14		293.23	303.98	323.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.23	5.65	0.00	0.00	33.54	41.20	0.00	0.00	0.00	37.45	39.24	43.15
Movement LOS	D	A			C	D				D	D	D
d_A, Approach Delay [s/veh]	26.08			36.56			0.00			40.19		
Approach LOS	C			D			A			D		
d_I, Intersection Delay [s/veh]	33.91											
Intersection LOS	C											
Intersection V/C	0.890											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.770

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		35.00			35.00			35.00			35.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			Yes			Yes			Yes	

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	968	567	371	738	0	156	4	496	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	968	567	371	738	0	156	4	496	0	0	0
Peak Hour Factor	1.0000	0.9160	0.9160	0.9160	0.9160	1.0000	0.9160	0.9160	0.9160	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	264	155	101	201	0	43	1	135	0	0	0
Total Analysis Volume [veh/h]	0	1057	619	405	806	0	170	4	541	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	21	40	0	0	50	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	47	47	13	64	18	18	18	
g / C, Green / Cycle	0.52	0.52	0.14	0.71	0.21	0.21	0.21	
(v / s)_i Volume / Saturation Flow Rate	0.29	0.38	0.12	0.22	0.09	0.17	0.17	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1619	1615	
c, Capacity [veh/h]	1882	840	496	2554	371	332	332	
d1, Uniform Delay [s]	14.63	16.79	37.54	5.01	31.38	34.20	34.20	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.22	5.71	3.36	0.32	0.88	5.05	5.07	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

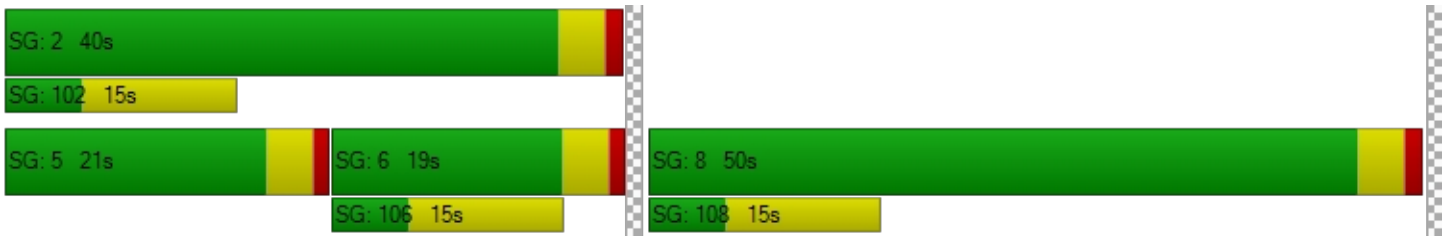
X, volume / capacity	0.56	0.74	0.82	0.32	0.46	0.82	0.82	
d, Delay for Lane Group [s/veh]	15.85	22.51	40.90	5.34	32.26	39.25	39.27	
Lane Group LOS	B	C	D	A	C	D	D	
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.94	10.24	4.44	2.31	3.24	5.97	5.96	
50th-Percentile Queue Length [ft/ln]	173.58	255.99	110.93	57.85	80.92	149.14	148.93	
95th-Percentile Queue Length [veh/ln]	11.26	15.49	7.89	4.17	5.83	9.97	9.96	
95th-Percentile Queue Length [ft/ln]	281.62	387.19	197.29	104.13	145.65	249.28	249.00	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	15.85	22.51	40.90	5.34	0.00	32.26	39.25	39.26	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	D	D			
d_A, Approach Delay [s/veh]	18.31			17.23			37.59			0.00		
Approach LOS	B			B			D			A		
d_I, Intersection Delay [s/veh]	21.78											
Intersection LOS	C											
Intersection V/C	0.770											

Sequence

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



Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex PM.vistro
Report File: K:\...\7 GP PM.pdf

Scenario 20 GP 2035 PM
10/10/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	NB Left	0.686	30.0	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	SB Right	1.145	72.6	E
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	1.219	88.9	F
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.155	39.8	E
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	WB Left	0.777	24.1	C
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	EB Thru	0.134	7.6	A
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	WB Left	0.812	35.1	D
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	WB Right	0.863	30.8	C
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	EB Thru	0.969	33.2	C

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	30.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.686

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	90	267	421	37	239	46	16	226	154	561	196	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	267	421	37	239	46	16	226	154	561	196	38
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	68	108	9	61	12	4	58	39	144	50	10
Total Analysis Volume [veh/h]	92	274	431	38	245	47	16	232	158	575	201	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	11	19	0	41	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	39	39	4	37	37	2	13	13	18	28	28
g / C, Green / Cycle	0.07	0.43	0.43	0.05	0.41	0.41	0.03	0.14	0.14	0.20	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.27	0.02	0.07	0.03	0.01	0.11	0.11	0.16	0.06	0.07
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1652	3514	1900	1794
c, Capacity [veh/h]	128	825	701	88	1490	665	48	269	234	697	596	563
d1, Uniform Delay [s]	41.00	16.86	19.68	41.66	16.71	16.05	43.08	37.19	37.40	34.61	22.70	22.70
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.42	1.08	4.01	3.35	0.24	0.21	4.05	4.38	6.03	2.55	0.17	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

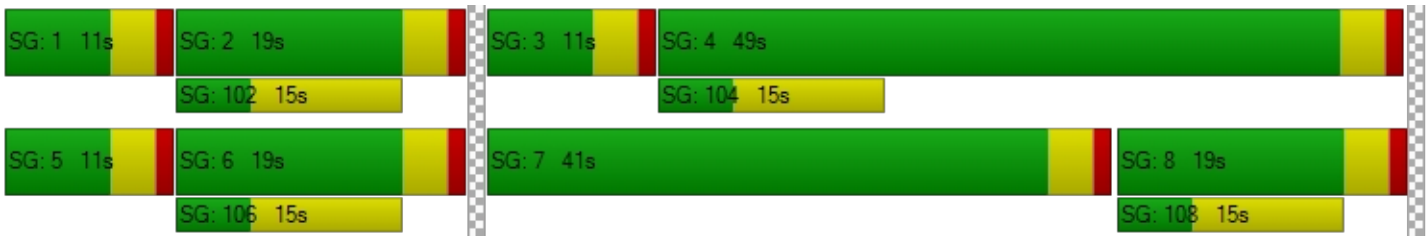
X, volume / capacity	0.72	0.33	0.61	0.43	0.16	0.07	0.34	0.76	0.79	0.82	0.21	0.21
d, Delay for Lane Group [s/veh]	48.41	17.94	23.69	45.02	16.95	16.25	47.13	41.57	43.43	37.15	22.87	22.88
Lane Group LOS	D	B	C	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.22	3.78	7.26	0.89	1.57	0.60	0.40	4.53	4.24	6.07	1.88	1.78
50th-Percentile Queue Length [ft/ln]	55.39	94.43	181.52	22.13	39.27	14.96	9.92	113.25	105.92	151.80	47.09	44.58
95th-Percentile Queue Length [veh/ln]	3.99	6.80	11.68	1.59	2.83	1.08	0.71	8.02	7.61	10.11	3.39	3.21
95th-Percentile Queue Length [ft/ln]	99.70	169.98	292.00	39.83	70.68	26.93	17.86	200.51	190.32	252.84	84.76	80.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.41	17.94	23.69	45.02	16.95	16.25	47.13	41.80	43.43	37.15	22.87	22.88
Movement LOS	D	B	C	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	24.57			20.08			42.64			32.95		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	29.97											
Intersection LOS	C											
Intersection V/C	0.686											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	72.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.145

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	707	644	0	0	453	610	0	0	0	363	2	216
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	707	644	0	0	453	610	0	0	0	363	2	216
Peak Hour Factor	0.9770	0.9770	1.0000	1.0000	0.9770	0.9770	1.0000	1.0000	1.0000	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	181	165	0	0	116	156	0	0	0	93	1	55
Total Analysis Volume [veh/h]	724	659	0	0	464	624	0	0	0	372	2	221
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	36	70	0	0	34	0	0	0	0	0	20	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	32	66	30	30		16	16
g / C, Green / Cycle	0.36	0.73	0.33	0.33		0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.40	0.18	0.24	0.39		0.21	0.14
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1617
c, Capacity [veh/h]	643	2651	633	538		323	288
d1, Uniform Delay [s]	29.03	3.93	26.49	30.02		37.00	35.26
k, delay calibration	0.50	0.50	0.50	0.50		0.17	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	75.55	0.22	7.36	91.06		80.99	4.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

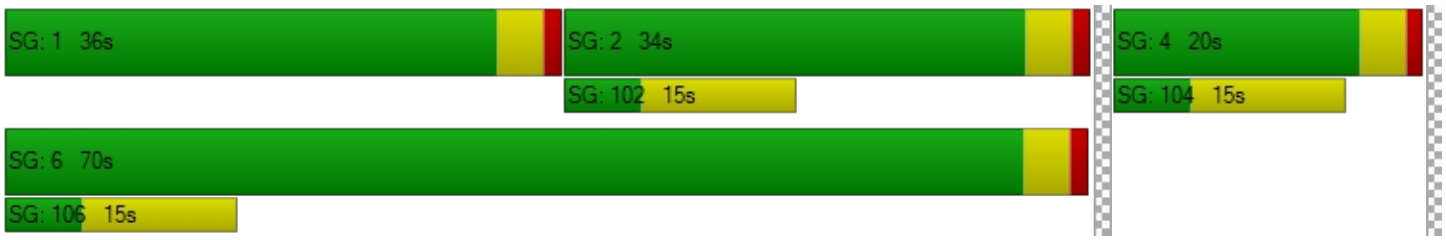
X, volume / capacity	1.13	0.25	0.73	1.16		1.15	0.77
d, Delay for Lane Group [s/veh]	104.58	4.15	33.85	121.08		117.99	39.68
Lane Group LOS	F	A	C	F		F	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	26.46	1.52	9.62	24.55		14.11	4.87
50th-Percentile Queue Length [ft/ln]	661.58	37.96	240.50	613.81		352.68	121.64
95th-Percentile Queue Length [veh/ln]	37.73	2.73	14.71	35.84		21.69	8.48
95th-Percentile Queue Length [ft/ln]	943.35	68.33	367.66	895.88		542.22	212.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	104.58	4.15	0.00	0.00	33.85	121.08	0.00	0.00	0.00	117.99	39.68	39.68
Movement LOS	F	A			C	F				F	D	D
d_A, Approach Delay [s/veh]	56.73			83.88			0.00			88.64		
Approach LOS	E			F			A			F		
d_I, Intersection Delay [s/veh]	72.55											
Intersection LOS	E											
Intersection V/C	1.145											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	88.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.219

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	989	606	183	646	0	357	0	626	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	989	606	183	646	0	357	0	626	0	0	0
Peak Hour Factor	1.0000	0.9130	0.9130	0.9130	0.9130	1.0000	0.9130	0.9130	0.9130	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	271	166	50	177	0	98	0	171	0	0	0
Total Analysis Volume [veh/h]	0	1083	664	200	708	0	391	0	686	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	43	0	12	55	0	0	35	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	39	39	8	51	31	31	
g / C, Green / Cycle	0.43	0.43	0.09	0.57	0.34	0.34	
(v / s)_i Volume / Saturation Flow Rate	0.46	0.52	0.11	0.20	0.22	0.42	
s, saturation flow rate [veh/h]	1900	1675	1810	3618	1810	1615	
c, Capacity [veh/h]	821	724	164	2052	622	556	
d1, Uniform Delay [s]	25.58	25.58	40.96	10.49	24.73	29.55	
k, delay calibration	0.50	0.50	0.11	0.50	0.18	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	49.84	105.77	110.14	0.46	1.73	120.59	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

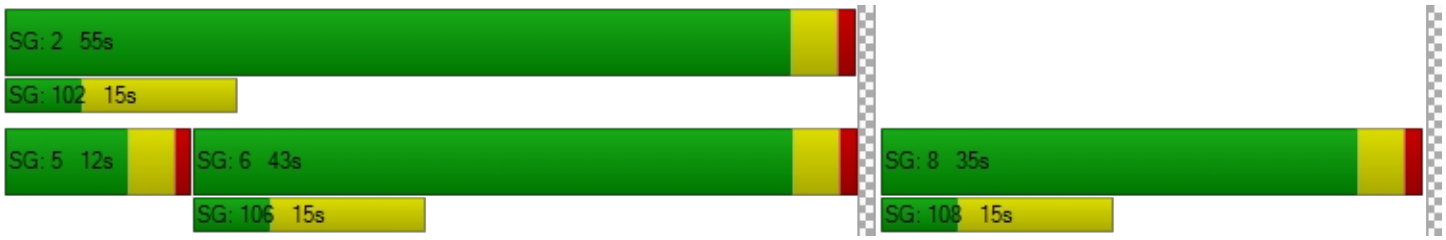
X, volume / capacity	1.06	1.21	1.22	0.35	0.63	1.23	
d, Delay for Lane Group [s/veh]	75.42	131.35	151.10	10.95	26.45	150.14	
Lane Group LOS	F	F	F	B	C	F	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	27.38	35.39	8.57	3.53	6.93	29.87	
50th-Percentile Queue Length [ft/ln]	684.56	884.76	214.24	88.25	173.21	746.65	
95th-Percentile Queue Length [veh/ln]	37.65	51.29	14.30	6.35	11.25	44.15	
95th-Percentile Queue Length [ft/ln]	941.23	1282.18	357.39	158.85	281.13	1103.68	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	86.24	131.35	151.10	10.95	0.00	26.45	26.45	150.14	0.00	0.00	0.00
Movement LOS		F	F	F	B		C	C	F			
d_A, Approach Delay [s/veh]	103.39			41.82			105.23			0.00		
Approach LOS	F			D			F			A		
d_I, Intersection Delay [s/veh]	88.94											
Intersection LOS	F											
Intersection V/C	1.219											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	39.8
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.155

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	4	552	6	0	733	0	2	0	11	18	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	552	6	0	733	0	2	0	11	18	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	145	2	0	193	0	1	0	3	5	0	0
Total Analysis Volume [veh/h]	4	581	6	0	772	0	2	0	12	19	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00	0.02	0.00	0.03	0.16	0.00	0.00
d_M, Delay for Movement [s/veh]	9.25	0.00	0.00	8.61	0.00	0.00	34.28	30.01	14.50	39.80	34.59	17.31
Movement LOS	A	A	A	A	A	A	D	D	B	E	D	C
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00	0.14	0.14	0.14	0.53	0.53	0.53
95th-Percentile Queue Length [ft/ln]	0.35	0.35	0.00	0.00	0.00	0.00	3.58	3.58	3.58	13.26	13.26	13.26
d_A, Approach Delay [s/veh]	0.06			0.00			17.33			39.80		
Approach LOS	A			A			C			E		
d_I, Intersection Delay [s/veh]	0.74											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.777

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	76	300	41	213	312	261	218	245	69	23	274	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	300	41	213	312	261	218	245	69	23	274	100
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	79	11	56	82	69	57	64	18	6	72	26
Total Analysis Volume [veh/h]	80	316	43	224	328	275	229	258	73	24	288	105
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	20	28	0	20	21	0	30	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	58	58	58	58	58	58	58	58	58	58	58
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	9	9	9	13	13	9	22	22	2	15
g / C, Green / Cycle	0.09	0.15	0.15	0.16	0.22	0.22	0.16	0.38	0.38	0.04	0.26
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.10	0.12	0.17	0.17	0.13	0.14	0.05	0.01	0.22
s, saturation flow rate [veh/h]	1810	1900	1822	1810	1900	1617	1810	1900	1615	1810	1814
c, Capacity [veh/h]	158	287	275	287	421	359	292	719	611	71	465
d1, Uniform Delay [s]	25.53	23.36	23.39	23.69	21.41	21.42	23.59	13.09	11.85	27.42	20.69
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.48	2.33	2.51	4.64	3.03	3.59	4.61	0.30	0.09	2.81	4.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

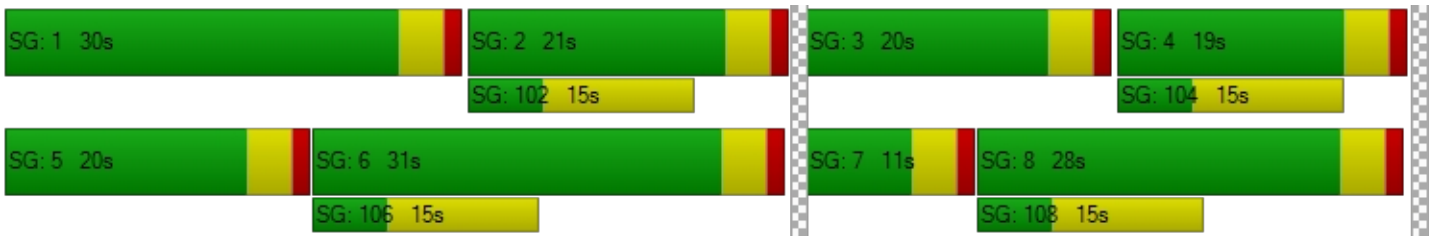
X, volume / capacity	0.51	0.64	0.64	0.78	0.77	0.77	0.78	0.36	0.12	0.34	0.85
d, Delay for Lane Group [s/veh]	28.01	25.69	25.90	28.33	24.44	25.02	28.20	13.39	11.94	30.23	24.99
Lane Group LOS	C	C	C	C	C	C	C	B	B	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.09	2.33	2.28	3.07	4.09	3.55	3.13	2.14	0.55	0.36	5.05
50th-Percentile Queue Length [ft/ln]	27.21	58.37	57.03	76.68	102.28	88.79	78.20	53.62	13.71	8.97	126.33
95th-Percentile Queue Length [veh/ln]	1.96	4.20	4.11	5.52	7.36	6.39	5.63	3.86	0.99	0.65	8.74
95th-Percentile Queue Length [ft/ln]	48.97	105.06	102.65	138.03	184.10	159.82	140.76	96.51	24.68	16.14	218.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.01	25.78	25.90	28.33	24.45	25.02	28.20	13.39	11.94	30.23	24.99	24.99
Movement LOS	C	C	C	C	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	26.20			25.69			19.26			25.29		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	24.11											
Intersection LOS	C											
Intersection V/C	0.777											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	7.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.134

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	2	0	1	20	1	48	44	54	1	4	48	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	0	1	20	1	48	44	54	1	4	48	23
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	6	0	14	13	16	0	1	14	7
Total Analysis Volume [veh/h]	2	0	1	23	1	55	51	62	1	5	55	26
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	828	905	849	895
Degree of Utilization, x	0.00	0.09	0.13	0.10

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.01	0.29	0.46	0.32
95th-Percentile Queue Length [ft]	0.27	7.16	11.58	7.95
Approach Delay [s/veh]	7.37	7.36	7.90	7.45
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.61			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	35.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.812

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	308	626	131	12	467	23	39	66	459	90	43	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	308	626	131	12	467	23	39	66	459	90	43	14
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	81	165	34	3	123	6	10	17	121	24	11	4
Total Analysis Volume [veh/h]	324	659	138	13	492	24	41	69	483	95	45	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	27	0	14	19	0	24	38	0	11	25	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	37	37	2	21	21	5	29	29	6	31	31
g / C, Green / Cycle	0.20	0.41	0.41	0.02	0.23	0.23	0.05	0.32	0.32	0.07	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.18	0.22	0.22	0.01	0.14	0.14	0.02	0.04	0.30	0.05	0.02	0.01
s, saturation flow rate [veh/h]	1810	1900	1787	1810	1900	1869	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	359	773	727	42	439	432	93	610	519	130	649	552
d1, Uniform Delay [s]	35.29	20.24	20.25	43.35	30.86	30.88	41.53	21.56	29.65	41.01	20.02	19.73
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.30	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.63	2.60	2.77	4.19	5.74	5.87	3.28	0.08	17.73	7.72	0.04	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

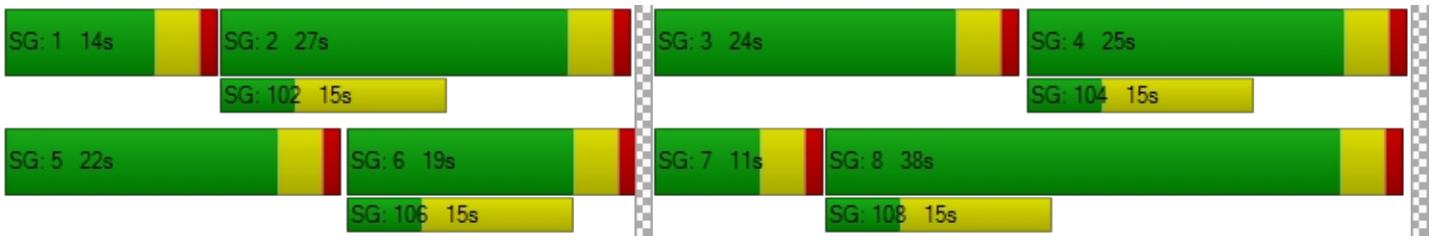
X, volume / capacity	0.90	0.53	0.53	0.31	0.59	0.59	0.44	0.11	0.93	0.73	0.07	0.03
d, Delay for Lane Group [s/veh]	43.91	22.84	23.02	47.54	36.60	36.75	44.80	21.64	47.38	48.73	20.07	19.75
Lane Group LOS	D	C	C	D	D	D	D	C	D	D	C	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.55	6.70	6.35	0.33	5.55	5.50	0.95	1.01	12.10	2.30	0.62	0.20
50th-Percentile Queue Length [ft/ln]	188.84	167.56	158.74	8.20	138.82	137.45	23.77	25.14	302.47	57.42	15.57	5.12
95th-Percentile Queue Length [veh/ln]	12.06	10.95	10.48	0.59	9.42	9.34	1.71	1.81	17.80	4.13	1.12	0.37
95th-Percentile Queue Length [ft/ln]	301.53	273.70	262.05	14.76	235.43	233.58	42.78	45.25	445.08	103.36	28.02	9.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.91	22.91	23.02	47.54	36.67	36.75	44.80	21.64	47.38	48.73	20.07	19.75
Movement LOS	D	C	C	D	D	D	D	C	D	D	C	B
d_A, Approach Delay [s/veh]	29.00			36.94			44.21			37.60		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	35.07											
Intersection LOS	D											
Intersection V/C	0.812											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	30.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	593	687	0	0	794	270	0	0	0	734	2	399
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	593	687	0	0	794	270	0	0	0	734	2	399
Peak Hour Factor	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	157	182	0	0	210	71	0	0	0	194	1	105
Total Analysis Volume [veh/h]	627	726	0	0	839	285	0	0	0	776	2	422
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	23	71	0	0	48	0	0	0	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	18	54	32	32		28	28	28
g / C, Green / Cycle	0.20	0.60	0.36	0.36		0.31	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.18	0.20	0.30	0.32		0.22	0.22	0.25
s, saturation flow rate [veh/h]	3514	3618	1900	1744		1810	1798	1615
c, Capacity [veh/h]	705	2186	682	626		556	552	496
d1, Uniform Delay [s]	35.03	8.83	26.27	27.30		27.77	27.82	28.76
k, delay calibration	0.11	0.11	0.16	0.20		0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	4.09	0.09	3.81	8.57		7.84	8.06	13.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.33	0.82	0.90		0.72	0.72	0.81
d, Delay for Lane Group [s/veh]	39.12	8.92	30.09	35.87		35.62	35.88	41.92
Lane Group LOS	D	A	C	D		D	D	D
Critical Lane Group	Yes	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.85	3.12	11.04	12.21		8.51	8.55	9.37
50th-Percentile Queue Length [ft/ln]	171.17	77.93	275.94	305.20		212.67	213.63	234.19
95th-Percentile Queue Length [veh/ln]	11.14	5.61	16.49	17.94		13.29	13.34	14.39
95th-Percentile Queue Length [ft/ln]	278.45	140.27	412.15	448.45		332.26	333.48	359.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.12	8.92	0.00	0.00	31.99	35.87	0.00	0.00	0.00	35.74	35.88	41.60
Movement LOS	D	A			C	D				D	D	D
d_A, Approach Delay [s/veh]	22.91			32.98			0.00			37.80		
Approach LOS	C			C			A			D		
d_I, Intersection Delay [s/veh]	30.85											
Intersection LOS	C											
Intersection V/C	0.863											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	33.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.969

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	948	665	496	1016	0	346	3	812	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	948	665	496	1016	0	346	3	812	0	0	0
Peak Hour Factor	1.0000	0.9740	0.9740	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	243	171	127	261	0	89	1	208	0	0	0
Total Analysis Volume [veh/h]	0	973	683	509	1043	0	355	3	834	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	43	0	18	61	0	0	29	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	39	39	14	57	25	25	25	
g / C, Green / Cycle	0.43	0.43	0.16	0.63	0.28	0.28	0.28	
(v / s)_i Volume / Saturation Flow Rate	0.27	0.42	0.14	0.29	0.20	0.27	0.25	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1617	1615	
c, Capacity [veh/h]	1565	699	549	2291	503	449	449	
d1, Uniform Delay [s]	19.82	25.11	37.49	8.51	29.21	32.25	31.14	
k, delay calibration	0.50	0.50	0.11	0.50	0.15	0.32	0.26	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.87	28.94	7.39	0.65	2.51	28.97	12.85	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.62	0.98	0.93	0.46	0.71	0.98	0.89	
d, Delay for Lane Group [s/veh]	21.69	54.05	44.88	9.16	31.72	61.22	43.99	
Lane Group LOS	C	D	D	A	C	E	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	
50th-Percentile Queue Length [veh/ln]	7.77	18.72	5.92	4.65	6.95	12.64	9.48	
50th-Percentile Queue Length [ft/ln]	194.28	467.92	147.99	116.20	173.82	316.05	236.98	
95th-Percentile Queue Length [veh/ln]	12.34	25.81	9.91	8.18	11.28	18.47	14.53	
95th-Percentile Queue Length [ft/ln]	308.58	645.29	247.75	204.59	281.93	461.83	363.21	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	21.69	54.05	44.88	9.16	0.00	31.72	61.22	53.01	0.00	0.00	0.00
Movement LOS		C	D	D	A		C	E	D			
d_A, Approach Delay [s/veh]	35.03			20.88			46.69			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	33.20											
Intersection LOS	C											
Intersection V/C	0.969											

Sequence

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



APPENDIX D-7

INTERSECTION ANALYSIS WORKSHEETS – BUILD-OUT WITH PROJECT

Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex AM.vistro
Report File: K:\...\8 GP WP AM.pdf

Scenario 21 GP 2035 + Proj AM
10/10/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	NB Left	0.715	26.5	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	SB Right	1.204	83.6	F
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	1.138	67.1	E
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.242	46.9	E
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	WB Right	0.888	40.0	D
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	WB Thru	0.554	12.3	B
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	NB Left	1.068	70.7	E
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	SB Right	0.907	35.5	D
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	0.774	22.0	C
10	Maple Ave / North Dwy	Two-way stop	HCM 2010	EB Left	0.011	8.8	A
11	Maple Ave / South Dwy	Two-way stop	HCM 2010	EB Left	0.003	8.6	A

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	26.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.715

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	90	412	494	23	410	14	26	109	61	517	210	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	63	0	0	0	0	0	0	15	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	412	557	23	410	14	26	109	61	532	210	32
Peak Hour Factor	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	109	147	6	108	4	7	29	16	140	55	8
Total Analysis Volume [veh/h]	95	434	587	24	432	15	27	115	64	561	221	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	12	19	0	41	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	46	46	3	43	43	4	7	7	17	21	21
g / C, Green / Cycle	0.07	0.52	0.52	0.04	0.48	0.48	0.04	0.08	0.08	0.19	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.05	0.23	0.36	0.01	0.12	0.01	0.01	0.05	0.05	0.16	0.07	0.07
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1682	3514	1900	1813
c, Capacity [veh/h]	130	975	829	66	1730	772	72	148	131	684	443	422
d1, Uniform Delay [s]	41.01	13.84	16.77	42.42	13.94	12.39	42.22	40.28	40.44	34.79	28.48	28.48
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.72	1.47	5.07	3.31	0.35	0.05	3.24	4.17	5.72	2.51	0.37	0.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

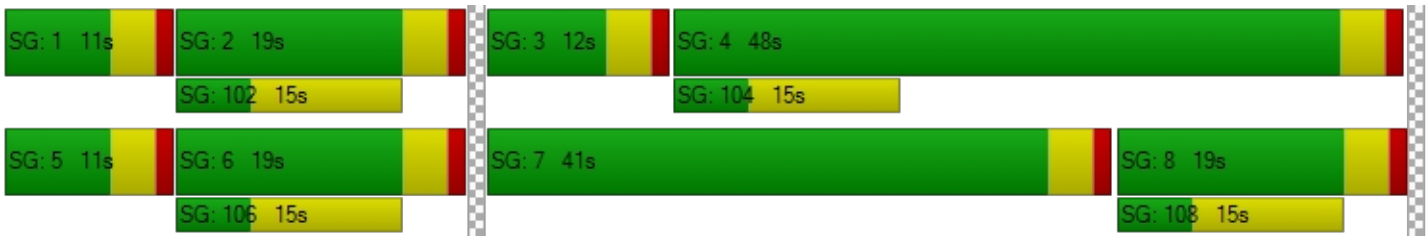
X, volume / capacity	0.73	0.44	0.71	0.36	0.25	0.02	0.38	0.62	0.67	0.82	0.29	0.29
d, Delay for Lane Group [s/veh]	48.73	15.31	21.84	45.73	14.28	12.43	45.46	44.45	46.15	37.30	28.85	28.87
Lane Group LOS	D	B	C	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.30	5.48	9.49	0.57	2.51	0.16	0.64	2.09	2.05	5.93	2.30	2.20
50th-Percentile Queue Length [ft/ln]	57.42	136.88	237.27	14.30	62.84	4.00	15.96	52.37	51.22	148.28	57.47	54.95
95th-Percentile Queue Length [veh/ln]	4.13	9.31	14.54	1.03	4.52	0.29	1.15	3.77	3.69	9.93	4.14	3.96
95th-Percentile Queue Length [ft/ln]	103.36	232.82	363.57	25.74	113.12	7.20	28.73	94.27	92.20	248.14	103.44	98.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.73	15.31	21.84	45.73	14.28	12.43	45.46	44.80	46.15	37.30	28.86	28.87
Movement LOS	D	B	C	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	21.59			15.83			45.31			34.66		
Approach LOS	C			B			D			C		
d_I, Intersection Delay [s/veh]	26.51											
Intersection LOS	C											
Intersection V/C	0.715											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	83.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.204

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	508	819	0	0	467	550	0	0	0	653	10	244
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	63	0	0	1	14	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	508	882	0	0	468	564	0	0	0	653	10	244
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	134	232	0	0	123	148	0	0	0	172	3	64
Total Analysis Volume [veh/h]	535	928	0	0	493	594	0	0	0	687	11	257
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	26	57	0	0	31	0	0	0	0	0	33	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	22	53	27	27		29	29
g / C, Green / Cycle	0.24	0.59	0.30	0.30		0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.30	0.26	0.26	0.37		0.38	0.16
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1625
c, Capacity [veh/h]	443	2132	570	484		583	523
d1, Uniform Delay [s]	34.02	10.22	29.81	31.54		30.54	24.80
k, delay calibration	0.37	0.50	0.50	0.50		0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	108.32	0.65	16.02	119.02		97.44	0.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	1.21	0.44	0.87	1.23		1.18	0.51
d, Delay for Lane Group [s/veh]	142.34	10.87	45.83	150.56		127.99	25.58
Lane Group LOS	F	B	D	F		F	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	22.60	4.67	12.12	25.98		27.67	4.56
50th-Percentile Queue Length [ft/ln]	564.88	116.65	303.06	649.49		691.69	113.91
95th-Percentile Queue Length [veh/ln]	33.65	8.21	17.83	38.63		40.17	8.06
95th-Percentile Queue Length [ft/ln]	841.17	205.21	445.81	965.81		1004.19	201.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	142.34	10.87	0.00	0.00	45.83	150.56	0.00	0.00	0.00	127.99	25.58	25.58
Movement LOS	F	B			D	F				F	C	C
d_A, Approach Delay [s/veh]	58.95			103.06			0.00			99.25		
Approach LOS	E			F			A			F		
d_I, Intersection Delay [s/veh]	83.61											
Intersection LOS	F											
Intersection V/C	1.204											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	67.1
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.138

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	762	378	209	929	0	564	2	837	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	0	1	0	57	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	768	378	209	930	0	621	2	837	0	0	0
Peak Hour Factor	1.0000	0.9840	0.9840	0.9840	0.9840	1.0000	0.9840	0.9840	0.9840	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	195	96	53	236	0	158	1	213	0	0	0
Total Analysis Volume [veh/h]	0	780	384	212	945	0	631	2	851	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	31	0	13	44	0	0	46	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	27	27	9	40	42	42	
g / C, Green / Cycle	0.30	0.30	0.10	0.45	0.47	0.47	
(v / s)_i Volume / Saturation Flow Rate	0.31	0.34	0.12	0.26	0.35	0.53	
s, saturation flow rate [veh/h]	1900	1702	1810	3618	1810	1615	
c, Capacity [veh/h]	571	512	184	1616	841	750	
d1, Uniform Delay [s]	31.50	31.50	40.46	18.66	19.87	24.13	
k, delay calibration	0.50	0.50	0.11	0.50	0.28	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	42.47	83.42	81.71	1.55	3.51	76.57	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

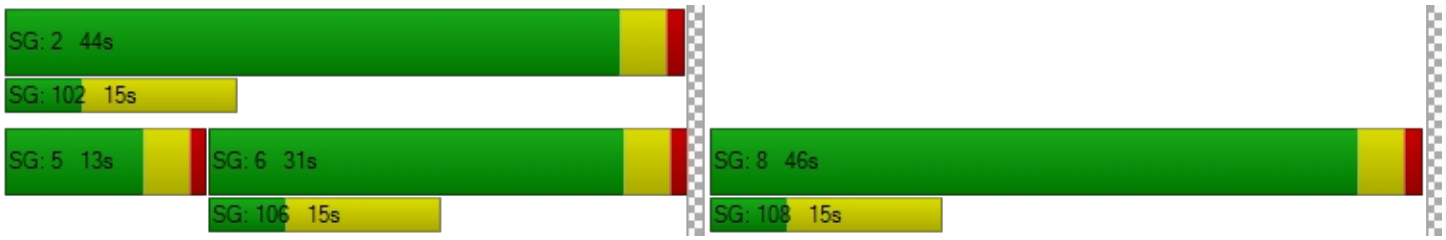
X, volume / capacity	1.02	1.14	1.15	0.58	0.75	1.13	
d, Delay for Lane Group [s/veh]	73.97	114.92	122.18	20.22	23.39	100.70	
Lane Group LOS	F	F	F	C	C	F	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	18.49	22.39	8.15	7.23	10.81	30.32	
50th-Percentile Queue Length [ft/ln]	462.35	559.64	203.72	180.71	270.16	757.97	
95th-Percentile Queue Length [veh/ln]	25.86	32.59	13.51	11.64	16.20	43.11	
95th-Percentile Queue Length [ft/ln]	646.41	814.71	337.66	290.94	404.94	1077.65	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	84.37	114.92	122.18	20.22	0.00	23.39	23.39	100.70	0.00	0.00	0.00
Movement LOS		F	F	F	C		C	C	F			
d_A, Approach Delay [s/veh]	94.45			38.90			67.72			0.00		
Approach LOS	F			D			E			A		
d_I, Intersection Delay [s/veh]	67.13											
Intersection LOS	E											
Intersection V/C	1.138											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	46.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.242

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	8	631	18	0	659	0	0	0	1	4	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	20	88	10	5	0	0	0	0	22	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	651	106	10	664	0	0	0	1	26	0	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	171	28	3	175	0	0	0	0	7	0	1
Total Analysis Volume [veh/h]	8	685	112	11	699	0	0	0	1	27	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.24	0.00	0.01
d_M, Delay for Movement [s/veh]	9.00	0.00	0.00	9.37	0.00	0.00	40.46	36.78	13.14	46.87	41.77	22.58
Movement LOS	A	A	A	A	A	A	E	E	B	E	E	C
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.04	0.04	0.00	0.01	0.01	0.01	0.92	0.92	0.92
95th-Percentile Queue Length [ft/ln]	0.67	0.67	0.00	0.91	0.91	0.00	0.17	0.17	0.17	22.96	22.96	22.96
d_A, Approach Delay [s/veh]	0.09			0.15			13.14			44.44		
Approach LOS	A			A			B			E		
d_I, Intersection Delay [s/veh]	0.98											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	40.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.888

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	89	173	12	89	283	287	264	138	50	44	240	203
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	10	2	15	63	0	0	0	0	39
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	179	12	99	285	302	327	138	50	44	240	242
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	47	3	26	75	79	86	36	13	12	63	64
Total Analysis Volume [veh/h]	94	188	13	104	300	318	344	145	53	46	253	255
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	17	25	0	21	24	0	30	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	20	20	7	20	20	19	43	43	5	28
g / C, Green / Cycle	0.07	0.22	0.22	0.08	0.23	0.23	0.21	0.47	0.47	0.05	0.31
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.05	0.06	0.16	0.20	0.19	0.08	0.03	0.03	0.29
s, saturation flow rate [veh/h]	1810	1900	1857	1810	1900	1615	1810	1900	1615	1810	1745
c, Capacity [veh/h]	127	422	413	136	431	367	388	897	763	96	543
d1, Uniform Delay [s]	41.17	28.85	28.87	40.98	32.04	33.60	34.39	13.61	13.00	41.53	30.24
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.15	0.14	0.11	0.11	0.11	0.36
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.10	0.29	0.30	8.63	2.03	8.53	8.44	0.08	0.04	3.63	20.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

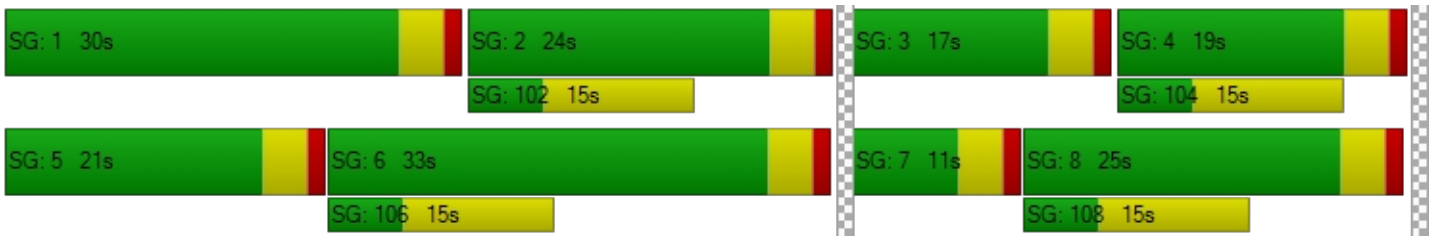
X, volume / capacity	0.74	0.24	0.24	0.77	0.70	0.87	0.89	0.16	0.07	0.48	0.94
d, Delay for Lane Group [s/veh]	49.27	29.14	29.17	49.61	34.07	42.13	42.83	13.70	13.04	45.16	50.68
Lane Group LOS	D	C	C	D	C	D	D	B	B	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.29	1.78	1.76	2.54	6.03	7.30	7.95	1.61	0.56	1.07	13.22
50th-Percentile Queue Length [ft/ln]	57.16	44.54	44.07	63.47	150.82	182.59	198.63	40.20	14.05	26.74	330.50
95th-Percentile Queue Length [veh/ln]	4.12	3.21	3.17	4.57	10.06	11.74	12.57	2.89	1.01	1.93	19.18
95th-Percentile Queue Length [ft/ln]	102.88	80.18	79.33	114.24	251.53	293.40	314.20	72.36	25.30	48.13	479.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.27	29.16	29.17	49.61	34.07	42.13	42.83	13.70	13.04	45.16	50.68	50.68
Movement LOS	D	C	C	D	C	D	D	B	B	D	D	D
d_A, Approach Delay [s/veh]	35.57			39.86			32.12			50.22		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	39.99											
Intersection LOS	D											
Intersection V/C	0.888											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	12.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.554

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	3	1	5	64	1	79	56	48	0	1	164	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	8	0	0	0	0	0	23	35	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	1	13	64	1	79	56	48	23	36	164	29
Peak Hour Factor	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750	0.5750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	6	28	0	34	24	21	10	16	71	13
Total Analysis Volume [veh/h]	16	2	23	111	2	137	97	83	40	63	285	50
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	629	677	683	719
Degree of Utilization, x	0.07	0.37	0.32	0.55

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.21	1.70	1.39	3.43
95th-Percentile Queue Length [ft]	5.21	42.56	34.83	85.78
Approach Delay [s/veh]	9.12	11.40	10.76	14.05
Approach LOS	A	B	B	B
Intersection Delay [s/veh]	12.30			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	70.7
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.068

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	494	452	86	18	690	46	25	57	397	166	144	21
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	39	17	0	1	3	0	0	0	10	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	533	469	86	19	693	46	25	57	407	166	144	24
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	140	123	23	5	182	12	7	15	107	44	38	6
Total Analysis Volume [veh/h]	561	494	91	20	729	48	26	60	428	175	152	25
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	29	40	0	11	22	0	16	26	0	13	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	40	40	3	18	18	3	22	22	9	28	28
g / C, Green / Cycle	0.28	0.45	0.45	0.03	0.20	0.20	0.04	0.24	0.24	0.10	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.31	0.16	0.16	0.01	0.21	0.21	0.01	0.03	0.27	0.10	0.08	0.02
s, saturation flow rate [veh/h]	1810	1900	1799	1810	1900	1859	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	503	852	806	56	383	374	67	462	393	181	581	494
d1, Uniform Delay [s]	32.51	16.26	16.27	42.76	35.94	35.94	42.32	26.62	34.06	40.35	23.57	22.03
k, delay calibration	0.40	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.30	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	72.20	1.15	1.21	3.88	52.89	53.60	3.57	0.13	62.27	23.98	0.24	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.12	0.35	0.35	0.36	1.03	1.03	0.39	0.13	1.09	0.97	0.26	0.05
d, Delay for Lane Group [s/veh]	104.70	17.41	17.48	46.64	88.84	89.54	45.89	26.75	96.34	64.33	23.81	22.07
Lane Group LOS	F	B	B	D	F	F	D	C	F	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	20.48	4.09	3.89	0.49	13.70	13.48	0.62	0.99	14.99	4.96	2.39	0.37
50th-Percentile Queue Length [ft/ln]	512.02	102.13	97.24	12.18	342.57	337.02	15.49	24.87	374.63	124.06	59.72	9.18
95th-Percentile Queue Length [veh/ln]	29.78	7.35	7.00	0.88	20.05	19.78	1.12	1.79	22.38	8.62	4.30	0.66
95th-Percentile Queue Length [ft/ln]	744.57	183.84	175.03	21.92	501.31	494.60	27.89	44.77	559.55	215.39	107.49	16.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	104.70	17.44	17.48	46.64	89.16	89.54	45.89	26.75	96.34	64.33	23.81	22.07
Movement LOS	F	B	B	D	F	F	D	C	F	E	C	C
d_A, Approach Delay [s/veh]	60.16			88.12			85.66			43.83		
Approach LOS	E			F			F			D		
d_I, Intersection Delay [s/veh]	70.71											
Intersection LOS	E											
Intersection V/C	1.068											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	35.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.907

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	720	392	0	0	622	404	0	0	0	492	3	457
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	0	13	0	0	0	0	0	0	50
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	720	398	0	0	635	404	0	0	0	492	3	507
Peak Hour Factor	0.9190	0.9190	1.0000	1.0000	0.9190	0.9190	1.0000	1.0000	1.0000	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	196	108	0	0	173	110	0	0	0	134	1	138
Total Analysis Volume [veh/h]	783	433	0	0	691	440	0	0	0	535	3	552
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	27	63	0	0	36	0	0	0	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	22	60	34	34		22	22	22
g / C, Green / Cycle	0.24	0.66	0.37	0.37		0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.22	0.12	0.30	0.34		0.20	0.21	0.22
s, saturation flow rate [veh/h]	3514	3618	1900	1671		1810	1704	1615
c, Capacity [veh/h]	860	2401	712	626		448	421	400
d1, Uniform Delay [s]	33.05	5.78	25.07	26.61		31.91	32.42	32.91
k, delay calibration	0.11	0.50	0.50	0.50		0.16	0.19	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	4.18	0.16	8.91	18.79		5.19	8.73	14.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

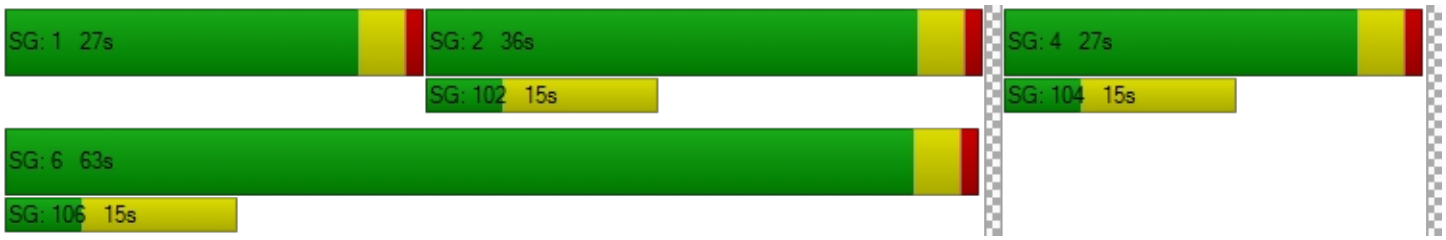
X, volume / capacity	0.91	0.18	0.79	0.90		0.81	0.86	0.91
d, Delay for Lane Group [s/veh]	37.23	5.95	33.98	45.40		37.10	41.15	47.14
Lane Group LOS	D	A	C	D		D	D	D
Critical Lane Group	Yes	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	8.45	1.36	11.84	13.97		7.79	8.28	8.95
50th-Percentile Queue Length [ft/ln]	211.21	33.92	296.03	349.21		194.73	206.98	223.67
95th-Percentile Queue Length [veh/ln]	13.22	2.44	17.48	20.10		12.37	13.00	13.85
95th-Percentile Queue Length [ft/ln]	330.38	61.06	437.12	502.45		309.16	324.95	346.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.23	5.95	0.00	0.00	36.05	45.40	0.00	0.00	0.00	38.40	41.15	45.09
Movement LOS	D	A			D	D				D	D	D
d_A, Approach Delay [s/veh]	26.09			39.69			0.00			41.80		
Approach LOS	C			D			A			D		
d_I, Intersection Delay [s/veh]	35.55											
Intersection LOS	D											
Intersection V/C	0.907											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.774

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	968	567	371	738	0	156	4	496	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	12	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	974	567	383	739	0	156	4	496	0	0	0
Peak Hour Factor	1.0000	0.9160	0.9160	0.9160	0.9160	1.0000	0.9160	0.9160	0.9160	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	266	155	105	202	0	43	1	135	0	0	0
Total Analysis Volume [veh/h]	0	1063	619	418	807	0	170	4	541	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	21	40	0	0	50	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	47	47	13	64	18	18	18	
g / C, Green / Cycle	0.52	0.52	0.14	0.71	0.21	0.21	0.21	
(v / s)_i Volume / Saturation Flow Rate	0.29	0.38	0.12	0.22	0.09	0.17	0.17	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1619	1615	
c, Capacity [veh/h]	1870	835	508	2554	371	332	332	
d1, Uniform Delay [s]	14.88	17.04	37.39	5.01	31.38	34.20	34.20	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.26	5.89	3.40	0.33	0.88	5.05	5.07	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

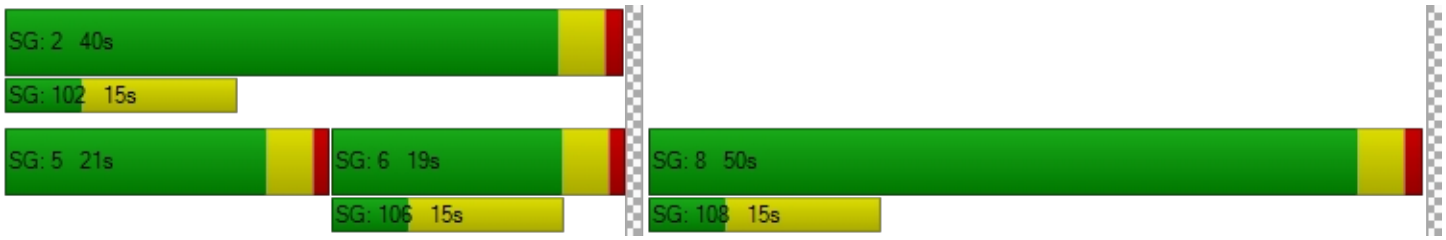
X, volume / capacity	0.57	0.74	0.82	0.32	0.46	0.82	0.82	
d, Delay for Lane Group [s/veh]	16.15	22.93	40.79	5.34	32.26	39.25	39.27	
Lane Group LOS	B	C	D	A	C	D	D	
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.07	10.36	4.58	2.32	3.24	5.97	5.96	
50th-Percentile Queue Length [ft/ln]	176.81	259.02	114.44	57.94	80.92	149.14	148.93	
95th-Percentile Queue Length [veh/ln]	11.43	15.64	8.09	4.17	5.83	9.97	9.96	
95th-Percentile Queue Length [ft/ln]	285.85	390.99	202.16	104.30	145.65	249.28	249.00	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	16.15	22.93	40.79	5.34	0.00	32.26	39.25	39.26	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	D	D			
d_A, Approach Delay [s/veh]	18.64			17.44			37.59			0.00		
Approach LOS	B			B			D			A		
d_I, Intersection Delay [s/veh]	21.98											
Intersection LOS	C											
Intersection V/C	0.774											

Sequence

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



Intersection Level Of Service Report
Intersection 10: Maple Ave / North Dwy

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Maple Ave		Maple Ave		North Dwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Maple Ave		Maple Ave		North Dwy	
Base Volume Input [veh/h]	0	9	2	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	12	46	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	12	14	46	11	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	4	12	3	0
Total Analysis Volume [veh/h]	0	12	14	46	11	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	0.00	8.79	8.52
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.87	0.87
d_A, Approach Delay [s/veh]	0.00		0.00		8.79	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.17					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 11: Maple Ave / South Dwy

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Maple Ave		Maple Ave		South Dwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Maple Ave		Maple Ave		South Dwy	
Base Volume Input [veh/h]	0	9	2	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	12	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	9	2	12	3	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	1	3	1	0
Total Analysis Volume [veh/h]	0	9	2	12	3	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.24	0.00	0.00	0.00	8.61	8.36
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.23	0.23
d_A, Approach Delay [s/veh]	0.00		0.00		8.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.99					
Intersection LOS	A					

Rialto Annexation Island 4 Industrial

Vistro File: K:\...\Rialto_Maple Annex PM.vistro
Report File: K:\...\8 GP WP PM.pdf

Scenario 21 GP 2035 + Proj PM
10/10/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave / Casmalia St	Signalized	HCM 2010	NB Left	0.725	30.6	C
2	Alder Ave / SR-210 WB Ramps	Signalized	HCM 2010	SB Right	1.187	82.6	F
3	Alder Ave / SR-210 EB Ramps	Signalized	HCM 2010	SB Left	1.220	88.8	F
4	Locust Ave / Vineyard Ave	Two-way stop	HCM 2010	WB Left	0.981	151.4	F
5	Locust Ave / Casmalia Ave	Signalized	HCM 2010	WB Left	0.812	27.3	C
6	Maple Ave / Bohnert Ave	All-way stop	HCM 2010	EB Thru	0.149	7.8	A
7	Ayala Dr / Casmalia St	Signalized	HCM 2010	WB Left	0.858	38.1	D
8	Ayala Dr / SR-210 WB Ramps	Signalized	HCM 2010	SB Right	0.885	32.6	C
9	Ayala Dr / SR-210 EB Ramps	Signalized	HCM 2010	EB Thru	0.985	35.3	D
10	Maple Ave / North Dwy	Two-way stop	HCM 2010	EB Left	0.044	8.8	A
11	Maple Ave / South Dwy	Two-way stop	HCM 2010	EB Left	0.012	8.6	A

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

Intersection Level Of Service Report
Intersection 1: Alder Ave / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	30.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.725

Intersection Setup

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	90	267	421	37	239	46	16	226	154	561	196	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	22	0	0	0	0	0	0	63	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	267	443	37	239	46	16	226	154	624	196	38
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	68	113	9	61	12	4	58	39	160	50	10
Total Analysis Volume [veh/h]	92	274	454	38	245	47	16	232	158	639	201	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	11	19	0	41	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	37	37	4	35	35	2	13	13	20	30	30
g / C, Green / Cycle	0.07	0.42	0.42	0.05	0.39	0.39	0.03	0.14	0.14	0.22	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.28	0.02	0.07	0.03	0.01	0.11	0.11	0.18	0.06	0.06
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1652	3514	1900	1794
c, Capacity [veh/h]	128	788	670	88	1421	634	48	269	234	765	632	597
d1, Uniform Delay [s]	41.00	18.02	21.45	41.66	17.82	17.11	43.08	37.20	37.41	33.70	21.45	21.45
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.42	1.21	5.44	3.35	0.26	0.23	4.05	4.40	6.06	2.50	0.15	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

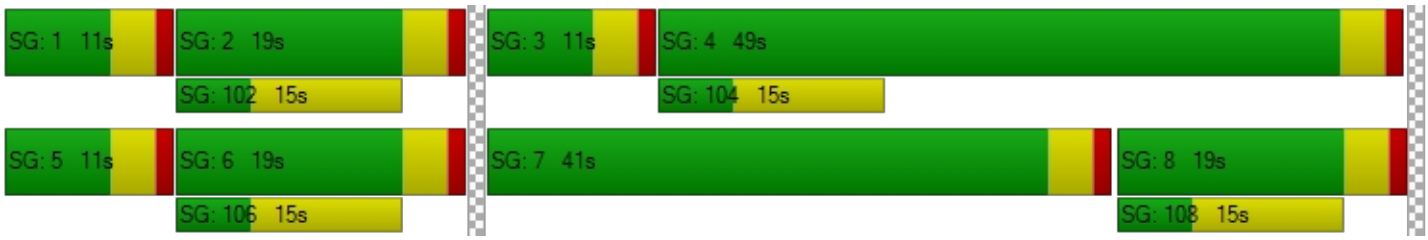
X, volume / capacity	0.72	0.35	0.68	0.43	0.17	0.07	0.34	0.76	0.80	0.84	0.20	0.20
d, Delay for Lane Group [s/veh]	48.41	19.23	26.89	45.02	18.08	17.33	47.13	41.60	43.47	36.20	21.60	21.61
Lane Group LOS	D	B	C	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.22	3.95	8.28	0.89	1.64	0.62	0.40	4.53	4.24	6.70	1.82	1.72
50th-Percentile Queue Length [ft/ln]	55.39	98.70	206.91	22.13	40.91	15.59	9.92	113.29	105.97	167.40	45.49	43.01
95th-Percentile Queue Length [veh/ln]	3.99	7.11	12.99	1.59	2.95	1.12	0.71	8.02	7.62	10.94	3.27	3.10
95th-Percentile Queue Length [ft/ln]	99.70	177.65	324.86	39.83	73.64	28.06	17.86	200.57	190.39	273.50	81.87	77.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.41	19.23	26.89	45.02	18.08	17.33	47.13	41.82	43.47	36.20	21.61	21.61
Movement LOS	D	B	C	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	26.75			21.07			42.67			32.22		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	30.61											
Intersection LOS	C											
Intersection V/C	0.725											

Sequence

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



Intersection Level Of Service Report
Intersection 2: Alder Ave / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	82.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.187

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	707	644	0	0	453	610	0	0	0	363	2	216
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	22	0	0	6	57	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	707	666	0	0	459	667	0	0	0	363	2	216
Peak Hour Factor	0.9770	0.9770	1.0000	1.0000	0.9770	0.9770	1.0000	1.0000	1.0000	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	181	170	0	0	117	171	0	0	0	93	1	55
Total Analysis Volume [veh/h]	724	682	0	0	470	683	0	0	0	372	2	221
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	36	70	0	0	34	0	0	0	0	0	20	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	32	66	30	30		16	16
g / C, Green / Cycle	0.36	0.73	0.33	0.33		0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.40	0.19	0.25	0.42		0.21	0.14
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1617
c, Capacity [veh/h]	643	2651	633	538		323	288
d1, Uniform Delay [s]	29.03	3.96	26.60	30.02		37.00	35.26
k, delay calibration	0.50	0.50	0.50	0.50		0.17	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	75.55	0.23	7.69	135.35		80.99	4.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

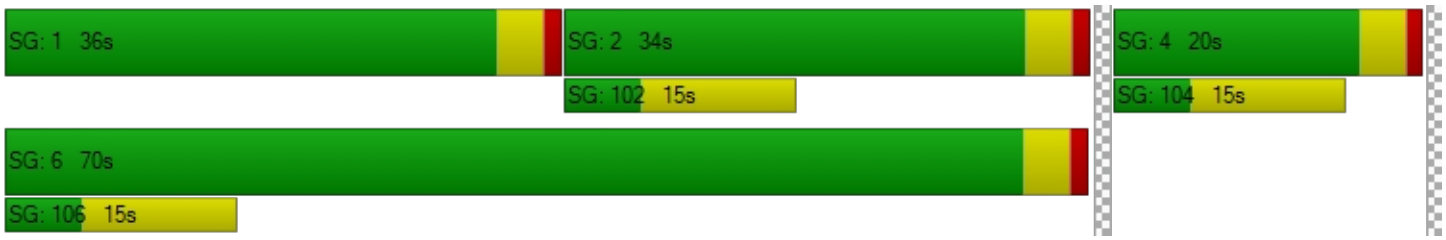
X, volume / capacity	1.13	0.26	0.74	1.27		1.15	0.77
d, Delay for Lane Group [s/veh]	104.58	4.19	34.29	165.37		117.99	39.68
Lane Group LOS	F	A	C	F		F	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	26.46	1.58	9.82	31.17		14.11	4.87
50th-Percentile Queue Length [ft/ln]	661.58	39.60	245.53	779.29		352.68	121.64
95th-Percentile Queue Length [veh/ln]	37.73	2.85	14.96	46.43		21.69	8.48
95th-Percentile Queue Length [ft/ln]	943.35	71.28	374.03	1160.81		542.22	212.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	104.58	4.19	0.00	0.00	34.29	165.37	0.00	0.00	0.00	117.99	39.68	39.68
Movement LOS	F	A			C	F				F	D	D
d_A, Approach Delay [s/veh]	55.89			111.94			0.00			88.64		
Approach LOS	E			F			A			F		
d_I, Intersection Delay [s/veh]	82.55											
Intersection LOS	F											
Intersection V/C	1.187											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Alder Ave / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	88.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.220

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	989	606	183	646	0	357	0	626	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	6	0	20	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	991	606	183	652	0	377	0	626	0	0	0
Peak Hour Factor	1.0000	0.9130	0.9130	0.9130	0.9130	1.0000	0.9130	0.9130	0.9130	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	271	166	50	179	0	103	0	171	0	0	0
Total Analysis Volume [veh/h]	0	1085	664	200	714	0	413	0	686	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	43	0	12	55	0	0	35	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	39	39	8	51	31	31	
g / C, Green / Cycle	0.43	0.43	0.09	0.57	0.34	0.34	
(v / s)_i Volume / Saturation Flow Rate	0.46	0.52	0.11	0.20	0.23	0.42	
s, saturation flow rate [veh/h]	1900	1675	1810	3618	1810	1615	
c, Capacity [veh/h]	821	724	164	2052	622	556	
d1, Uniform Delay [s]	25.58	25.58	40.96	10.51	25.12	29.55	
k, delay calibration	0.50	0.50	0.11	0.50	0.20	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	50.24	106.27	110.14	0.47	2.30	120.59	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

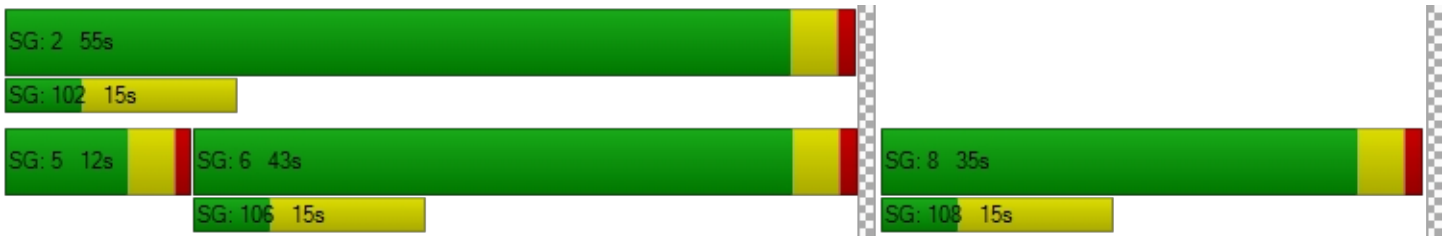
X, volume / capacity	1.07	1.21	1.22	0.35	0.66	1.23	
d, Delay for Lane Group [s/veh]	75.83	131.85	151.10	10.98	27.42	150.14	
Lane Group LOS	F	F	F	B	C	F	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	27.47	35.50	8.57	3.57	7.51	29.87	
50th-Percentile Queue Length [ft/ln]	686.86	887.39	214.24	89.19	187.76	746.65	
95th-Percentile Queue Length [veh/ln]	37.79	51.45	14.30	6.42	12.00	44.15	
95th-Percentile Queue Length [ft/ln]	944.78	1286.36	357.39	160.54	300.12	1103.68	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	86.70	131.85	151.10	10.98	0.00	27.42	27.42	150.14	0.00	0.00	0.00
Movement LOS		F	F	F	B		C	C	F			
d_A, Approach Delay [s/veh]	103.84			41.64			104.02			0.00		
Approach LOS	F			D			F			A		
d_I, Intersection Delay [s/veh]	88.78											
Intersection LOS	F											
Intersection V/C	1.220											

Sequence

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



Intersection Level Of Service Report
Intersection 4: Locust Ave / Vineyard Ave

Control Type:	Two-way stop	Delay (sec / veh):	151.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.981

Intersection Setup

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Vineyard Ave			Vineyard Ave		
Base Volume Input [veh/h]	4	552	6	0	733	0	2	0	11	18	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	30	3	20	0	0	0	0	89	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	559	36	3	753	0	2	0	11	107	0	10
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	147	9	1	198	0	1	0	3	28	0	3
Total Analysis Volume [veh/h]	4	588	38	3	793	0	2	0	12	113	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00	0.02	0.00	0.03	0.98	0.00	0.02
d_M, Delay for Movement [s/veh]	9.32	0.00	0.00	8.74	0.00	0.00	37.54	32.57	14.82	151.41	145.71	127.18
Movement LOS	A	A	A	A	A	A	E	D	B	F	F	F
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.01	0.01	0.00	0.15	0.15	0.15	6.84	6.84	6.84
95th-Percentile Queue Length [ft/ln]	0.36	0.36	0.00	0.23	0.23	0.00	3.79	3.79	3.79	170.96	170.96	170.96
d_A, Approach Delay [s/veh]	0.06			0.03			18.07			149.26		
Approach LOS	A			A			C			F		
d_I, Intersection Delay [s/veh]	12.04											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 5: Locust Ave / Casmalia Ave

Control Type:	Signalized	Delay (sec / veh):	27.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.812

Intersection Setup

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	76	300	41	213	312	261	218	245	69	23	274	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	40	6	63	22	0	0	0	0	13
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	302	41	253	318	324	240	245	69	23	274	113
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	79	11	67	84	85	63	64	18	6	72	30
Total Analysis Volume [veh/h]	80	318	43	266	335	341	253	258	73	24	288	119
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	20	28	0	20	21	0	30	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	68	68	68	68	68	68	68	68	68	68	68
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	11	11	12	17	17	12	27	27	3	18
g / C, Green / Cycle	0.08	0.16	0.16	0.18	0.25	0.25	0.17	0.39	0.39	0.04	0.26
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.10	0.15	0.18	0.21	0.14	0.14	0.05	0.01	0.23
s, saturation flow rate [veh/h]	1810	1900	1822	1810	1900	1615	1810	1900	1615	1810	1807
c, Capacity [veh/h]	146	295	283	324	482	410	310	746	634	68	468
d1, Uniform Delay [s]	30.10	26.87	26.91	26.88	23.00	24.01	27.15	14.52	13.14	31.92	24.11
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.20	2.13	2.30	5.17	1.81	4.43	5.20	0.28	0.08	3.04	5.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

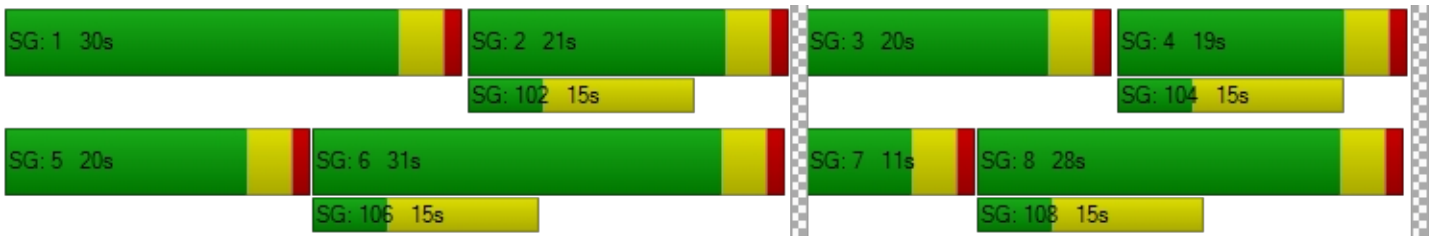
X, volume / capacity	0.55	0.62	0.63	0.82	0.69	0.83	0.82	0.35	0.12	0.35	0.87
d, Delay for Lane Group [s/veh]	33.30	29.00	29.20	32.05	24.81	28.45	32.34	14.79	13.22	34.97	29.22
Lane Group LOS	C	C	C	C	C	C	C	B	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.32	2.77	2.71	4.32	4.70	5.24	4.13	2.55	0.65	0.42	6.37
50th-Percentile Queue Length [ft/ln]	33.01	69.33	67.66	108.08	117.54	131.10	103.22	63.72	16.31	10.59	159.30
95th-Percentile Queue Length [veh/ln]	2.38	4.99	4.87	7.73	8.26	9.00	7.43	4.59	1.17	0.76	10.51
95th-Percentile Queue Length [ft/ln]	59.42	124.79	121.80	193.33	206.44	225.00	185.80	114.70	29.35	19.06	262.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.30	29.09	29.20	32.05	24.81	28.45	32.34	14.79	13.22	34.97	29.22	29.22
Movement LOS	C	C	C	C	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	29.86			28.17			22.20			29.54		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.27											
Intersection LOS	C											
Intersection V/C	0.812											

Sequence

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



Intersection Level Of Service Report
Intersection 6: Maple Ave / Bohnert Ave

Control Type:	All-way stop	Delay (sec / veh):	7.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.149

Intersection Setup

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Maple Ave			Maple Ave			Bohnert Ave			Bohnert Ave		
Base Volume Input [veh/h]	2	0	1	20	1	48	44	54	1	4	48	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	0	32	0	0	0	0	0	8	12	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	0	33	20	1	48	44	54	9	16	48	23
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	0	9	6	0	14	13	16	3	5	14	7
Total Analysis Volume [veh/h]	29	0	38	23	1	55	51	62	10	18	55	26
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	851	875	826	850
Degree of Utilization, x	0.08	0.09	0.15	0.12

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.26	0.30	0.52	0.39
95th-Percentile Queue Length [ft]	6.40	7.42	13.06	9.84
Approach Delay [s/veh]	7.59	7.52	8.12	7.79
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.81			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Ayala Dr / Casmalia St

Control Type:	Signalized	Delay (sec / veh):	38.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.858

Intersection Setup

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Base Volume Input [veh/h]	308	626	131	12	467	23	39	66	459	90	43	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	6	0	3	14	0	0	0	40	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	321	632	131	15	481	23	39	66	499	90	43	15
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	84	166	34	4	127	6	10	17	131	24	11	4
Total Analysis Volume [veh/h]	338	665	138	16	506	24	41	69	525	95	45	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	27	0	14	19	0	24	38	0	11	25	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	34	34	2	18	18	5	31	31	6	33	33
g / C, Green / Cycle	0.20	0.38	0.38	0.03	0.21	0.21	0.05	0.35	0.35	0.07	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.19	0.22	0.22	0.01	0.14	0.14	0.02	0.04	0.33	0.05	0.02	0.01
s, saturation flow rate [veh/h]	1810	1900	1788	1810	1900	1870	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	362	722	679	47	391	385	91	657	558	128	696	591
d1, Uniform Delay [s]	35.43	22.13	22.14	43.09	33.03	33.05	41.55	20.01	28.57	41.02	18.52	18.27
k, delay calibration	0.13	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.34	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.62	3.29	3.50	4.19	9.27	9.49	3.46	0.07	20.04	8.12	0.04	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

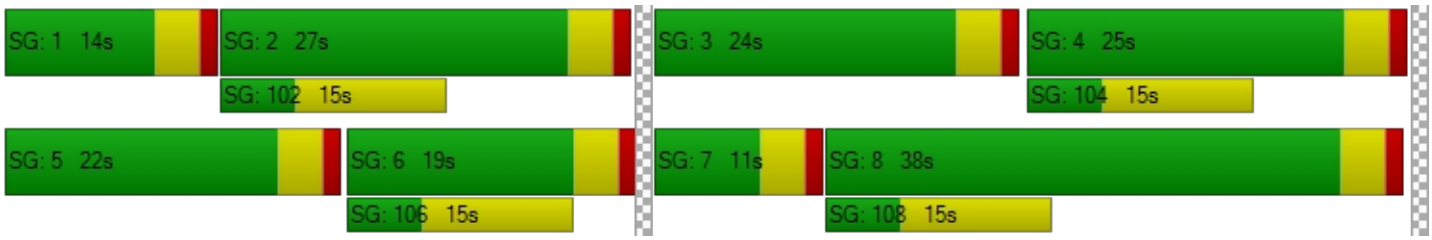
X, volume / capacity	0.93	0.57	0.57	0.34	0.68	0.68	0.45	0.11	0.94	0.74	0.06	0.03
d, Delay for Lane Group [s/veh]	48.05	25.42	25.64	47.28	42.30	42.54	45.02	20.08	48.60	49.14	18.56	18.29
Lane Group LOS	D	C	C	D	D	D	D	C	D	D	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.29	7.21	6.84	0.40	6.21	6.15	0.95	0.96	13.41	2.31	0.59	0.21
50th-Percentile Queue Length [ft/ln]	207.27	180.26	171.02	9.95	155.16	153.75	23.84	24.02	335.14	57.68	14.85	5.22
95th-Percentile Queue Length [veh/ln]	13.01	11.61	11.13	0.72	10.29	10.22	1.72	1.73	19.41	4.15	1.07	0.38
95th-Percentile Queue Length [ft/ln]	325.33	290.35	278.25	17.90	257.30	255.43	42.91	43.23	485.26	103.82	26.73	9.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.05	25.50	25.64	47.28	42.41	42.54	45.02	20.08	48.60	49.14	18.56	18.29
Movement LOS	D	C	C	D	D	D	D	C	D	D	B	B
d_A, Approach Delay [s/veh]	32.20			42.56			45.27			37.16		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	38.14											
Intersection LOS	D											
Intersection V/C	0.858											

Sequence

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



Intersection Level Of Service Report
Intersection 8: Ayala Dr / SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	32.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 WB Ramps			SR-210 WB Ramps		
Base Volume Input [veh/h]	593	687	0	0	794	270	0	0	0	734	2	399
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	54	0	0	0	0	0	0	17
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	593	689	0	0	848	270	0	0	0	734	2	416
Peak Hour Factor	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	157	182	0	0	224	71	0	0	0	194	1	110
Total Analysis Volume [veh/h]	627	728	0	0	896	285	0	0	0	776	2	440
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	27	53	0	0	26	0	0	0	0	0	37	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	C	R
C, Cycle Length [s]	90	90	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	19	56	33	33		26	26	26
g / C, Green / Cycle	0.21	0.62	0.37	0.37		0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.18	0.20	0.31	0.34		0.22	0.23	0.25
s, saturation flow rate [veh/h]	3514	3618	1900	1751		1810	1792	1615
c, Capacity [veh/h]	727	2246	703	647		525	520	469
d1, Uniform Delay [s]	34.48	8.10	25.95	26.98		29.25	29.33	30.30
k, delay calibration	0.11	0.50	0.50	0.50		0.17	0.17	0.22
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	3.20	0.38	11.62	19.36		3.80	4.10	9.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

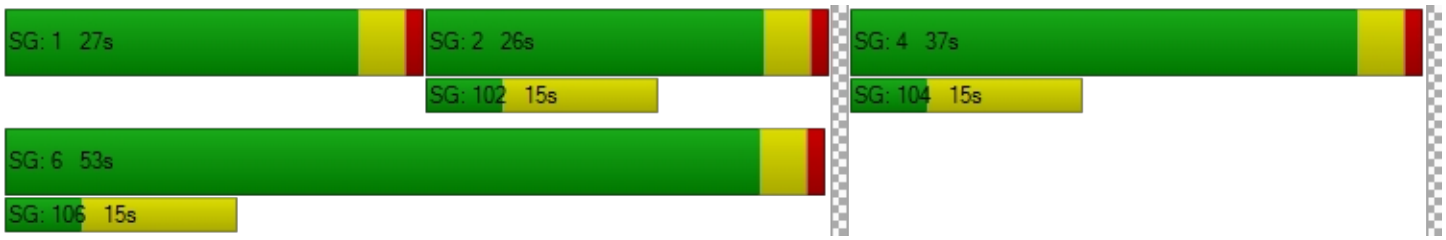
X, volume / capacity	0.86	0.32	0.84	0.91		0.77	0.78	0.87
d, Delay for Lane Group [s/veh]	37.68	8.48	37.57	46.35		33.04	33.43	39.88
Lane Group LOS	D	A	D	D		C	C	D
Critical Lane Group	Yes	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.71	3.02	13.10	14.75		8.22	8.28	9.19
50th-Percentile Queue Length [ft/ln]	167.68	75.50	327.45	368.64		205.47	206.96	229.71
95th-Percentile Queue Length [veh/ln]	10.95	5.44	19.03	21.04		12.92	13.00	14.16
95th-Percentile Queue Length [ft/ln]	273.86	135.90	475.84	526.08		323.01	324.93	353.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.68	8.48	0.00	0.00	40.56	46.35	0.00	0.00	0.00	33.23	33.43	39.38
Movement LOS	D	A			D	D				C	C	D
d_A, Approach Delay [s/veh]	21.99			41.96			0.00			35.45		
Approach LOS	C			D			A			D		
d_I, Intersection Delay [s/veh]	32.64											
Intersection LOS	C											
Intersection V/C	0.885											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Ayala Dr / SR-210 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	35.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.985

Intersection Setup

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ayala Dr			Ayala Dr			SR-210 EB Ramps			SR-210 EB Ramps		
Base Volume Input [veh/h]	0	948	665	496	1016	0	346	3	812	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	48	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	950	665	544	1022	0	346	3	812	0	0	0
Peak Hour Factor	1.0000	0.9740	0.9740	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	244	171	140	262	0	89	1	208	0	0	0
Total Analysis Volume [veh/h]	0	975	683	559	1049	0	355	3	834	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	43	0	18	61	0	0	29	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
C, Cycle Length [s]	90	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	39	39	14	57	25	25	25	
g / C, Green / Cycle	0.43	0.43	0.16	0.63	0.28	0.28	0.28	
(v / s)_i Volume / Saturation Flow Rate	0.27	0.42	0.16	0.29	0.20	0.27	0.25	
s, saturation flow rate [veh/h]	3618	1615	3514	3618	1810	1617	1615	
c, Capacity [veh/h]	1565	699	549	2291	503	449	449	
d1, Uniform Delay [s]	19.83	25.11	37.99	8.53	29.21	32.25	31.14	
k, delay calibration	0.50	0.50	0.11	0.50	0.15	0.32	0.26	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.88	28.94	22.69	0.66	2.51	28.97	12.85	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.62	0.98	1.02	0.46	0.71	0.98	0.89	
d, Delay for Lane Group [s/veh]	21.71	54.05	60.68	9.19	31.72	61.22	43.99	
Lane Group LOS	C	D	F	A	C	E	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	
50th-Percentile Queue Length [veh/ln]	7.79	18.72	7.58	4.69	6.95	12.64	9.48	
50th-Percentile Queue Length [ft/ln]	194.86	467.92	189.55	117.15	173.82	316.05	236.98	
95th-Percentile Queue Length [veh/ln]	12.37	25.81	12.20	8.24	11.28	18.47	14.53	
95th-Percentile Queue Length [ft/ln]	309.32	645.29	304.98	205.91	281.93	461.83	363.21	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	21.71	54.05	60.68	9.19	0.00	31.72	61.22	53.01	0.00	0.00	0.00
Movement LOS		C	D	F	A		C	E	D			
d_A, Approach Delay [s/veh]	35.03			27.09			46.69			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	35.28											
Intersection LOS	D											
Intersection V/C	0.985											

Sequence

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



Intersection Level Of Service Report
Intersection 10: Maple Ave / North Dwy

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.044

Intersection Setup

Name	Maple Ave		Maple Ave		North Dwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Maple Ave		Maple Ave		North Dwy	
Base Volume Input [veh/h]	0	2	6	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	4	16	43	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	14	10	16	43	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	3	4	11	0
Total Analysis Volume [veh/h]	0	14	10	16	43	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	7.27	0.00	0.00	0.00	8.83	8.56
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.14	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	3.43	3.43
d_A, Approach Delay [s/veh]	0.00		0.00		8.83	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.58					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 11: Maple Ave / South Dwy

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Maple Ave		Maple Ave		South Dwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Maple Ave		Maple Ave		South Dwy	
Base Volume Input [veh/h]	0	2	6	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	12	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2	6	4	12	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	2	1	3	0
Total Analysis Volume [veh/h]	0	2	6	4	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	7.24	0.00	0.00	0.00	8.61	8.39
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.90	0.90
d_A, Approach Delay [s/veh]	0.00		0.00		8.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.30					
Intersection LOS	A					

APPENDIX D-8

INTERSECTION ANALYSIS WORKSHEETS – MITIGATION

Option 1: Add 2nd NBL

Number	2											
Intersection	Alder Ave / SR-210 WB Ramps											
Control Type	Signalized											
Analysis Method	HCM 2010											
Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	297	464	0	0	302	444	0	0	0	337	10	206
Total Analysis Volume [veh/h]	535	928	0	0	493	594	0	0	0	687	11	257

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	12.00											
Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	26	57	0	0	31	0	0	0	0	0	33	0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.18	0.59	0.36	0.36		0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.15	0.26	0.26	0.37		0.38	0.16
so, Base Saturation Flow per Lane [veh/h/ln]	1900	1900	1900	1900		1900	1900
Arrival type	3		3		3	3	
s, saturation flow rate [veh/h]	3514	3618	1900	1615		1810	1625
c, Capacity [veh/h]	637	2132	691	587		583	523
X, volume / capacity	0.84	0.44	0.71	1.01		1.18	0.51
d, Delay for Lane Group [s/veh]	38.67	10.87	30.85	68.82		127.99	25.58
Lane Group LOS	D	B	C	F		F	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th Percentile Queue Length [veh/ln]	5.75	4.07	2.71	10.05		27.27	4.50

50th-Percentile Queue Length [veh/ln]	5.75	4.67	9.71	18.35		27.67	4.56
50th-Percentile Queue Length [ft/ln]	143.85	116.65	242.87	458.87		691.69	113.91
95th-Percentile Queue Length [veh/ln]	9.69	8.21	14.83	25.59		40.17	8.06
95th-Percentile Queue Length [ft/ln]	242.20	205.21	370.66	639.75		1004.19	201.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.67	10.87	0.00	0.00	30.85	68.82	0.00	0.00	0.00	127.99	25.58	25.58
Movement LOS	D	B			C	F				F	C	C
Critical Movement	No	No			No	No				Yes	No	No
d_A, Approach Delay [s/veh]	21.04			51.60			0.00			99.25		
Approach LOS	C			D			A			F		
d_I, Intersection Delay [s/veh]	51.83											
Intersection LOS	D											
Intersection V/C	1.038											

Option 1: 2nd EBL

Number	5											
Intersection	Locust Ave / Casmalia Ave											
Control Type	Signalized											
Analysis Method	HCM 2010											
Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	84	154	7	61	251	268	198	53	44	24	160	118
Total Analysis Volume [veh/h]	94	188	13	104	300	318	344	145	53	46	253	255

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	16.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	17	25	0	21	24	0	30	33	0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.08	0.23	0.23	0.09	0.24	0.24	0.14	0.40	0.40	0.06	0.32
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.05	0.06	0.16	0.20	0.10	0.08	0.03	0.03	0.29
so, Base Saturation Flow per Lane [veh/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Arrival type	3			3			3			3	
s, saturation flow rate [veh/h]	1810	1900	1857	1810	1900	1615	3514	1900	1615	1810	1745
c, Capacity [veh/h]	150	444	434	155	449	382	476	757	643	107	562
X, volume / capacity	0.63	0.23	0.23	0.67	0.67	0.83	0.72	0.19	0.08	0.43	0.90
d, Delay for Lane Group [s/veh]	36.02	22.47	22.49	36.74	26.52	30.76	31.77	14.16	13.46	35.29	34.22
Lane Group LOS	D	C	C	D	C	C	C	B	B	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes

50th-Percentile Queue Length [veh/ln]	1.67	1.32	1.31	1.87	4.51	5.28	2.82	1.41	0.49	0.82	9.14
50th-Percentile Queue Length [ft/ln]	41.84	33.11	32.76	46.83	112.70	131.94	70.46	35.34	12.36	20.40	228.39
95th-Percentile Queue Length [veh/ln]	3.01	2.38	2.36	3.37	7.99	9.05	5.07	2.54	0.89	1.47	14.09
95th-Percentile Queue Length [ft/ln]	75.30	59.60	58.97	84.29	199.75	226.13	126.83	63.61	22.24	36.73	352.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.02	22.48	22.49	36.74	26.52	30.76	31.77	14.16	13.46	35.29	34.22	34.22
Movement LOS	D	C	C	D	C	C	C	B	B	D	C	C
Critical Movement	No	No	No	Yes	No	No	No	No	No	No	No	No
d_A, Approach Delay [s/veh]	26.79			29.86			25.27			34.31		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	29.42											
Intersection LOS	C											
Intersection V/C	0.822											

Option 1: EB RT Overlap

Number	7											
Intersection	Ayala Dr / Casmalia St											
Control Type	Signalized											
Analysis Method	HCM 2010											
Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	149	333	83	17	481	21	11	45	191	160	66	20
Total Analysis Volume [veh/h]	561	494	91	20	729	41	26	60	428	175	84	25

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	16.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	30	40	0	11	21	0	12	27	27	12	27	0
Walk [s]	0	5	0	0	5	0	0	5	5	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.29	0.59	0.59	0.03	0.34	0.34	0.04	0.11	0.44	0.09	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.31	0.16	0.16	0.01	0.20	0.20	0.01	0.03	0.27	0.10	0.04	0.02
so, Base Saturation Flow per Lane [veh/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Arrival type	3			3			3			3		
s, saturation flow rate [veh/h]	1810	1900	1799	1810	1900	1865	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	522	1127	1067	58	640	628	70	205	712	162	302	257
X, volume / capacity	1.07	0.27	0.27	0.34	0.61	0.61	0.37	0.29	0.60	1.08	0.28	0.10
d, Delay for Lane Group [s/veh]	89.12	9.45	9.49	46.21	29.20	29.29	45.54	37.85	21.47	97.15	33.87	32.57
Lane Group LOS	F	A	A	D	C	C	D	D	C	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No

50th-Percentile Queue Length [veh/ln]	19.05	2.69	2.57	0.48	7.34	7.23	0.62	1.24	6.79	6.04	1.62	0.47
50th-Percentile Queue Length [ft/ln]	476.23	67.37	64.14	12.09	183.55	180.64	15.41	30.88	169.68	150.90	40.44	11.68
95th-Percentile Queue Length [veh/ln]	27.39	4.85	4.62	0.87	11.79	11.63	1.11	2.22	11.06	10.33	2.91	0.84
95th-Percentile Queue Length [ft/ln]	684.80	121.26	115.46	21.76	294.64	290.85	27.73	55.59	276.49	258.31	72.80	21.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	89.12	9.46	9.49	46.21	29.24	29.29	45.54	37.85	21.47	97.15	33.87	32.57
Movement LOS	F	A	A	D	C	C	D	D	C	F	C	C
Critical Movement	No	No	No	No	No	No	No	No	No	Yes	No	No
d_A, Approach Delay [s/veh]	48.46			29.67			24.60			72.75		
Approach LOS	D			C			C			E		
d_I, Intersection Delay [s/veh]	41.07											
Intersection LOS	D											
Intersection V/C	0.928											

Option 1: 2nd NBL

Number	2											
Intersection	Alder Ave / SR-210 WB Ramps											
Control Type	Signalized											
Analysis Method	HCM 2010											
Name	Alder Ave			Alder Ave			SR-210 WB Ramps			SR-210 WB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	346	395	0	0	268	381	0	0	0	229	2	153
Total Analysis Volume [veh/h]	724	682	0	0	470	683	0	0	0	372	2	221

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	12.00											
Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Split	Split	Split
Signal group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	36	70	0	0	34	0	0	0	0	0	20	0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.24	0.73	0.45	0.45		0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.21	0.19	0.25	0.42		0.21	0.14
so, Base Saturation Flow per Lane [veh/h/ln]	1900	1900	1900	1900		1900	1900
Arrival type	3		3		3	3	
s, saturation flow rate [veh/h]	3514	3618	1900	1615		1810	1617
c, Capacity [veh/h]	846	2651	850	723		323	288
X, volume / capacity	0.86	0.26	0.55	0.94		1.15	0.77
d, Delay for Lane Group [s/veh]	35.29	4.19	20.84	46.22		117.99	39.68
Lane Group LOS	D	A	C	D		F	D
Critical Lane Group	Yes	No	No	Yes		Yes	No

50th-Percentile Queue Length [veh/ln]	7.55	1.58	7.29	17.16		14.11	4.87
50th-Percentile Queue Length [ft/ln]	188.66	39.60	182.19	428.91		352.68	121.64
95th-Percentile Queue Length [veh/ln]	12.05	2.85	11.71	23.95		21.69	8.48
95th-Percentile Queue Length [ft/ln]	301.29	71.28	292.87	598.73		542.22	212.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.29	4.19	0.00	0.00	20.84	46.22	0.00	0.00	0.00	117.99	39.68	39.68
Movement LOS	D	A			C	D				F	D	D
Critical Movement	No	No			No	No				Yes	No	No
d_A, Approach Delay [s/veh]	20.21			35.87			0.00			88.64		
Approach LOS	C			D			A			F		
d_I, Intersection Delay [s/veh]	38.84											
Intersection LOS	D											
Intersection V/C	0.963											

Option 1: 2nd EBL

Number	5											
Intersection	Locust Ave / Casmalia Ave											
Control Type	Signalized											
Analysis Method	HCM 2010											
Name	Locust Ave			Locust Ave			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	49	170	25	113	224	219	186	182	55	11	158	78
Total Analysis Volume [veh/h]	64	223	41	266	280	341	253	258	68	24	288	119

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	16.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	20	0	19	28	0	20	21	0	30	31	0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.08	0.15	0.15	0.18	0.26	0.26	0.12	0.35	0.35	0.04	0.27
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.07	0.15	0.15	0.21	0.07	0.14	0.04	0.01	0.23
so, Base Saturation Flow per Lane [veh/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Arrival type	3			3			3			3	
s, saturation flow rate [veh/h]	1810	1900	1800	1810	1900	1615	3514	1900	1615	1810	1807
c, Capacity [veh/h]	142	294	279	334	496	422	417	657	558	71	481
X, volume / capacity	0.45	0.46	0.47	0.80	0.56	0.81	0.61	0.39	0.12	0.34	0.85
d, Delay for Lane Group [s/veh]	27.80	23.43	23.58	26.96	19.62	23.85	25.73	14.77	13.08	29.91	24.37
Lane Group LOS	C	C	C	C	B	C	C	B	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes

50th-Percentile Queue Length [veh/ln]	0.86	1.60	1.56	3.52	3.02	4.23	1.59	2.28	0.54	0.35	5.13
50th-Percentile Queue Length [ft/ln]	21.61	40.03	39.05	88.03	75.54	105.81	39.71	57.04	13.52	8.86	128.17
95th-Percentile Queue Length [veh/ln]	1.56	2.88	2.81	6.34	5.44	7.61	2.86	4.11	0.97	0.64	8.84
95th-Percentile Queue Length [ft/ln]	38.89	72.05	70.28	158.45	135.98	190.16	71.48	102.68	24.34	15.95	221.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.80	23.49	23.58	26.96	19.62	23.85	25.73	14.77	13.08	29.91	24.37	24.37
Movement LOS	C	C	C	C	B	C	C	B	B	C	C	C
Critical Movement	No	No	No	No	No	No	No	No	No	Yes	No	No
d_A, Approach Delay [s/veh]	24.34			23.45			19.36			24.68		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	22.75											
Intersection LOS	C											
Intersection V/C	0.752											

Option 1: EB RT Overlap

Number	7											
Intersection	Ayala Dr / Casmalia St											
Control Type	Signalized											
Analysis Method	HCM 2010											
Name	Ayala Dr			Ayala Dr			Casmalia St			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	92	441	123	12	303	10	25	53	178	87	33	13
Total Analysis Volume [veh/h]	338	665	135	16	506	24	41	67	525	95	45	16

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	16.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	22	27	0	14	19	0	24	38	38	11	25	0
Walk [s]	0	5	0	0	5	0	0	5	5	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.20	0.57	0.57	0.03	0.40	0.40	0.05	0.15	0.40	0.07	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.19	0.22	0.22	0.01	0.14	0.14	0.02	0.04	0.33	0.05	0.02	0.01
so, Base Saturation Flow per Lane [veh/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Arrival type	3			3			3			3		
s, saturation flow rate [veh/h]	1810	1900	1790	1810	1900	1870	1810	1900	1615	1810	1900	1615
c, Capacity [veh/h]	362	1082	1019	49	753	741	93	293	644	130	332	282
X, volume / capacity	0.93	0.38	0.38	0.33	0.35	0.36	0.44	0.23	0.81	0.73	0.14	0.06
d, Delay for Lane Group [s/veh]	48.09	11.69	11.76	46.86	20.42	20.45	44.80	33.81	33.72	48.73	31.63	31.09
Lane Group LOS	D	B	B	D	C	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No

50th-Percentile Queue Length [veh/ln]	8.30	4.32	4.09	0.39	3.99	3.95	0.95	1.29	11.00	2.30	0.83	0.29
50th-Percentile Queue Length [ft/ln]	207.42	107.95	102.37	9.87	99.77	98.66	23.77	32.14	274.94	57.42	20.63	7.25
95th-Percentile Queue Length [veh/ln]	13.02	7.73	7.37	0.71	7.18	7.10	1.71	2.31	16.44	4.13	1.49	0.52
95th-Percentile Queue Length [ft/ln]	325.51	193.14	184.27	17.77	179.58	177.58	42.78	57.85	410.91	103.36	37.14	13.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.09	11.72	11.76	46.86	20.44	20.45	44.80	33.81	33.72	48.73	31.63	31.09
Movement LOS	D	B	B	D	C	C	D	C	C	D	C	C
Critical Movement	No	No	No	No	No	No	No	No	No	Yes	No	No
d_A, Approach Delay [s/veh]	22.53			21.21			34.45			41.99		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	26.51											
Intersection LOS	C											
Intersection V/C	0.704											

APPENDIX E

CUMULATIVE PROJECTS INFORMATION

TOTAL CUMULATIVE PROJECTS TRAFFIC

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB	176	227	0	0	73	56	0	0	0	220	0	2
3	Alder and 210 EB	0	252	88	9	309	0	150	0	278	0	0	0
7	Ayala and Casmalia	143	106	0	0	190	1	0	10	32	0	11	0
8	Ayala and 210 WB	63	75	0	0	165	75	0	0	0	166	0	238
9	Ayala and 210 EB	0	104	207	116	216	0	32	0	76	0	0	0
5	Locust at Casmalia	2	13	3	22	22	8	58	10	4	18	23	79
1	Alder and Casmalia	0	12	108	0	17	0	0	1	0	32	0	0
6	Maple and Bohnert	0	0	0	0	0	0	0	0	0	0	2	0

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB	268	160	0	0	107	173	0	0	0	97	0	35
3	Alder and 210 EB	0	362	239	2	210	0	64	0	214	0	0	0
7	Ayala and Casmalia	57	167	0	0	152	0	1	9	112	0	9	0
8	Ayala and 210 WB	88	168	0	0	273	57	0	0	0	243	0	148
9	Ayala and 210 EB	0	173	227	198	319	0	83	0	86	0	0	0
5	Locust at Casmalia	10	33	12	94	27	33	25	9	8	10	45	15
1	Alder and Casmalia	0	14	38	0	11	0	0	0	0	120	0	0
6	Maple and Bohnert	0	0	0	0	0	0	0	2	0	0	1	0
4	Locust and Vineyard	0	73	6	0	154	0	0	0	0	18	0	0

ATTENTION: ENTER ONLY IN BLUE CELLS - EVERYTHING ELSE CALCULATES

Int. #:	20	Alder and Casmalia
	1	

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	0	87	0	17	0	0	0	0	0	0	0
AM Out		0	12	0	0	0	0	0	0	0	24	0	0
AM Tot		0	12	87	0	17	0	0	0	0	24	0	0
PM In		0	0	30	0	11	0	0	0	0	0	0	0
PM Out		0	14	0	0	0	0	0	0	0	90	0	0
PM Tot		0	14	30	0	11	0	0	0	0	90	0	0

Zone #	3	Hotel (SWC of Linden at Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					1%							
AM Out										2%		
PM In	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	52	0	0	0	0	1	0	0	0	0	0	0	0
AM Out	38	0	0	0	0	0	0	0	0	0	1	0	0
PM In	46	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	48	0	0	0	0	0	0	0	0	0	1	0	0

Zone #	6	Prologis (Tamarind @ Walnut) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%							
AM Out		5%										
PM In	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	55	0	0	0	0	3	0	0	0	0	0	0	0
AM Out	14	0	1	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	1	0	0	0	0	0	0	0
PM Out	55	0	3	0	0	0	0	0	0	0	0	0	0

Zone #	7	Prologis (Tamarind @ Walnut) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	97	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	25	0	0	0	0	0	0	0	0	0	0	0	0
PM In	33	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	99	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	8	Renaissance/Palmetto Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	50	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	12	0	0	0	0	0	0	0	0	0	0	0	0
PM In	17	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	50	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Renaissance/Palmetto Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	88	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	23	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	88	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	Prologis (Locust @ Stonehurst) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			40%									
AM Out										40%		
PM In	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	67	0	0	27	0	0	0	0	0	0	0	0	0
AM Out	18	0	0	0	0	0	0	0	0	0	7	0	0
PM In	23	0	0	9	0	0	0	0	0	0	0	0	0
PM Out	68	0	0	0	0	0	0	0	0	0	27	0	0

Zone #	11	Prologis (Locust @ Stonehurst) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			50%									
AM Out										50%		
PM In	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	120	0	0	60	0	0	0	0	0	0	0	0	0
AM Out	32	0	0	0	0	0	0	0	0	0	16	0	0
PM In	41	0	0	21	0	0	0	0	0	0	0	0	0
PM Out	123	0	0	0	0	0	0	0	0	0	62	0	0

Zone #	12	Morin Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	28	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	8	0	0	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	13	Morin Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%							
AM Out		5%										
PM In	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	49	0	0	0	0	2	0	0	0	0	0	0	0
AM Out	14	0	1	0	0	0	0	0	0	0	0	0	0
PM In	16	0	0	0	0	1	0	0	0	0	0	0	0
PM Out	49	0	2	0	0	0	0	0	0	0	0	0	0

Zone #	20	Sater Bros - Comm Dvlpmnt (Alder @ Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%							
AM Out		5%										
PM In	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	213	0	0	0	0	11	0	0	0	0	0	0	0
AM Out	192	0	10	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	9	0	0	0	0	0	0	0
PM Out	171	0	9	0	0	0	0	0	0	0	0	0	0

ATTENTION: ENTER ONLY IN BLUE CELLS - EVERYTHING ELSE CALCULATES

Int. #:	1	Alder and 210 WB
	2	

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	87	0	0	17	0	0	0	0	158	0	0
AM Out		36	12	0	0	3	22	0	0	0	0	0	0
AM Tot		36	99	0	0	20	22	0	0	0	158	0	0
PM In		0	30	0	0	11	0	0	0	0	73	0	0
PM Out		44	14	0	0	10	80	0	0	0	0	0	0
PM Tot		44	44	0	0	21	80	0	0	0	73	0	0

Zone #	3	Hotel (SWC of Linden at Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					1%							
AM Out						2%						
PM In	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	52	0	0	0	0	1	0	0	0	0	0	0	0
AM Out	38	0	0	0	0	0	1	0	0	0	0	0	0
PM In	46	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	48	0	0	0	0	0	1	0	0	0	0	0	0

Zone #	6	Prologis (Tamarind @ Walnut) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%					15%		
AM Out	10%	5%										
PM In	0%	0%	0%	0%	5%	0%	0%	0%	0%	15%	0%	0%
PM Out	10%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	55	0	0	0	0	3	0	0	0	0	8	0	0
AM Out	14	1	1	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	1	0	0	0	0	3	0	0
PM Out	55	6	3	0	0	0	0	0	0	0	0	0	0

Zone #	7	Prologis (Tamarind @ Walnut) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										55%		
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	55%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	97	0	0	0	0	0	0	0	0	0	53	0	0
AM Out	25	0	0	0	0	0	0	0	0	0	0	0	0
PM In	33	0	0	0	0	0	0	0	0	0	18	0	0
PM Out	99	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	8	Renaissance/Palmetto Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										20%		
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	50	0	0	0	0	0	0	0	0	0	10	0	0
AM Out	12	0	0	0	0	0	0	0	0	0	0	0	0
PM In	17	0	0	0	0	0	0	0	0	0	3	0	0
PM Out	50	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Renaissance/Palmetto Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										50%		
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	88	0	0	0	0	0	0	0	0	0	44	0	0
AM Out	23	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	15	0	0
PM Out	88	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	Prologis (Locust @ Stonehurst) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		40%										
AM Out					15%	25%						
PM In	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	15%	25%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	67	0	27	0	0	0	0	0	0	0	0	0	0
AM Out	18	0	0	0	0	3	5	0	0	0	0	0	0
PM In	23	0	9	0	0	0	0	0	0	0	0	0	0
PM Out	68	0	0	0	0	10	17	0	0	0	0	0	0

Zone #	11	Prologis (Locust @ Stonehurst) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		50%										
AM Out						50%						
PM In	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	120	0	60	0	0	0	0	0	0	0	0	0	0
AM Out	32	0	0	0	0	0	16	0	0	0	0	0	0
PM In	41	0	21	0	0	0	0	0	0	0	0	0	0
PM Out	123	0	0	0	0	0	62	0	0	0	0	0	0

Zone #	12	Morin Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	15%											
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	28	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	8	1	0	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	29	4	0	0	0	0	0	0	0	0	0	0	0

Zone #	13	Morin Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%					15%		
AM Out	10%	5%										
PM In	0%	0%	0%	0%	5%	0%	0%	0%	0%	15%	0%	0%
PM Out	10%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	49	0	0	0	0	2	0	0	0	0	7	0	0
AM Out	14	1	1	0	0	0	0	0	0	0	0	0	0
PM In	16	0	0	0	0	1	0	0	0	0	2	0	0
PM Out	49	5	2	0	0	0	0	0	0	0	0	0	0

Zone #	20	Sater Bros - Comm Dvlpmnt (Alder @ Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%					17%		
AM Out	17%	5%										
PM In	0%	0%	0%	0%	5%	0%	0%	0%	0%	17%	0%	0%
PM Out	17%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	213	0	0	0	0	11	0	0	0	0	36	0	0
AM Out	192	33	10	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	9	0	0	0	0	32	0	0
PM Out	171	29	9	0	0	0	0	0	0	0	0	0	0

ATTENTION: ENTER ONLY IN BLUE CELLS - EVERYTHING ELSE CALCULATES

Int. #:	2	Alder and 210 EB
	3	

Zone #	3	Hotel (SWC of Linden at Renaissance)

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	10	0	0	199	0	77	0	46	0	0	0
AM Out		0	47	72	0	3	0	0	0	0	0	0	0
AM Tot		0	57	72	0	202	0	77	0	46	0	0	0
PM In		0	3	0	0	92	0	27	0	36	0	0	0
PM Out		0	55	176	0	10	0	0	0	0	0	0	0
PM Tot		0	58	176	0	102	0	27	0	36	0	0	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					1%				2%			
AM Out												
PM In	0%	0%	0%	0%	1%	0%	0%	0%	2%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	52	0	0	0	0	1	0	0	0	1	0	0	0
AM Out	38	0	0	0	0	0	0	0	0	0	0	0	0
PM In	46	0	0	0	0	0	0	0	0	1	0	0	0
PM Out	48	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	6	Prologis (Tamarind @ Walnut) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					20%				10%			
AM Out		20%	15%									
PM In	0%	0%	0%	0%	20%	0%	0%	0%	10%	0%	0%	0%
PM Out	0%	20%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	55	0	0	0	0	11	0	0	0	6	0	0	0
AM Out	14	0	3	2	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	4	0	0	0	2	0	0	0
PM Out	55	0	11	8	0	0	0	0	0	0	0	0	0

Zone #	7	Prologis (Tamarind @ Walnut) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					55%							
AM Out			55%									
PM In	0%	0%	0%	0%	55%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	55%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	97	0	0	0	0	53	0	0	0	0	0	0	0
AM Out	25	0	0	14	0	0	0	0	0	0	0	0	0
PM In	33	0	0	0	0	18	0	0	0	0	0	0	0
PM Out	99	0	0	54	0	0	0	0	0	0	0	0	0

Zone #	8	Renaissance/Palmetto Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					20%							
AM Out			20%									
PM In	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	50	0	0	0	0	10	0	0	0	0	0	0	0
AM Out	12	0	0	2	0	0	0	0	0	0	0	0	0
PM In	17	0	0	0	0	3	0	0	0	0	0	0	0
PM Out	50	0	0	10	0	0	0	0	0	0	0	0	0

Zone #	9	Renaissance/Palmetto Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					50%							
AM Out			50%									
PM In	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	88	0	0	0	0	44	0	0	0	0	0	0	0
AM Out	23	0	0	12	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	15	0	0	0	0	0	0	0
PM Out	88	0	0	44	0	0	0	0	0	0	0	0	0

Zone #	10	Prologis (Locust @ Stonehurst) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		15%					25%					
AM Out					15%							
PM In	0%	15%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	67	0	10	0	0	0	0	17	0	0	0	0	0
AM Out	18	0	0	0	0	3	0	0	0	0	0	0	0
PM In	23	0	3	0	0	0	0	6	0	0	0	0	0
PM Out	68	0	0	0	0	10	0	0	0	0	0	0	0

Zone #	11	Prologis (Locust @ Stonehurst) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In							50%					
AM Out												
PM In	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	120	0	0	0	0	0	0	60	0	0	0	0	0
AM Out	32	0	0	0	0	0	0	0	0	0	0	0	0
PM In	41	0	0	0	0	0	0	21	0	0	0	0	0
PM Out	123	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	12	Morin Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					20%				10%			
AM Out		20%	15%									
PM In	0%	0%	0%	0%	20%	0%	0%	0%	10%	0%	0%	0%
PM Out	0%	20%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	28	0	0	0	0	6	0	0	0	3	0	0	0
AM Out	8	0	2	1	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	2	0	0	0	1	0	0	0
PM Out	29	0	6	4	0	0	0	0	0	0	0	0	0

Zone #	13	Morin Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					55%							
AM Out			55%									
PM In	0%	0%	0%	0%	55%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	55%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	49	0	0	0	0	27	0	0	0	0	0	0	0
AM Out	14	0	0	8	0	0	0	0	0	0	0	0	0
PM In	16	0	0	0	0	9	0	0	0	0	0	0	0
PM Out	49	0	0	27	0	0	0	0	0	0	0	0	0

Zone #	20	Sater Bros - Comm Dvlpmnt (Alder @ Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					22%				17%			
AM Out		22%	17%									
PM In	0%	0%	0%	0%	22%	0%	0%	0%	17%	0%	0%	0%
PM Out	0%	22%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	213	0	0	0	0	47	0	0	0	36	0	0	0
AM Out	192	0	42	33	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	41	0	0	0	32	0	0	0
PM Out	171	0	38	29	0	0	0	0	0	0	0	0	0

ATTENTION: ENTER ONLY IN BLUE CELLS - EVERYTHING ELSE CALCULATES

Int. #:	19	Locust at Casmalia
	5	

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	0	0	0	1	0	0	0	1	0	11	0
AM Out		0	0	0	0	0	0	0	10	0	4	2	1
AM Tot		0	0	0	0	1	0	0	10	1	4	13	1
PM In		0	0	0	0	1	0	0	0	0	0	9	0
PM Out		0	0	0	0	0	0	4	9	0	5	2	1
PM Tot		0	0	0	0	1	0	4	9	0	5	11	1

Zone #	3	Hotel (SWC of Linden at Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					2%				1%			
AM Out										10%	4%	2%
PM In	0%	0%	0%	0%	2%	0%	0%	0%	1%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	4%	2%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	52	0	0	0	0	1	0	0	0	1	0	0	0
AM Out	38	0	0	0	0	0	0	0	0	0	4	2	1
PM In	46	0	0	0	0	1	0	0	0	0	0	0	0
PM Out	48	0	0	0	0	0	0	0	0	0	5	2	1

Zone #	6	Prologis (Tamarind @ Walnut) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	55	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	55	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	7	Prologis (Tamarind @ Walnut) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	97	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	25	0	0	0	0	0	0	0	0	0	0	0	0
PM In	33	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	99	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	8	Renaissance/Palmetto Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	50	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	12	0	0	0	0	0	0	0	0	0	0	0	0
PM In	17	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	50	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Renaissance/Palmetto Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	88	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	23	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	88	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	Prologis (Locust @ Stonehurst) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	67	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	18	0	0	0	0	0	0	0	0	0	0	0	0
PM In	23	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	68	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	11	Prologis (Locust @ Stonehurst) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	120	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	32	0	0	0	0	0	0	0	0	0	0	0	0
PM In	41	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	123	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	12	Morin Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	28	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	8	0	0	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	0	0	0	4	0	0	0	0	0

Zone #	13	Morin Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	49	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	0	0	0
PM In	16	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	49	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	Sater Bros - Comm Dvlpmnt (Alder @ Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In											5%	
AM Out	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	213	0	0	0	0	0	0	0	0	0	0	11	0
AM Out	192	0	0	0	0	0	0	0	10	0	0	0	0
PM In	188	0	0	0	0	0	0	0	0	0	0	9	0
PM Out	171	0	0	0	0	0	0	0	9	0	0	0	0

ATTENTION: ENTER ONLY IN BLUE CELLS - EVERYTHING ELSE CALCULATES

Int. #:	21	Maple and Bohnert
	6	

Zone #	3	Hotel (SWC of Linden at Renaissance)

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	0	0	0	0	0	0	0	0	0	0	0
AM Out		0	0	0	0	0	0	0	0	0	0	0	0
AM Tot		0	0	0	0	0	0	0	0	0	0	0	0
PM In		0	0	0	0	0	0	0	0	0	0	0	0
PM Out		0	0	0	0	0	0	0	0	0	0	0	0
PM Tot		0	0	0	0	0	0	0	0	0	0	0	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	52	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	38	0	0	0	0	0	0	0	0	0	0	0	0
PM In	46	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	48	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	6	Prologis (Tamarind @ Walnut) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	55	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	55	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	7	Prologis (Tamarind @ Walnut) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	97	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	25	0	0	0	0	0	0	0	0	0	0	0	0
PM In	33	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	99	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	8	Renaissance/Palmetto Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	50	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	12	0	0	0	0	0	0	0	0	0	0	0	0
PM In	17	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	50	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Renaissance/Palmetto Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	88	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	23	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	88	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	Prologis (Locust @ Stonehurst) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	67	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	18	0	0	0	0	0	0	0	0	0	0	0	0
PM In	23	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	68	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	11	Prologis (Locust @ Stonehurst) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	120	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	32	0	0	0	0	0	0	0	0	0	0	0	0
PM In	41	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	123	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	12	Morin Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	28	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	8	0	0	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	13	Morin Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	49	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	0	0	0
PM In	16	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	49	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	Sater Bros - Comm Dvlpmnt (Alder @ Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	213	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	192	0	0	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	171	0	0	0	0	0	0	0	0	0	0	0	0

ATTENTION: ENTER ONLY IN BLUE CELLS - EVERYTHING ELSE CALCULATES

Int. #:	13	Ayala and Casmalia
	7	

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	0	0	0	3	0	0	0	0	0	11	0
AM Out		0	2	0	0	0	0	0	10	0	0	0	0
AM Tot		0	2	0	0	3	0	0	10	0	0	11	0
PM In		0	0	0	0	2	0	0	0	0	0	9	0
PM Out		0	2	0	0	0	0	0	9	0	0	0	0
PM Tot		0	2	0	0	2	0	0	9	0	0	9	0

Zone #	3	Hotel (SWC of Linden at Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%							
AM Out	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	52	0	0	0	0	3	0	0	0	0	0	0	0
AM Out	38	0	2	0	0	0	0	0	0	0	0	0	0
PM In	46	0	0	0	0	2	0	0	0	0	0	0	0
PM Out	48	0	2	0	0	0	0	0	0	0	0	0	0

Zone #	6	Prologis (Tamarind @ Walnut) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	55	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	55	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	7	Prologis (Tamarind @ Walnut) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	97	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	25	0	0	0	0	0	0	0	0	0	0	0	0
PM In	33	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	99	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	8	Renaissance/Palmetto Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	50	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	12	0	0	0	0	0	0	0	0	0	0	0	0
PM In	17	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	50	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Renaissance/Palmetto Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	88	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	23	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	88	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	Prologis (Locust @ Stonehurst) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	67	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	18	0	0	0	0	0	0	0	0	0	0	0	0
PM In	23	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	68	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	11	Prologis (Locust @ Stonehurst) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	120	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	32	0	0	0	0	0	0	0	0	0	0	0	0
PM In	41	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	123	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	12	Morin Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	28	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	8	0	0	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	13	Morin Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	49	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	0	0	0
PM In	16	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	49	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	Sater Bros - Comm Dvlpmnt (Alder @ Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In											5%	
AM Out	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	213	0	0	0	0	0	0	0	0	0	0	11	0
AM Out	192	0	0	0	0	0	0	0	10	0	0	0	0
PM In	188	0	0	0	0	0	0	0	0	0	0	9	0
PM Out	171	0	0	0	0	0	0	0	9	0	0	0	0

ATTENTION: ENTER ONLY IN BLUE CELLS - EVERYTHING ELSE CALCULATES

Int. #:	14	Ayala and 210 WB
	8	

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	3	0	0	3	0	0	0	0	4	0	61
AM Out		2	2	0	0	18	0	0	0	0	0	0	0
AM Tot		2	5	0	0	21	0	0	0	0	4	0	61
PM In		0	1	0	0	2	0	0	0	0	4	0	21
PM Out		2	2	0	0	66	0	0	0	0	0	0	0
PM Tot		2	3	0	0	68	0	0	0	0	4	0	21

Zone #	3	Hotel (SWC of Linden at Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%					8%		
AM Out	4%	5%										
PM In	0%	0%	0%	0%	5%	0%	0%	0%	0%	8%	0%	0%
PM Out	4%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	52	0	0	0	0	3	0	0	0	0	4	0	0
AM Out	38	2	2	0	0	0	0	0	0	0	0	0	0
PM In	46	0	0	0	0	2	0	0	0	0	4	0	0
PM Out	48	2	2	0	0	0	0	0	0	0	0	0	0

Zone #	6	Prologis (Tamarind @ Walnut) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	55	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	55	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	7	Prologis (Tamarind @ Walnut) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	97	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	25	0	0	0	0	0	0	0	0	0	0	0	0
PM In	33	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	99	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	8	Renaissance/Palmetto Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	50	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	12	0	0	0	0	0	0	0	0	0	0	0	0
PM In	17	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	50	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Renaissance/Palmetto Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	88	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	23	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	88	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	Prologis (Locust @ Stonehurst) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		5%										20%
AM Out					25%							
PM In	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%
PM Out	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	67	0	3	0	0	0	0	0	0	0	0	0	13
AM Out	18	0	0	0	0	5	0	0	0	0	0	0	0
PM In	23	0	1	0	0	0	0	0	0	0	0	0	5
PM Out	68	0	0	0	0	17	0	0	0	0	0	0	0

Zone #	11	Prologis (Locust @ Stonehurst) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												40%
AM Out					40%							
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%
PM Out	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	120	0	0	0	0	0	0	0	0	0	0	0	48
AM Out	32	0	0	0	0	13	0	0	0	0	0	0	0
PM In	41	0	0	0	0	0	0	0	0	0	0	0	16
PM Out	123	0	0	0	0	49	0	0	0	0	0	0	0

Zone #	12	Morin Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	28	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	8	0	0	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	13	Morin Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	49	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	0	0	0
PM In	16	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	49	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	Sater Bros - Comm Dvlpmnt (Alder @ Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	213	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	192	0	0	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	171	0	0	0	0	0	0	0	0	0	0	0	0

ATTENTION: ENTER ONLY IN BLUE CELLS - EVERYTHING ELSE CALCULATES

Int. #:	15	Ayala and 210 EB
	9	

Zone #	3	Hotel (SWC of Linden at Renaissance)

TOTAL CUMULATIVE PROJECTS TRAFFIC													
Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	3	0	0	7	0	0	0	2	0	0	0
AM Out		0	3	3	17	1	0	0	0	0	0	0	0
AM Tot		0	6	3	17	8	0	0	0	2	0	0	0
PM In		0	1	0	0	6	0	0	0	2	0	0	0
PM Out		0	4	4	63	3	0	0	0	0	0	0	0
PM Tot		0	5	4	63	9	0	0	0	2	0	0	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					13%				4%			
AM Out		9%	8%									
PM In	0%	0%	0%	0%	13%	0%	0%	0%	4%	0%	0%	0%
PM Out	0%	9%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	52	0	0	0	0	7	0	0	0	2	0	0	0
AM Out	38	0	3	3	0	0	0	0	0	0	0	0	0
PM In	46	0	0	0	0	6	0	0	0	2	0	0	0
PM Out	48	0	4	4	0	0	0	0	0	0	0	0	0

Zone #	6	Prologis (Tamarind @ Walnut) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	55	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	55	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	7	Prologis (Tamarind @ Walnut) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	97	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	25	0	0	0	0	0	0	0	0	0	0	0	0
PM In	33	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	99	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	8	Renaissance/Palmetto Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	50	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	12	0	0	0	0	0	0	0	0	0	0	0	0
PM In	17	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	50	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Renaissance/Palmetto Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	88	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	23	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	88	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	Prologis (Locust @ Stonehurst) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		5%										
AM Out				20%	5%							
PM In	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	20%	5%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	67	0	3	0	0	0	0	0	0	0	0	0	0
AM Out	18	0	0	0	4	1	0	0	0	0	0	0	0
PM In	23	0	1	0	0	0	0	0	0	0	0	0	0
PM Out	68	0	0	0	14	3	0	0	0	0	0	0	0

Zone #	11	Prologis (Locust @ Stonehurst) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out				40%								
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	120	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	32	0	0	0	13	0	0	0	0	0	0	0	0
PM In	41	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	123	0	0	0	49	0	0	0	0	0	0	0	0

Zone #	12	Morin Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	28	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	8	0	0	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	13	Morin Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	49	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	0	0	0
PM In	16	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	49	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	Sater Bros - Comm Dvlpmnt (Alder @ Renaissance)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	213	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	192	0	0	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	171	0	0	0	0	0	0	0	0	0	0	0	0

CP 10 Lytle Creek

CUMULATIVE PROJECTS - HAND ENTERED FROM TRAFFIC STUDIES

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB		68			44	17				1		
3	Alder and 210 EB		46	2	9	37		22					
7	Ayala and Casmalia		84			160							
8	Ayala and 210 WB		48			85	75						36
9	Ayala and 210 EB		16		67	18		32					
5	Locust at Casmalia												
1	Alder and Casmalia												
6	Maple and Bohnert												

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB		83			69	33				3		34
3	Alder and 210 EB		64	2		72		19					
7	Ayala and Casmalia		105			100							
8	Ayala and 210 WB		105			43	57						71
9	Ayala and 210 EB		22		24	19		83					
5	Locust at Casmalia												
1	Alder and Casmalia												
6	Maple and Bohnert												

CP 12 B&B Plastics - LLG - Others 9

CUMULATIVE PROJECTS - HAND ENTERED FROM TRAFFIC STUDIES

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB		35			1	9						
3	Alder and 210 EB		2			1		33					
7	Ayala and Casmalia	27					1			7			
8	Ayala and 210 WB		2			7							25
9	Ayala and 210 EB		2		7								0
5	Locust at Casmalia				7		3	36				7	10
1	Alder and Casmalia												
6	Maple and Bohnert												

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB		12			2	33						
3	Alder and 210 EB		1			2		11					
7	Ayala and Casmalia	9						1		26			
8	Ayala and 210 WB					26							8
9	Ayala and 210 EB				25	2							
5	Locust at Casmalia				27		11	13				25	3
1	Alder and Casmalia												
6	Maple and Bohnert												

CP 19 Renaissance Marketplace (100%) 100%

CUMULATIVE PROJECTS - HAND ENTERED FROM TRAFFIC STUDIES

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB	3	2			3							
3	Alder and 210 EB		5			3				6			
7	Ayala and Casmalia		9			15							
8	Ayala and 210 WB	7	9			15					24		
9	Ayala and 210 EB		15	14		40				13			
5	Locust at Casmalia	2	3			6				3			
1	Alder and Casmalia												
6	Maple and Bohnert												

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB	20	10			8							
3	Alder and 210 EB		31			8				15			
7	Ayala and Casmalia		51			39							
8	Ayala and 210 WB	41	51			39					62		
9	Ayala and 210 EB		92	82		101				31			
5	Locust at Casmalia	10	20			15				8			
1	Alder and Casmalia												
6	Maple and Bohnert												

CP 21iv Logistics IV

CUMULATIVE PROJECTS - HAND ENTERED FROM TRAFFIC STUDIES

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB	16									61		
3	Alder and 210 EB		16	14		61				62			
7	Ayala and Casmalia												
8	Ayala and 210 WB										4		
9	Ayala and 210 EB			2		4							
5	Locust at Casmalia		2			6							
1	Alder and Casmalia												
6	Maple and Bohnert												

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB	62									21		
3	Alder and 210 EB		62	61		21				21			
7	Ayala and Casmalia												
8	Ayala and 210 WB										1		
9	Ayala and 210 EB			3		1							
5	Locust at Casmalia		6			2							
1	Alder and Casmalia												
6	Maple and Bohnert												

CP 24 PA 108 B6

CUMULATIVE PROJECTS - HAND ENTERED FROM TRAFFIC STUDIES

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB	87											
3	Alder and 210 EB		87							26			
7	Ayala and Casmalia	16											
8	Ayala and 210 WB										12		16
9	Ayala and 210 EB			112		12							
5	Locust at Casmalia				6								51
1	Alder and Casmalia												
6	Maple and Bohnert												

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB	14											
3	Alder and 210 EB		14							94			
7	Ayala and Casmalia	12											
8	Ayala and 210 WB										102		12
9	Ayala and 210 EB			15		102							
5	Locust at Casmalia				51								1
1	Alder and Casmalia												
6	Maple and Bohnert												

CP 25 Ayala Shopping Center

CUMULATIVE PROJECTS - HAND ENTERED FROM TRAFFIC STUDIES

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB		4			5							
3	Alder and 210 EB		4			5							
7	Ayala and Casmalia		11			12							
8	Ayala and 210 WB	54	11			12					61		
9	Ayala and 210 EB		65	55		73				61			
5	Locust at Casmalia		4			5							
1	Alder and Casmalia												
6	Maple and Bohnert												

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB		4			4							
3	Alder and 210 EB		4			4							
7	Ayala and Casmalia		9			11							
8	Ayala and 210 WB	45	9			11					53		
9	Ayala and 210 EB		54	46		64				53			
5	Locust at Casmalia		4			4							
1	Alder and Casmalia												
6	Maple and Bohnert												

CP 26 PA 108 Bldg 4-B

CUMULATIVE PROJECTS - HAND ENTERED FROM TRAFFIC STUDIES

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB	16											
3	Alder and 210 EB		16							58			
7	Ayala and Casmalia												
8	Ayala and 210 WB										61		
9	Ayala and 210 EB			16		61							
5	Locust at Casmalia				3								1
1	Alder and Casmalia												
6	Maple and Bohnert												

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB	59											
3	Alder and 210 EB		59							20			
7	Ayala and Casmalia												
8	Ayala and 210 WB										21		
9	Ayala and 210 EB			62		21							
5	Locust at Casmalia				1								3
1	Alder and Casmalia												
6	Maple and Bohnert												

CP 28 Locust Vineyard Warehouse

CUMULATIVE PROJECTS - HAND ENTERED FROM TRAFFIC STUDIES

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB		19				5						2
3	Alder and 210 EB		1					18					
7	Ayala and Casmalia	16								6			
8	Ayala and 210 WB					6							16
9	Ayala and 210 EB				6								
5	Locust at Casmalia		3		6		5	22					16
1	Alder and Casmalia			21					1		5		
6	Maple and Bohnert											2	

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB		7			3	18						1
3	Alder and 210 EB				2	1		7					
7	Ayala and Casmalia	6								15			
8	Ayala and 210 WB					15							6
9	Ayala and 210 EB				15								
5	Locust at Casmalia		0		15	3	22	8					6
1	Alder and Casmalia			8							21		
6	Maple and Bohnert								2			1	

CP 30 Buidling 7, 8, 9

CUMULATIVE PROJECTS - HAND ENTERED FROM TRAFFIC STUDIES

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB	18	0			0	3				0	0	0
3	Alder and 210 EB		18	0	0	0		0	0	80			
7	Ayala and Casmalia	84	0	0	0	0	0	0	0	19	0	0	0
8	Ayala and 210 WB	0	0			19	0				0	0	84
9	Ayala and 210 EB		0	5	19	0		0	0	0			
5	Locust at Casmalia	0	1	3	0	4	0	0	0	0	14	3	0
1	Alder and Casmalia	0	0	0	0	0	0	0	0	0	3	0	0
6	Maple and Bohnert	0	0	0	0	0	0	0	0	0	0	0	0

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2	Alder and 210 WB	69	0			0	9				0	0	0
3	Alder and 210 EB		69	0	0	0		0	0	28			
7	Ayala and Casmalia	30	0	0	0	0	0	0	0	71	0	0	0
8	Ayala and 210 WB	0	0			71	0				0	0	30
9	Ayala and 210 EB		0	15	71	0		0	0	0			
5	Locust at Casmalia	0	3	12	0	2	0	0	0	0	5	9	1
1	Alder and Casmalia	0	0	0	0	0	0	0	0	0	9	0	0
6	Maple and Bohnert	0	0	0	0	0	0	0	0	0	0	0	0

Table 2

Project Trip Generation Summary

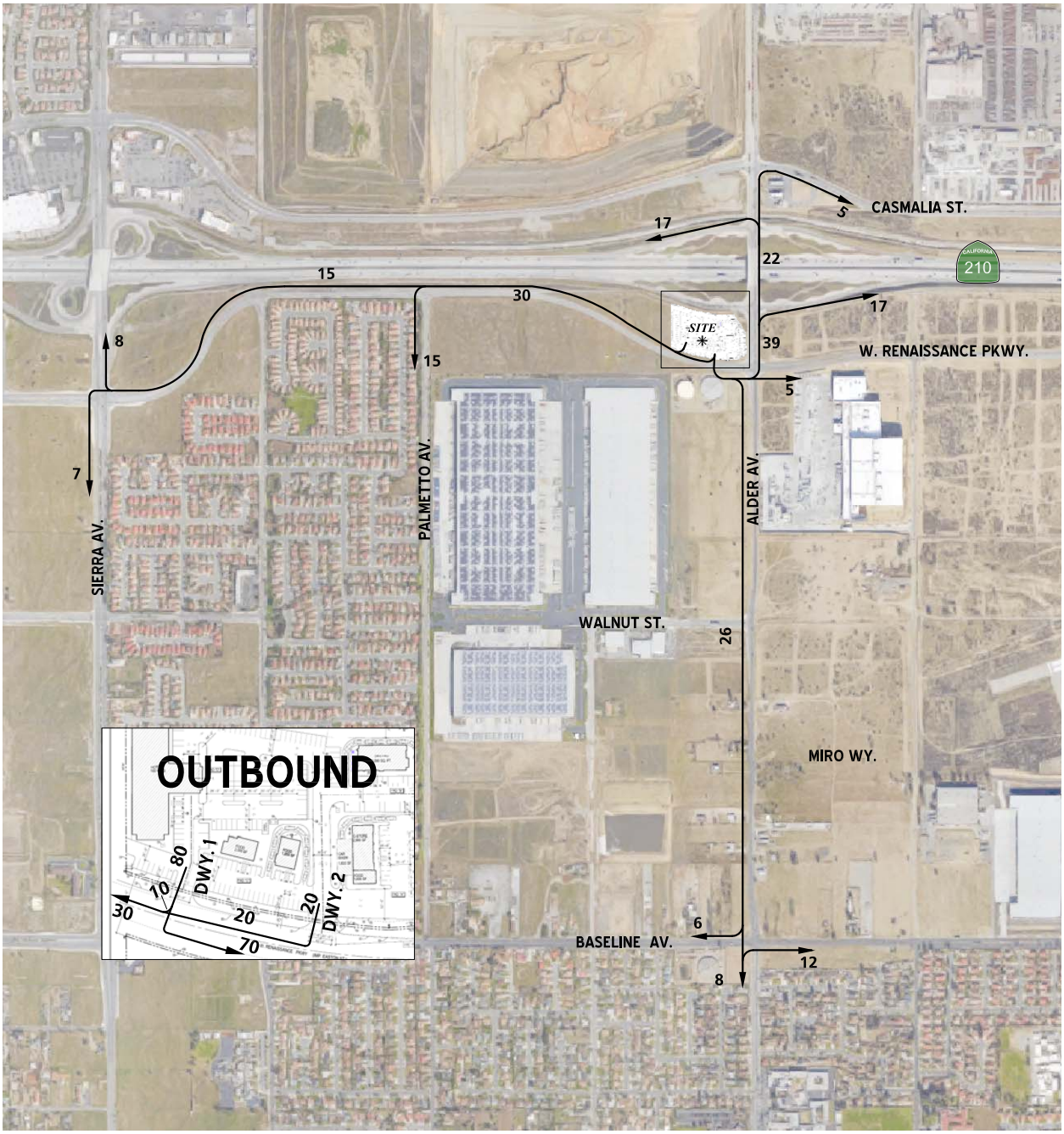
Land Use	Quantity	Units[1]	Weekday AM Peak Hour			Weekday PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Hotel	100	RM	31	22	53	31	29	60	817
Internal Capture[2]:			*-3*	*-2*	*-5*	*-3*	*-3*	*-6*	*-82*
Net External Trips:			**28**	**20**	**48**	**28**	**26**	**54**	**735**
High Turnover Sit-Down Restaurant	2.000	TSF	12	10	22	12	8	20	254
Internal Capture[2]:			*-1*	*-1*	*-2*	*-1*	*-1*	*-2*	*-25*
Pass-by Reduction (PM-25%)[3]:			*0*	*0*	*0*	*-2*	*-2*	*-4*	*-57*
Net External Trips:			**11**	**9**	**20**	**9**	**5**	**14**	**172**
Fast Food w/o Drive-Through	1.000	TSF	26	18	44	13	13	26	716
Internal Capture[2]:			*-3*	*-2*	*-5*	*-1*	*-1*	*-2*	*-72*
Pass-by Reduction(AM/PM-25%)[3]:			*-6*	*-4*	*-10*	*-3*	*-3*	*-6*	*-161*
Net External Trips:			**17**	**12**	**29**	**9**	**9**	**18**	**483**
Fast Food w/ Drive-Through	5.440	TSF	126	121	247	92	85	177	2,699
Internal Capture[2]:			*-4*	*-3*	*-7*	*-6*	*-6*	*-12*	*-66*
Pass-by Reduction(AM/PM-25%)[3]:			*-31*	*-30*	*-61*	*-20*	*-20*	*-40*	*-638*
Net External Trips:			**91**	**88**	**179**	**66**	**59**	**125**	**1,995**
Gas/Service Station w/ Food Mart and Car Wash	16	VFP	97	93	190	113	109	222	2,445
Internal Capture[2]:			*-10*	*-9*	*-19*	*-11*	*-11*	*-22*	*-245*
Pass-by Reduction (AM/PM-25%)[3]:			*-21*	*-21*	*-42*	*-26*	*-26*	*-52*	*-572*
Net External Trips:			**66**	**63**	**129**	**76**	**72**	**148**	**1,628**
TOTAL NET EXTERNAL TRIPS			**213**	**192**	**405**	**188**	**171**	**359**	**5,013**

[1] TSF = Thousand Square Feet; VFP = Vehicle Fueling Positions

[2] Internal capture calculated is the maximum allowable per City of Rialto traffic study guidelines (e.g., 10 percent).

[3] Pass-by reduction is the maximum allowable per City of Rialto traffic study guidelines (e.g., 25 percent).

EXHIBIT 3: PROJECT OUTBOUND TRIP DISTRIBUTION



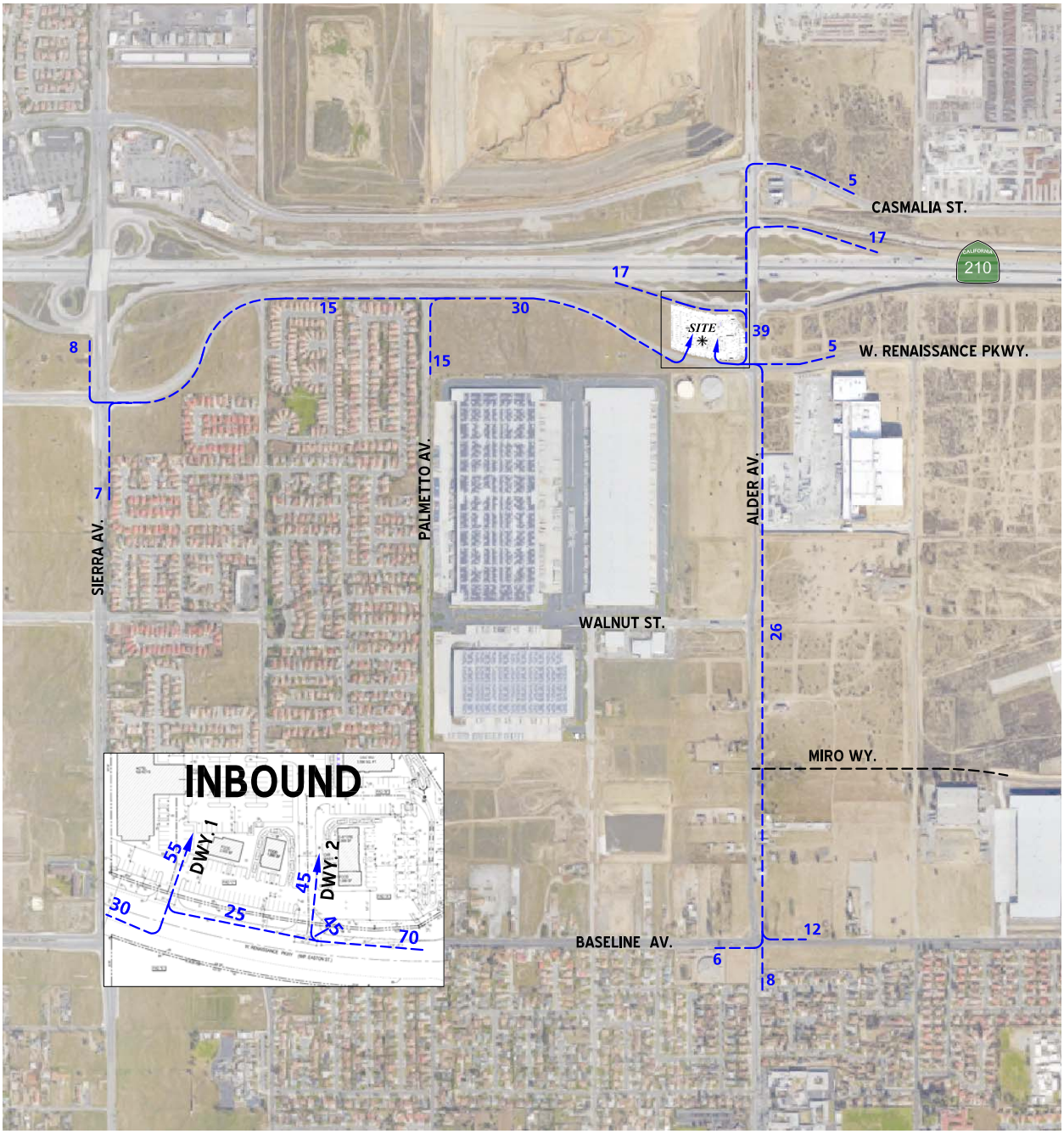
LEGEND:

10 = PERCENT TO/FROM PROJECT

= OUTBOUND

N

EXHIBIT 4: PROJECT INBOUND TRIP DISTRIBUTION

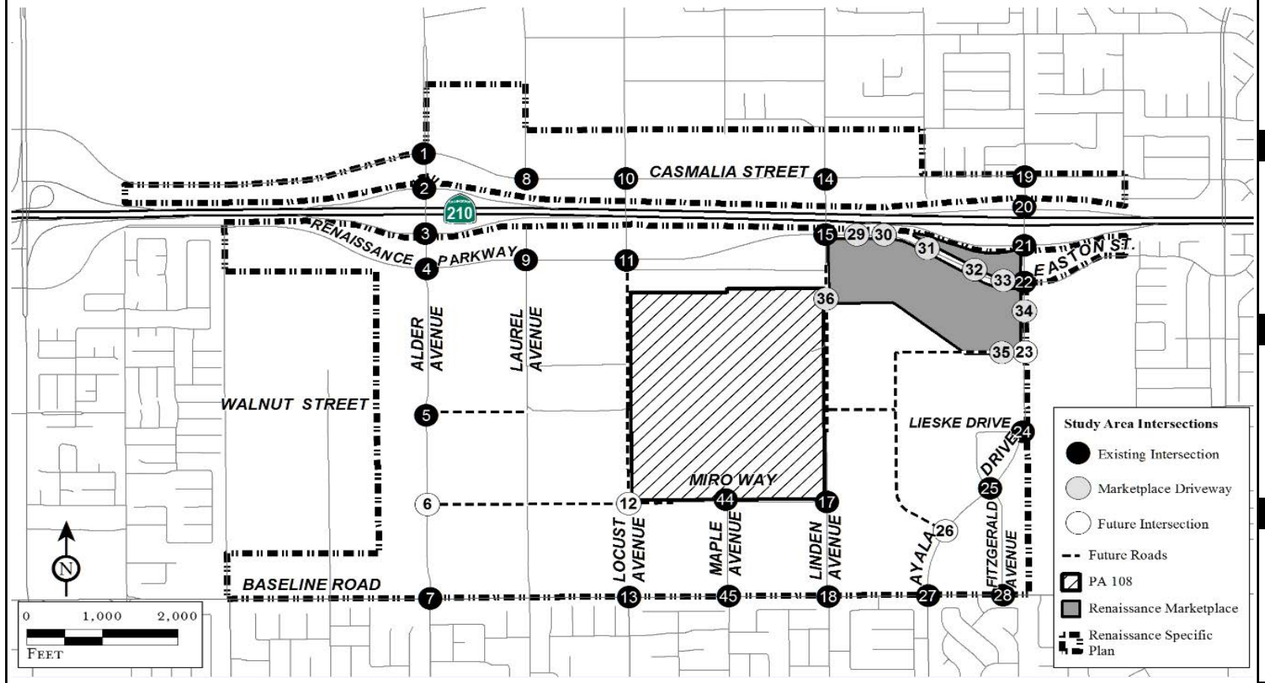


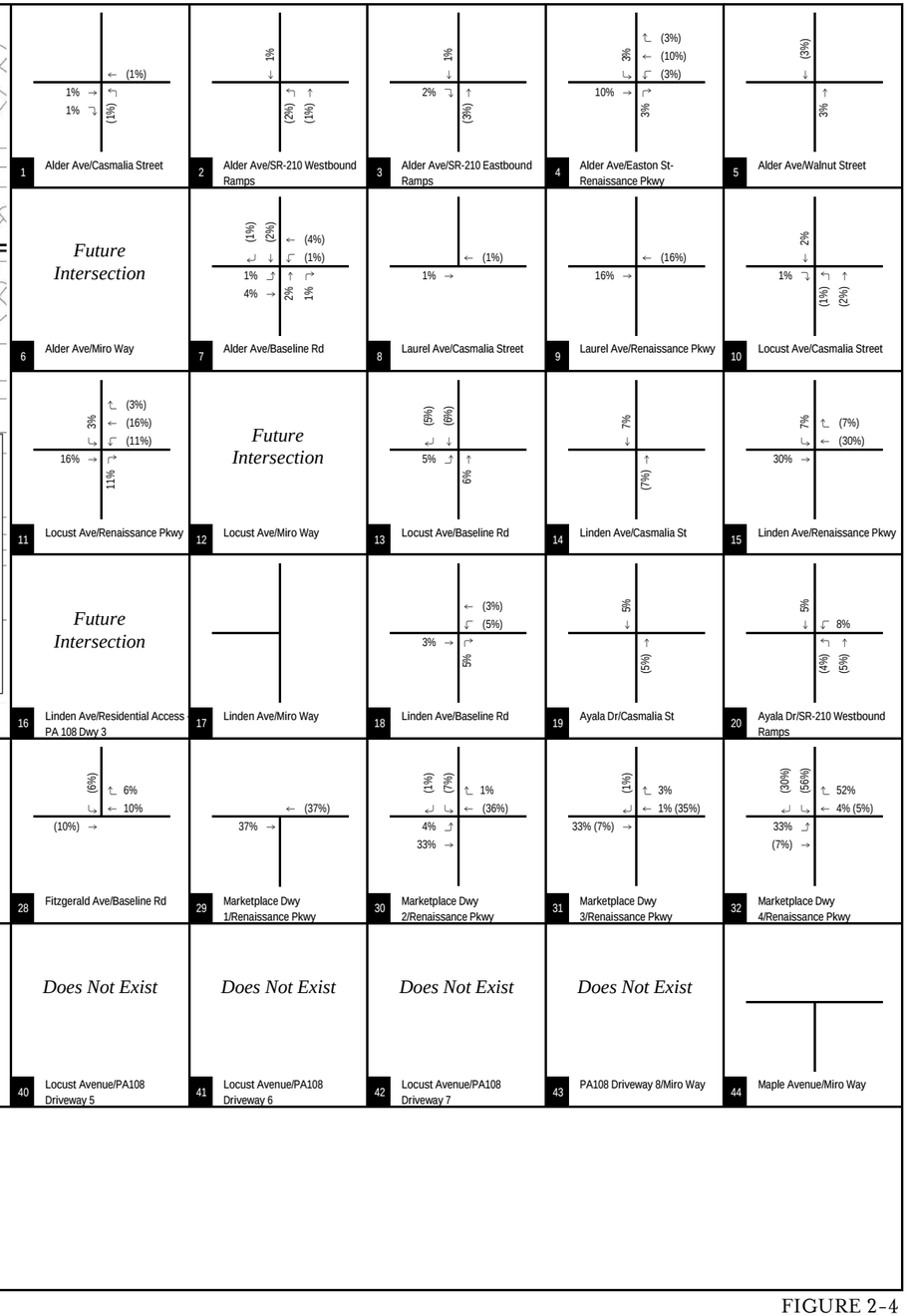
LEGEND:

10 = PERCENT TO/FROM PROJECT

= INBOUND

N





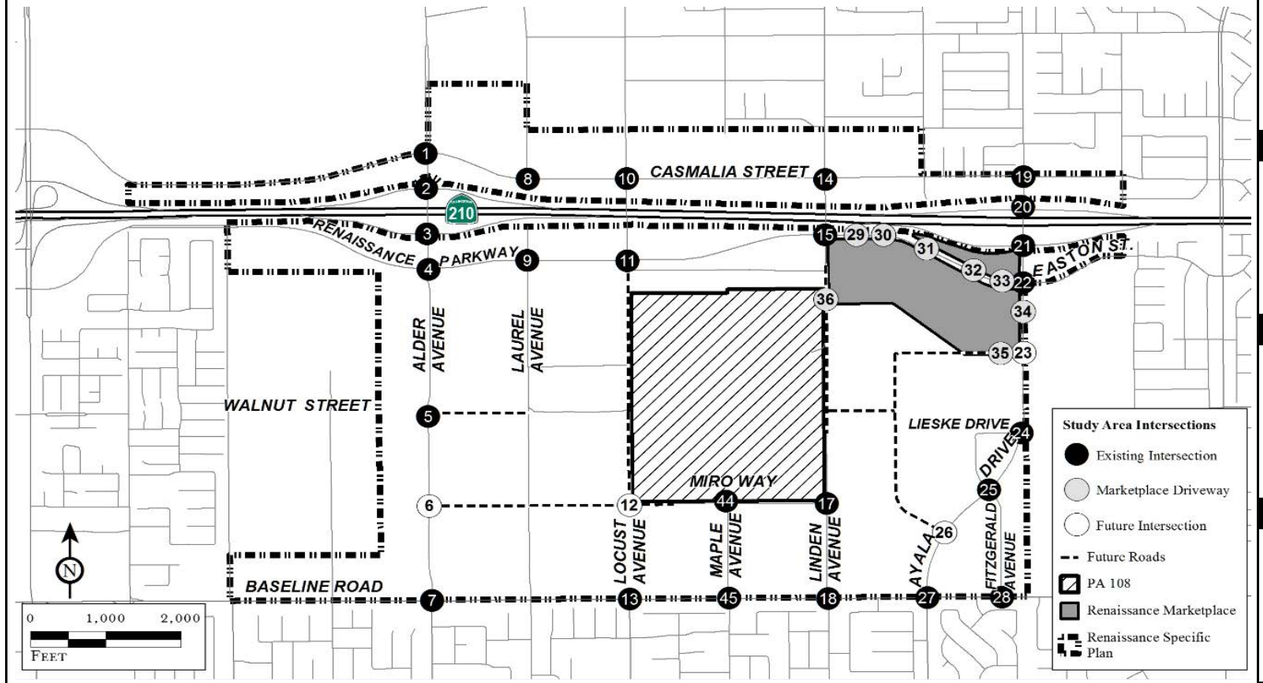
LSA

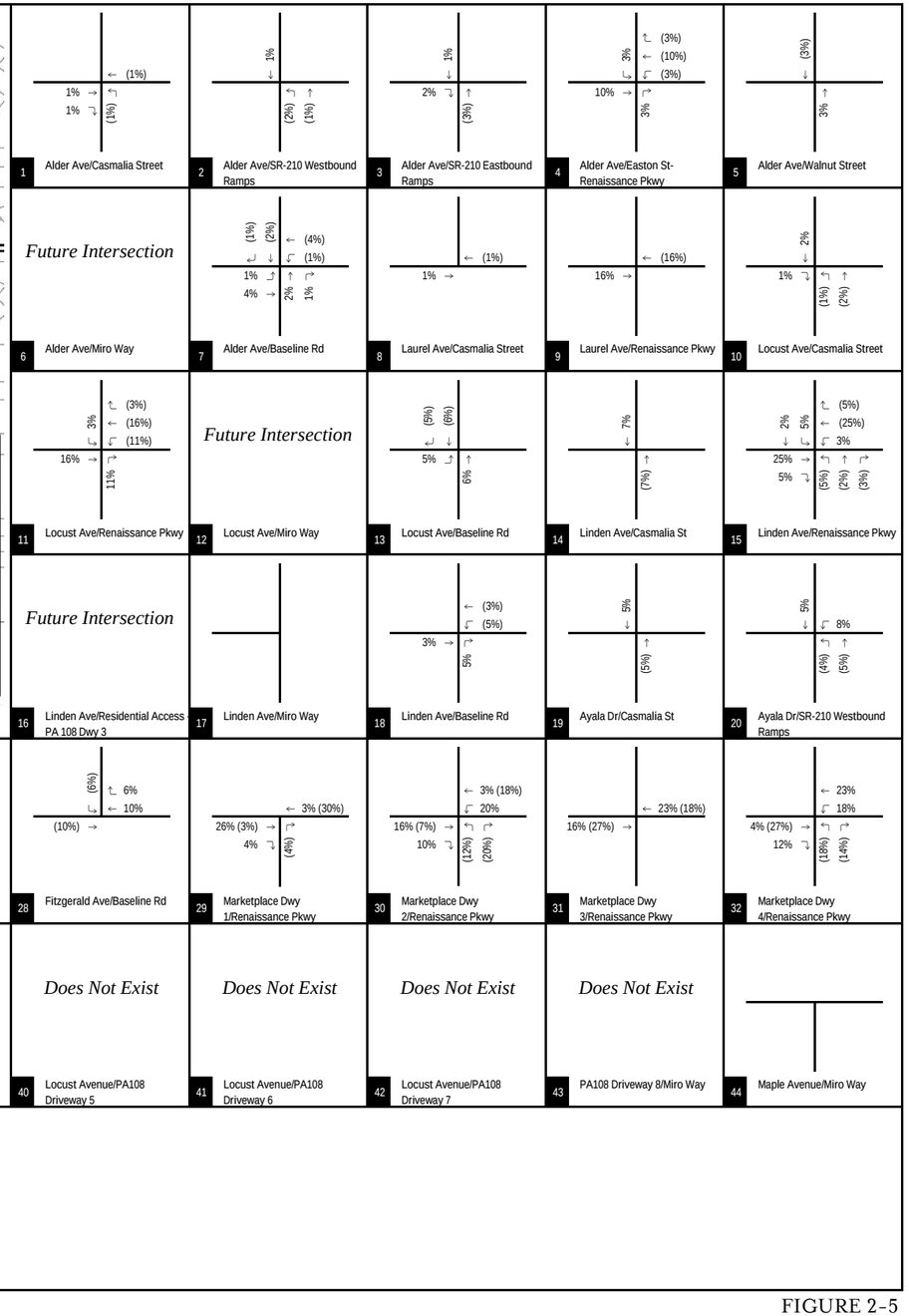
FIGURE 2-4

XX% (YY%) Inbound% (Outbound%) Trip Distribution

Rialto Renaissance Specific Plan Amendment
Traffic Impact Analysis
Marketplace: Trip Distribution (Northern Portion)

R:\LEW1307\2015_08\z84_MP_Dist_N 2_OY (10/9/2015)





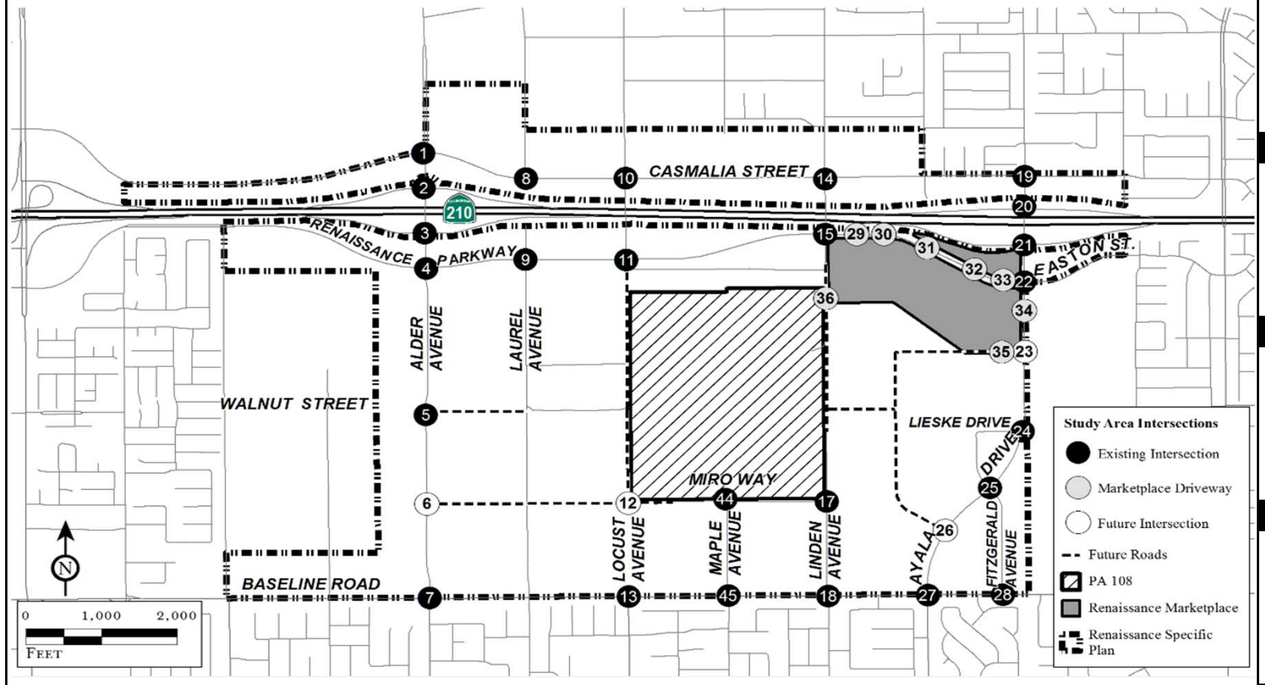
LSA

FIGURE 2-5

XX% (YY%) Inbound% (Outbound%) Trip Distribution

Rialto Renaissance Specific Plan Amendment
Traffic Impact Analysis
Marketplace: Trip Distribution (Southern Portion)

R:\LEW1307\2015_08\z84_MP_Dist_S 2_OY (10/9/2015)



1 Alder Ave/Casmalia Street

2 Alder Ave/SR-210 Westbound Ramps

3 Alder Ave/SR-210 Eastbound Ramps

4 Alder Ave/Easton St-Renaissance Pkwy

5 Alder Ave/Walnut Street

Futrue Intersection

6 Alder Ave/Miro Way

7 Alder Ave/Baseline Rd

8 Laurel Ave/Casmalia Street

9 Laurel Ave/Renaissance Pkwy

10 Locust Ave/Casmalia Street

11 Locust Ave/Renaissance Pkwy

Futrue Intersection

12 Locust Ave/Miro Way

13 Locust Ave/Baseline Rd

14 Linden Ave/Casmalia St

15 Linden Ave/Renaissance Pkwy

Futrue Intersection

16 Linden Ave/Residential Access - PA 108 Dwy 3

17 Linden Ave/Miro Way

18 Linden Ave/Baseline Rd

19 Ayala Dr/Casmalia St

20 Ayala Dr/SR-210 Westbound Ramps

21 Ayala Dr/SR-210 Eastbound Ramps

22 Ayala Dr/Renaissance Pkwy-Easton St

23 Ayala Dr/Proposed St (North)

24 Ayala Dr/Lieske Dr

25 Ayala Dr/Fitzgerald Ave

26 Ayala Dr/Proposed St (South)

27 Ayala Dr/Baseline Rd

28 Fitzgerald Ave/Baseline Rd

29 Marketplace Dwy 1/Renaissance Pkwy

30 Marketplace Dwy 2/Renaissance Pkwy

31 Marketplace Dwy 3/Renaissance Pkwy

32 Marketplace Dwy 4/Renaissance Pkwy

33 Marketplace Dwy 5/Renaissance Pkwy

34 Ayala Drive/Marketplace Dwy 6

35 Marketplace Dwy 7/Proposed St (North)

36 Linden Avenue/Marketplace Dwy 8

Does Not Exist

37 Linden Avenue/PA108 Driveway 1

Does Not Exist

38 Linden Avenue/PA108 Driveway 2

Does Not Exist

39 Locust Avenue/PA108 Driveway 4

Does Not Exist

40 Locust Avenue/PA108 Driveway 5

Does Not Exist

41 Locust Avenue/PA108 Driveway 6

Does Not Exist

42 Locust Avenue/PA108 Driveway 7

Does Not Exist

43 PA108 Driveway 8/Miro Way

44 Maple Avenue/Miro Way

45 Maple Avenue/Baseline Road

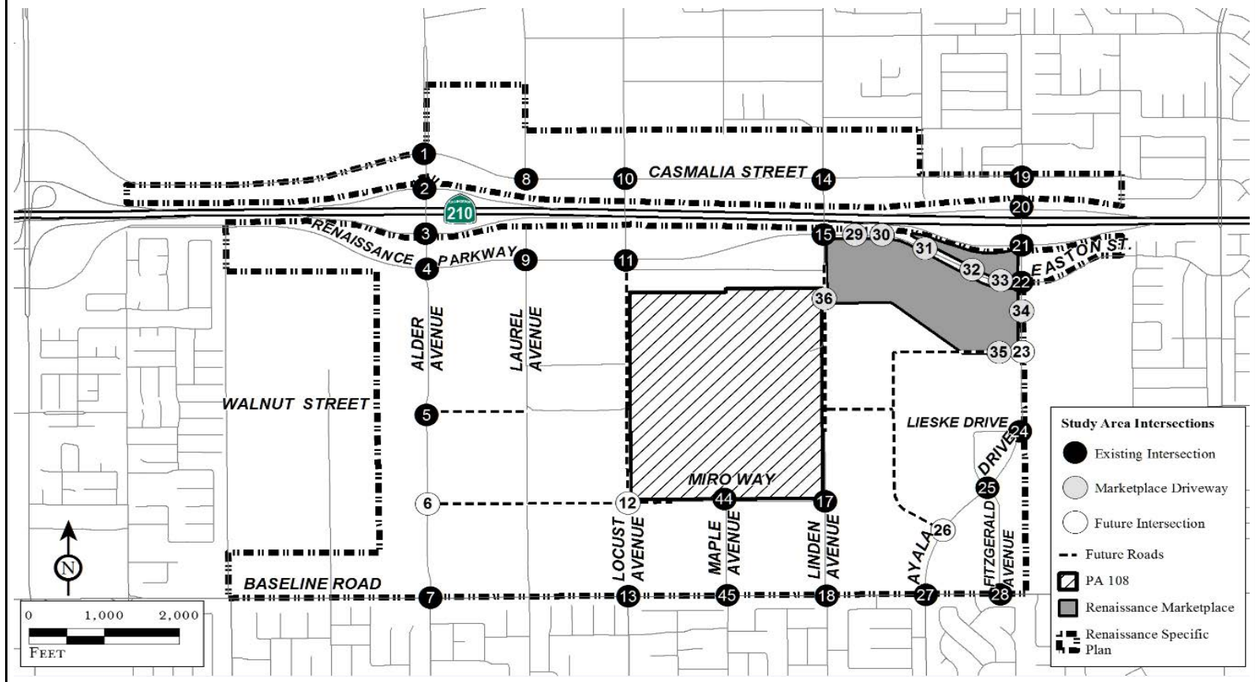
LSA

FIGURE 2-6

XX / YY AM / PM Peak Hour Trips

Rialto Renaissance Specific Plan Amendment
Traffic Impact Analysis
Marketplace: Pass-By Trips

R:\LEW1307\2015_08\z84_MP_Pass-by (10/9/2015)



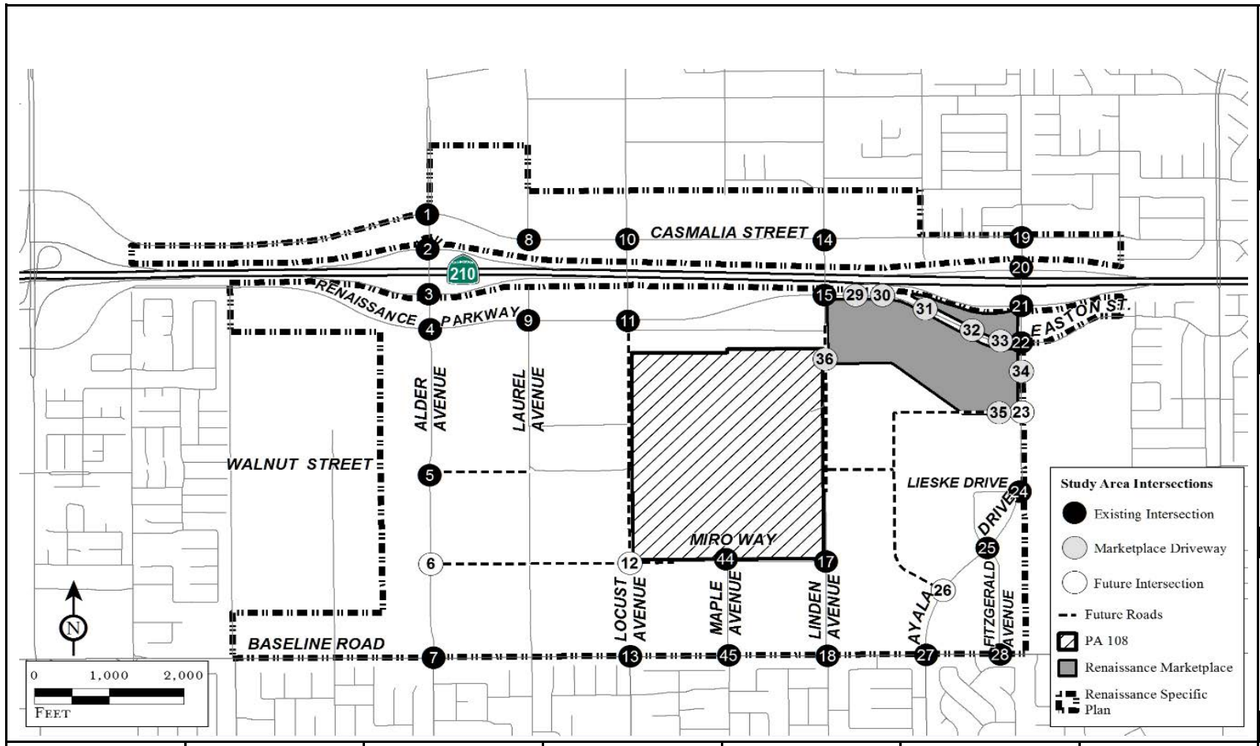
1 Alder Ave/Casmalia Street	2 Alder Ave/SR-210 Westbound Ramps	3 Alder Ave/SR-210 Eastbound Ramps 19 / 41 ↴ 5 / 10 ↷	4 Alder Ave/Easton St-Renaissance Pkwy ← -3 / -14 ↰ 22 / 55 ↱ 8 / 24 ↰ -3 / -14 → 3 / 14 ↷ 3 / 14	5 Alder Ave/Walnut Street
6 Alder Ave/Miro Way *Futrue Intersection*	7 Alder Ave/Baseline Rd	8 Laurel Ave/Casmalia Street	9 Laurel Ave/Renaissance Pkwy ← 12 / 37 26 / 68 →	10 Locust Ave/Casmalia Street
11 Locust Ave/Renaissance Pkwy 26 / 68 → ← 12 / 37	12 Locust Ave/Miro Way *Futrue Intersection*	13 Locust Ave/Baseline Rd	14 Linden Ave/Casmalia St	15 Linden Ave/Renaissance Pkwy ← 8 / 24 ↰ 2 / 7 21 / 50 → ↴ 3 / 13 ↷ 2 / 7 5 / 19 ↴
16 Linden Ave/Residential Access - PA 108 Dwy 3 *Futrue Intersection*	17 Linden Ave/Miro Way	18 Linden Ave/Baseline Rd	19 Ayala Dr/Casmalia St	20 Ayala Dr/SR-210 Westbound Ramps ↰ 54 / 117 54 / 117 ↴
21 Ayala Dr/SR-210 Eastbound Ramps 22 / 47 ↴ ← 54 / 117 54 / 117 → ↷ 36 / 78	22 Ayala Dr/Renaissance Pkwy-Easton St 100 / 209 ↴ ← 85 / 177 19 / 55 ↴ ↰ -9 / -13 17 / 42 ↴ → -10 / -14	23 Ayala Dr/Proposed St (North) 5 / 20 ↴ ← 2 / 8 2 / 7 ↴ ↰ 5 / 20 5 / 19 ↴ 2 / 8 →	24 Ayala Dr/Lieske Dr ← 7 / 27 7 / 27 →	25 Ayala Dr/Fitzgerald Ave ← 7 / 27 7 / 27 →
26 Ayala Dr/Proposed St (South) ← 7 / 27 7 / 27 →	27 Ayala Dr/Baseline Rd 3 / 14 ↴ ↰ 3 / 14 -3 / -14 → ← 3 / 14 3 / 14 ↴ -3 / -14	28 Fitzgerald Ave/Baseline Rd	29 Marketplace Dwy 1/Renaissance Pkwy ← 10 / 31 17 / 32 → ↷ 7 / 30 6 / 24 ↴	30 Marketplace Dwy 2/Renaissance Pkwy ← 7 / 17 3 / 2 ↴ ↰ 19 / 78 ↷ 19 / 52 → 3 / 14 ↷ 17 / 72 2 / 8 ↴
31 Marketplace Dwy 3/Renaissance Pkwy ← 28 / 96 36 / 123 →	32 Marketplace Dwy 4/Renaissance Pkwy ↰ 38 / 31 3 / 2 ↴ ↰ 69 / 57 ↴ ← 20 / 77 ↰ 24 / 93 8 / 7 ↴ ↴ 2 / 18 ↷ 26 / 108 → ↴ 18 / 72 ↷ 2 / 8 ↴	33 Marketplace Dwy 5/Renaissance Pkwy ↰ 22 / 18 ← 80 / 200 114 / 238 → ↷ ↴ 6 / 25	34 Ayala Drive/Marketplace Dwy 6 5 / 19 ↴ ← 5 / 23 2 / 6 ↴ ↷ 7 / 28 →	35 Marketplace Dwy 7/Proposed St (North) ↰ 7 / 27 7 / 27 ↴ ↰ 7 / 27
36 Linden Avenue/Marketplace Dwy 8 ↰ 7 / 26 ↴ ↰ 5 / 20	37 Linden Avenue/PA108 Driveway 1 *Does Not Exist*	38 Linden Avenue/PA108 Driveway 2 *Does Not Exist*	39 Locust Avenue/PA108 Driveway 4 *Does Not Exist*	40 Locust Avenue/PA108 Driveway 5 *Does Not Exist*
41 Locust Avenue/PA108 Driveway 6 *Does Not Exist*	42 Locust Avenue/PA108 Driveway 7 *Does Not Exist*	43 PA108 Driveway 8/Miro Way *Does Not Exist*	44 Maple Avenue/Miro Way	45 Maple Avenue/Baseline Road

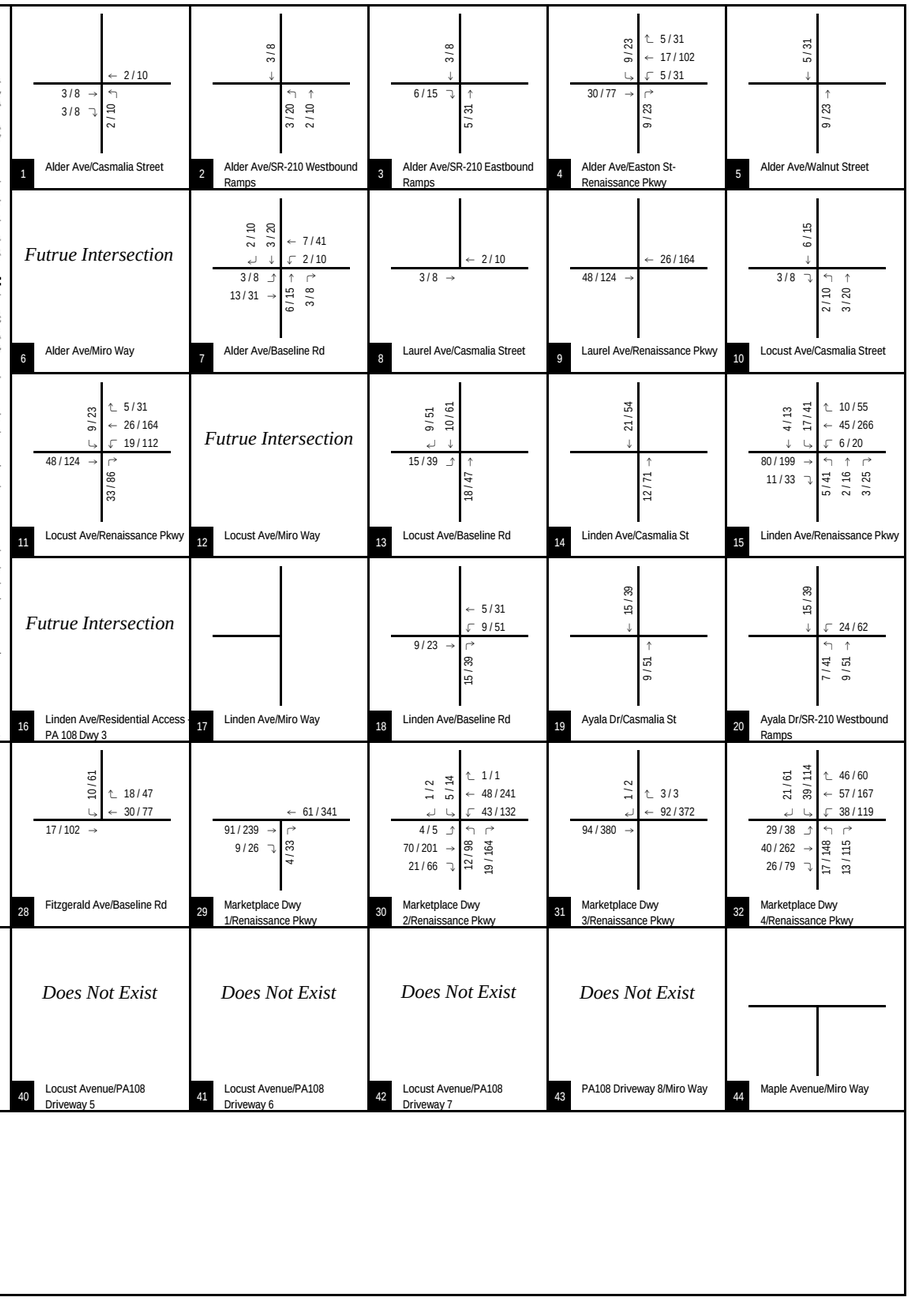
LSA

FIGURE 2-7

XXX / YYY AM / PM Peak Hour Trips

Rialto Renaissance Specific Plan Amendment
Traffic Impact Analysis
Marketplace: Diverted Link Trips





LSA

FIGURE 2-8

XXX / YYY AM / PM Peak Hour Trips

Rialto Renaissance Specific Plan Amendment
Traffic Impact Analysis
Marketplace: Net New Project Trips

R:\LEW1307\2015_08\z84_MP_Net Trips (10/9/2015)

Table 2-D - Renaissance Marketplace Trip Generation

Land Use	Units	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour Total	Daily
North Side								
Hotel	110 Room							
Hotel	52.2 TSF							
Trip Generation[1]		34	24	58	34	32	66	899
Gas/Car Wash	10.0 FS							
Gasoline/Service Station	4.2 TSF							
Trip Generation[2]		60	58	118	18	121	139	1,528
Diverted Linked Trips[3]		(16)	(16)	(32)	(19)	(19)	(38)	(397)
Pass-by Trips[3]		(26)	(26)	(52)	(4)	(4)	(8)	(76)
Net Trip Generation		44	42	34	(1)	102	93	1,055
Pad E								
Fast Food with Drive Through	5.2 TSF							
Trip Generation[4]		120	116	236	88	82	170	2,579
Diverted Linked Trips[3]		(31)	(31)	(62)	(23)	(23)	(46)	(672)
Pass-by Trips[3]		(52)	(52)	(104)	(4)	(4)	(8)	(132)
Net Trip Generation		89	85	70	65	59	116	1,775
Pad F								
Fast Food with Drive Through	4.2 TSF							
Trip Generation[4]		96	93	189	71	65	136	2,063
Diverted Linked Trips[3]		(25)	(25)	(50)	(18)	(18)	(36)	(538)
Pass-by Trips[3]		(41)	(41)	(82)	(3)	(3)	(6)	(106)
Net Trip Generation		71	68	57	53	47	94	1,419
Total Building Area (North Side)	**65.756 TSF**							
Gross Trips		**310**	**291**	**601**	**211**	**300**	**511**	**7,069**
Diverted Linked Trips[3]		**(72)**	**(72)**	**(144)**	**(60)**	**(60)**	**(120)**	**(1,607)**
Internal (between North & South Side)		**(30)**	**(30)**	**(60)**	**(26)**	**(26)**	**(51)**	**(707)**
Pass By Trips[3]		**(119)**	**(119)**	**(238)**	**(11)**	**(11)**	**(22)**	**(314)**
Total Net Trips		**89**	**70**	**159**	**115**	**203**	**318**	**4,441**
South Side								
Total Building Area (South Side)	**523.567 TSF**							
Gross Trips[5]		**310**	**193**	**503**	**937**	**1,008**	**1,945**	**22,360**
Diverted Linked Trips[3]		**(67)**	**(67)**	**(134)**	**(273)**	**(273)**	**(546)**	**(5,810)**
Internal (between North & South Side)		**(30)**	**(30)**	**(60)**	**(26)**	**(26)**	**(51)**	**(707)**
Pass By Trips[3]		**0**	**0**	**0**	**(92)**	**(92)**	**(184)**	**(2,504)**
Total Net Trips		**213**	**96**	**309**	**547**	**617**	**1,164**	**13,340**
Total Project Trip Generation Summary								
Total Building Area	**589.323 TSF**							
Total Gross Trips		**620**	**484**	**1,104**	**1,148**	**1,308**	**2,456**	**29,429**
Total Diverted Linked Trips		**(139)**	**(139)**	**(278)**	**(333)**	**(333)**	**(666)**	**(7,417)**
Internal (between North & South Side)		**(60)**	**(60)**	**(120)**	**(51)**	**(51)**	**(102)**	**(1,414)**
Pass By Trips[3]		**(119)**	**(119)**	**(238)**	**(103)**	**(103)**	**(206)**	**(2,818)**
Total Net Trips		**302**	**166**	**468**	**661**	**821**	**1,482**	**17,780**

Notes:

TSF = Thousand Square Feet

[1] Trip Generation Rates are based on the Institute of 'Transportation Engineers (ITE) *Trip Generation Manual,* 9th Edition for Land Use 310 - "Hotel."

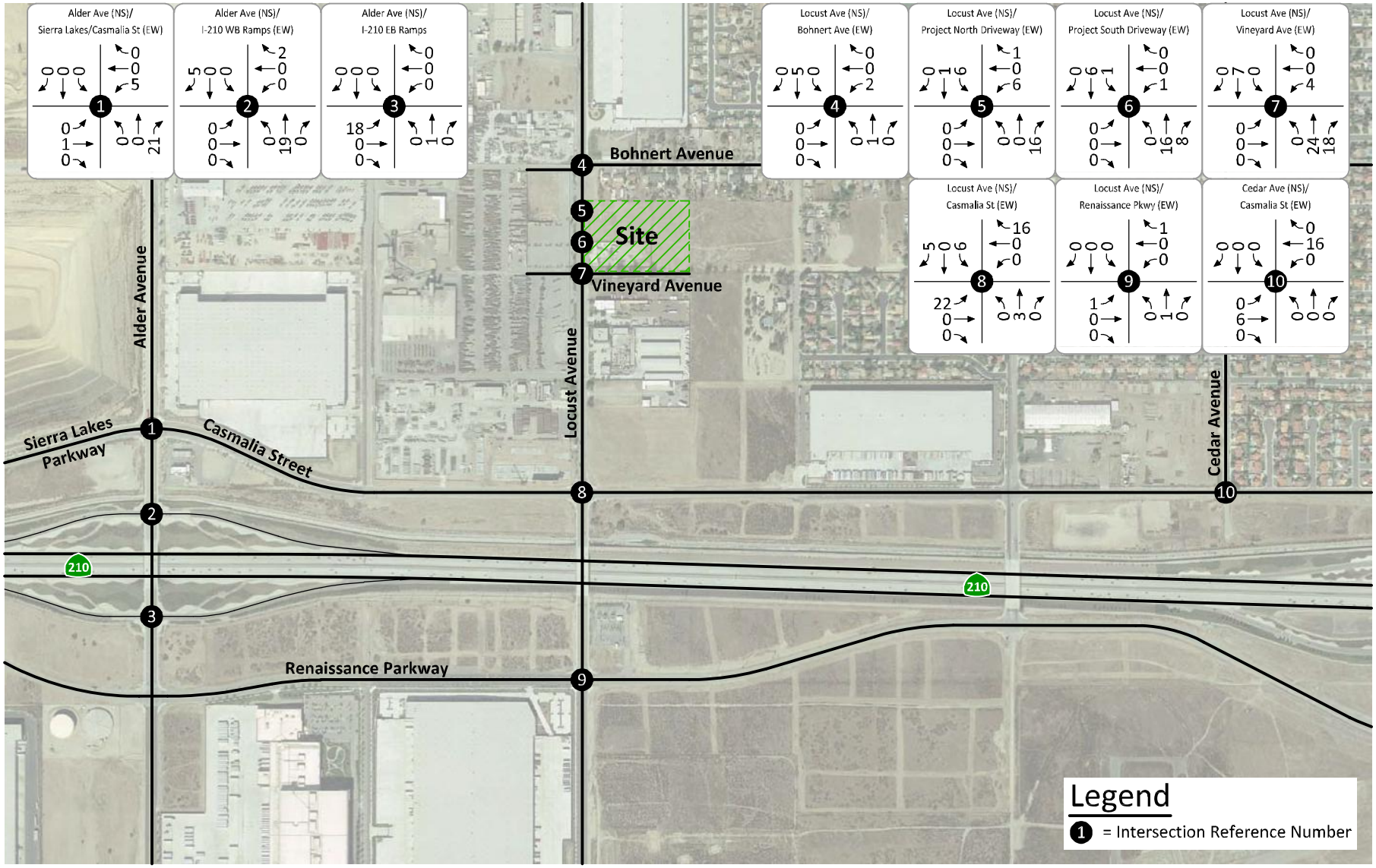
[2] Trip Generation Rates are based on the ITE *Trip Generation Manual,* 9th Edition for Land Use 946 - "Gasoline/Service Station with Convenience Market and Car Wash."

[3] Based on consultation with City staff pass-by trips were calculated using 10% of adjacent street. A diverted linked trip rate of 26% was used (based on the ITE Trip Generation Handbook 2nd Edition and in consultation with City staff).

[4] Trip Generation Rates are based on the ITE *Trip Generation Manual,* 9th Edition for Land Use 934 - "Fast Food Restaurant with Drive Through."

[5] Trip Generation Rates are based on the ITE *Trip Generation Manual,* 9th Edition for Land Use 820 - "Shopping Center."

Figure 16
Project
Morning Peak Hour Intersection Turning Movement Volumes

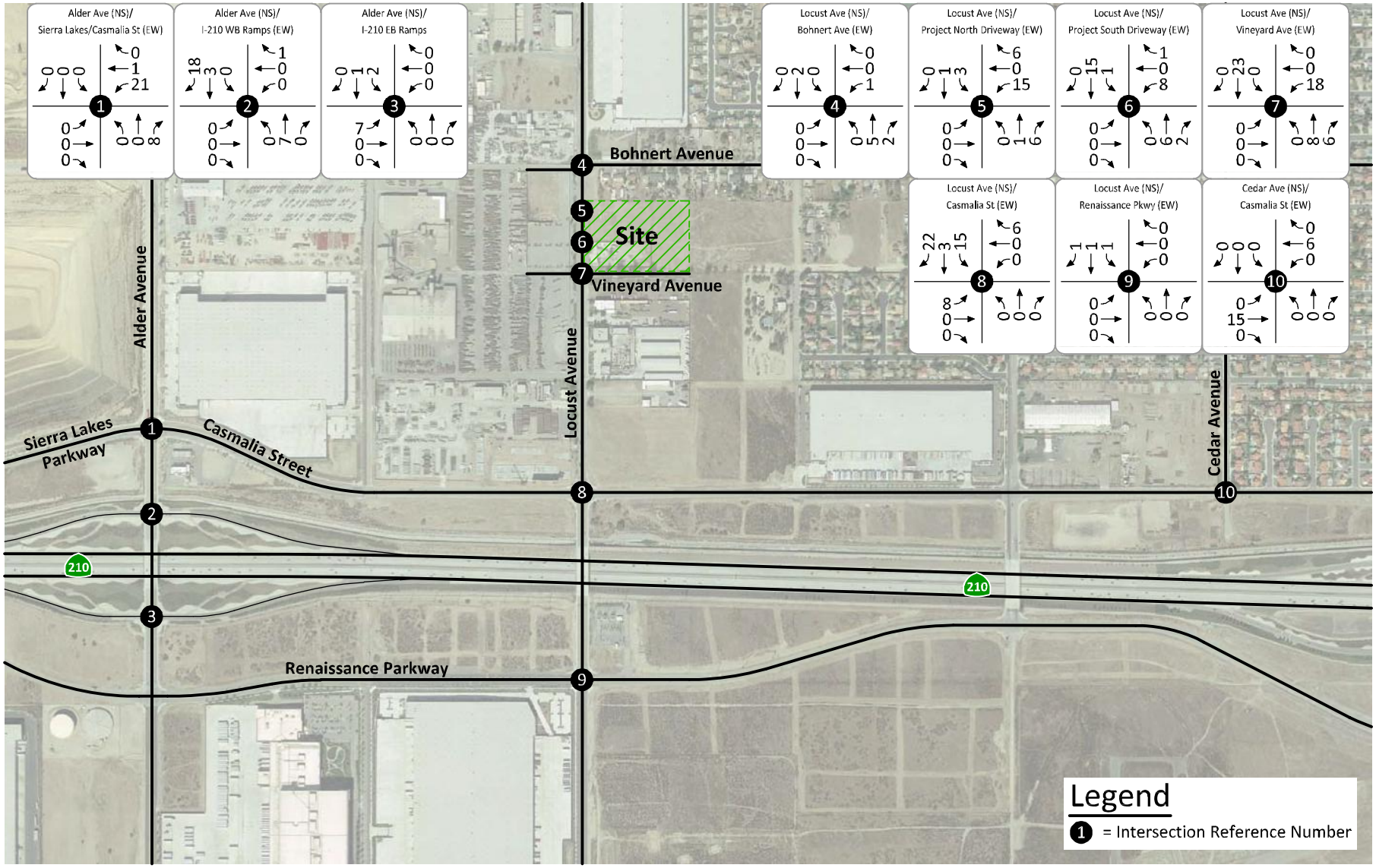


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 7010

Figure 17
Project
Evening Peak Hour Intersection Turning Movement Volumes



KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 7010

Table 3

Project Trip Generation[1]

Descriptor	Quantity	Units[2]	Type of Vehicle: Passenger Car	2 Axle Truck	3 Axle Truck	4+ Axle Truck	Total Trucks	Total
Land Use: Warehousing	120.600	TSF	60.0%	0.8%	11.2%	28.0%	40.0%	100%
Trip Generation Rates in trips per TSF								
Daily			2.136	0.029	0.399	0.997	1.424	3.56
Morning Peak Hour			0.180	0.002	0.034	0.084	0.120	0.30
Evening Peak Hour			0.192	0.003	0.036	0.090	0.128	0.32
Trip Generation in Vehicles								
Daily			258	3	48	120	171	429
Morning Peak Hour								
Inbound			17	-	3	8	11	28
Outbound			4	-	1	2	3	7
Total			21	-	4	10	14	35
Evening Peak Hour								
Inbound			6	-	1	3	4	10
Outbound			17	-	3	8	11	28
Total			23	-	4	11	15	38
Passenger Car Equivalent (PCE) Factor[3]			1.00	1.50	2.00	3.00		
Trip Generation in PCEs								
Daily			258	5	96	360	461	719
Morning Peak Hour								
Inbound			17	-	6	24	30	47
Outbound			4	-	2	6	8	12
Total			21	-	8	30	38	59
Evening Peak Hour								
Inbound			6	-	2	9	11	17
Outbound			17	-	6	24	30	47
Total			23	-	8	33	41	64

[1] Source: Institute of Transportation Engineers, Trip Generation Manual, 9th Edition, 2012, Land Use Code 150 and City of Rialto Traffic Impact Analysis Report Guidelines and Requirements, 2014.

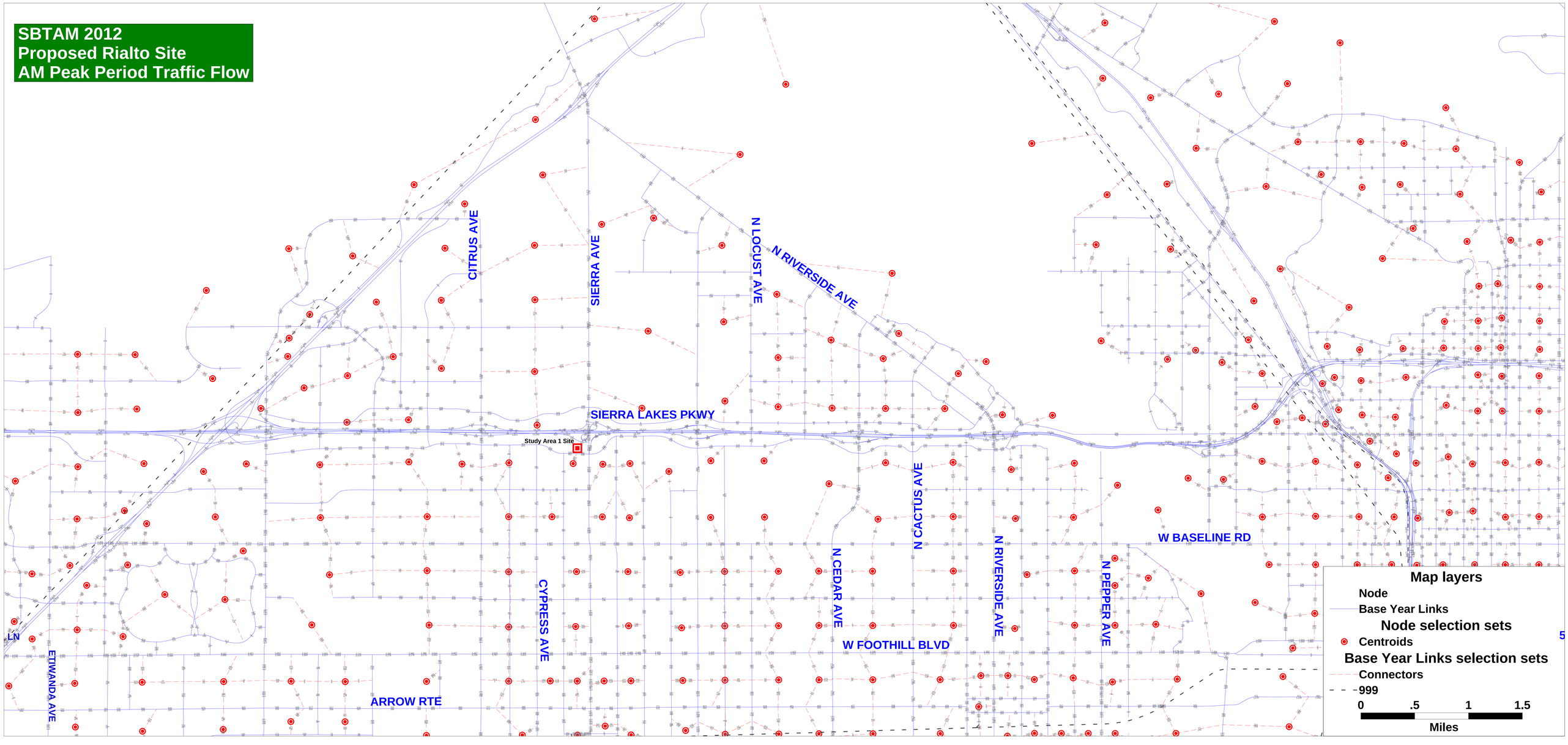
[2] TSF = Thousand Square Feet

[3] Passenger Car Equivalent factors are from City of Rialto Traffic Impact Analysis Report Guidelines and Requirements, 2014.

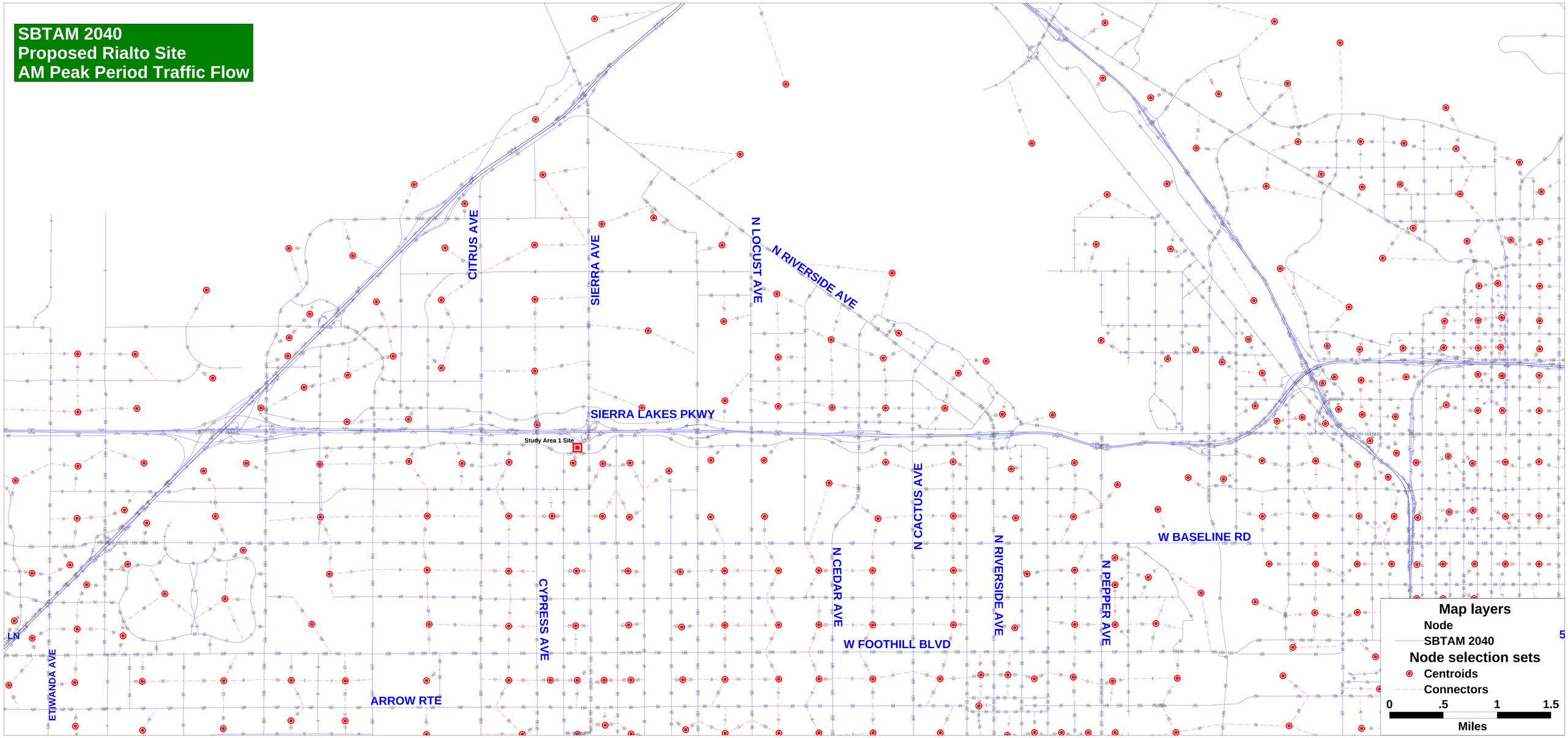
APPENDIX F

SBTAM MODEL PLOTS AND B-TURNS WORKSHEETS

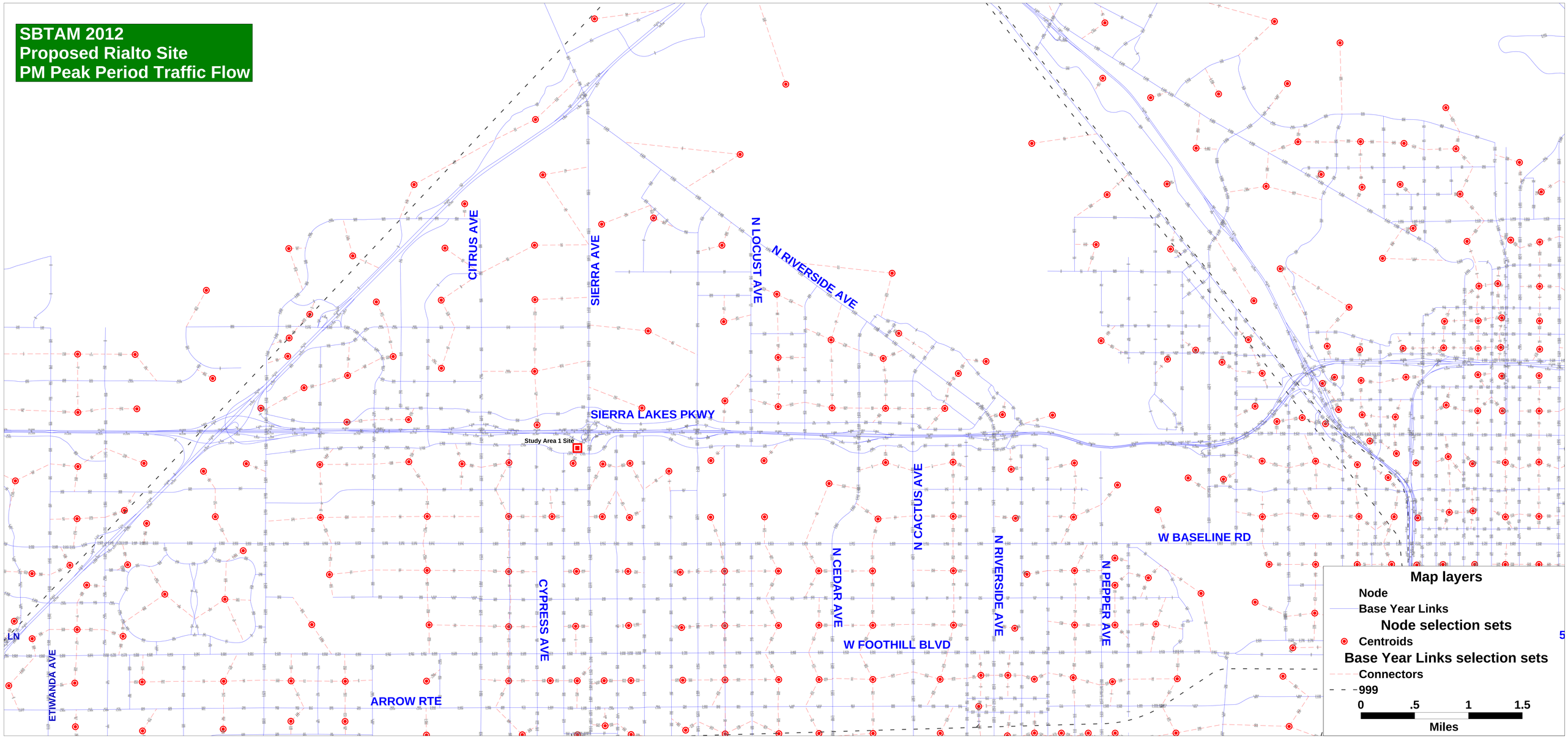
SBTAM 2012
Proposed Rialto Site
AM Peak Period Traffic Flow



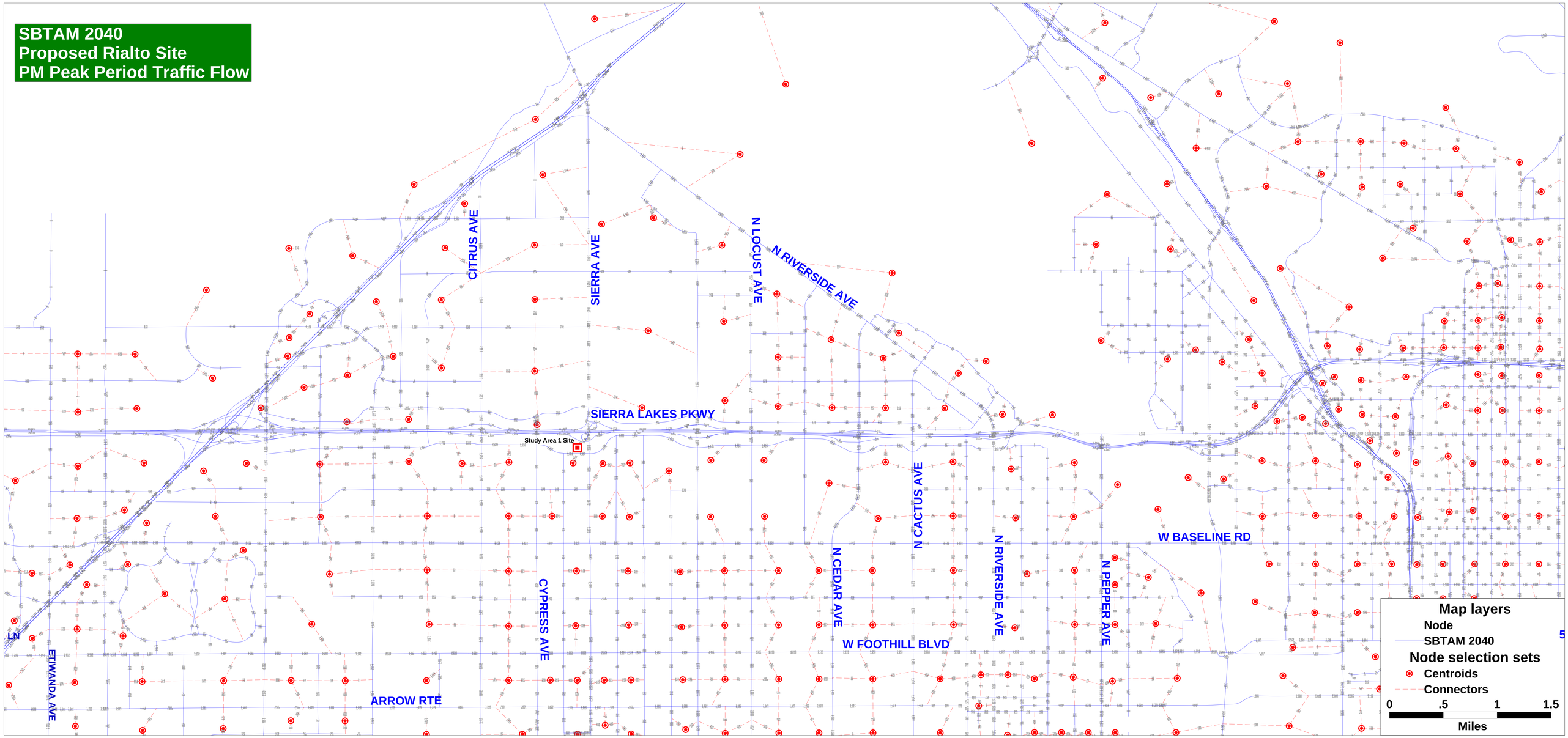
SBTAM 2040
Proposed Rialto Site
AM Peak Period Traffic Flow



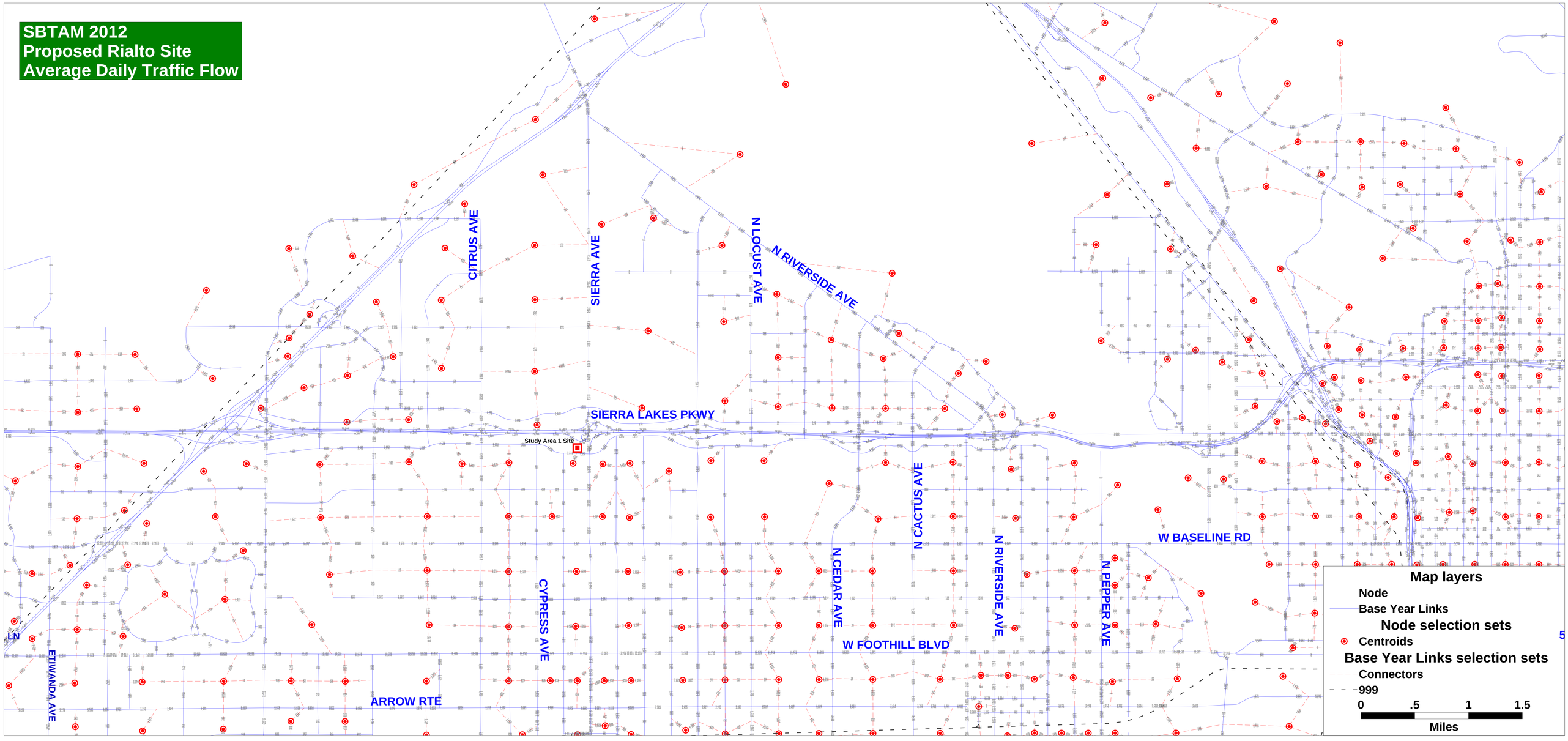
SBTAM 2012
Proposed Rialto Site
PM Peak Period Traffic Flow



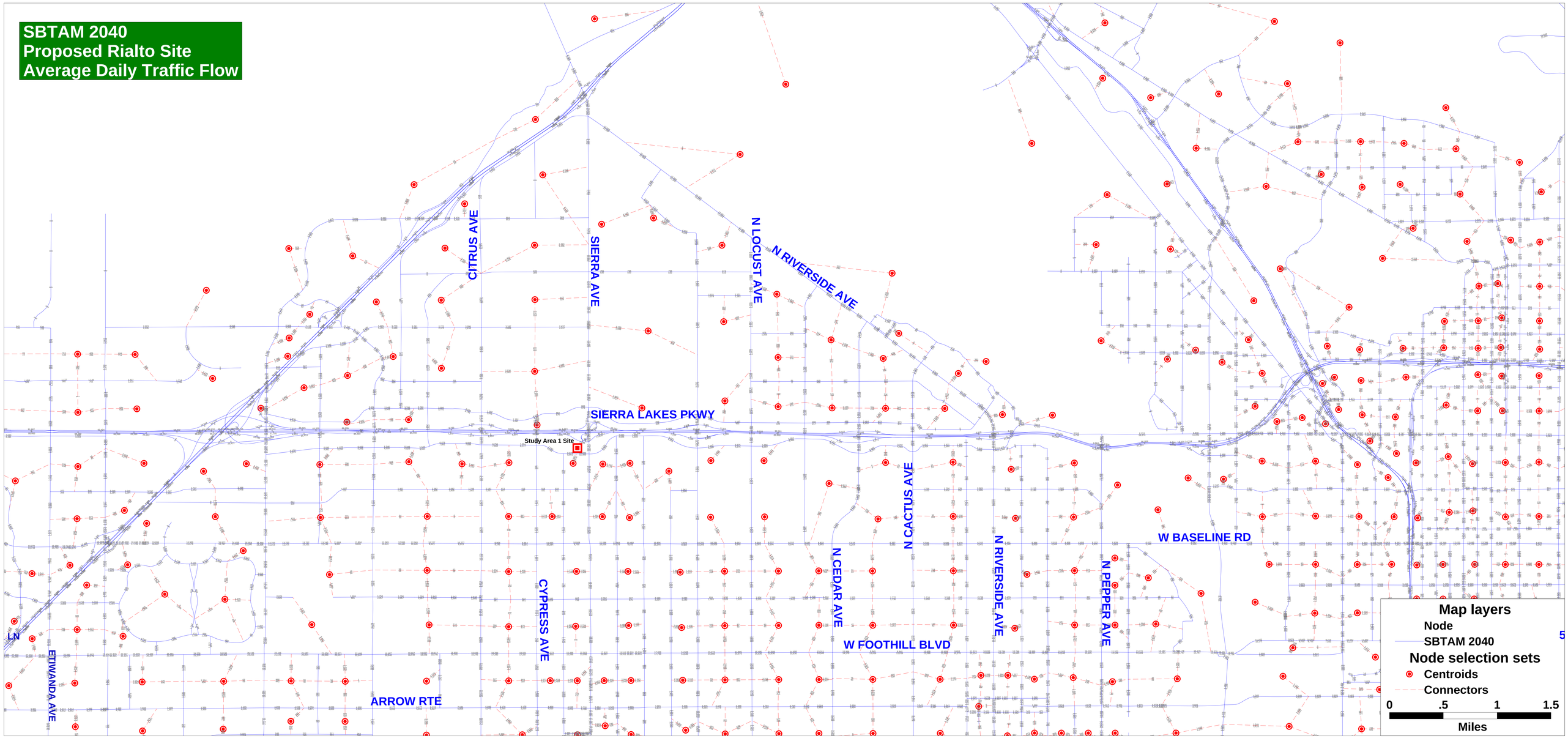
SBTAM 2040
Proposed Rialto Site
PM Peak Period Traffic Flow



SBTAM 2012
Proposed Rialto Site
Average Daily Traffic Flow



SBTAM 2040
Proposed Rialto Site
Average Daily Traffic Flow

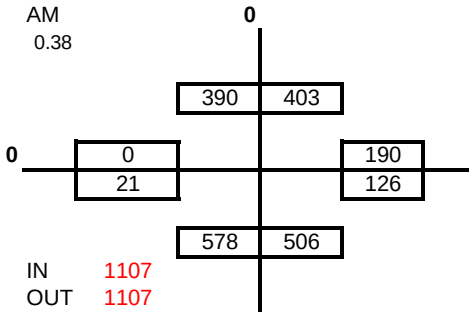


Project:	Rialto Annexation Island 4	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	1	**Total Difference**	28
		Existing Year Counts	2018
North/South Street	Alder Avenue	**Difference Ex to B-O**	22
		Percent	0.79
East/West Street	Casmalia Street	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	17

Date: 09/24/18

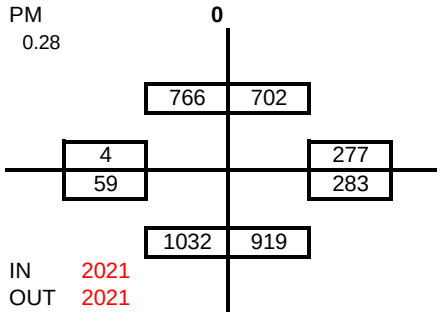
Model Base Year: **2012**

AM 0.38



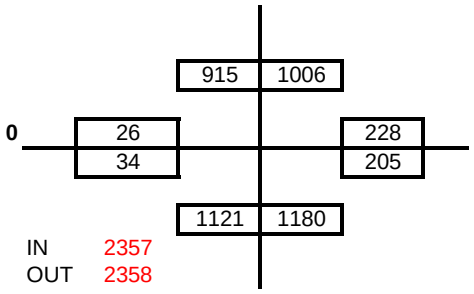
IN 1107
OUT 1107
BAL 0

PM 0.28

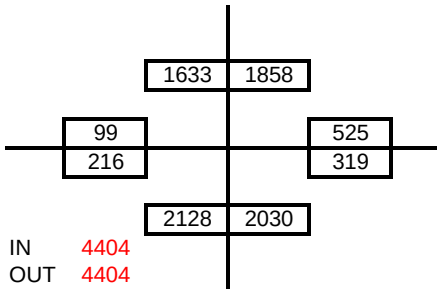


IN 2021
OUT 2021
BAL 0

Model Build-out Year: **2040** **Build-out**

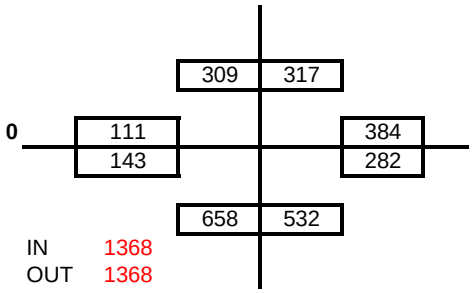


IN 2357
OUT 2358
BAL 1

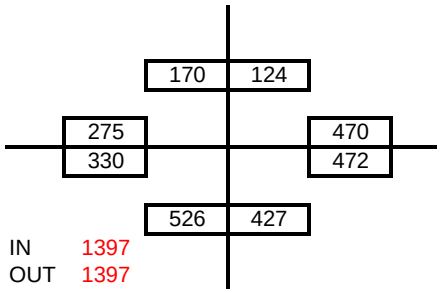


IN 4404
OUT 4404
BAL 0

Existing Year Counts **2018**

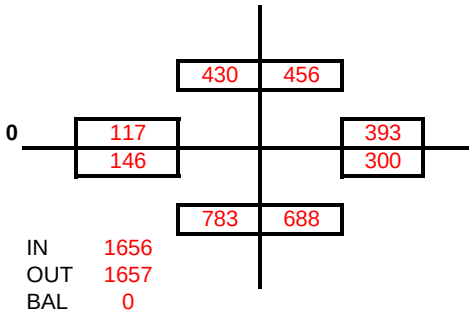


IN 1368
OUT 1368
BAL 0

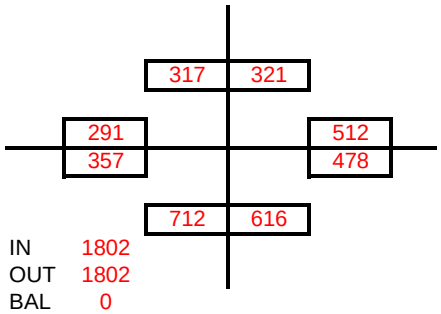


IN 1397
OUT 1397
BAL 0

Study Year Forecast **2035** **Build-out**



IN 1656
OUT 1657
BAL 0



IN 1802
OUT 1802
BAL 0

Intersection: Alder Avenue Casmalia Street

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	87	SOUTH LEG	
	THRU	341	IN ...	688
	RIGHT	239	OUT ...	783
SOUTH BOUND	LEFT	22	NORTH LEG	
	THRU	317	IN ...	430
	RIGHT	13	OUT ...	456
EAST BOUND	LEFT	25	WEST LEG	
	THRU	88	IN ...	146
	RIGHT	52	OUT ...	117
WEST BOUND	LEFT	360	EAST LEG	
	THRU	188	IN ...	393
	RIGHT	31	OUT ...	300
		1,763		3,313

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	87	50
	THRU	341	412
	RIGHT	239	221
SOUTH BOUND	LEFT	22	17
	THRU	317	410
	RIGHT	13	6
EAST BOUND	LEFT	25	23
	THRU	88	62
	RIGHT	52	61
WEST BOUND	LEFT	360	313
	THRU	188	61
	RIGHT	31	21
		1,763	1,657

Intersection: Alder Avenue Casmalia Street

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	83	SOUTH LEG	
	THRU	194	IN ...	616
	RIGHT	277	OUT ...	712
SOUTH BOUND	LEFT	36	NORTH LEG	
	THRU	197	IN ...	317
	RIGHT	43	OUT ...	321
EAST BOUND	LEFT	12	WEST LEG	
	THRU	205	IN ...	357
	RIGHT	128	OUT ...	291
WEST BOUND	LEFT	320	EAST LEG	
	THRU	177	IN ...	512
	RIGHT	34	OUT ...	478
		1,706		3,604

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

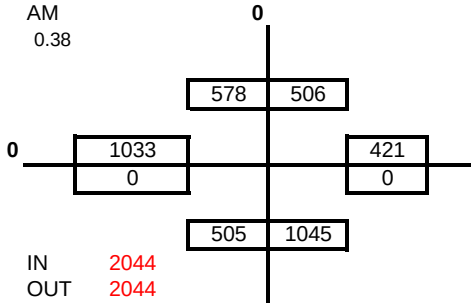
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	83	90
	THRU	194	267
	RIGHT	277	259
SOUTH BOUND	LEFT	36	33
	THRU	197	239
	RIGHT	43	46
EAST BOUND	LEFT	12	16
	THRU	205	186
	RIGHT	128	154
WEST BOUND	LEFT	320	319
	THRU	177	155
	RIGHT	34	38
		1,706	1,802

Project:	Rialto Annexation Island 4	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	2	**Total Difference**	28
		Existing Year Counts	2018
North/South Street	Alder Avenue	**Difference Ex to B-O**	22
		Percent	0.79
East/West Street	SR-210 WB Ramps	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	17

Date: 09/24/18

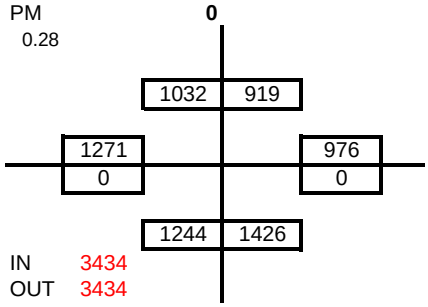
Model Base Year: 2012

AM 0.38



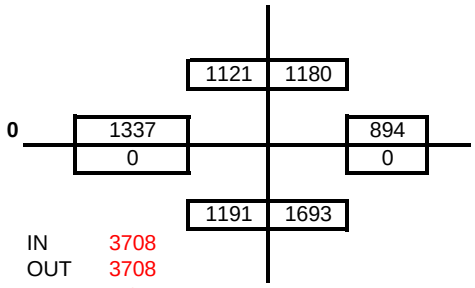
IN 2044
OUT 2044
BAL 0

PM 0.28

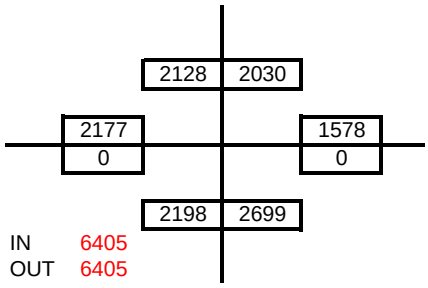


IN 3434
OUT 3434
BAL 0

Model Build-out Year: 2040 Build-out

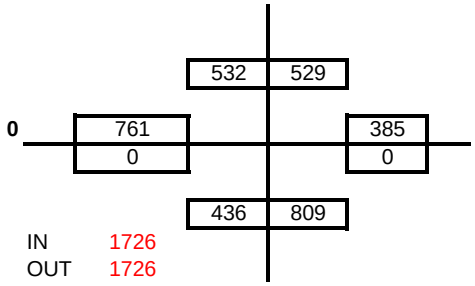


IN 3708
OUT 3708
BAL 0

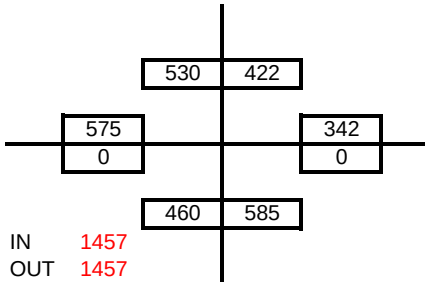


IN 6405
OUT 6405
BAL 0

Existing Year Counts 2018

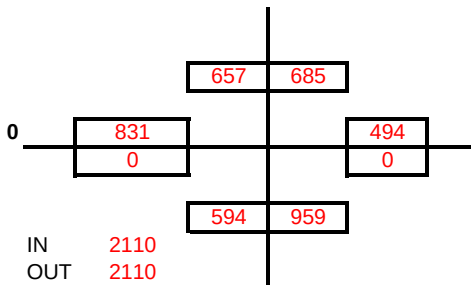


IN 1726
OUT 1726
BAL 0

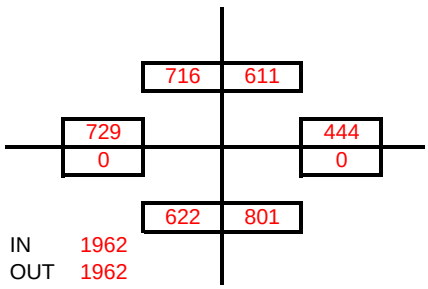


IN 1457
OUT 1457
BAL 0

Study Year Forecast 2035 Build-out



IN 2110
OUT 2110
BAL 0



IN 1962
OUT 1962
BAL 0

Intersection: Alder Avenue SR-210 WB Ramps

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	297	SOUTH LEG	
	THRU	464	IN ...	959
	RIGHT	0	OUT ...	594
SOUTH BOUND	LEFT	0	NORTH LEG	
	THRU	302	IN ...	657
	RIGHT	444	OUT ...	685
EAST BOUND	LEFT	0	WEST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	831
WEST BOUND	LEFT	337	EAST LEG	
	THRU	10	IN ...	494
	RIGHT	206	OUT ...	0
		2,060		4,220

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	297	431
	THRU	464	528
	RIGHT	0	0
SOUTH BOUND	LEFT	0	0
	THRU	302	267
	RIGHT	444	391
EAST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
WEST BOUND	LEFT	337	328
	THRU	10	10
	RIGHT	206	157
		2,060	2,110

Intersection: Alder Avenue SR-210 WB Ramps

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	346	SOUTH LEG	
	THRU	395	IN ...	801
	RIGHT	0	OUT ...	622
SOUTH BOUND	LEFT	0	NORTH LEG	
	THRU	268	IN ...	716
	RIGHT	381	OUT ...	611
EAST BOUND	LEFT	0	WEST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	729
WEST BOUND	LEFT	229	EAST LEG	
	THRU	2	IN ...	444
	RIGHT	153	OUT ...	0
		1,774		3,924

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

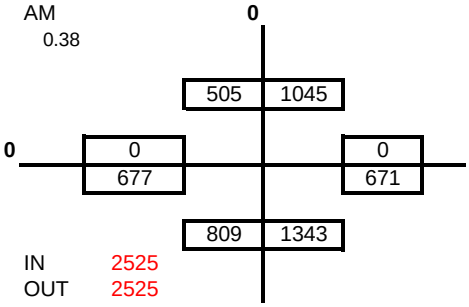
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	346	352
	THRU	395	449
	RIGHT	0	0
SOUTH BOUND	LEFT	0	0
	THRU	268	341
	RIGHT	381	375
EAST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
WEST BOUND	LEFT	229	281
	THRU	2	2
	RIGHT	153	162
		1,774	1,962

Project:	Rialto Annexation Island 4	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	3	**Total Difference**	28
		Existing Year Counts	2018
North/South Street	Alder Avenue	**Difference Ex to B-O**	22
		Percent	0.79
East/West Street	SR-210 EB Ramps	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	17

Date: 09/24/18

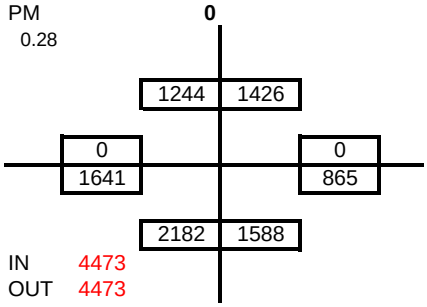
Model Base Year: **2012**

AM 0.38



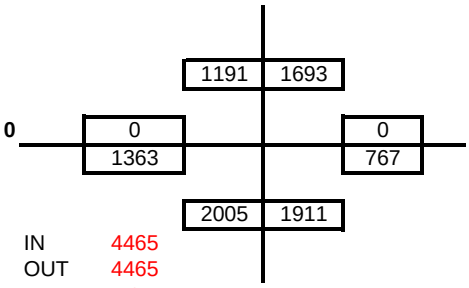
IN	2525
OUT	2525
BAL	0

PM 0.28

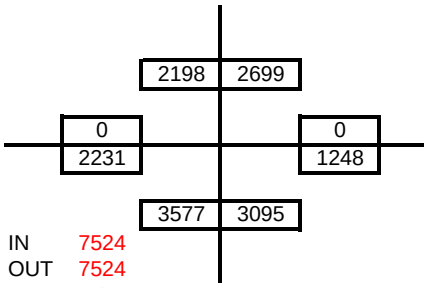


IN	4473
OUT	4473
BAL	0

Model Build-out Year: **2040** **Build-out**

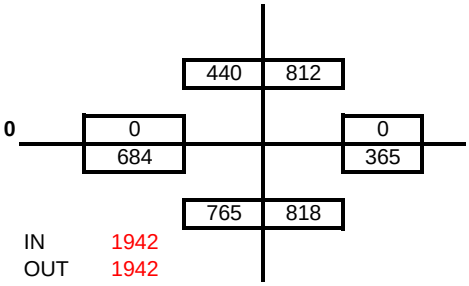


IN	4465
OUT	4465
BAL	0

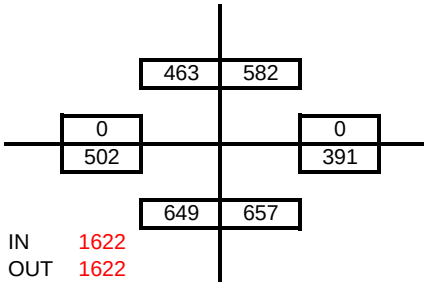


IN	7524
OUT	7524
BAL	0

Existing Year Counts **2018**

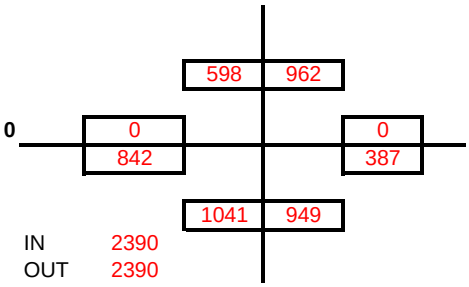


IN	1942
OUT	1942
BAL	0

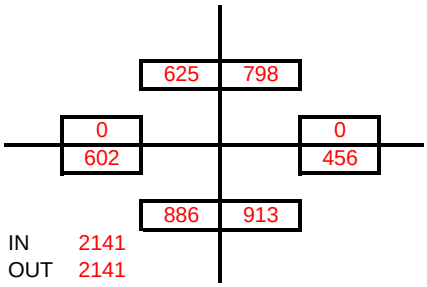


IN	1622
OUT	1622
BAL	0

Study Year Forecast **2035** **Build-out**



IN	2390
OUT	2390
BAL	0



IN	2141
OUT	2141
BAL	0

Intersection: Alder Avenue SR-210 EB Ramps

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	0	SOUTH LEG	
	THRU	411	IN ...	949
	RIGHT	256	OUT ...	1,041
SOUTH BOUND	LEFT	166	NORTH LEG	
	THRU	465	IN ...	598
	RIGHT	0	OUT ...	962
EAST BOUND	LEFT	351	WEST LEG	
	THRU	2	IN ...	842
	RIGHT	462	OUT ...	0
WEST BOUND	LEFT	0	EAST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	387
		2,113		4,779

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	0	0
	THRU	411	657
	RIGHT	256	291
SOUTH BOUND	LEFT	166	95
	THRU	465	504
	RIGHT	0	0
EAST BOUND	LEFT	351	305
	THRU	2	1
	RIGHT	462	537
WEST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
		2,113	2,390

Intersection: Alder Avenue SR-210 EB Ramps

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	0	SOUTH LEG	
	THRU	484	IN ...	913
	RIGHT	273	OUT ...	886
SOUTH BOUND	LEFT	155	NORTH LEG	
	THRU	348	IN ...	625
	RIGHT	0	OUT ...	798
EAST BOUND	LEFT	254	WEST LEG	
	THRU	0	IN ...	602
	RIGHT	370	OUT ...	0
WEST BOUND	LEFT	0	EAST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	456
		1,884		4,281

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

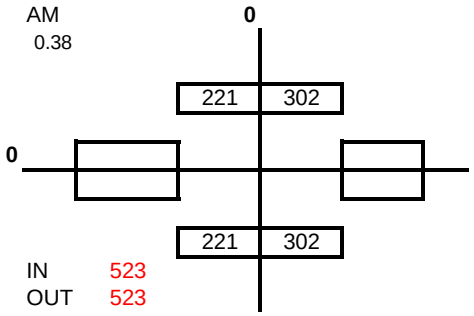
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	0	0
	THRU	484	599
	RIGHT	273	313
SOUTH BOUND	LEFT	155	143
	THRU	348	483
	RIGHT	0	0
EAST BOUND	LEFT	254	199
	THRU	0	0
	RIGHT	370	403
WEST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
		1,884	2,141

Project:	Rialto Annexation Island 4	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	4	**Total Difference**	28
		Existing Year Counts	2018
North/South Street	Locust Avenue	**Difference Ex to B-O**	22
		Percent	0.79
East/West Street	Vineyard Avenue	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	17

Date: 09/24/18

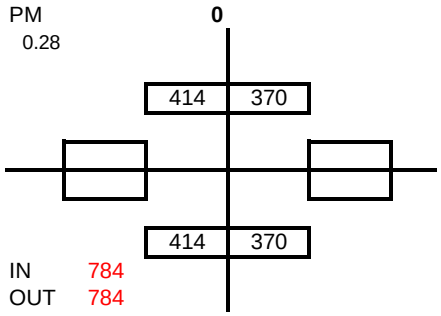
Model Base Year: **2012**

AM 0.38



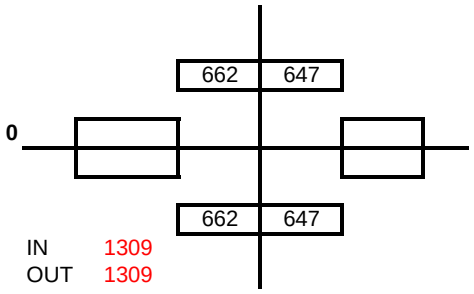
IN 523
OUT 523
BAL 0

PM 0.28

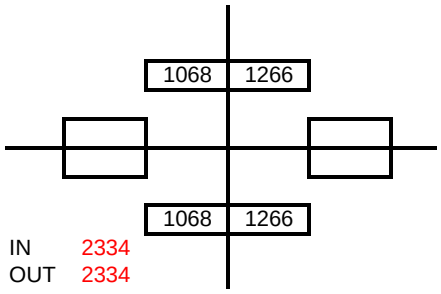


IN 784
OUT 784
BAL 0

Model Build-out Year: **2040** **Build-out**

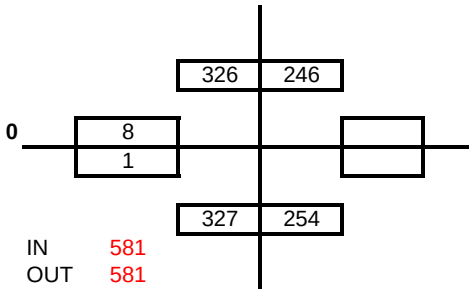


IN 1309
OUT 1309
BAL 0

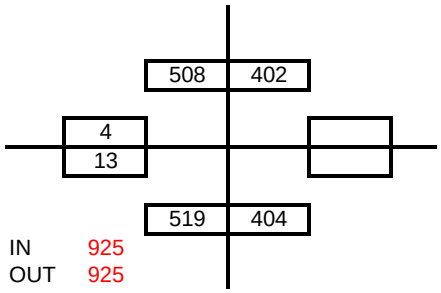


IN 2334
OUT 2334
BAL 0

Existing Year Counts **2018**

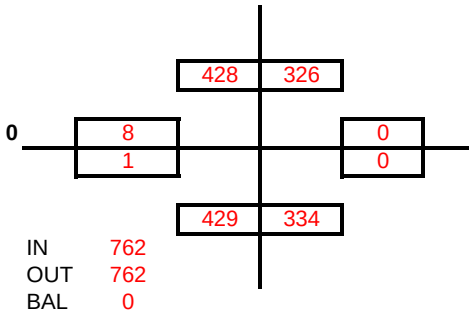


IN 581
OUT 581
BAL 0

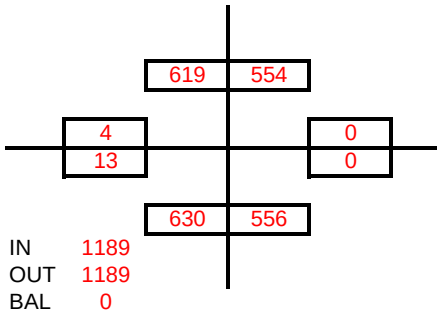


IN 925
OUT 925
BAL 0

Study Year Forecast **2035** **Build-out**



IN 762
OUT 762
BAL 0



IN 1189
OUT 1189
BAL 0

Intersection: Locust Avenue Vineyard Avenue

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	8	SOUTH LEG	
	THRU	462	IN ...	334
	RIGHT	0	OUT ...	429
SOUTH BOUND	LEFT	0	NORTH LEG	
	THRU	580	IN ...	428
	RIGHT	0	OUT ...	326
EAST BOUND	LEFT	0	WEST LEG	
	THRU	0	IN ...	1
	RIGHT	1	OUT ...	8
WEST BOUND	LEFT	0	EAST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
		1,051		1,525

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	8	8
	THRU	462	326
	RIGHT	0	0
SOUTH BOUND	LEFT	0	0
	THRU	580	428
	RIGHT	0	0
EAST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	1	1
WEST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
		1,051	762

Intersection: Locust Avenue Vineyard Avenue

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	FY INTERSECTION LEG	TOTAL
NORTH BOUND	LEFT	4	SOUTH LEG	
	THRU	430	IN ...	556
	RIGHT	0	OUT ...	630
SOUTH BOUND	LEFT	0	NORTH LEG	
	THRU	556	IN ...	619
	RIGHT	0	OUT ...	554
EAST BOUND	LEFT	2	WEST LEG	
	THRU	0	IN ...	13
	RIGHT	11	OUT ...	4
WEST BOUND	LEFT	0	EAST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
		1,003		2,377

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

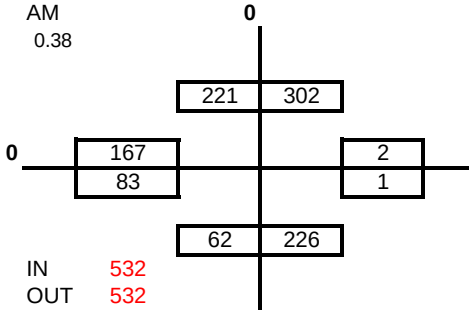
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	4	4
	THRU	430	552
	RIGHT	0	0
SOUTH BOUND	LEFT	0	0
	THRU	556	619
	RIGHT	0	0
EAST BOUND	LEFT	2	2
	THRU	0	0
	RIGHT	11	11
WEST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
		1,003	1,189

Project:	Rialto Annexation Island 4	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	5	**Total Difference**	28
		Existing Year Counts	2018
North/South Street	Locust Avenue	**Difference Ex to B-O**	22
		Percent	0.79
East/West Street	Casmalia Street	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	17

Date: 09/24/18

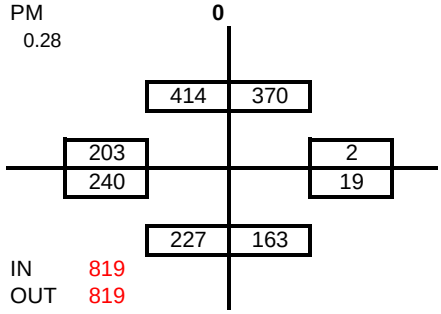
Model Base Year: **2012**

AM 0.38



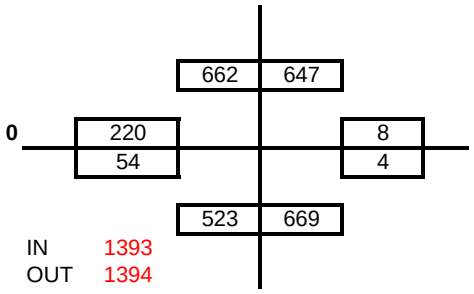
IN 532
OUT 532
BAL 0

PM 0.28

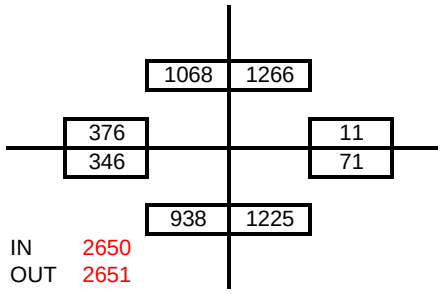


IN 819
OUT 819
BAL 0

Model Build-out Year: **2040** **Build-out**

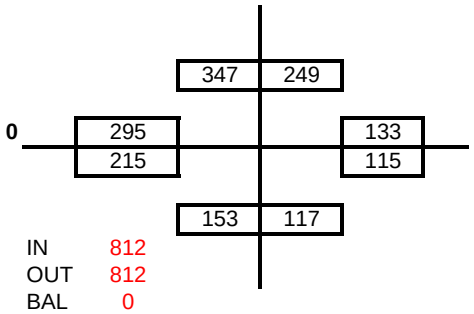


IN 1393
OUT 1394
BAL 1

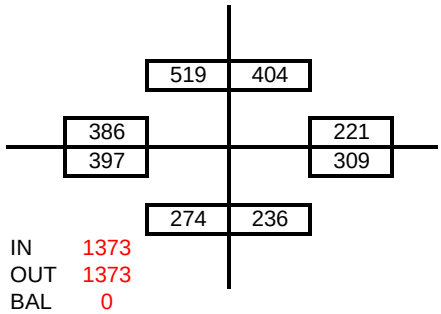


IN 2650
OUT 2651
BAL 1

Existing Year Counts **2018**

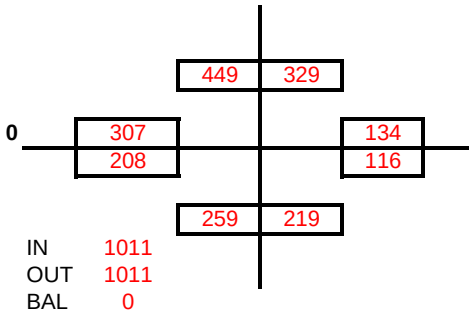


IN 812
OUT 812
BAL 0

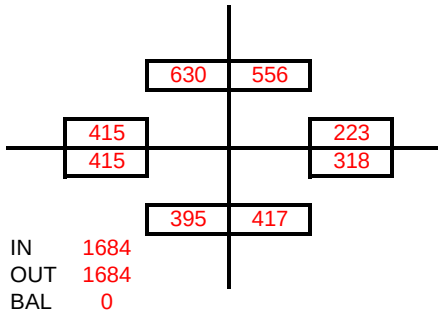


IN 1373
OUT 1373
BAL 0

Study Year Forecast **2035** **Build-out**



IN 1011
OUT 1011
BAL 0



IN 1684
OUT 1684
BAL 0

Intersection: Locust Avenue Casmalia Street

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	84	SOUTH LEG	
	THRU	154	IN ...	219
	RIGHT	7	OUT ...	259
SOUTH BOUND	LEFT	61	NORTH LEG	
	THRU	251	IN ...	449
	RIGHT	268	OUT ...	329
EAST BOUND	LEFT	198	WEST LEG	
	THRU	53	IN ...	208
	RIGHT	44	OUT ...	307
WEST BOUND	LEFT	24	EAST LEG	
	THRU	160	IN ...	134
	RIGHT	118	OUT ...	116
		1,422		2,022

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	84	68
	THRU	154	143
	RIGHT	7	9
SOUTH BOUND	LEFT	61	61
	THRU	251	214
	RIGHT	268	174
EAST BOUND	LEFT	198	130
	THRU	53	46
	RIGHT	44	33
WEST BOUND	LEFT	24	13
	THRU	160	66
	RIGHT	118	56
		1,422	1,011

Intersection: Locust Avenue Casmalia Street

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	49	SOUTH LEG	
	THRU	170	IN ...	417
	RIGHT	25	OUT ...	395
SOUTH BOUND	LEFT	113	NORTH LEG	
	THRU	224	IN ...	630
	RIGHT	219	OUT ...	556
EAST BOUND	LEFT	186	WEST LEG	
	THRU	182	IN ...	415
	RIGHT	55	OUT ...	415
WEST BOUND	LEFT	11	EAST LEG	
	THRU	158	IN ...	223
	RIGHT	78	OUT ...	318
		1,470		3,369

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

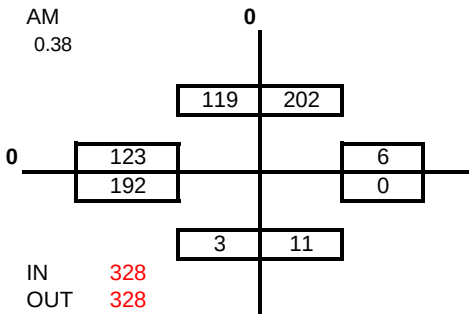
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	49	76
	THRU	170	300
	RIGHT	25	41
SOUTH BOUND	LEFT	113	113
	THRU	224	312
	RIGHT	219	206
EAST BOUND	LEFT	186	181
	THRU	182	164
	RIGHT	55	69
WEST BOUND	LEFT	11	14
	THRU	158	134
	RIGHT	78	75
		1,470	1,684

Project:	Rialto Annexation Island 4	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	6	**Total Difference**	28
		Existing Year Counts	2018
North/South Street	Maple Avenue	**Difference Ex to B-O**	22
		Percent	0.79
East/West Street	Bohnert Avenue	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	17

Date: 09/24/18

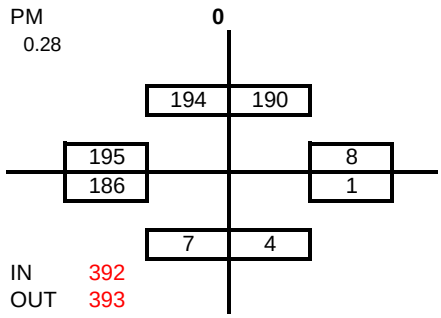
Model Base Year: **2012**

AM 0.38



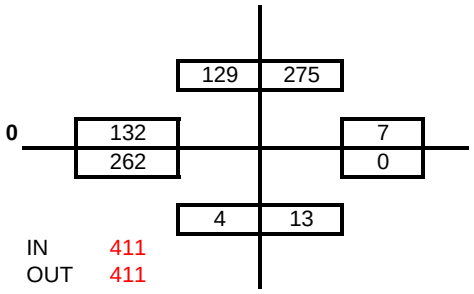
IN 328
OUT 328
BAL 0

PM 0.28

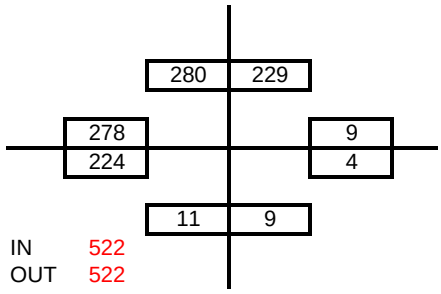


IN 392
OUT 393
BAL 1

Model Build-out Year: **2040 Build-out**

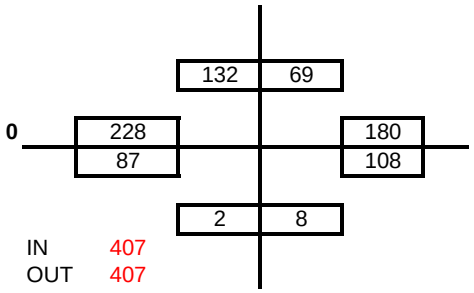


IN 411
OUT 411
BAL 0

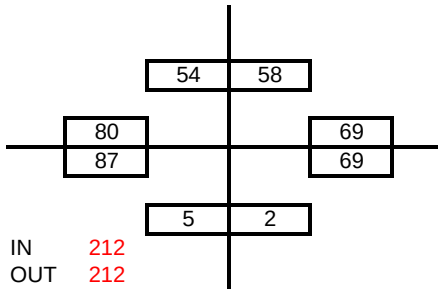


IN 522
OUT 522
BAL 0

Existing Year Counts **2018**

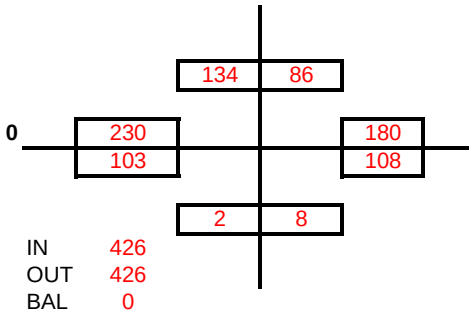


IN 407
OUT 407
BAL 0

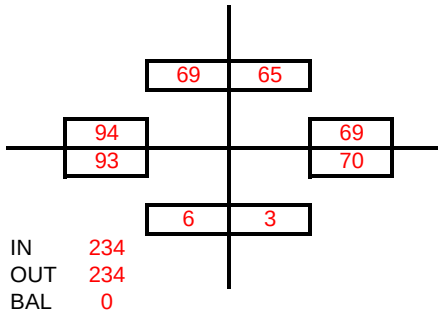


IN 212
OUT 212
BAL 0

Study Year Forecast **2035 Build-out**



IN 426
OUT 426
BAL 0



IN 234
OUT 234
BAL 0

Intersection: Maple Avenue Bohnert Avenue

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	FY INTERSECTION LEG	TOTAL
NORTH BOUND	LEFT	3	SOUTH LEG	
	THRU	1	IN ...	8
	RIGHT	5	OUT ...	2
SOUTH BOUND	LEFT	62	NORTH LEG	
	THRU	1	IN ...	134
	RIGHT	76	OUT ...	86
EAST BOUND	LEFT	44	WEST LEG	
	THRU	46	IN ...	103
	RIGHT	0	OUT ...	230
WEST BOUND	LEFT	1	EAST LEG	
	THRU	156	IN ...	180
	RIGHT	28	OUT ...	108
		423		852

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	3	3
	THRU	1	1
	RIGHT	5	4
SOUTH BOUND	LEFT	62	56
	THRU	1	1
	RIGHT	76	77
EAST BOUND	LEFT	44	56
	THRU	46	48
	RIGHT	0	0
WEST BOUND	LEFT	1	1
	THRU	156	150
	RIGHT	28	29
		423	426

Intersection: Maple Avenue Bohnert Avenue

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	FY INTERSECTION LEG	TOTAL
NORTH BOUND	LEFT	1	SOUTH LEG	
	THRU	0	IN ...	3
	RIGHT	1	OUT ...	6
SOUTH BOUND	LEFT	18	NORTH LEG	
	THRU	1	IN ...	69
	RIGHT	35	OUT ...	65
EAST BOUND	LEFT	37	WEST LEG	
	THRU	50	IN ...	93
	RIGHT	1	OUT ...	94
WEST BOUND	LEFT	4	EAST LEG	
	THRU	45	IN ...	69
	RIGHT	22	OUT ...	70
		215		468

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

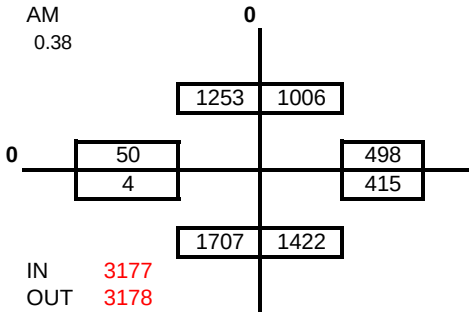
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	1	2
	THRU	0	0
	RIGHT	1	1
SOUTH BOUND	LEFT	18	20
	THRU	1	1
	RIGHT	35	48
EAST BOUND	LEFT	37	44
	THRU	50	49
	RIGHT	1	1
WEST BOUND	LEFT	4	3
	THRU	45	45
	RIGHT	22	21
		215	234

Project:	Rialto Annexation Island 4	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	7	**Total Difference**	28
		Existing Year Counts	2018
North/South Street	Ayala Drive	**Difference Ex to B-O**	22
		Percent	0.79
East/West Street	Casmalia Street	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	17

Date: 09/24/18

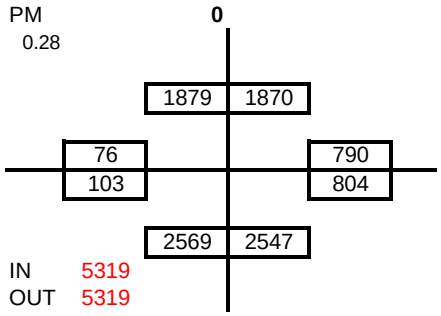
Model Base Year: **2012**

AM



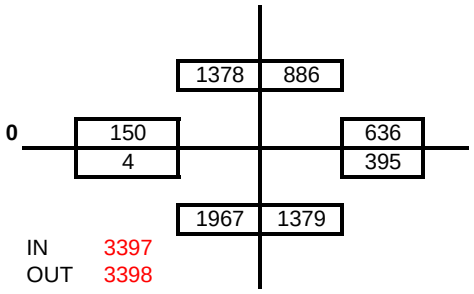
IN 3177
OUT 3178
BAL 1

PM

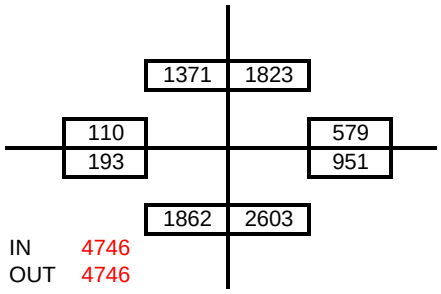


IN 5319
OUT 5319
BAL 0

Model Build-out Year: **2040** **Build-out**

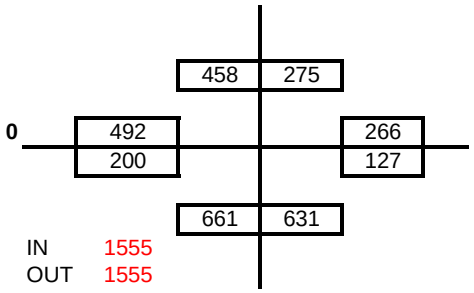


IN 3397
OUT 3398
BAL 1

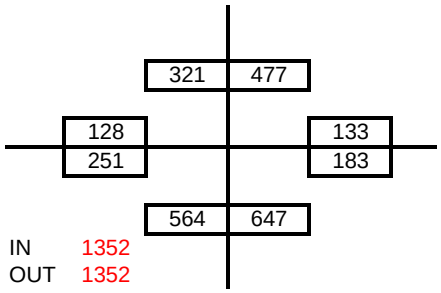


IN 4746
OUT 4746
BAL 0

Existing Year Counts **2018**

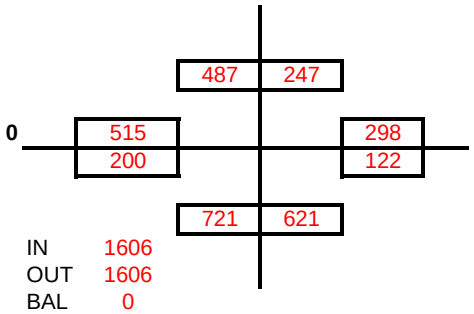


IN 1555
OUT 1555
BAL 0

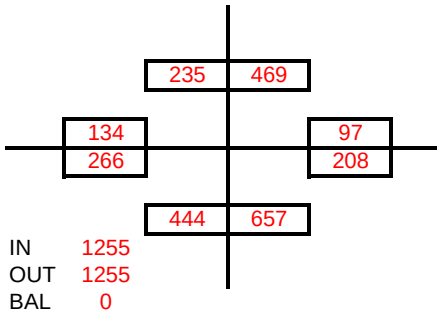


IN 1352
OUT 1352
BAL 0

Study Year Forecast **2035** **Build-out**



IN 1606
OUT 1606
BAL 0



IN 1255
OUT 1255
BAL 0

Intersection: Ayala Drive Casmalia Street

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	149	SOUTH LEG	
	THRU	333	IN ...	621
	RIGHT	83	OUT ...	721
SOUTH BOUND	LEFT	17	NORTH LEG	
	THRU	481	IN ...	487
	RIGHT	21	OUT ...	247
EAST BOUND	LEFT	11	WEST LEG	
	THRU	45	IN ...	200
	RIGHT	191	OUT ...	515
WEST BOUND	LEFT	160	EAST LEG	
	THRU	66	IN ...	298
	RIGHT	20	OUT ...	122
		1,577		3,212

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	149	325
	THRU	333	227
	RIGHT	83	71
SOUTH BOUND	LEFT	17	15
	THRU	481	425
	RIGHT	21	46
EAST BOUND	LEFT	11	7
	THRU	45	36
	RIGHT	191	156
WEST BOUND	LEFT	160	140
	THRU	66	144
	RIGHT	20	14
		1,577	1,606

Intersection: Ayala Drive Casmalia Street

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	92	SOUTH LEG	
	THRU	441	IN ...	657
	RIGHT	123	OUT ...	444
SOUTH BOUND	LEFT	12	NORTH LEG	
	THRU	303	IN ...	235
	RIGHT	10	OUT ...	469
EAST BOUND	LEFT	25	WEST LEG	
	THRU	53	IN ...	266
	RIGHT	178	OUT ...	134
WEST BOUND	LEFT	87	EAST LEG	
	THRU	33	IN ...	97
	RIGHT	13	OUT ...	208
		1,370		2,509

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

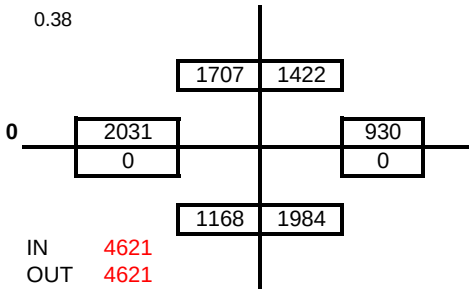
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	92	97
	THRU	441	430
	RIGHT	123	131
SOUTH BOUND	LEFT	12	11
	THRU	303	214
	RIGHT	10	9
EAST BOUND	LEFT	25	28
	THRU	53	66
	RIGHT	178	171
WEST BOUND	LEFT	87	58
	THRU	33	28
	RIGHT	13	10
		1,370	1,255

Project:	Rialto Annexation Island 4	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	8	**Total Difference**	28
		Existing Year Counts	2018
North/South Street	Ayala Drive	**Difference Ex to B-O**	22
		Percent	0.79
East/West Street	SR-210 WB Ramps	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	17

Date: 09/24/18

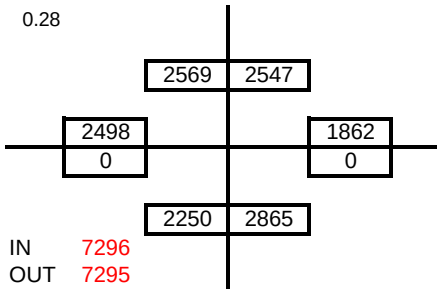
Model Base Year: **2012**

AM 0.38



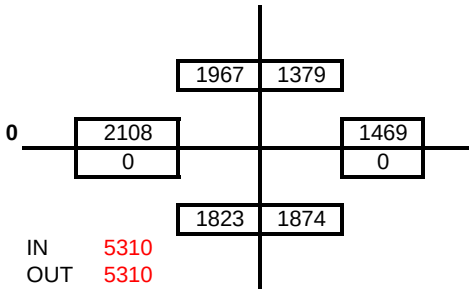
IN 4621
OUT 4621
BAL 0

PM 0.28

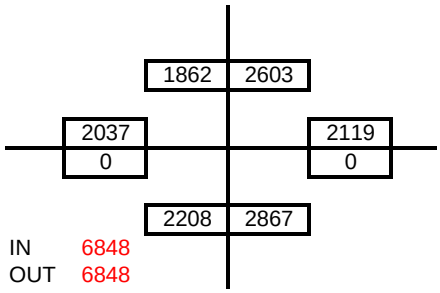


IN 7296
OUT 7295
BAL -1

Model Build-out Year: **2040** **Build-out**

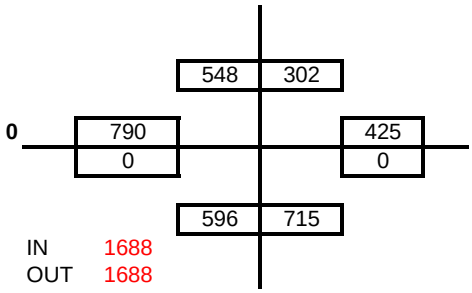


IN 5310
OUT 5310
BAL 0

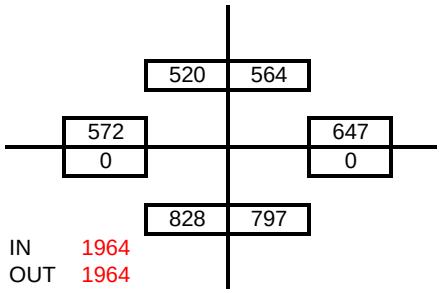


IN 6848
OUT 6848
BAL 0

Existing Year Counts **2018**

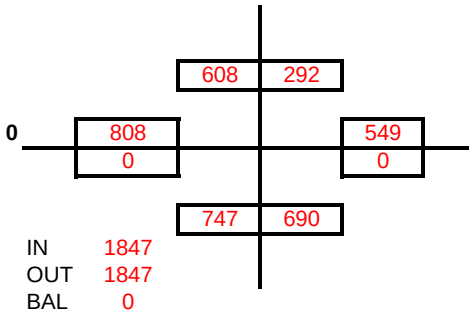


IN 1688
OUT 1688
BAL 0

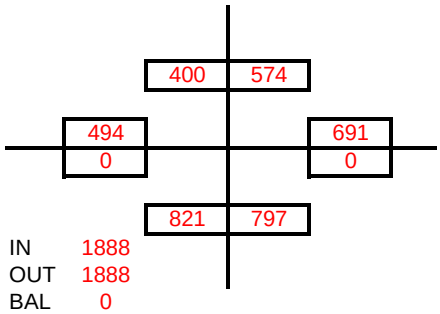


IN 1964
OUT 1964
BAL 0

Study Year Forecast **2035** **Build-out**



IN 1847
OUT 1847
BAL 0



IN 1888
OUT 1888
BAL 0

Intersection: Ayala Drive SR-210 WB Ramps

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	632	SOUTH LEG	
	THRU	183	IN ...	690
	RIGHT	0	OUT ...	747
SOUTH BOUND	LEFT	0	NORTH LEG	
	THRU	325	IN ...	608
	RIGHT	271	OUT ...	292
EAST BOUND	LEFT	0	WEST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	808
WEST BOUND	LEFT	313	EAST LEG	
	THRU	3	IN ...	549
	RIGHT	144	OUT ...	0
		1,871		3,694

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	632	546
	THRU	183	144
	RIGHT	0	0
SOUTH BOUND	LEFT	0	0
	THRU	325	349
	RIGHT	271	259
EAST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
WEST BOUND	LEFT	313	398
	THRU	3	3
	RIGHT	144	148
		1,871	1,847

Intersection: Ayala Drive SR-210 WB Ramps

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	486	SOUTH LEG	
	THRU	396	IN ...	797
	RIGHT	0	OUT ...	821
SOUTH BOUND	LEFT	353	NORTH LEG	
	THRU	180	IN ...	400
	RIGHT	17	OUT ...	574
EAST BOUND	LEFT	0	WEST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	494
WEST BOUND	LEFT	472	EAST LEG	
	THRU	2	IN ...	691
	RIGHT	194	OUT ...	0
		2,100		3,776

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

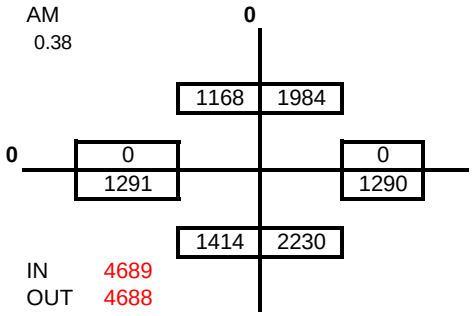
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	486	451
	THRU	396	353
	RIGHT	0	0
SOUTH BOUND	LEFT	353	0
	THRU	180	356
	RIGHT	17	41
EAST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
WEST BOUND	LEFT	472	464
	THRU	2	2
	RIGHT	194	221
		2,100	1,888

Project:	Rialto Annexation Island 4	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	9	**Total Difference**	28
		Existing Year Counts	2018
North/South Street	Ayala Drive	**Difference Ex to B-O**	22
		Percent	0.79
East/West Street	SR-210 EB Ramps	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	17

Date: 09/24/18

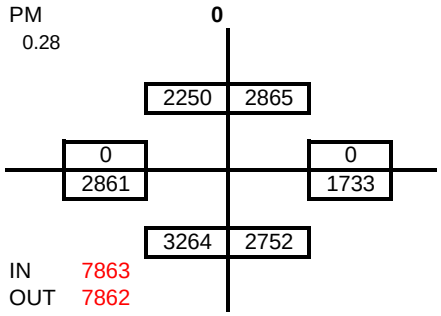
Model Base Year: **2012**

AM 0.38



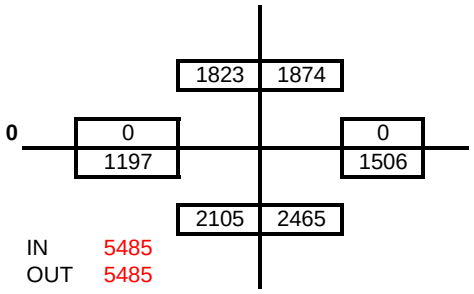
IN 4689
OUT 4688
BAL -1

PM 0.28

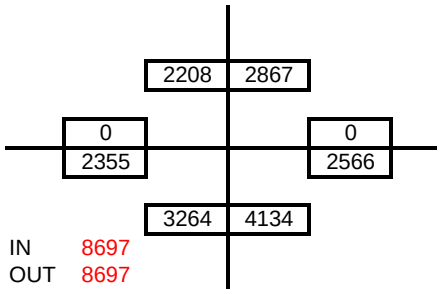


IN 7863
OUT 7862
BAL -1

Model Build-out Year: **2040** **Build-out**

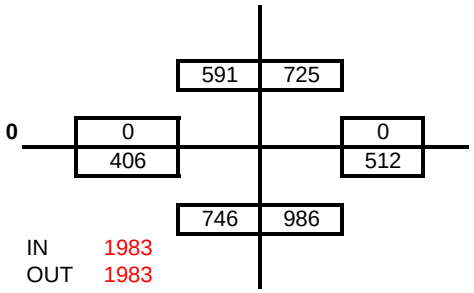


IN 5485
OUT 5485
BAL 0

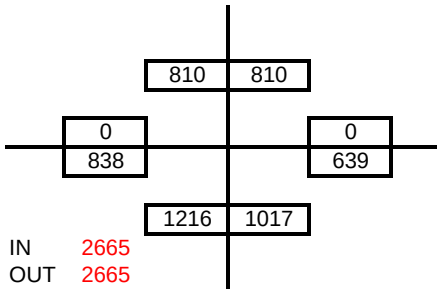


IN 8697
OUT 8697
BAL 0

Existing Year Counts **2018**

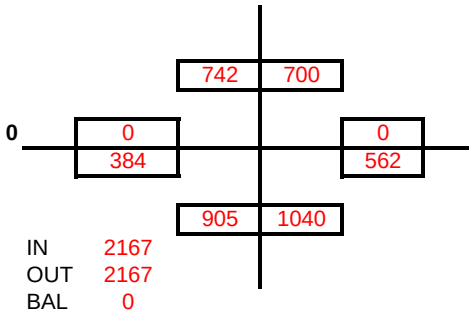


IN 1983
OUT 1983
BAL 0

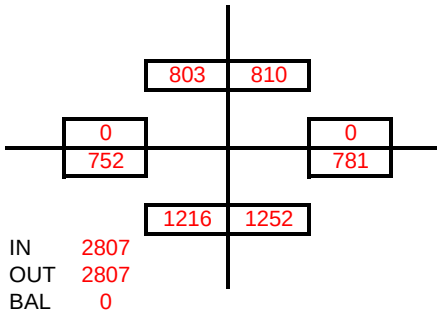


IN 2665
OUT 2665
BAL 0

Study Year Forecast **2035** **Build-out**



IN 2167
OUT 2167
BAL 0



IN 2807
OUT 2807
BAL 0

Intersection: Ayala Drive SR-210 EB Ramps

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	FY INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	0	SOUTH LEG	
	THRU	757	IN ...	1,040
	RIGHT	346	OUT ...	905
SOUTH BOUND	LEFT	196	NORTH LEG	
	THRU	437	IN ...	742
	RIGHT	0	OUT ...	700
EAST BOUND	LEFT	70	WEST LEG	
	THRU	4	IN ...	384
	RIGHT	404	OUT ...	0
WEST BOUND	LEFT	0	EAST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	562
		2,214		4,334

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	0	0
	THRU	757	663
	RIGHT	346	371
SOUTH BOUND	LEFT	196	188
	THRU	437	558
	RIGHT	0	0
EAST BOUND	LEFT	70	37
	THRU	4	3
	RIGHT	404	347
WEST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
		2,214	2,167

Intersection: Ayala Drive SR-210 EB Ramps

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	FY INTERSECTION LEG	TOTAL
NORTH BOUND	LEFT	0	SOUTH LEG	
	THRU	685	IN ...	1,252
	RIGHT	421	OUT ...	1,216
SOUTH BOUND	LEFT	230	NORTH LEG	
	THRU	611	IN ...	803
	RIGHT	0	OUT ...	810
EAST BOUND	LEFT	211	WEST LEG	
	THRU	3	IN ...	752
	RIGHT	698	OUT ...	0
WEST BOUND	LEFT	0	EAST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	781
		2,859		5,614

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	0	0
	THRU	685	681
	RIGHT	421	568
SOUTH BOUND	LEFT	230	210
	THRU	611	595
	RIGHT	0	0
EAST BOUND	LEFT	211	130
	THRU	3	3
	RIGHT	698	621
WEST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
		2,859	2,807

APPENDIX G

SIGNAL WARRANT ANALYSIS WORKSHEET

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: **Locust Avenue** NB SB # OF APPROACH LANES: **1**

MINOR STREET: **Vineyard Avenue** EB WB # OF APPROACH LANES: **1**

CITY, STATE: **Rialto, CA**

COMMENTS: Signal Warrant Study
Opening Year 2020 Cumulative Plus Project

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **Y**

			MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
					MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				→	**350**	**105**		**525**	**53**		**280**	**84**		**420**	**42**			
06:00 AM	TO	07:00 AM	0	0														
07:00 AM	TO	08:00 AM	0	0														
08:00 AM	TO	09:00 AM	1,434	29	Y			Y			Y			Y				
09:00 AM	TO	10:00 AM	0	0														
10:00 AM	TO	11:00 AM	0	0														
11:00 AM	TO	12:00 PM	0	0														
12:00 PM	TO	01:00 PM	0	0														
01:00 PM	TO	02:00 PM	0	0														
02:00 PM	TO	03:00 PM	0	0														
03:00 PM	TO	04:00 PM	0	0														
04:00 PM	TO	05:00 PM	0	0														
05:00 PM	TO	06:00 PM	1,323	117	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
06:00 PM	TO	07:00 PM	0	0														
07:00 PM	TO	08:00 PM	0	0														
08:00 PM	TO	09:00 PM	0	0														
09:00 PM	TO	10:00 PM	0	0														
			2,757	146	2	1	**1**	2	1	**1**	2	1	**1**	2	1	**1**	**1**	**1**
					8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
					NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

09/24/18
Kimley-Horn and Associates