



Traffic Impact Study

for:

Rialto Travel Center Project

In the City of Rialto

September 2021

Kimley»»Horn

TRAFFIC IMPACT STUDY
FOR THE PROPOSED
RIALTO TRAVEL CENTER PROJECT
IN THE CITY OF RIALTO

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TRAFFIC IMPACT STUDY
FOR THE PROPOSED
RIALTO TRAVEL CENTER 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 effects of the proposed Rialto Travel Center project in the City of Rialto.

This 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* (December 2013), and in accordance with San Bernardino Association of Governments (SANBAG) Congestion Management Program (CMP) requirements.

This study addresses existing and future traffic conditions, taking into account the project trips to be generated by the project and potential project-related effects 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 effects 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:

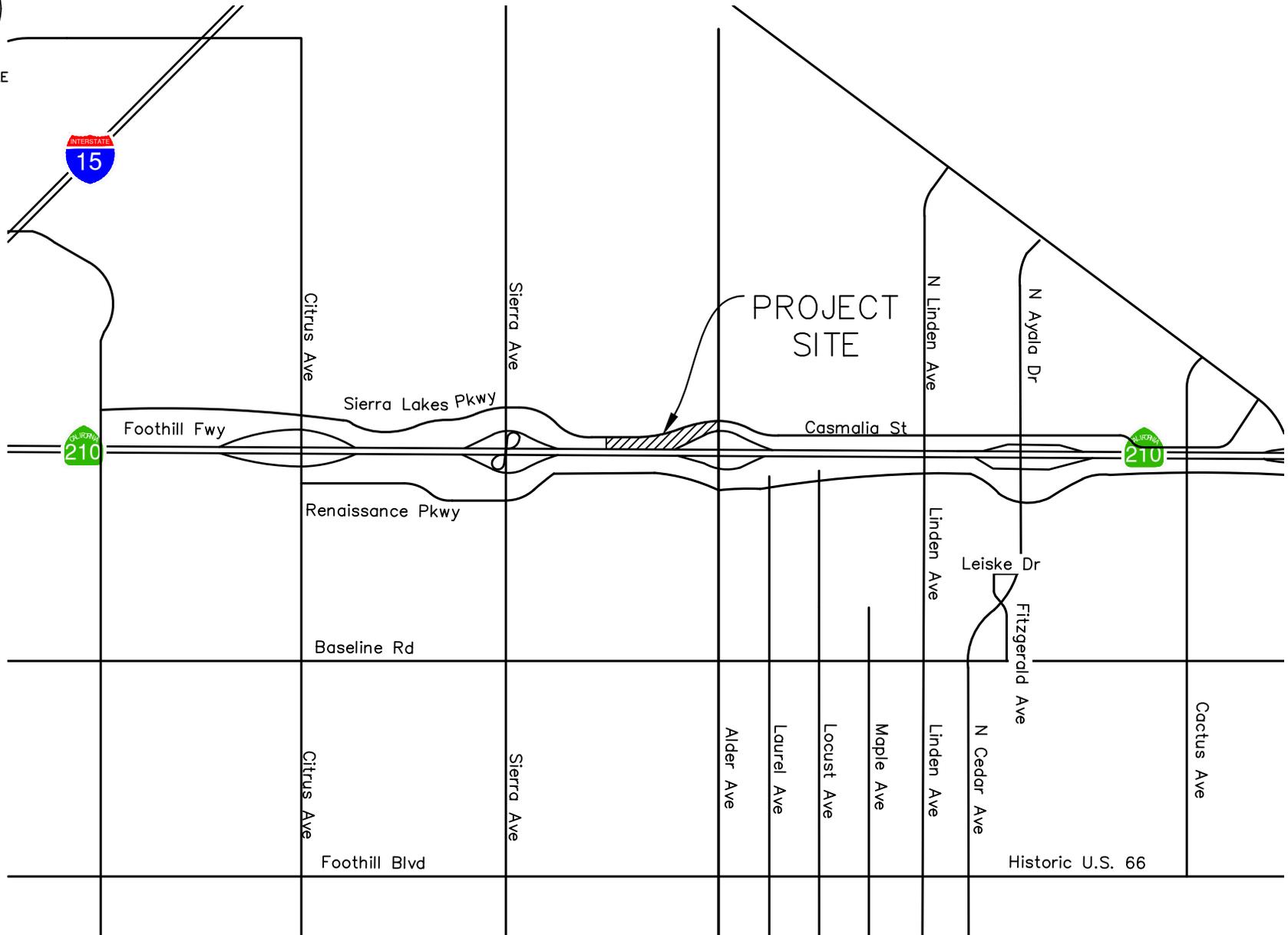
- Existing Conditions
- Opening Year 2022 – Existing Plus Growth
- Opening Year 2022 – Existing Plus Growth Plus Project
- Opening Year 2022 Cumulative – Without Project
- Opening Year 2022 Cumulative – Plus Project

B. Site Plan Location and Study Area

The project is located on the southwest corner of the intersection of Alder Avenue and Sierra Lakes Parkway/Casmalia Street, north of the State Route 210 (SR-210) in the City of Rialto. The project site is shown in its regional setting on a vicinity map on Figure 1. The project site (approximately 13.22 acres) is bounded by Sierra Lakes Parkway to the north, SR-210 to the south, Alder Avenue to the east, and vacant land to the west. The project site is located within the Renaissance Specific Plan area.



NOT TO SCALE



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FIGURE 1
VICINITY MAP



C. Development Project **Identification**

Pending.

D. Development Project Description

The project will involve the construction of a gas station with 16 fueling positions and associated convenience store, a 2,400 square-foot fast food restaurant with a drive-through, 6,375 square-foot shop building, and a truck stop with 9 fueling positions on the currently vacant site. The project would also consist of a parking lot with 103 vehicle parking stalls and 91 truck parking stalls. A copy of the project site plan is provided on Figure 2.

The site is located within the Renaissance Specific Plan, which is located generally between Casmalia Street on the north, Baseline Road on the south, Ayala Drive on the east, and Tamarind and Palmetto Avenues on the west. The Renaissance Specific Plan area covers 1,445 acres, with 81 separate Planning Areas, and is approved for a variety of land uses, including residential, commercial, industrial, and employment uses. The Specific Plan was approved for build-out in three separate phases, over a 20-year period. An amendment to the Specific Plan was approved in December, 2016.

The project site is located within Planning Area 1 (PA 1) of the Renaissance Specific Plan Amendment. The existing land use designation is Freeway Incubator for PA 1. The proposed gas stations with convenience store and fast-food restaurant are permitted uses under the Freeway Incubator designation since it permits for large regional retail and business uses.

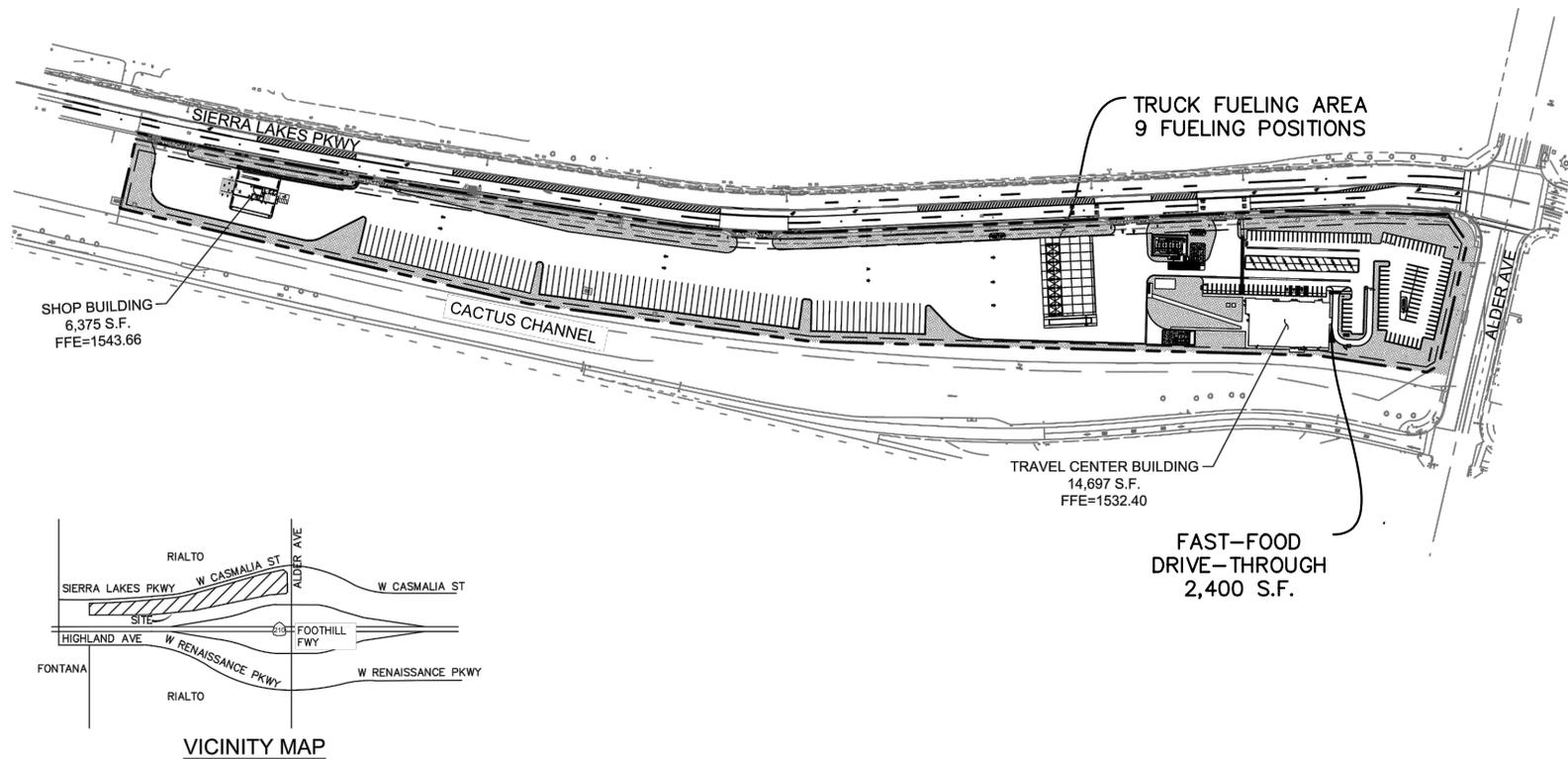
Vehicular access provisions for the project site would consist of the following:

- Three full-movement driveways on Sierra Lakes Parkway for the truck parking stalls and truck fueling positions;
- One exit only driveway on Sierra Lakes Parkway for the truck fueling positions;
- One driveway on Sierra Lakes Parkway for the vehicle fueling positions, convenience store, and fast-food restaurant.

The proposed opening year for the project is Year 2022. The project will be developed in a single project phase. The project site is located within 1 mile from the City of Rialto's border with the City of Fontana.



NOT TO SCALE



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**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) 6th Edition, 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 effects 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 6th Edition), Exhibit 18-4.

² Source: Highway Capacity Manual (HCM 6th Edition), Exhibits 19-1 and 20-2.

3. Roadway Segment Analysis

The roadway segment analysis will address the project's effect 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 effects at the following study intersections:

Existing Intersections:

1. Alder Avenue at Sierra Lakes Parkway/Casmalia Street
2. Alder Avenue at SR-210 Westbound Ramps
3. Alder Avenue at SR-210 Eastbound Ramps
4. Alder Avenue at Renaissance Parkway

Future Driveway Intersections:

- D1. Sierra Lakes Parkway at Driveway #1 (Truck Stop)
- D2. Sierra Lakes Parkway at Driveway #2 (Truck Stop)
- D3. Sierra Lakes Parkway at Driveway #3 (Truck Stop)
- D4. Sierra Lakes Parkway at Driveway #4 (Truck Stop)
- D5. Sierra Lakes Parkway at Driveway #5 (Gas Station)

In addition, the following roadway segments were analyzed:

- Alder Avenue: Sierra Lakes Parkway to SR-210 EB Ramps
- Alder Avenue: SR-210 EB Ramps to SR-210 WB Ramps
- Alder Avenue: SR-210 WB Ramps to Renaissance Parkway

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*.

Due to the current closure of schools and businesses during the COVID-19 pandemic, historical traffic counts (pre-pandemic) were used at the study intersections and an annual growth of 2% was applied to grow the historical traffic volumes to Year 2021 for existing conditions.

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

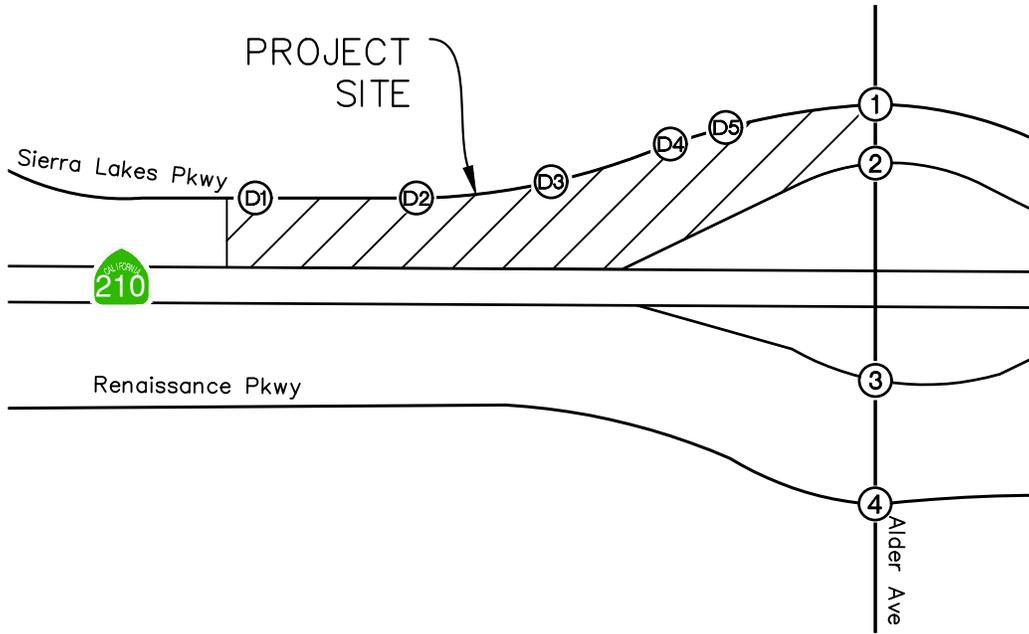
Regional access to the site is provided primarily by the State Route 210 (SR-210) Freeway, to the south of the project site. Access to SR-210 is available on the ramps along Alder Avenue. In addition, the I-215 Freeway is located approximately 6 miles to the east of the site; the I-15 Freeway is approximately 4.5 miles to the west of the site, and access to the I-10 Freeway is approximately 6 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.

Sierra Lakes Parkway/Casmalia Street – Sierra Lakes Parkway is designated as a Secondary Arterial in the Renaissance Specific Plan Amendment, which would provide four travel lanes with a bike lane in each direction and a raised median within 100 feet of right-of-way. Adjacent to the project site, Sierra Lakes Parkway provides three travel lanes with one lane in the eastbound direction and two lanes in the westbound direction. Sierra Lakes Parkway extends in an east-west orientation through and beyond the boundaries of the City of Rialto, changing to W Casmalia Street to the east. Sierra Lakes Parkway is a truck route between Sierra Avenue and Ayala Drive, with truck access restricted to local deliveries to the west of Alder Avenue. Sierra Lakes Parkway will form the north boundary of the project site. The project site plan depicts three full-movement project truck driveways and one exit-only truck driveway as well as one full-movement passenger car driveway on Sierra Lakes Parkway.

Alder Avenue – Alder Avenue is designated as a Major Arterial in the Renaissance Specific Plan Amendment, which would provide four travel lanes, a bike lane in each direction, and a raised median within 100 feet of right-of-way. Alder Avenue extends in a north-south orientation through and beyond the boundaries of the City of Rialto. Alder Avenue is a truck route between Baseline Road to Casa Grande Drive. Alder Avenue will form the east boundary of the project site. The posted speed limit on Alder Avenue is 50 mph.

Renaissance Parkway – Renaissance Parkway is located approximately 0.3-miles south of the project site, and is designated as a Major Arterial, with four travel lanes, a bike lane in each direction, and a raised center median within 108 feet of right-of-way. Renaissance Parkway extends in an east-west orientation through and beyond the boundaries of the City of Rialto, changing to Highland Avenue to the west and Easton Street to the east. Renaissance Parkway connects with a number of north-south streets that have interchanges with the SR-210 Freeway to the north, and the I-10 Freeway to the south. Renaissance Parkway is a truck route between Alder Avenue and Locust Avenue, and east of Ayala Drive; with truck access restricted to local deliveries between Locust Avenue and Ayala Drive, and west of Alder Avenue.



1. Alder Ave at Sierra Lakes Pkwy	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps
4. Alder Ave at Renaissance Pkwy	D1. Sierra Lakes Pkwy at Truck Driveway	D2. Sierra Lakes Pkwy at Truck Driveway
	FUTURE INTERSECTION	FUTURE INTERSECTION
D3. Sierra Lakes Pkwy at Truck Driveway	D4. Sierra Lakes Pkwy at Truck Driveway	D5. Sierra Lakes Pkwy at Vehicle Driveway
FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION



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LEGEND:

- = Study Intersection
- = Turn or Through Lane
- = Signal

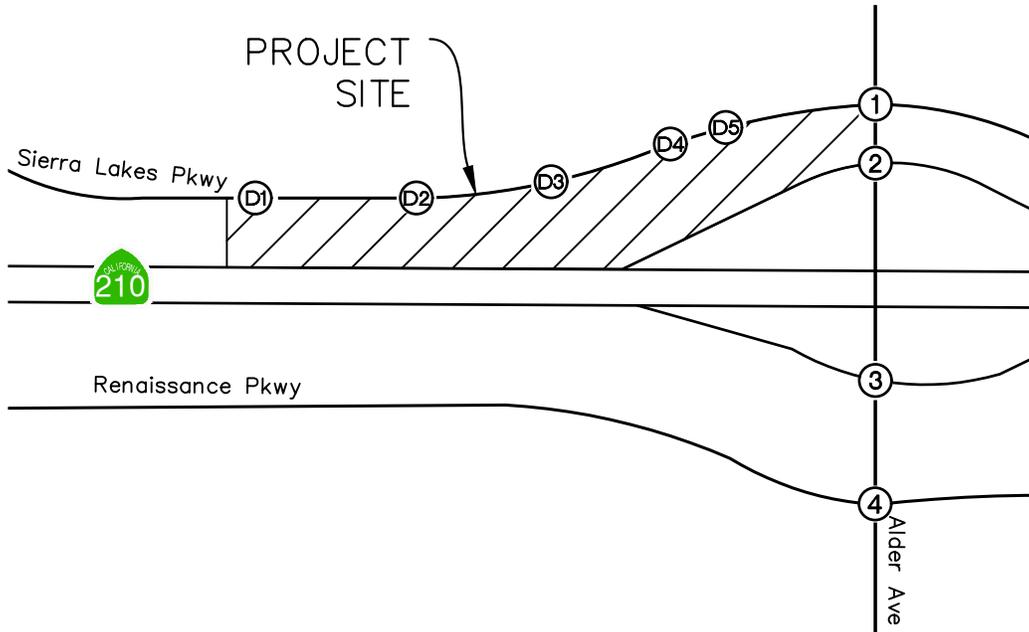
**FIGURE 3
EXISTING LANE CONFIGURATION
AND TRAFFIC CONTROL**

C. Existing Traffic Volumes

As mentioned earlier, due to the disruptions in traffic patterns amid the COVID-19 pandemic, historical traffic data at the study intersections were used for this study. Copies of the traffic count data worksheets are provided in *Appendix B*.

Traffic count data at Intersections #2, #3, and #4 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 effects of truck traffic on intersection 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 volumes for Intersection #1 were estimated based on the amount of truck traffic on nearby study intersections. 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.



1. Alder Ave at Sierra Lakes Pkwy	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps
4. Alder Ave at Renaissance Pkwy	D1. Sierra Lakes Pkwy at Truck Driveway	D2. Sierra Lakes Pkwy at Truck Driveway
D3. Sierra Lakes Pkwy at Truck Driveway	D4. Sierra Lakes Pkwy at Truck Driveway	D5. Sierra Lakes Pkwy at Vehicle Driveway



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LEGEND:

- (X) = Study Intersection
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

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

**FIGURE 4
EXISTING PEAK HOUR
TRAFFIC VOLUMES**



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*.

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

The General Plan Circulation Element references the Renaissance Specific Plan for roadway designations for the project site and the surrounding vicinity. The original Renaissance Specific Plan was approved in 2010. An amendment to the specific plan – the Renaissance Specific Plan Amendment (RSPA) was approved in December 2016. A copy of the RSPA Vehicular Circulation Plan is provided on Figure 5. Designated truck routes in the RSPA area are shown on Figure 6. Project truck traffic is assumed to use the designated truck route system to access the freeway. Beyond the Specific Plan area, Alder Avenue, Locust Avenue, and Ayala Drive continue as truck routes to the north, with only Ayala Drive continuing as a truck route to the south (changing name to Cedar Avenue at Baseline Road). Baseline Road and Casmalia Avenue continue to the west as truck routes outside the Specific Plan area, and Baseline Road continues as a truck route to the east.

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 Sierra Avenue, approximately 1 mile to the west; Baseline Road, approximately 1 mile to the south; and Linden Avenue, approximately 1 mile to the east. 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 6:25 AM to 8:01 PM with approximately 45-minute to 80-minute headways (the time between bus arrivals), on Saturdays from 6:20 AM to 7:20 PM with approximately 1-hour headways, and on Sundays from 7:10 AM to 6:24 PM with approximately 1-hour headways.

OmniTrans Route 22 operates between the City of Rialto and the City of Colton along Linden Avenue in the project vicinity. Route 22 operates on weekdays from 5:05 AM to 9:43 PM with approximately 1-hour headways, on Saturdays from 7:13 AM to 7:28 PM with approximately 1-hour headways, and on Sundays from 7:28 AM to 7:28 PM with approximately 1-hour headways.

OmniTrans Route 82 operates between the City of Rancho Cucamonga and the City of Fontana along Sierra Avenue in the project vicinity. Route 82 operates on weekdays from 4:25 AM to 10:16 PM with approximately 1-hour headways, on Saturdays from 6:14 AM to 7:51 PM with approximately 1-hour headways, and on Sundays from 6:14 AM to 7:57 PM with approximately 1-hour headways. Route 82 has a transfer point with Route 10 at the intersection of Sierra Avenue and Baseline Road.

OmniTrans Route 312 operates between the City of Fontana and the City of San Bernardino along Linden Avenue and Renaissance Parkway in the project vicinity. Route 312 operates on weekdays from 5:20 AM to 10:30 PM with approximately 1-hour headways, on Saturdays from 7:15 AM to 6:50 PM with approximately 1-hour headways, and on Sundays from 7:15 AM to 6:49 PM with approximately 1-hour headways. Route 312 has a transfer point with Route 10 at the intersection of Linden Avenue and Baseline Road. Route 312 has a transfer point with Route 22 at the intersection of Riverside Avenue and Renaissance Parkway.

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 Sierra Lakes Parkway/Casmalia Street	S	46.2	D	43.4	D
2	Alder Avenue at SR-210 WB Ramps	S	28.4	C	29.7	C
3	Alder Avenue at SR-210 EB Ramps	S	26.9	C	23.7	C
4	Alder Avenue at Renaissance Parkway	S	27.9	C	26.3	C

Notes:

- 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 Highway Capacity Manual, (6th Edition).
- S = Signalized
U = Unsignalized

TABLE 2
SUMMARY OF ROADWAY SEGMENT ANALYSIS
EXISTING CONDITIONS

Roadway	Segment	Existing ADT	LOS D Capacity	LOS D or Better?
Alder Avenue	Sierra Lakes Pkwy to SR-210 EB Ramps	14,300	32,999	Yes
	SR-210 EB Ramps to SR-210 WB Ramps	15,300	32,999	Yes
	SR-210 WB Ramps to Renaissance Pkwy	18,200	32,999	Yes



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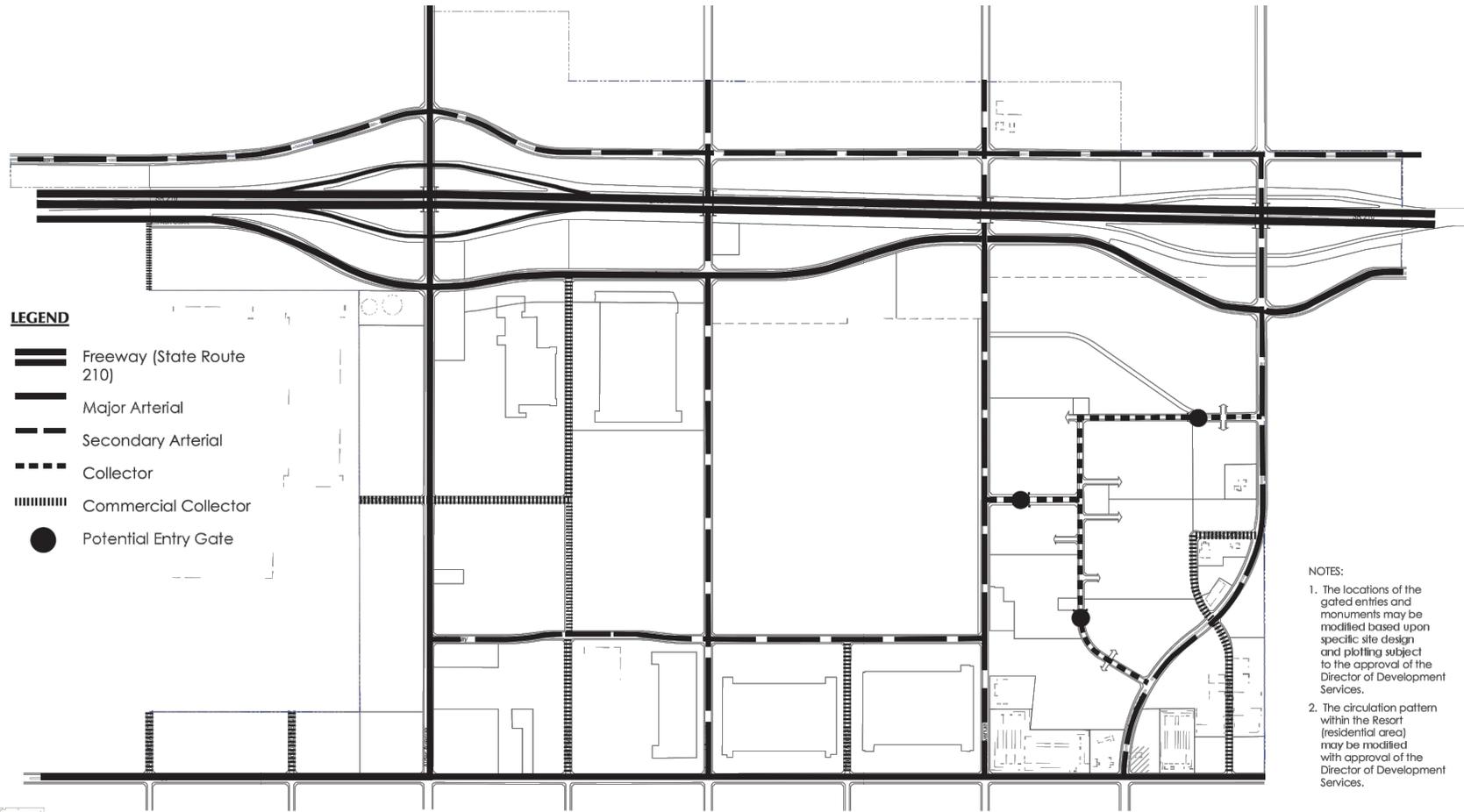


FIGURE 5
RENAISSANCE SPECIFIC PLAN AMENDMENT
VEHICULAR CIRCULATION PLAN



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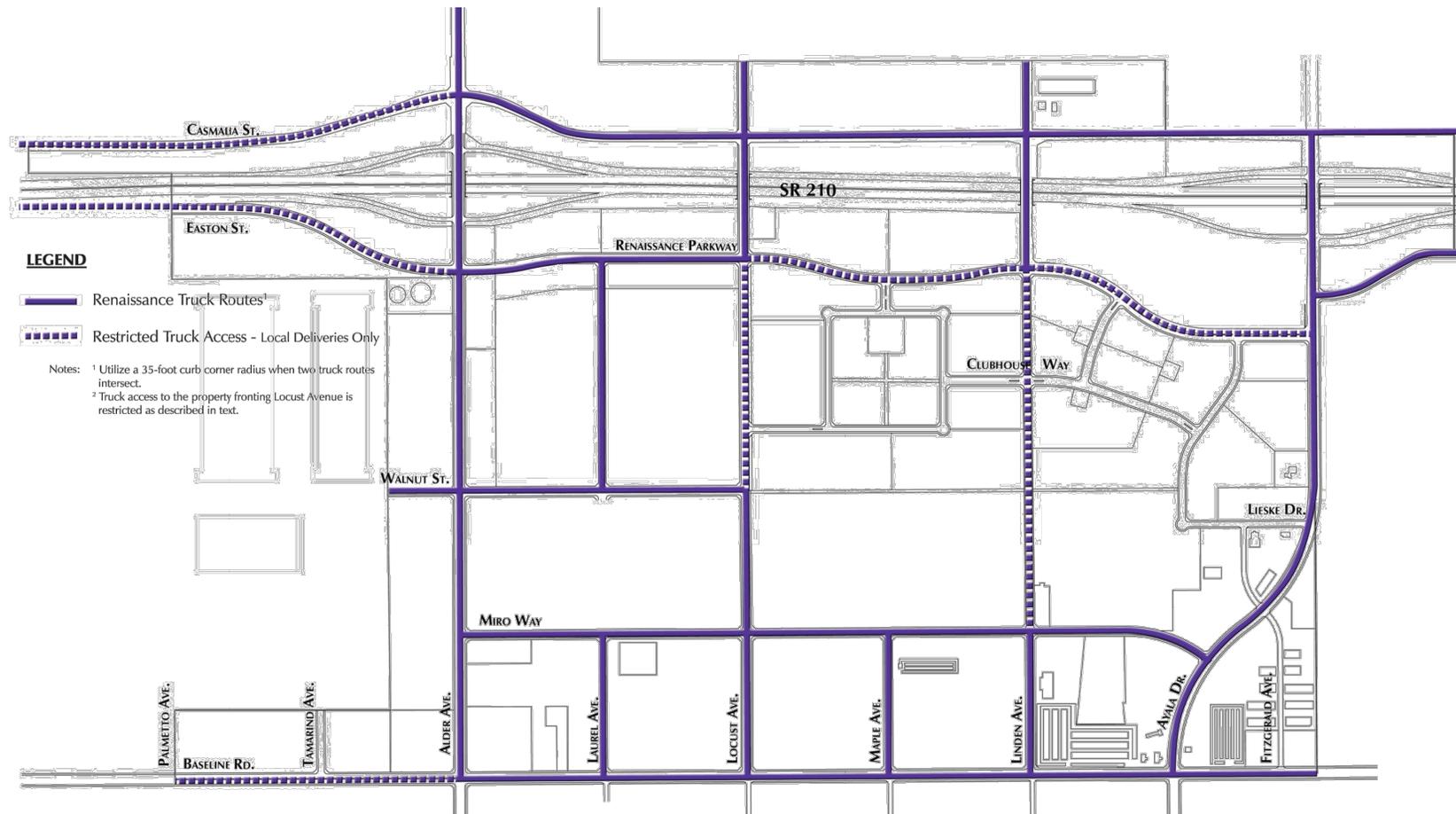


FIGURE 6
RENAISSANCE SPECIFIC PLAN TRUCK ROUTES

III. PROJECTED FUTURE TRAFFIC

A. Project Traffic

1. Project Trip Generation

Trip generation estimates for the project are based on daily and peak hourly trip generation rates obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition). ITE trip generation estimates for the project are based on the trip generation rates for the following ITE Land Uses: ITE Land Use 934 – Fast-Food Restaurant with Drive-Through Window; ITE Land Use 960 – Gas Station with Convenience Market; and ITE Land Use 950 – Truck Stop. It is assumed that trips generated by the fast-food restaurant and the gas station with convenience market are all passenger vehicle trips while trips generated by the truck stop are all truck trips. It should be noted that a daily trip generation rate for ITE Land Use 950 (Truck Stop) is not available. Therefore, sales data provided by the applicant for similar truck stop facilities, such as gallons of fuel sold on a monthly and daily basis and the average gallons of fuel filled for each truck, were used to determine an approximate number of trucks to visit the truck stop each day and to determine a custom daily rate for the project.

Not all trips from the project are anticipated to be new. Some trips are expected to be captured by the internal land uses, or from the existing flow of traffic passing the site. Internal capture, pass-by, and diverted trip reductions were applied to the project based on methodology within the ITE Trip Generation Handbook (3rd Edition) and the National Cooperative Highway Research Program (NCHRP) 684 Internal Trip Capture Estimation Tool.

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. The trip generation rates and PCE factors, and the resulting trip generation estimates for the project are summarized on Table 3. With the PCE factors, the project is estimated to generate 5,523 PCE trips on a daily basis, with 553 PCE trips in the morning peak hour, and 515 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, and the routes to and from the freeway system for the vehicles and trucks. Separate distribution patterns were assumed for passenger car trips and truck trips. 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.

B. Existing Plus Growth Plus Project Traffic (Opening Year 2022)

The project Opening Year is anticipated to be Year 2022.

1. Ambient Growth Rate

An ambient growth rate of 2.0% per year to Opening Year 2022 was applied to existing peak hour traffic volumes to develop Existing Plus Growth forecasts. The resulting peak hour Existing Plus Growth without the project (Opening Year 2022) traffic volumes are shown on Figure 10.

Project traffic was then added to develop Existing Plus Growth Plus Project (Opening Year 2022) traffic forecasts. Existing Plus Growth Plus Project peak hour traffic volumes are shown on Figure 11.

2. Opening Year 2022 Existing Plus Growth

Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for Existing Plus Growth without the project (Opening Year 2022). The results are shown on Table 4. Intersection analysis worksheets for this scenario are provided in *Appendix D*.

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

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 Plus Growth conditions are shown on Table 5.

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

TABLE 3
SUMMARY OF PROJECT TRIP GENERATION
RIALTO TRAVEL CENTER

Trip Generation Rates									
Land Use	ITE Code (a)	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Fast-Food Restaurant w Drive-Through Window	934	ksf	470.950	0.51	0.49	40.19	0.52	0.48	32.67
Super Convenience Market/Gas Station	960	FP	230.520	0.50	0.50	28.08	0.50	0.50	22.96
Truck Stop	Data (b) / 950	FP	88.889	0.51	0.49	7.18	0.49	0.51	8.41
Project Trip Generation									
Land Use	Quantity	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Passenger Car Trips									
Fast-Food Restaurant with Drive-Through	2,400	ksf	1,130	49	47	96	41	37	78
<i>Internal Capture (c) (Daily: 10%, AM: 10%, PM: 10%)</i>			-113	-5	-5	-10	-4	-4	-8
<i>Pass-By Trips (d) (Daily: 25%, AM: 25%, PM: 25%)</i>			-254	-11	-11	-22	-9	-9	-18
Super Convenience Market/Gas Station	16	FP	3,688	225	224	449	184	183	367
<i>Internal Capture (c) (Daily: 10%, AM: 10%, PM: 10%)</i>			-369	-23	-22	-45	-19	-18	-37
<i>Pass-By Trips (d) (Daily: 25%, AM: 25%, PM: 25%)</i>			-830	-51	-50	-101	-42	-41	-83
Truck Trips (f) (g) (h)									
Truck Stop	9	FP	800	33	32	65	37	39	76
<i>Pass-By Trips (i) (Daily: 5%, AM: 5%, PM: 5%)</i>			-40	-2	-1	-3	-2	-2	-4
PCE Truck Stop (PCE Factor = 3)			2,400	99	96	195	111	117	228
<i>PCE Pass-By Trips (i) (Daily: 5%, AM: 5%, PM: 5%)</i>			-120	-6	-3	-9	-6	-6	-12
Total Driveway Trips			6,736	345	340	685	313	315	628
Passenger Car			4,336	246	244	490	202	198	400
Truck PCE			2,400	99	96	195	111	117	228
Total Primary Trips			5,532	277	276	553	256	259	515
Passenger Car			3,252	184	183	367	151	148	299
Truck PCE			2,280	93	93	186	105	111	216
Notes:									
KSF = thousand square feet, FP = Fueling Position									
AM and/or PM rates correspond to peak of adjacent street traffic									
(a) Trip Generation data for ITE Codes from <i>ITE Trip Generation, 10th Edition</i>									
(b) Daily Trip Generation data provided by Applicant									
(c) Internal capture rates from ITE Trip Generation Handbook, 3rd Edition NCHRP 684 Interna Trip Capture Estimation Tool									
(d) Pass-by rates from ITE Trip Generation Handbook, 3rd Edition for ITE LU 934 Fast-Food Restaurant With Drive-Through Window and LU 945 Gasoline/Service Station With Convenience Market									
(e) Diverted trip rates from ITE Trip Generation Handbook, 3rd Edition for ITE LU 934 Fast-Food Restaurant With Drive-Through Window and LU 945 Gasoline/Service Station With Convenience Market									
(f) Truck trips include trips to the Truck Stop land use portion only, using daily trip information obtained from similar facilities									
(g) Peak hour information estimated using peak hour percentages from ITE Trip Generation Manual, 10th Edition									
(h) No internal capture was assumed for the Truck Stop land use, as a truck stop is assumed to include a variety of services									
(i) As there was no supporting data available to define the number of pass-by trips, pass-by rates were estimated to be 5%									
(j) As there was no supporting data available to define the number of pass-by trips, diverted rates were estimated to be similar to a Super Convenience Market with Gas Station									



NOT TO SCALE

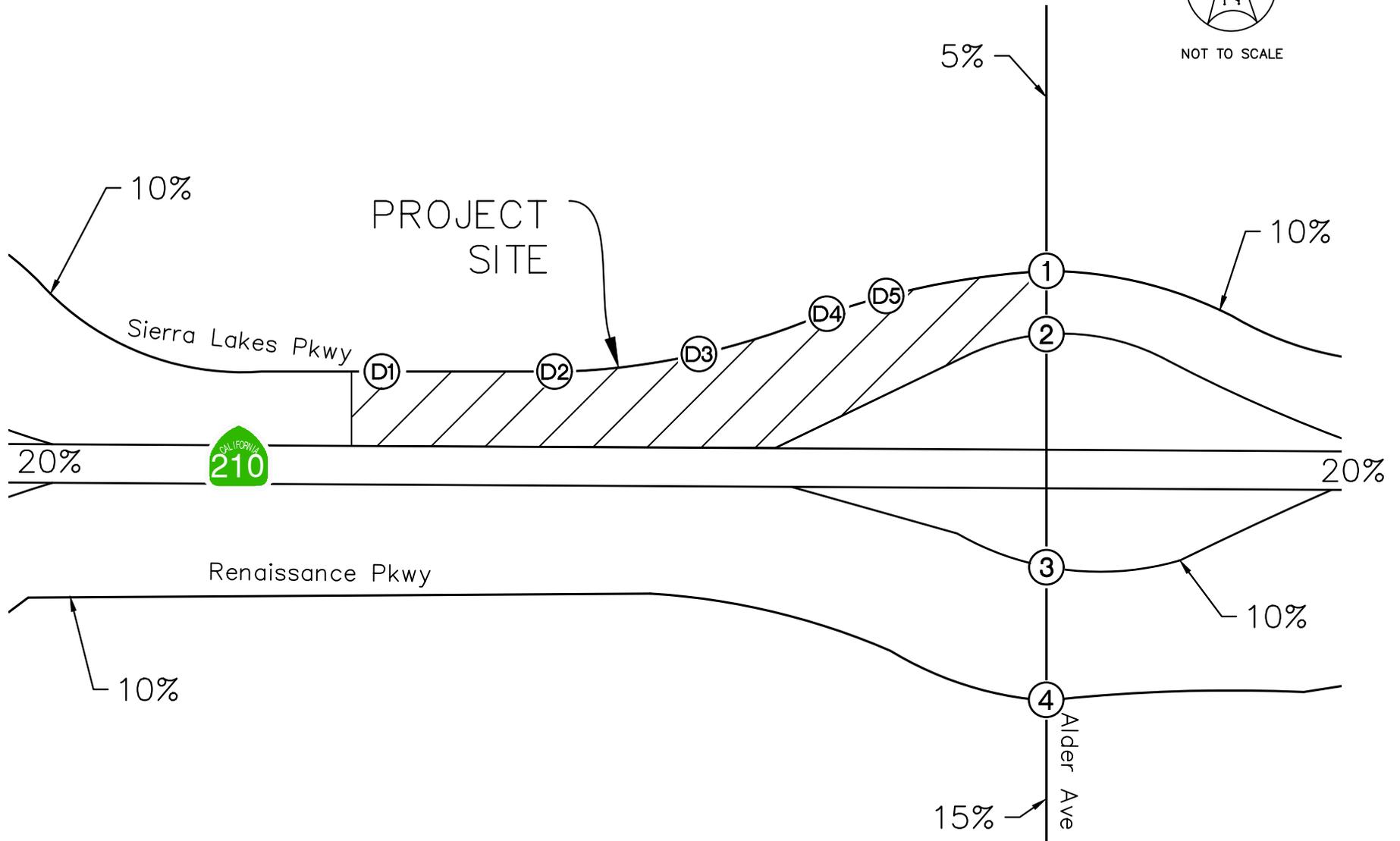
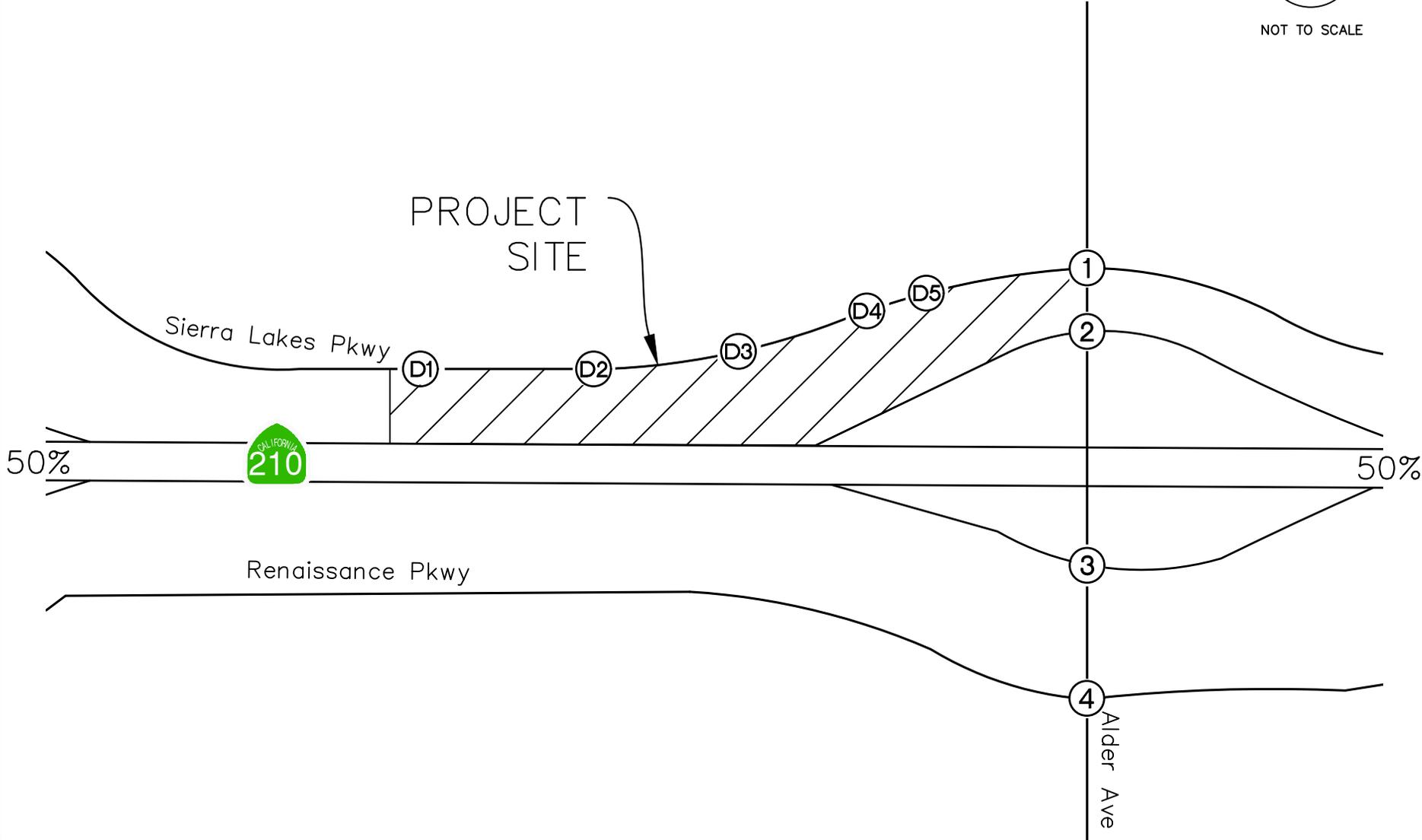


FIGURE 7
PROJECT TRIP DISTRIBUTION - PASSENGER CARS



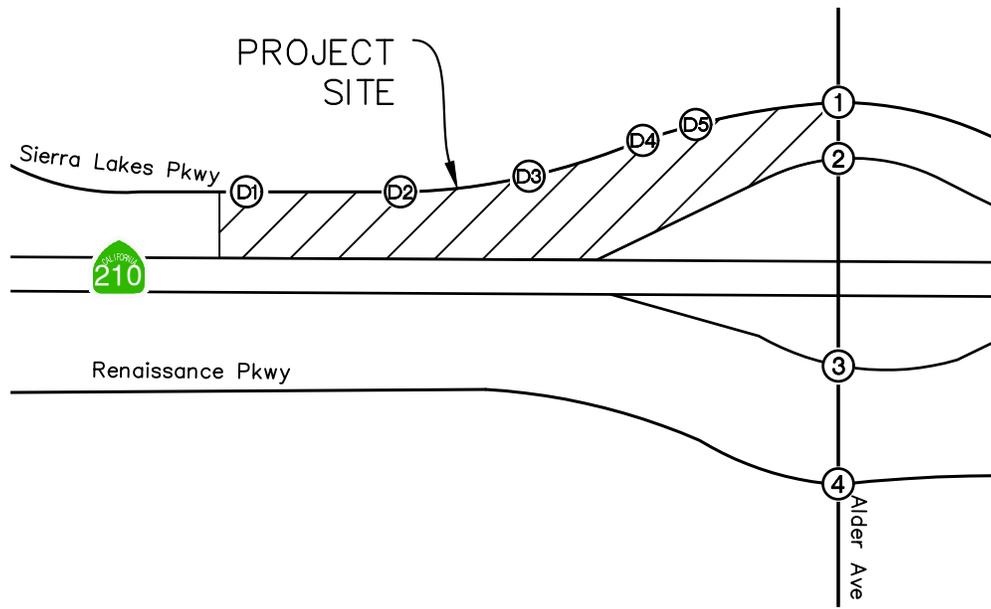
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FIGURE 8
PROJECT TRIP DISTRIBUTION - TRUCKS





1. Alder Ave at Sierra Lakes Pkwy	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps
4. Alder Ave at Renaissance Pkwy	D1. Sierra Lakes Pkwy at Truck Driveway	D2. Sierra Lakes Pkwy at Truck Driveway
D3. Sierra Lakes Pkwy at Truck Driveway	D4. Sierra Lakes Pkwy at Truck Driveway	D5. Sierra Lakes Pkwy at Vehicle Driveway



NOT TO SCALE

LEGEND:

(X) = Study Intersection

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

**FIGURE 9
PROJECT-RELATED TRAFFIC VOLUMES**



3. Opening Year 2022 Existing Plus Growth Plus Project

Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for Existing Plus Growth with the project (Opening Year 2022 Plus Project). The results are shown on Table 6. Intersection analysis worksheets for this scenario are provided in *Appendix D*.

Review of this table indicates that with the addition of project traffic, the following intersections would operate at an unacceptable Level of Service:

- #1 – Alder Avenue at Sierra Lakes Parkway/Casmalia Street: AM – LOS E, PM – LOS E

Based on the significance thresholds presented earlier in this report, these intersections would experience a direct project effect due to increase in delay caused by the addition of project traffic to the following intersection:

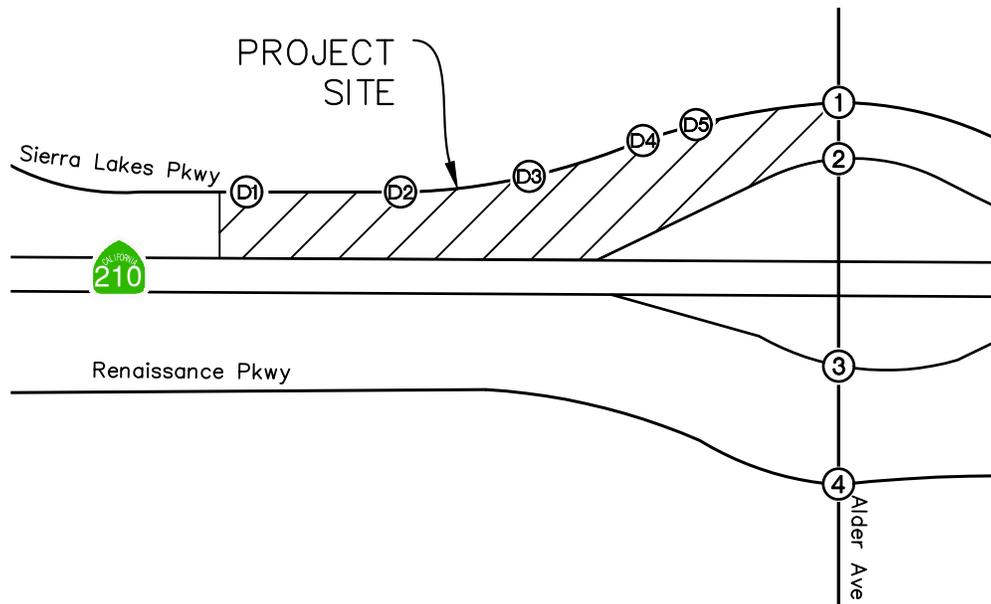
- #1 – Alder Avenue at Sierra Lakes Parkway/Casmalia Street: AM – LOS E, PM – LOS E

Recommended improvements at intersections #1 and #2 are presented in the Recommended Improvements section of this report. Copies of intersection analysis worksheets are provided in Appendix D.

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 Plus Growth Plus Project conditions are shown on Table 7.

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



1. Alder Ave at Sierra Lakes Pkwy	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps
4. Alder Ave at Renaissance Pkwy	D1. Sierra Lakes Pkwy at Truck Driveway	D2. Sierra Lakes Pkwy at Truck Driveway
D3. Sierra Lakes Pkwy at Truck Driveway	D4. Sierra Lakes Pkwy at Truck Driveway	D5. Sierra Lakes Pkwy at Vehicle Driveway



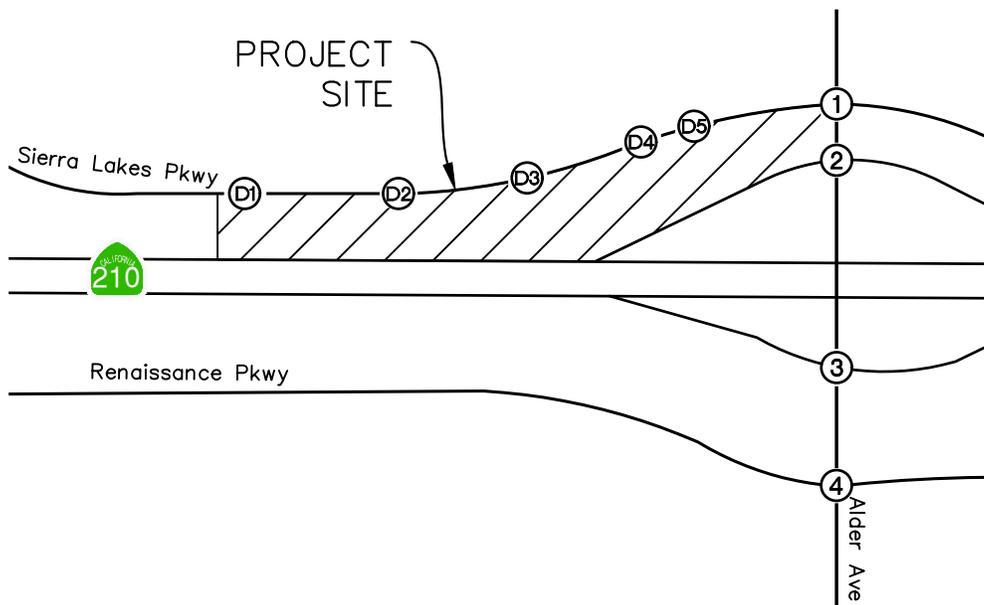
NOT TO SCALE

LEGEND:

- (X) = Study Intersection
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

**FIGURE 10
OPENING YEAR 2022 - EXISTING PLUS GROWTH
TRAFFIC VOLUMES**





1. Alder Ave at Sierra Lakes Pkwy	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps
4. Alder Ave at Renaissance Pkwy	D1. Sierra Lakes Pkwy at Truck Driveway	D2. Sierra Lakes Pkwy at Truck Driveway
D3. Sierra Lakes Pkwy at Truck Driveway	D4. Sierra Lakes Pkwy at Truck Driveway	D5. Sierra Lakes Pkwy at Vehicle Driveway



NOT TO SCALE

LEGEND:

- (X) = Study Intersection
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

**FIGURE 11
OPENING YEAR 2022 - EXISTING PLUS GROWTH
PLUS PROJECT TRAFFIC VOLUMES**



TABLE 4
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2022 - EXISTING PLUS GROWTH

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Alder Avenue at Sierra Lakes Parkway/Casmalia Street	S	47.6	D	43.9	D
2	Alder Avenue at SR-210 WB Ramps	S	29.6	C	31.1	C
3	Alder Avenue at SR-210 EB Ramps	S	27.3	C	24.1	C
4	Alder Avenue at Renaissance Parkway	S	28.0	C	26.5	C

Notes:

- 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 Highway Capacity Manual, (6th Edition).
- S = Signalized
U = Unsignalized

TABLE 5
SUMMARY OF ROADWAY SEGMENT ANALYSIS
OPENING YEAR 2022 - EXISTING PLUS GROWTH

Roadway	Segment	Existing ADT	Opening Year 2022 Base ADT	LOS D Capacity	LOS D or Better?
Alder Avenue	Sierra Lakes Pkwy to SR-210 EB Ramps	14,300	14,400	32,999	Yes
	SR-210 EB Ramps to SR-210 WB Ramps	15,300	15,500	32,999	Yes
	SR-210 WB Ramps to Renaissance Pkwy	18,200	18,400	32,999	Yes

TABLE 6
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2022 - EXISTING PLUS GROWTH PLUS PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Change Delay	Sig Effect?	Without Project		With Project		Change Delay	Sig Effect?
			Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	Alder Avenue at Sierra Lakes Parkway/Casmalia Street	S	47.6	D	74.4	E	26.8	No	43.9	D	59.3	E	15.4	Yes
2	Alder Avenue at SR-210 WB Ramps	S	29.6	C	35.0	C	5.4	No	31.1	C	35.2	D	4.1	Yes
3	Alder Avenue at SR-210 EB Ramps	S	27.3	C	31.5	C	4.2	No	24.1	C	26.3	C	2.2	No
4	Alder Avenue at Renaissance Parkway	S	28.0	C	28.9	C	0.9	No	26.5	C	28.0	C	1.5	No
D1	Sierra Lakes Parkway at Driveway #1 (Truck Stop)	U	-	-	8.8	A	-	-	-	-	9.7	A	-	-
D2	Sierra Lakes Parkway at Driveway #2 (Truck Stop)	U	-	-	8.9	A	-	-	-	-	9.9	A	-	-
D3	Sierra Lakes Parkway at Driveway #3 (Truck Stop)	U	-	-	9.0	A	-	-	-	-	10.0	A	-	-
D4	Sierra Lakes Parkway at Driveway #4 (Truck Stop)	U	-	-	9.0	A	-	-	-	-	10.1	B	-	-
D5	Sierra Lakes Parkway at Driveway #5 (Gas Station)	U	-	-	10.6	B	-	-	-	-	12.0	B	-	-

Notes:

- Bold and shaded values indicate intersections operating at an unacceptable Level of Service 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 Highway Capacity Manual, (6th Edition).

S = Signalized
U = Unsignalized

TABLE 7
SUMMARY OF ROADWAY SEGMENT ANALYSIS
OPENING YEAR 2022 - EXISTING PLUS GROWTH PLUS PROJECT

Roadway	Segment	Opening Year 2022 Base ADT	Project ADT	Opening Year Plus Project ADT	LOS D Capacity	LOS D or Better?
Alder Avenue	Sierra Lakes Pkwy to SR-210 EB Ramps	14,400	3,200	17,600	32,999	Yes
	SR-210 EB Ramps to SR-210 WB Ramps	15,500	2,300	17,800	32,999	Yes
	SR-210 WB Ramps to Renaissance Pkwy	18,400	1,100	19,500	32,999	Yes

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 12. Cumulative Project traffic volumes are shown on Figure 13.

2. Background Growth Rate

As discussed earlier, an ambient growth rate of 2.0% per year to Opening Year 2022 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*.

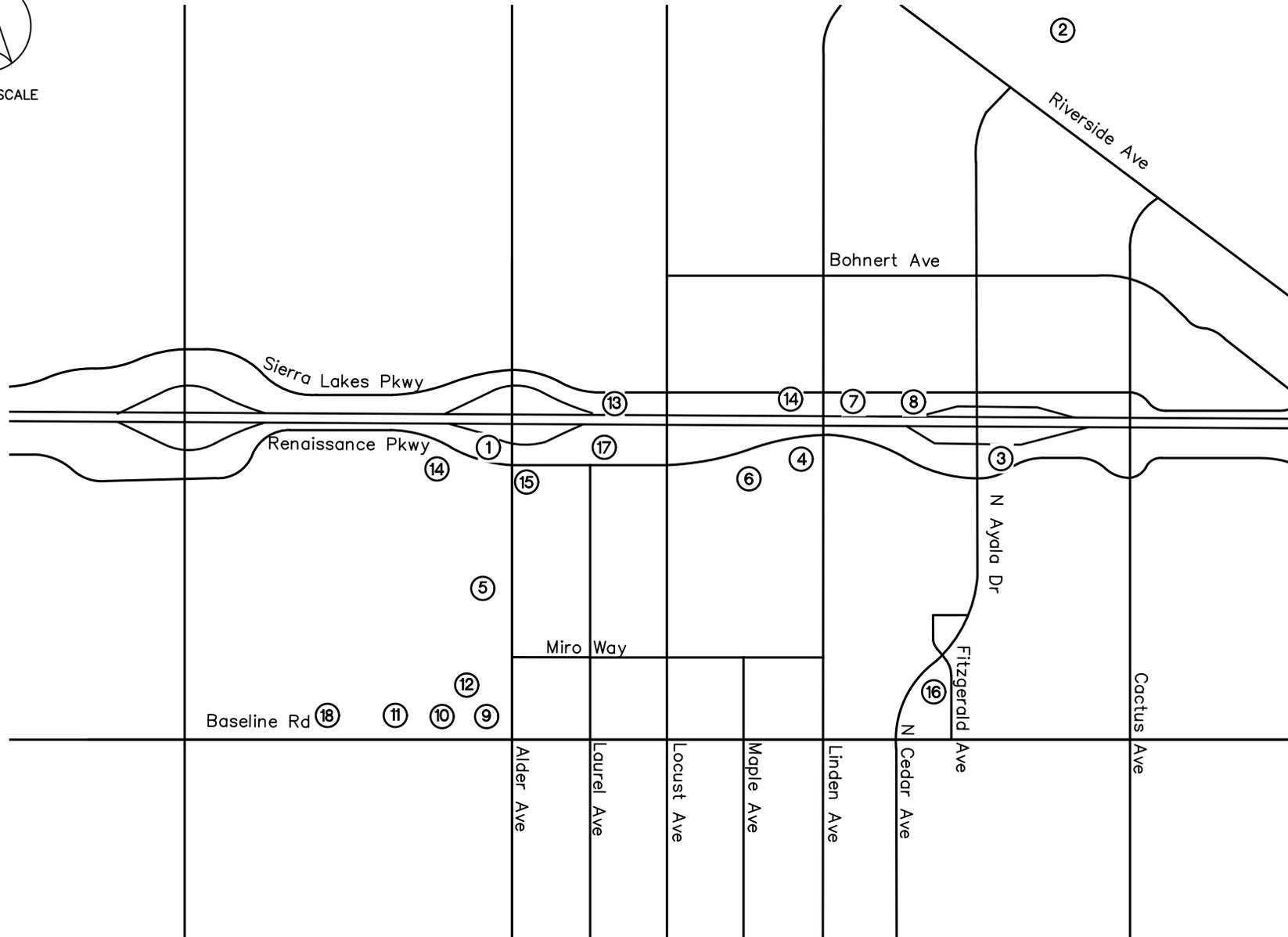
TABLE 8
SUMMARY OF CUMULATIVE PROJECTS

Project #	Land Use	Quantity	Units	Trip Generation Estimates							
				Daily	AM Peak Hour			PM Peak Hour			
					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	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	Renaissance East										
	High-Turnover (Sit-Down) Restaurant	8,849	KSF	993	48	40	88	54	33	87	
	Specialty Retail Center	4,550	KSF	202	-	-	-	5	7	12	
	Pass-by Specialty Retail Center (10%)			-40	0	0	0	-1	-1	-2	
4	Hotel (SWC of Linden and Renaissance)	135	Occupied Room	1,204	52	38	90	46	48	94	
5	Morin Warehouse	200,000	KSF	1,193	77	22	99	26	78	104	
6	Buildings 7, 8, and 9 Warehouse	540,427	KSF	3,224	216	57	273	73	218	291	
7	SEC Casmalia / Linden Warehouse	136,220	KSF	813	54	13	67	18	55	73	
8	Fuel Station/Fast Food (SWC of Casmalia / Ayala)	7,000	KSF	4,419	202	188	390	174	164	338	
9	NWC Baseline / Alder Warehouse	255,655	KSF	1,526	104	28	132	34	104	138	
10	NWC Baseline / Tamarind Warehouse	156,500	KSF	935	65	18	83	23	65	88	
11	Warehouse (Baseline / Palmetto)	99,999	KSF	599	41	12	53	13	41	54	
12	Warehouse (W/S Alder and S/O Miro)	78,680	KSF	698	32	31	63	34	35	67	
13	Warehouse (SEC Casmalia/Laurel)	87,189	KSF	524	25	24	49	26	25	51	
14	Warehouse (SWC Casmalia/Linden)	116,429	KSF	500	24	24	48	25	25	50	
15	Fuel / FF / Market (SEC Renaissance and Alder)		FUELING POSITIONS	9,993	557	556	1,113	454	454	908	
16	Crow Holdings (N/S Baseline E/O Ayala)	668,524	KSF	1,163	88	26	114	34	93	127	
17	Orbis (NEC Renaissance and Laurel)	135,408	KSF	236	18	5	23	7	19	26	
18	Warehouse II (Baseline and Palmetto NEC)	90,726	KSF	158	12	4	16	5	13	18	
Total Project Trips				39,925	1,940	1,677	3,616	1,673	1,892	3,562	

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



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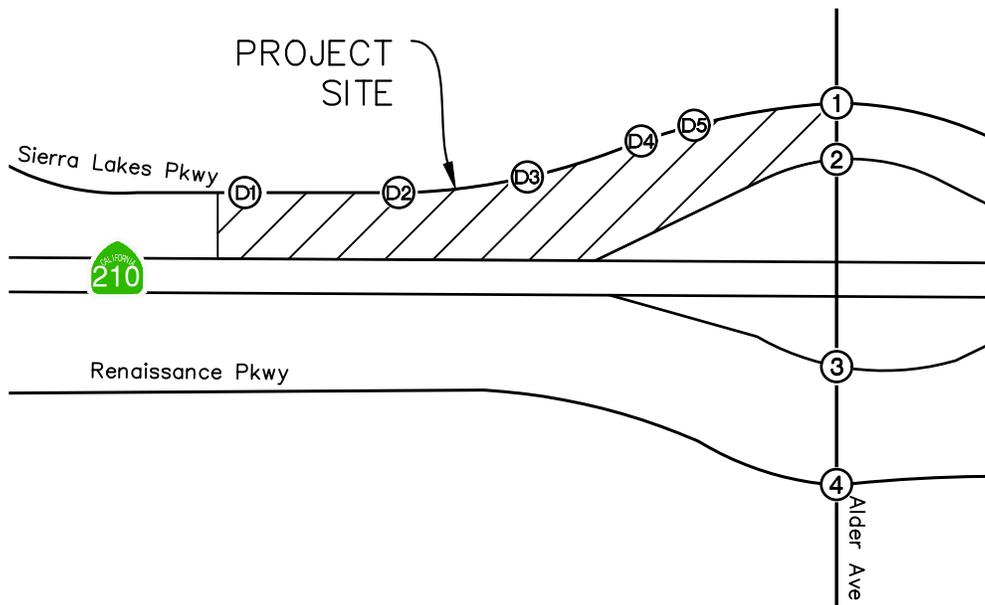


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FIGURE 12
LOCATION OF CUMULATIVE PROJECTS

LEGEND:
⊗ = Cumulative Project





1. Alder Ave at Sierra Lakes Pkwy	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps
4. Alder Ave at Renaissance Pkwy	D1. Sierra Lakes Pkwy at Truck Driveway	D2. Sierra Lakes Pkwy at Truck Driveway
D3. Sierra Lakes Pkwy at Truck Driveway	D4. Sierra Lakes Pkwy at Truck Driveway	D5. Sierra Lakes Pkwy at Vehicle Driveway



NOT TO SCALE

LEGEND:

- (X) = Study Intersection
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

**FIGURE 13
CUMULATIVE PROJECTS
TRAFFIC VOLUMES**

5. Opening Year 2022 Cumulative Without Project Conditions

Peak Hour Operating Conditions

Peak hour traffic volumes for Opening Year 2022 Cumulative Without Project Conditions are shown on Figure 14. 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:

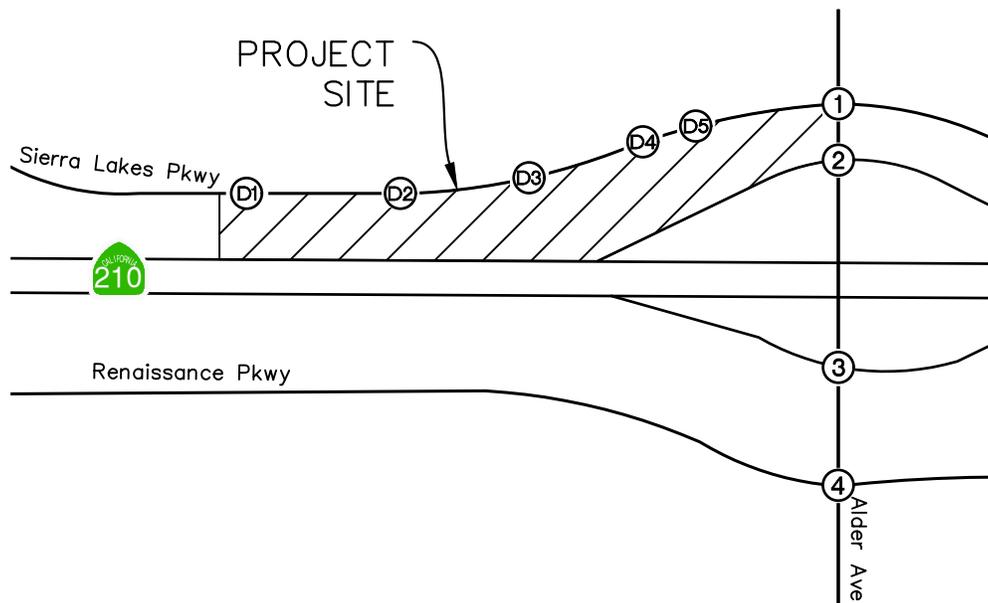
- #1 – Alder Avenue at Sierra Lakes Parkway/Casmalia Street: AM – LOS F, PM – LOS E
- #2 – Alder Avenue at SR-210 Westbound Ramps: AM – LOS F, PM – LOS F
- #3 – Alder Avenue at SR-210 Eastbound Ramps: AM – LOS F, PM – LOS E
- #4 – Alder Avenue at Renaissance Parkway: AM – LOS F, PM – LOS F

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

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 Opening Year 2022 Cumulative without Project conditions are shown on Table 10.

Review of this table indicates that, with the addition of Cumulative Projects traffic, the study roadway segments would continue to operate within their current Level of Service D capacity.



1. Alder Ave at Sierra Lakes Pkwy	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps
4. Alder Ave at Renaissance Pkwy	D1. Sierra Lakes Pkwy at Truck Driveway	D2. Sierra Lakes Pkwy at Truck Driveway
D3. Sierra Lakes Pkwy at Truck Driveway	D4. Sierra Lakes Pkwy at Truck Driveway	D5. Sierra Lakes Pkwy at Vehicle Driveway



NOT TO SCALE

LEGEND:

- (X) = Study Intersection
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

**FIGURE 14
OPENING YEAR 2022 CUMULATIVE WITHOUT
PROJECT TRAFFIC VOLUMES**

TABLE 9
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2022 CUMULATIVE WITHOUT PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Alder Avenue at Sierra Lakes Parkway/Casmalia Street	S	86.1	F	68.2	E
2	Alder Avenue at SR-210 WB Ramps	S	90.0	F	113.9	F
3	Alder Avenue at SR-210 EB Ramps	S	98.2	F	73.7	E
4	Alder Avenue at Renaissance Parkway	S	81.5	F	88.1	F

Notes:

- Bold and shaded values indicate intersections operating at an unacceptable Level of Service 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 Highway Capacity Manual, (6th Edition).

S = Signalized
U = Unsignalized

TABLE 10
SUMMARY OF ROADWAY SEGMENT ANALYSIS
OPENING YEAR 2022 CUMULATIVE WITHOUT PROJECT CONDITIONS

Roadway	Segment	Opening Year ADT	Cumulative Projects ADT	Opening Year Plus CP ADT	LOS D Capacity	LOS D or Better?
Alder Avenue	Sierra Lakes Pkwy to SR-210 EB Ramps	14,400	6,000	20,400	32,999	Yes
	SR-210 EB Ramps to SR-210 WB Ramps	15,500	9,300	24,800	32,999	Yes
	SR-210 WB Ramps to Renaissance Pkwy	18,400	11,300	29,700	32,999	Yes

6. Opening Year 2022 Cumulative Plus Project Conditions

Peak Hour Operating Conditions

Project traffic was added to Opening Year 2022 Cumulative traffic volumes to develop Opening Year 2022 Cumulative Plus Project traffic forecast volumes. The resulting peak hour traffic volumes are shown on Figure 15.

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 operate at an unacceptable Level of Service:

- #1 – Alder Avenue at Sierra Lakes Parkway/Casmalia Street: AM – LOS F, PM – LOS F
- #2 – Alder Avenue at SR-210 Westbound Ramps: AM – LOS F, PM – LOS F
- #3 – Alder Avenue at SR-210 Eastbound Ramps: AM – LOS F, PM – LOS F
- #4 – Alder Avenue at Renaissance Parkway: AM – LOS F, PM – LOS F

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

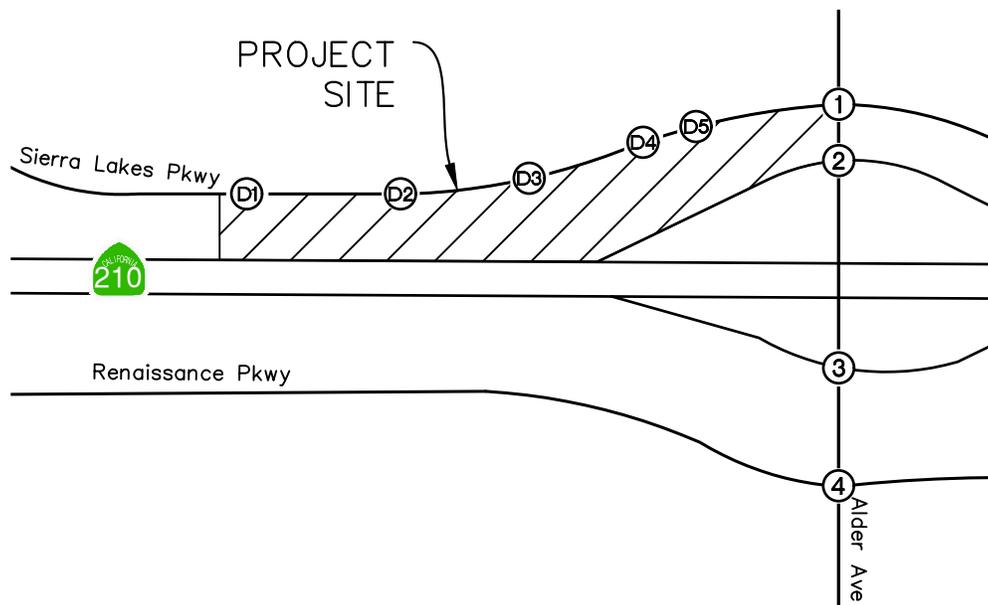
- #2 – Alder Avenue at SR-210 Westbound Ramps: AM – LOS F, PM – LOS F
- #3 – Alder Avenue at SR-210 Eastbound Ramps: AM – LOS F, PM – LOS F
- #4 – Alder Avenue at Renaissance Parkway: AM – LOS F, PM – LOS F

Recommended improvements are presented in the Recommended Improvements section of this report. Copies of intersection analysis worksheets for this scenario are provided in *Appendix D*.

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 Opening Year 2022 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 current Level of Service D capacity.



1. Alder Ave at Sierra Lakes Pkwy	2. Alder Ave at SR-210 WB Ramps	3. Alder Ave at SR-210 EB Ramps
4. Alder Ave at Renaissance Pkwy	D1. Sierra Lakes Pkwy at Truck Driveway	D2. Sierra Lakes Pkwy at Truck Driveway
D3. Sierra Lakes Pkwy at Truck Driveway	D4. Sierra Lakes Pkwy at Truck Driveway	D5. Sierra Lakes Pkwy at Vehicle Driveway



NOT TO SCALE

LEGEND:

- (X) = Study Intersection
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

**FIGURE 15
OPENING YEAR 2022 CUMULATIVE PLUS PROJECT
TRAFFIC VOLUMES**

TABLE 11
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2022 CUMULATIVE PLUS PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Change Delay	Sig Effect?	Without Project		With Project		Change Delay	Sig Effect?
			Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	Alder Avenue at Sierra Lakes Parkway/Casmalia Street	S	86.1	F	118.8	F	32.7	Yes	68.2	E	89.0	F	20.8	Yes
2	Alder Avenue at SR-210 WB Ramps	S	90.0	F	122.8	F	32.8	Yes	113.9	F	146.2	F	32.3	Yes
3	Alder Avenue at SR-210 EB Ramps	S	98.2	F	118.7	F	20.5	Yes	73.7	E	92.9	F	19.2	Yes
4	Alder Avenue at Renaissance Parkway	S	81.5	F	93.7	F	12.1	Yes	88.1	F	96.7	F	8.7	Yes
D1	Sierra Lakes Parkway at Driveway #1 (Truck Stop)	U	-	-	9.0	A	-	No	-	-	10.0	A	-	No
D2	Sierra Lakes Parkway at Driveway #2 (Truck Stop)	U	-	-	9.1	A	-	No	-	-	10.1	B	-	No
D3	Sierra Lakes Parkway at Driveway #3 (Truck Stop)	U	-	-	9.2	A	-	No	-	-	10.2	B	-	No
D4	Sierra Lakes Parkway at Driveway #4 (Truck Stop)	U	-	-	9.3	A	-	No	-	-	10.3	B	-	No
D5	Sierra Lakes Parkway at Driveway #5 (Gas Station)	U	-	-	11.1	B	-	No	-	-	12.5	B	-	No

Notes:

- Bold and shaded values indicate intersections operating at an unacceptable Level of Service 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 Highway Capacity Manual, (6th Edition).

S = Signalized
U = Unsignalized

TABLE 12
SUMMARY OF ROADWAY SEGMENT ANALYSIS
OPENING YEAR 2022 CUMULATIVE PLUS PROJECT CONDITIONS

Roadway	Segment	Opening Year Plus CP ADT	Project ADT	Opening Year Plus CP Plus Project ADT	LOS D Capacity	LOS D or Better?
Alder Avenue	Sierra Lakes Pkwy to SR-210 EB Ramps	20,400	3,200	23,600	32,999	Yes
	SR-210 EB Ramps to SR-210 WB Ramps	24,800	2,300	27,100	32,999	Yes
	SR-210 WB Ramps to Renaissance Pkwy	29,700	1,100	30,800	32,999	Yes

IV. STORAGE CAPACITY AT LEFT-TURN POCKETS

Per request from City staff, queue lengths at left-turn pockets were assessed at the following locations:

- Alder Avenue at Sierra Lakes Parkway/Casmalia Street
 - Northbound Left Turn
 - Eastbound Left Turn
- Alder Avenue at SR-210 Westbound Ramps
 - Northbound Left Turn
- Alder Avenue at SR-210 Eastbound Ramps
 - Southbound Left Turn

A summary of left-turn pocket storage capacity, as well as the 50th and 95th percentile queue lengths at the locations noted above are shown on Table 13 for all scenarios. The table shows that the 95th percentile queues would exceed the available storage capacity under Existing conditions and subsequent scenarios at the following locations:

- Alder Avenue at SR-210 Westbound Ramps
 - Northbound Left Turn
- Alder Avenue at SR-210 Eastbound Ramps
 - Southbound Left Turn

Under Plus Project conditions, the 95th percentile queue would exceed the available storage capacity and have a direct effect at the following additional location:

- Alder Avenue at Sierra Lakes Parkway/Casmalia Street
 - Northbound Left-Turn

With implementation of the recommended improvements presented in the Recommended Improvements section, all left-turn pockets would continue to not have enough storage capacity. However, the recommended improvements would improve the left turn queue lengths, and would more than offset the project-related effects. The left-turn pocket capacity worksheets are provided in *Appendix D* of this report.

TABLE 13
SUMMARY OF LEFT-TURN POCKET STORAGE CAPACITY
RIALTO TRAVEL CENTER PROJECT

Intersection	Peak Hour Queue Length (ft/in)	Left-Turn Movement	Storage Capacity (ft/in)	Existing		Opening Year 2022		Opening Year 2022 Plus Project		Opening Year 2022 Cumulative		Opening Year 2022 Cumulative Plus Project		Opening Year 2022 Cumulative Plus Project With Mitigation	
				50th Percentile	95th Percentile	50th Percentile	95th Percentile	50th Percentile	95th Percentile	50th Percentile	95th Percentile	50th Percentile	95th Percentile	50th Percentile	95th Percentile
Alder Avenue at Sierra Lakes Parkway/ Casmalia Street	AM Peak Hour	NBL	175	80	143	82	148	493	744	135	230	707	1084	156	258
	PM Peak Hour			85	153	87	156	403	608	125	216	552	842	153	255
	AM Peak Hour	EBL	180	14	25	14	26	23	41	14	26	23	41	26	46
	PM Peak Hour			11	20	11	20	17	31	11	20	17	31	19	34
Alder Avenue at SR-210 Westbound Ramps	AM Peak Hour	NBL	225	211	330	223	346	223	346	596	877	596	877	230	368
	PM Peak Hour			254	385	278	415	278	415	909	1350	909	1350	318	491
Alder Avenue at SR-210 Eastbound Ramps	AM Peak Hour	SBL	245	149	249	152	253	238	364	280	447	545	861	182	311
	PM Peak Hour			82	148	84	151	130	224	126	223	375	614	84	152

V. RECOMMENDED IMPROVEMENTS

A. Intersection Improvements

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

- #1 – Alder Avenue at Sierra Lakes Parkway/Casmalia Street: AM and PM peak hours

A cumulative project-related effect would be considered significant at the following intersections:

- #2 – Alder Avenue at SR-210 Westbound Ramps: AM and PM peak hours
- #3 – Alder Avenue at SR-210 Eastbound Ramps: AM and PM peak hours
- #4 – Alder Avenue at Renaissance Parkway: AM and PM peak hours

Implementation of the following recommended improvement would mitigate the project's effect:

#1 – Alder Avenue at Sierra Lakes Parkway/Casmalia Street: Add a dedicated northbound right-turn lane. Restripe one northbound through lane to a shared through/left with split phasing. Increase the left turn pocket length to 300 feet. Restripe the eastbound shared through/right to a dedicated right turn lane with right turn overlap phasing. 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.

#2 – Alder Avenue at SR-210 Westbound Ramps: Restripe the northbound approach to add a second dedicated northbound left turn lane. Although the intersection would continue to operate at an unacceptable Level of Service, the addition of a second northbound left turn lane would improve the overall intersection delay, and would more than offset the project-related incremental increase in delay. The project will contribute on a fair-share basis to this improvement.

#3 – Alder Avenue at SR-210 Eastbound Ramps: Restripe the southbound approach to add a second southbound left turn lane. Although the intersection would continue to operate at an unacceptable Level of Service, the addition of a second southbound left turn lane would improve the overall intersection delay, and would more than offset the project-related incremental increase in delay. The project will contribute on a fair-share basis to this improvement.

#4 – Alder Avenue at Renaissance Parkway: Restripe the southbound approach to provide a second southbound left turn lane. Although the intersection would continue to operate at an unacceptable Level of Service, the addition of a second southbound left turn lane would improve the overall intersection delay, and would more than offset the project-related incremental increase in delay. The project will contribute on a fair-share basis to this improvement.

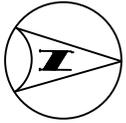
- *Note:* The Alder Avenue interchange with the SR-210 Freeway is the subject of a Feasibility Study Report (August 2017), which proposes improvements to the freeway off-ramps and to Alder Avenue between Sierra Lakes Parkway and Renaissance Parkway. The Build Alternative Layout Plan has identified the need for additional right- and left-turn capacity to and from the freeway ramps and on Alder Avenue through the interchange. The recommended improvements identified above to mitigate the project's effect are consistent with and a sub-set of the more comprehensive Build Alternative improvement plan.

The project's DIF fees would be applicable toward the cost of this improvement, and the cost of this improvement would also be subject to reimbursement by future development along Alder Avenue. The improvements along Alder Avenue are shown on Figure 16.

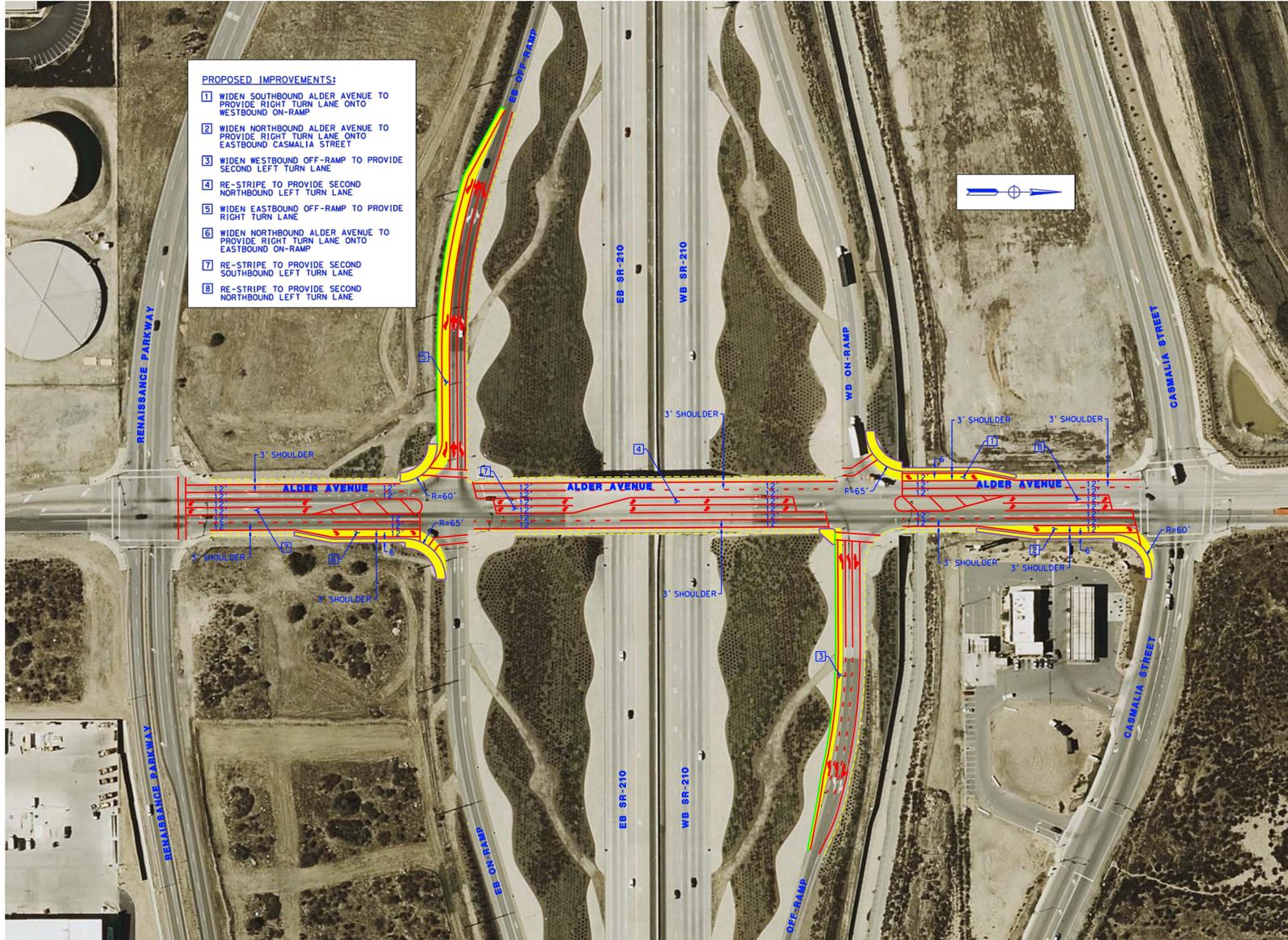
A summary of the intersection operation before and after implementation of these recommended improvements is provided on Table 14. The project fair share and proportional costs of the improvements are shown on Table 15 and Table 16, respectively.

B. Roadway Improvements

The project would not have a project related effect on any of the study roadway segments.



NOT TO SCALE



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FIGURE 16
ALDER AVENUE SR-210 INTERCHANGE IMPROVEMENTS

TABLE 14
SUMMARY OF INTERSECTION OPERATION WITH PROPOSED RECOMMENDED IMPROVEMENTS
OPENING YEAR 2022 CUMULATIVE PLUS PROJECT

Int. #	Intersection	AM Peak Hour				PM Peak Hour			
		Without Improvements		With Improvements		Without Improvements		With Improvements	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Alder Avenue at Sierra Lakes Parkway/Casmalia Street								
	Alder Avenue Improvement Project (Add a dedicated right-turn lane.) ¹ . Restripe one NB through lane to a NB shared through/left with Split signal phasing. Restripe the EB shared through/right to a dedicated EB right-turn lane with a right-turn overlap phasing.	118.8	F	42.0	D	89.0	F	47.9	D
2	Alder Avenue at SR-210 WB Ramps								
	Alder Avenue Improvement Project (Restripe NB approach to add a second NB Left Turn lane) ¹	122.8	F	60.8	E	146.2	F	65.8	E
3	Alder Avenue at SR-210 EB Ramps								
	Alder Avenue Improvement Project (Restripe SB approach to add a second SB left-turn lane.) ¹	118.7	F	87.0	F	92.9	F	71.4	E
4	Alder Avenue at Renaissance Parkway								
	Alder Avenue Improvement Project (Restripe SB approach to add a second SB Left-Turn lane) ¹	93.7	F	68.8	E	96.7	F	57.7	E

Notes:

- Bold and shaded values indicate intersections operating at an unacceptable Level of Service 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 Highway Capacity Manual, (6th Edition).

¹Source: Feasibility Study Report: Alder Avenue at SR-210 Interchange (August, 2017).

TABLE 15
SUMMARY OF PROJECT FAIR SHARE

Intersection	AM Peak Hour					PM Peak Hour				
	Total Volume		Total Growth	Project Trips	%age	Total Volume		Total Growth	Project Trips	%age
	2021	2022				2021	2022			
Opening Year 2022 Cumulative Conditions										
#1 - Alder Avenue at Sierra Lakes Parkway/Casmalia Street	939	2,076	1,137	517	45.5%	1,467	2,610	1,143	486	42.5%
Year 2040 Conditions ¹										
#1 - Alder Avenue at Sierra Lakes Parkway/Casmalia Street	939	2,832	1,893	517	27.3%	1,467	3,119	1,652	486	29.4%
#2 - Alder Avenue at SR-210 WB Ramps	1,948	3,406	1,458	463	31.8%	2,156	3,827	1,671	441	26.4%
#3 - Alder Avenue at SR-210 EB Ramps	2,050	3,500	1,450	295	20.3%	2,142	4,012	1,870	272	14.5%
#4 - Alder Avenue at Renaissance Parkway	2,013	3,643	1,630	127	7.8%	2,313	4,851	2,538	105	4.1%

¹ Future total volumes are based on the Year 2040 peak hour volumes in the Feasibility Study Report (August 2017) for the Alder Avenue Interchange Improvement project.

TABLE 16
SUMMARY OF PROJECT TRAFFIC FAIR SHARE FOR RECOMMENDED IMPROVEMENTS

#1 - Alder Avenue at Sierra Lakes Parkway/Casmalia Street	Unit Cost	Quantity	Total
Restripe one NB through lane to a NB shared through/left with Split signal phasing. Restripe the EB shared through/right to a dedicated EB right-turn lane with a right-turn overlap phasing.	\$ 170,000 ¹	1	\$ 170,000
Project Fair Share percentage ²			45.5%
Project Cost			\$ 77,300
#1, #2, #3, #4 = Alder Avenue Improvement			
Alder Avenue Improvement Project	\$ 4,206,168 ³	1	\$ 4,206,168
Project Fair Share percentage ⁴			21.8%
Project Cost			\$ 916,972
Total Project Cost			\$ 994,272

¹ Source: San Bernardino County Congestion Management Program, Appendix G: Preliminary Construction Cost Estimates for Congestion Management Plan (2003) with 2% per year inflation applied to estimate 2021 costs.

² Higher of AM or PM project fair share percentage

³ Source: Draft City of Rialto Transportation/Traffic Impact Fee Nexus Study (March, 2017). Note: The improvements to intersections #1, #2, #3, and #4 are part of the larger Alder Avenue Improvement Project that calls for roadway widening and intersection improvements between Casmalia Street and Renaissance Parkway.

⁴ Blended fair share percentage between intersections #1, #2, #3, #4 based on the AM peak hour fair share percentage.

VI. VEHICLE MILES TRAVELED ANALYSIS

A. Introduction

Senate Bill 743 (SB 743) was approved by California legislature in September 2013. SB 743 requires changes to California Environmental Quality Act (CEQA), specifically directing the Governor's Office of Planning and Research (OPR) to develop alternative metrics to the use of vehicular "Level of Service" (LOS) for evaluating transportation projects. OPR has prepared a technical advisory ("OPR" Technical Advisory) for evaluating transportation impacts in CEQA and has recommended that Vehicle Miles Traveled (VMT) replace LOS as the primary measure of transportation impacts. This analysis was prepared to document the VMT analysis for the Rialto Travel Center Project following the OPR Technical Advisory (December 2018) and the San Bernardino County Transportation Authority (SBCTA) Recommended VMT Guidelines.

B. Vehicle Miles Traveled Screening

This section documents Vehicle Miles Traveled (VMT)/SB 743 considerations for the Project. OPR provides details on appropriate screening thresholds that can be used to identify when a proposed land use project is anticipated to result in a less than significant impact without conducting a more detailed level analysis.

A land use project needs only meet one of the screening thresholds to be presumed to result in not a significant impact under CEQA pursuant to SB 743.

Land Use Type Screening

The OPR and SBCTA VMT Guidelines identify that Project types falling under the screening criteria includes the following:

- K-12 Schools
- Local-serving retail less than 50,000 square feet
- Local parks
- Day care centers
- Local serving gas stations
- Local serving banks
- Local serving hotels (e.g. non-destination hotels)
- Student housing Projects on or adjacent college campuses
- Local-serving assembly uses, Community Institutions
- Local serving community colleges
- Affordable or supportive housing, Assisted living facilities, Senior housing
- Projects generating less than 110 daily vehicle trips

Since the project is expected to operate as a local serving gas station and many of the project trips are diverted link trips, meaning that the project trips will already be on the roadway network but will stop by the project site as it is nearby or on the way to their intended destination, the VMT generated by the project is expected to be minimal. Therefore, the project should be screened out due to its land use type and further VMT analysis is not required. A VMT Analysis Memo has been provided in *Appendix F*.

VII. FINDINGS AND RECOMMENDATIONS

C. Improvements

Off-site recommended improvements were identified to mitigate the project's significant effects at four deficient intersections:

- #1 – Alder Avenue at Sierra Lakes Parkway/Casmalia Street
- #2 – Alder Avenue at SR-210 Westbound Ramps
- #3 – Alder Avenue at SR-210 Eastbound Ramps
- #4 – Alder Avenue at Renaissance Parkway

No project related effects were identified on the study roadway segments.

D. Traffic Signal Warrant Analysis

The passenger car and truck driveways along Sierra Lakes Parkway are proposed to be unsignalized driveways. Each proposed site driveway was analyzed. After analyzing all four truck driveways, they all are under acceptable LOS conditions. The passenger car driveway is also forecasted to operate at an acceptable LOS condition. Traffic Signal Warrant worksheets are provided in *Appendix G*.

E. Site Circulation

Vehicular access provisions for the project site would consist of one driveway on Sierra Lakes Parkway for passenger cars and four driveways on Sierra Lakes Parkway for trucks.

- Driveway 1 – Truck Driveway #1 would be a full-movement driveway for trucks to access the truck stop and truck fueling positions. This driveway would be approximately 54 feet wide.
- Driveway 2 – Truck Driveway #2 would be a full-movement driveway for trucks to access the truck stop and truck fueling positions. This driveway would be 50 feet wide.
- Driveway 3 – Truck Driveway #3 would be a full-movement driveway for trucks to access the truck stop and fueling positions. This driveway would be approximately 50 feet wide.
- Driveway 4 – Truck Driveway #4 would be an exit-only driveway for trucks to exit the site from the truck fueling positions. This driveway would be approximately 53 feet wide.
- Driveway 5 – The Vehicle Driveway would be a full-movement driveway for passenger cars to access the vehicle fueling positions, convenience store, and fast-food restaurant. This driveway would be 30 feet wide.

The cumulative intersection analysis for the plus Project condition indicates that all Project Driveways will operate under acceptable LOS conditions. A truck turning exhibit has been provided in *Appendix H*.

F. 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.

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.

G. Fair Share Calculations

The project fair share proportion of the improvements are shown on Table 15 (presented previously).

H. Specific Plan Signalization

Not Applicable.

I. General Plan Conformance

The proposed Rialto Travel Center project is in conformance with the Renaissance Specific Plan and the City of Rialto General Plan. The proposed use is permitted under the Freeway Incubator land use designations. Neither a Specific Plan Amendment nor a General Plan Amendment is required for the project.

J. Regional Funding Mechanisms

The project is located in the Renaissance Specific Plan area, and as such, is subject to the Renaissance Specific Plan Traffic Fee Program, as well as the City’s city-wide traffic impact fee program. To the extent that a recommended improvement is included in an existing fee program, the project’s payment of impact fees can be used to offset the costs of implementing the recommended improvements. 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. Any reimbursement agreements are at the discretion of the City Engineer.

APPENDIX A

APPROVED SCOPING AGREEMENT

City of Rialto
Traffic Impact Analysis
Scoping Agreement

Case No. PPD 2021-0013, EAR 2021-0016, CDP 2021-0009 thru CDP 2021-0014, MC 2021-0015

Related Cases -

SP No. _____

EIR No. _____

GPA No. _____

ZC No. _____

Project Name: Rialto Travel Center - Site Plan Attached (Attachment 1)

Project Address: Southwest corner (SWC) of Alder Avenue and Sierra Lakes Parkway

Project Description: Travel Center with 16 gas station fueling positions and convenience store,
2,400 SF fast food restaurant with drive-through and 9 truck stop fueling positions
Consultant Developer

Name: Kimley-Horn and Associates, Inc. Pilot Travel Centers LLC

Address: 3880 Lemon Street, Suite 420 5508 Lonas Drive

Riverside, CA 92501 Knoxville, TN 37909

Telephone: 714-939-1030 _____

Fax: N/A 865-450-2831

1. Trip Generation Source: ITE Trip Generation Manual, 10th Edition

Existing GP Land Use Vacant (RSPA Area 1) Proposed Land Use Travel Center

Current Zoning: RSP Freeway Incubator Proposed Zoning: RSP Freeway Incubator

Total Daily Project Trips: 5,532 (with PCE) - See Attachment 2 - Trip Generation Table

	Current Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>277</u>	<u>276</u>	<u>553</u>
PM Trips	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>256</u>	<u>259</u>	<u>515</u>
Internal Trip Allowance	Yes	<input checked="" type="checkbox"/>	No	<u>(See Attach. 2 % Trip Discount)</u>		
Pass-By Trip Allowance	Yes	<input checked="" type="checkbox"/>	No	<u>(See Attach. 2% Trip Discount)</u>		

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.

See Attachment 3 - Study Area

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

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

3. Background Growth Traffic

Project Completion Year: 2022 Annual Background Growth Rate: 2 %

Other Phase Years N/A

Other area projects to be considered: We will include Cumulative Projects as noted by the City Planning Department - See Attachment 5
(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: _____

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

- Alder Ave at Sierra Lakes Pkwy / Casmalia St
- Alder Avenue at SR-210 WB Ramps
- Alder Avenue at SR-210 EB Ramps
- Alder Avenue at Renaissance Parkway
- Sierra Lakes Pkwy at Dwy #1 (Truck Stop)
- Sierra Lakes Pkwy at Dwy #2 (Truck Stop)
- Sierra Lakes Pkwy at Dwy #3 (Truck Stop)
- Sierra Lakes Pkwy at Dwy #4 (Truck Stop)
- Sierra Lakes Pkwy at Dwy #5 (Gas Station)
- _____

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

- 1. Alder Ave (Sierra Lakes Pkwy to SR-210 EB Ramps) 6. _____
- 2. Alder Ave (SR-210 EB Ramps to SR-210 WB Ramps) 7. _____
- 3. Alder Ave (SR-210 WB Ramps to Renaissance Pkwy) 8. _____
- 4. _____ 9. _____
- 5. _____ 10. _____

6. Other Jurisdictional Impacts

Is this project within any other Agency's Sphere of Influence or within one-mile of another jurisdictional boundary? YES NO

If so, name of Jurisdiction: City of Fontana

7. Site Plan (please attach 11" x 17" legible copy)

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.)

- SW Corner of Sierra Lakes Pkwy and Alder Ave: Increase return radius and provide turn templates
- Traffic Signal Modification for Sierra Lakes Pkwy and Alder Ave: Provide timing/phasing analysis
- Queuing analysis along Alder Ave (from Sierra Lakes Pkwy to Renaissance Pkwy)
- Synchro analysis along Alder Ave (from Sierra Lakes Pkwy to Renaissance Pkwy)
- Site Access and restrictions
- Calculate Project Fair-share
- Queuing analysis will be done for the Eastbound Left (Sierra Lakes Pkwy at Alder Ave) and the Northbound Left (Sierra Lakes Pkwy at Driveway #5)
- VMT Analysis
- Truck Turn Templates - All Driveway Exhibits

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: Where historic counts are unavailable, new counts will be collected and a COVID adjustment factor will be applied

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 4/8/2021 (1st)

Scoping Agreement Resubmittal date 5/13/2021 (2nd)

Scoping Agreement Resubmittal date 6/8/2021 (3rd)

Kimley-Horn and Associates, Inc.	6/18/2021
Applicant/Engineer	Date

Land Use Concurrence:

Development Services Department	Date
---------------------------------	------

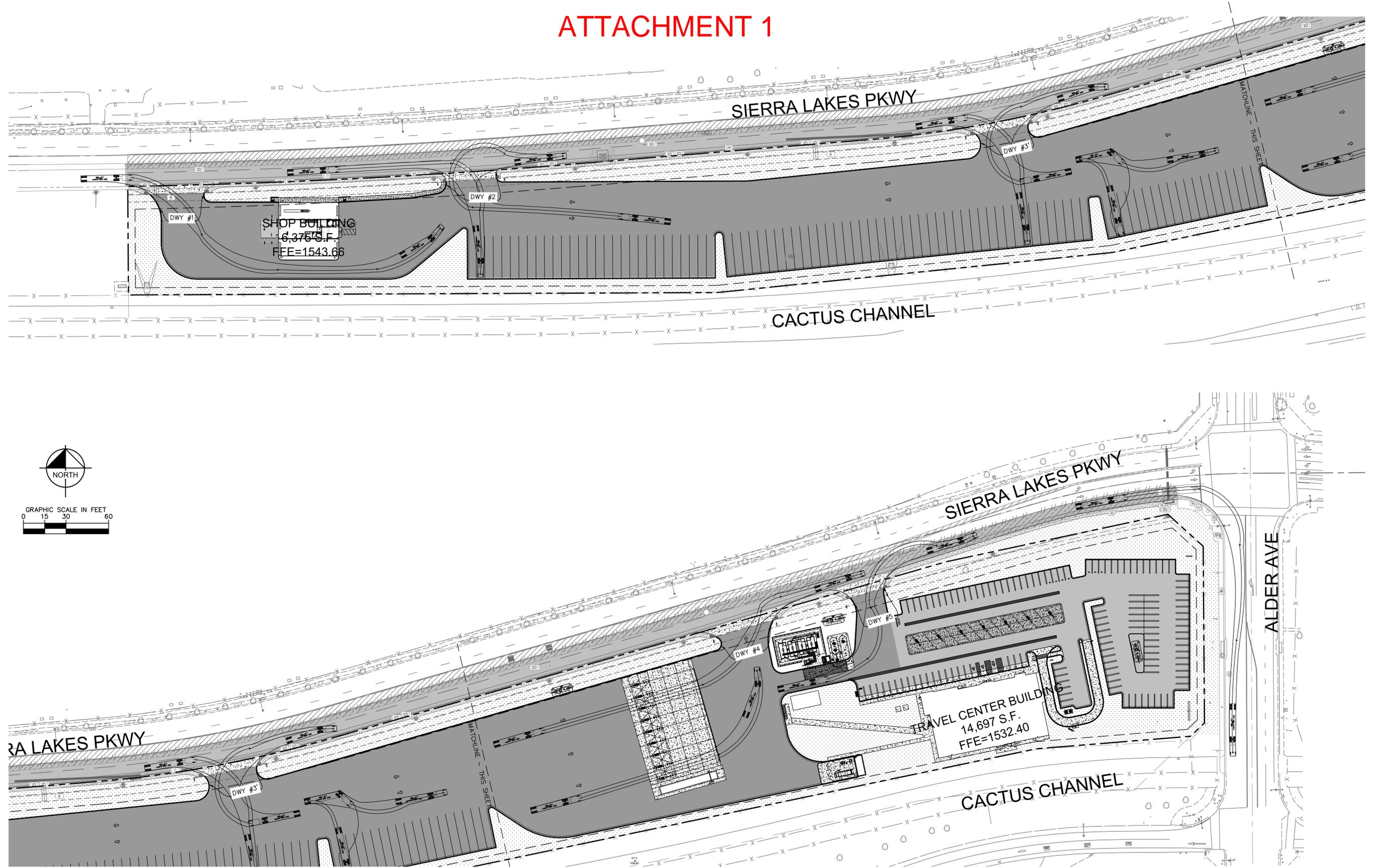
Approved by:

Public Works Department	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 final review and approval.

ATTACHMENT 1

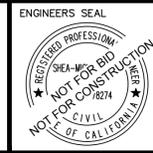


Drawing name: K:\RV\DEV\Plot\095426009_Rialto Travel Center\CADD\PlanSheets\Entitlement_Sheets\Site_Exhibit_Truck_Turns.dwg TRUCK TURNS 1 Jun 18, 2021 11:03am by: David Cowan
 This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



ISSUE	DATE	DESCRIPTION

MM
 DRAWN BY: DC
 CHECKED BY: SMRA
 RECOMMENDED



KimleyHorn
 1100 W TOWN & COUNTRY ROAD, SUITE 700
 ORANGE, CA 92668
 (714) 939-1030
 PREPARED UNDER THE DIRECT SUPERVISION OF:
 DATE: SHEA-MICHAEL ANTI, R.C.E. NO. 78274 EXP. XX/XX/XX

CITY OF RIALTO
 DEPARTMENT OF ENGINEERING
 APPROVED BY: RIALTO CITY ENGINEER
 DATE: REVIEWED AND RECOMMENDED BY: DATE

SIERRA LAKES PKWY
 RIALTO, CA 92377
 PROJECT ID: 095426009

RIALTO TRAVEL CENTER
 SITE PLAN

SHEET 1
 OF SHEETS 1
 CITY PROJECT NO.

ATTACHMENT 2 - TRIP GENERATION TABLES

Table 1 - Trip Generation Rates

Land Use	Source	Units	Daily Trip Rate	AM Peak Hour Rate		PM Peak Hour Rate	
				Trip Rate	In : Out	Trip Rate	In : Out
Fast-Foot Restaurant w Drive-Through Window	ITE Code 934	2.400 ksf	470.95	40.19	51% : 49%	32.67	52% : 48%
Super Convenience Market/Gas Station	ITE Code 960	16 FP	230.52	28.08	50% : 50%	22.96	50% : 50%
Truck Stop	Data (a)/ITE Code 950	9 Truck FP	88.89	7.18	51% : 49%	8.41	49% : 51%

Notes

KSF = thousand square feet, FP = Fueling Positions

AM and/or PM rates correspond to peak of adjacent street traffic

Trip Generation data for ITE Codes from *ITE Trip Generation, 10th Edition*

(a) Daily Trip Generation data provided by Applicant

ATTACHMENT 2 - TRIP GENERATION TABLES

Table 2 - Project Passenger Car Trip Generation

Proposed Land Use (a)	Units	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Fast-Food Restaurant with Drive-Through (b)	2,400	1,130	49	47	96	41	37	78
	<i>Internal Capture (c)</i> <i>(Daily: 10%, AM: 10%, PM: 10%)</i>	-113	-5	-5	-10	-4	-4	-8
	Net Driveway Trips – Fast-food Restaurant with Drive-Through	1,017	44	42	86	37	33	70
	<i>Pass-By Trips (d)</i> <i>(Daily: 25%, AM: 25%, PM: 25%)</i>	-254	-11	-11	-22	-9	-9	-18
	<i>Net Primary Trips – Fast-food Restaurant with Drive-Through</i>	763	33	31	64	28	24	52
Super Convenience Market/Gas Station (b)	16 Fueling Positions	3,688	225	224	449	184	183	367
	<i>Internal Capture (c)</i> <i>(Daily: 10%, AM: 10%, PM: 10%)</i>	-369	-23	-22	-45	-19	-18	-37
	Net Driveway Trips – Gas Station with Convenience Market	3,319	202	202	404	165	165	330
	<i>Pass-By Trips (d)</i> <i>(Daily: 25%, AM: 25%, PM: 25%)</i>	-830	-51	-50	-101	-42	-41	-83
	<i>Net Primary Trips – Super Convenience Market/Gas Station</i>	2,489	151	152	303	123	124	247
Net Passenger Car Trips (f)	<i>Net Driveway Trips</i>	4,336	246	244	490	202	198	400
	<i>Net Primary Trips (with pass-by reduction) (g)</i>	3,252	184	183	367	151	148	299
<p>Notes</p> <p>(a) Passenger Car trips include trips to 2,400 ksf Fast-Food Restaurant with drive-thru and a 16 fueling position Super Convenience Market/Gas Station.</p> <p>(b) Trip Generation data from ITE Trip Generation Manual, 10th Edition</p> <p>(c) Internal capture rates from ITE Trip Generation Handbook, 3rd Edition NCHRP 684 Internal Trip Capture Estimation Tool</p> <p>(d) Pass-by rates from ITE Trip Generation Handbook, 3rd Edition for ITE LU 934 Fast-Food Restaurant With Drive-Through Window and LU 945 Gasoline/Service Station With Convenience Market</p> <p>(e) Diverted trip rates from ITE Trip Generation Handbook, 3rd Edition for ITE LU 934 Fast-Food Restaurant With Drive-Through Window and LU 945 Gasoline/Service Station With Convenience Market</p> <p>(f) Net passenger car trips are the sum of trips generated by the Fast-Food Restaurant with drive-thru land use and Super Convenience Market/Gas Station land use</p> <p>(g) These values will be used for the Traffic Analysis at external intersections.</p>								

ATTACHMENT 2 - TRIP GENERATION TABLES

Table 3 - Truck Trip Generation

Proposed Land Use	Units	Daily Trips	AM Peak Hour (b)			PM Peak Hour (b)		
		(a)	In	Out	Total	In	Out	Total
Truck Stop	9 Fueling Positions	800	33	32	65	37	39	76
	<i>Internal Capture (c)</i> 0%	0	0	0	0	0	0	0
	Net Driveway Trips – Truck Stop	800	33	32	65	37	39	76
	Net Driveway Trips in PCE (PCE=3.0)	2,400	99	96	195	111	117	228
	<i>Pass-By Trips (d)</i> (Daily: 5%, AM: 5%, PM: 5%)	-40	-2	-1	-3	-2	-2	-4
	Net Primary Trips – Truck Stop	760	31	31	62	35	37	72
	Net Primary Trips in PCE (PCE=3.0)	2,280	93	93	186	105	111	216
<p>Notes</p> <p>(a) Truck trips include trips to the Truck Stop land use portion only, using daily trip information obtained from similar facilities</p> <p>(b) Peak hour information estimated using peak hour percentages from ITE Trip Generation Manual, 10th Edition</p> <p>(c) No internal capture was assumed for the Truck Stop land use, as a truck stop is assumed to include a variety of services</p> <p>(d) As there was no supporting data available to define the number of pass-by trips, pass-by rates were estimated to be 5%</p> <p>(e) As there was no supporting data available to define the number of pass-by trips, diverted rates were estimated to be similar to a Super Convenience Market with Gas Station</p>								

ATTACHMENT 2 - TRIP GENERATION TABLES

Table 4 - Total Project Trip Generation

	Daily Trips	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Total Primary Trips							
Fast Food w Drive-Through	763	33	31	64	28	24	52
Super Convenience Market/Gas Station	2,489	151	152	303	123	124	247
Truck Stop (PCE = 3.0)	2,280	93	93	186	105	111	216
Total Primary Trip Generation	5,532	277	276	553	256	259	515
Total Driveway Trips							
Fast Food w Drive-Through	1,017	44	42	86	37	33	70
Super Convenience Market/Gas Station	3,319	202	202	404	165	165	330
Truck Stop (PCE = 3.0)	2,400	99	96	195	111	117	228
Total Driveway Trip Generation	6,736	345	340	685	313	315	628

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Travel Center			Organization:	Kimley-Horn
Project Location:	Rialto			Performed By:	LCS
Scenario Description:				Date:	6/8/2021
Analysis Year:				Checked By:	
Analysis Period:	Daily			Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				3,688	1,844	1,844
Restaurant				1,130	565	565
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses ²				0		
				4,818	2,409	2,409

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		240	0	0	0
Restaurant	0	79		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	4,818	2,409	2,409
Internal Capture Percentage	13%	13%	13%
External Vehicle-Trips ⁵	4,180	2,090	2,090
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	4%	13%
Restaurant	42%	14%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Travel Center			Organization:	Kimley-Horn
Project Location:	Rialto			Performed By:	LCS
Scenario Description:				Date:	6/8/2021
Analysis Year:				Checked By:	
Analysis Period:	AM Street Peak Hour			Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				449	225	224
Restaurant				96	49	47
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses ²				0		
				545	274	271

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		25	0	0	0
Restaurant	0	7		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	545	274	271
Internal Capture Percentage	12%	12%	12%
External Vehicle-Trips ⁵	481	242	239
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	3%	11%
Restaurant	51%	15%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Travel Center	Organization:	Kimley-Horn
Project Location:	Rialto	Performed By:	LCS
Scenario Description:		Date:	6/8/2021
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				367	184	183
Restaurant				78	41	37
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses ²				0		
				445	225	220

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		12	0	0	0
Restaurant	0	15		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	445	225	220
Internal Capture Percentage	12%	12%	12%
External Vehicle-Trips ⁵	391	198	193
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	8%	7%
Restaurant	29%	41%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

ATTACHMENT 3A – PASSENGER CAR DISTRIBUTION



Legend:

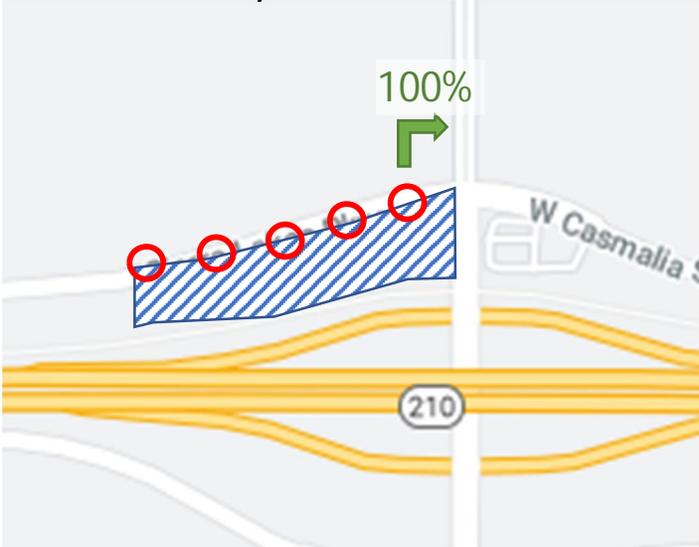
-  - Project Site
-  - Study Intersection
-  - Project Driveway
- XX% - Passenger Car Distribution
- D# - Driveway Number

Study Intersections:

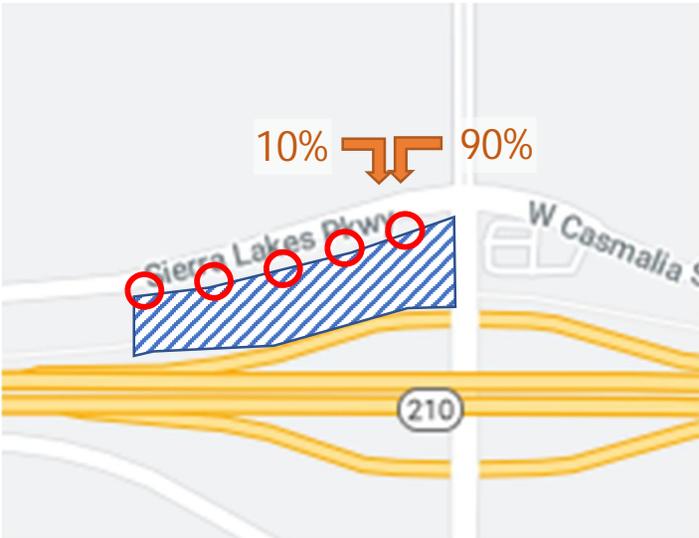
- | | |
|---|--|
| 1. Alder Avenue at Sierra Lakes Parkway/Casmalia Street | 2. Alder Avenue at SR-210 WB Ramps |
| 3. Alder Avenue at SR-210 EB Ramps | 4. Alder Avenue at Renaissance Parkway |
| D1. Sierra Lakes Parkway at Driveway #1 (Truck Stop) | D2. Sierra Lakes Parkway at Driveway #2 (Truck Stop) |
| D3. Sierra Lakes Parkway at Driveway #3 (Truck Stop) | D4. Sierra Lakes Parkway at Driveway #4 (Truck Stop) |
| D5. Sierra Lakes Parkway at Driveway #5 (Gas Station) | |

ATTACHMENT 3A – PASSENGER CAR DISTRIBUTION

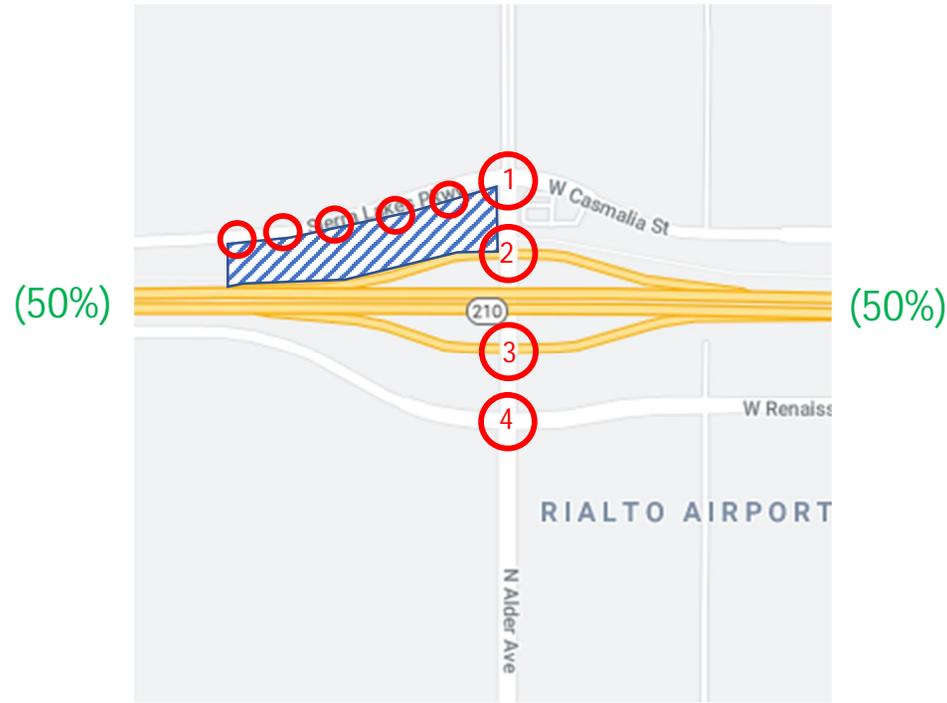
Driveway Distribution - OUT



Driveway Distribution - IN



ATTACHMENT 3B – TRUCK DISTRIBUTION



Legend:

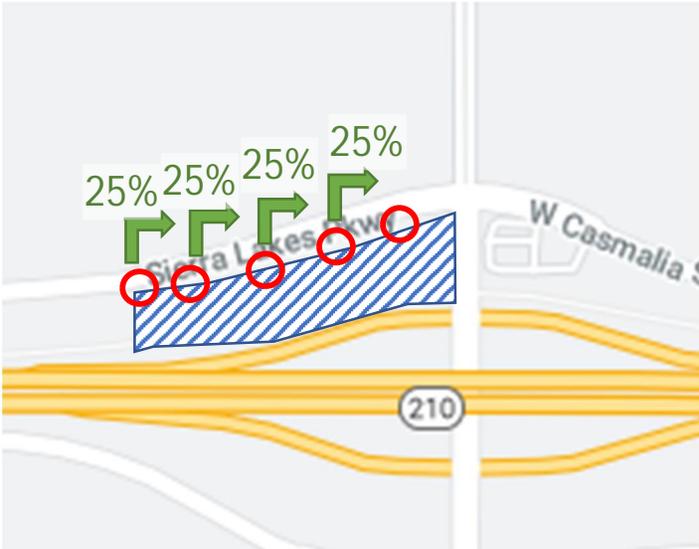
-  - Project Site
-  - Study Intersection
-  - Project Driveway
- XX% - Passenger Car Distribution
- D#** - Driveway Number

Study Intersections:

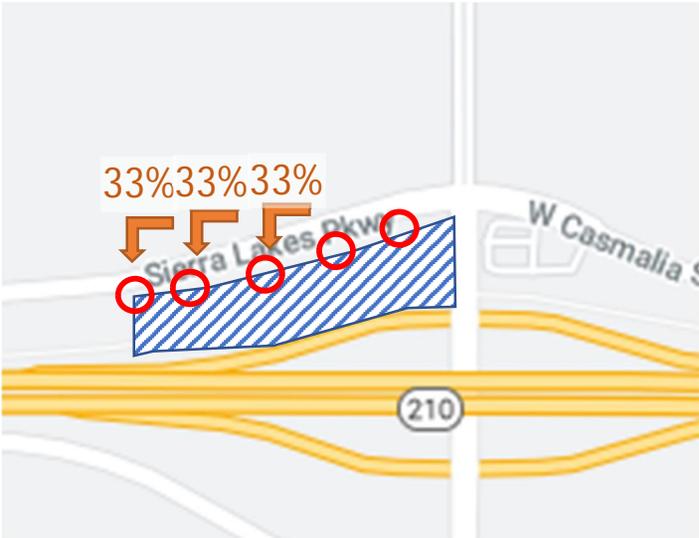
- | | |
|---|--|
| 1. Alder Avenue at Sierra Lakes Parkway/Casmalia Street | 2. Alder Avenue at SR-210 WB Ramps |
| 3. Alder Avenue at SR-210 EB Ramps | 4. Alder Avenue at Renaissance Parkway |
| D1. Sierra Lakes Parkway at Driveway #1 (Truck Stop) | D2. Sierra Lakes Parkway at Driveway #2 (Truck Stop) |
| D3. Sierra Lakes Parkway at Driveway #3 (Truck Stop) | D4. Sierra Lakes Parkway at Driveway #4 (Truck Stop) |
| D5. Sierra Lakes Parkway at Driveway #5 (Gas Station) | |

ATTACHMENT 3B – TRUCK DISTRIBUTION

Driveway Distribution - OUT



Driveway Distribution - IN



- * Crow Holdings NB Baseline E/O Ayala - 668,524 sf Warehouse
- * NEC Renaissance & Laurel (Orbis) - 135,408 sf Warehouse
- * Baseline / Palmetto Warehouse II - 90,726 sf Warehouse - NEC Baseline & Palmetto

TABLE 5
SUMMARY OF CUMULATIVE PROJECTS

Project #	Land Use	Quantity	Units	Trip Generation Estimates							
				Daily	AM Peak Hour			PM Peak Hour			
					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	Fuel / Market / Donut		FUELING POSITIONS	3,941	156	155	311	124	123	247	
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	
27	Housing		DU	1,487	52	51	103	66	65	131	
8	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	4,550	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	-	-	-	-	-	-	-	
	Fast-Food Restaurant w/ D.T.	4,900	KSF	2,431	114	109	223	83	77	159	
Pass-by Fast-Food Restaurant (10%)			-243	-11	-11	-22	-8	-8	-16		
9	PA 108 Building 4-B	411,330	KSF	2,454	162	44	206	55	165	220	
10	Hotel (SWC of Linden and Renaissance)	135	Occupied Room	1,204	52	38	90	46	48	94	
11	Shopping / Fast Food		KSF	4,651	44	44	88	99	98	197	
12	Morin Warehouse	200,000	KSF	1,193	77	22	99	26	78	104	
13	Buildings 7, 8, and 9 Warehouse	540,427	KSF	3,224	216	57	273	73	218	291	
14	SEC Casmalia / Linden Warehouse	136,220	KSF	813	54	13	67	18	55	73	
15	Fuel Station/Fast Food at SWC of Casmalia / Ayala	7,000	KSF	4,419	202	188	390	174	164	338	
16	Diesel Fuel Expansion at SEC of Casmalia / Alder	7,300	KSF	2,382	113	107	220	86	81	167	
17	NWC Baseline / Alder Warehouse	255,655	KSF	1,526	104	28	132	34	104	138	
18	NWC Baseline / Tamarind Warehouse	156,500	KSF	935	65	18	83	23	65	88	
19	Baseline / Palmetto Warehouse	99,999	KSF	599	41	12	53	13	41	54	
20	Warehouse w/S Alder S/O Miro	78,680	KSF	698	32	31	63	34	35	67	
21	Warehouse SEC Casmalia / Laurel	87,189	KSF	524	25	24	49	26	25	51	
22	Warehouse SWC Casmalia / Linden	116,429	KSF	500	24	24	48	25	25	50	
23	Warehouse Thrifty Oil	67,465	KSF	402	17	16	33	18	17	35	
24	Animal Hospital	8,732	KSF	279	24	23	47	23	23	46	
25	Fuel / FF / Market		FUELING POSITIONS	9,993	557	556	1,113	454	454	908	
Total Project Trips				62,330	2,879	2,267	5,145	2,295	2,822	5,113	

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

✓
 ✓
 Location? →
 Complete →
 Complete →
 Complete →
 ? →
 8,849 sf Restaurant →
 ✓
 Complete →
 Complete →
 Complete →
 Location? →
 ✓
 ✓
 ✓
 ✓
 Expired →
 ✓
 ✓
 Complete →
 Complete →
 Location? →
 I think this is SEC Renaissance & Alder, in which case yes.

	12:00AM	01:00AM	02:00AM	03:00AM	04:00AM	05:00AM	06:00AM	07:00AM	08:00AM	09:00AM	10:00AM	11:00AM	12:00PM	01:00PM	02:00PM	03:00PM	04:00PM	05:00PM	06:00PM	07:00PM	08:00PM	09:00PM	10:00PM	11:00PM	Day Total
Thursday	495	494	496	545	679	854	1,032	1,145	1,208	1,239	1,292	1,317	1,345	1,316	1,302	1,256	1,190	1,110	1,003	914	771	676	577	523	22,777
Friday	490	481	489	541	671	821	984	1,092	1,131	1,175	1,215	1,248	1,242	1,234	1,171	1,125	1,078	1,002	915	795	711	615	528	468	21,223
Saturday	426	392	386	393	454	551	658	788	869	952	986	1,003	969	940	901	830	774	687	610	541	460	386	331	299	15,587
Sunday	263	259	235	250	284	356	470	580	697	785	874	940	959	947	932	835	772	772	687	611	536	457	385	353	14,382
Monday	335	329	370	448	567	741	890	989	1,040	1,100	1,171	1,223	1,233	1,249	1,254	1,239	1,186	1,121	992	911	786	663	575	498	20,908
Tuesday	479	475	486	562	674	835	1,016	1,146	1,269	1,263	1,297	1,341	1,350	1,347	1,347	1,329	1,257	1,193	1,085	967	834	709	618	540	23,418
Wednesday	507	502	511	572	700	871	1,056	1,174	1,244	1,286	1,338	1,375	1,371	1,365	1,320	1,314	1,252	1,159	1,047	932	813	696	591	528	23,524
Total for week	2,995	2,932	2,972	3,312	4,030	5,029	6,107	6,914	7,457	7,799	8,172	8,447	8,469	8,399	8,227	8,007	7,573	7,043	6,340	5,670	4,910	4,202	3,605	3,209	141,820
Hourly percentage	2.11%	2.07%	2.10%	2.34%	2.84%	3.55%	4.31%	4.87%	5.26%	5.50%	5.76%	5.96%	5.97%	5.92%	5.80%	5.65%	5.34%	4.97%	4.47%	4.00%	3.46%	2.96%	2.54%	2.26%	100.00%
Expected transactions	8	8	8	9	11	14	17	19	21	22	23	24	24	24	23	23	21	20	18	16	14	12	10	9	400

Monthly volume 900,000 gallons
 Daily volume 30,000 gallons
 Average fill 105 gallons
 Fills/day 286
 Safety factor 1.4 (accounts for non-fueling customers)
 Trucks/day 400

Distribution numbers are based on sales data from 56 similar facilities in the region surrounding Rialto, CA.

APPENDIX B

TRAFFIC COUNT DATA SHEETS

National Data & Surveying Services

Intersection Turning Movement Count

Location: Alder Ave & Casmalia St/Sierra Lakes Pkwy
 City: Rialto
 Control: Signalized

Project ID: Historical
 Date: 12/7/2017

Total

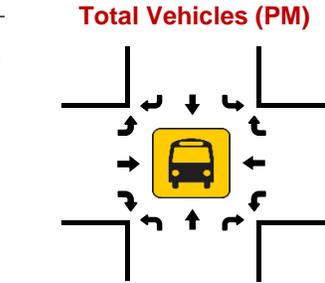
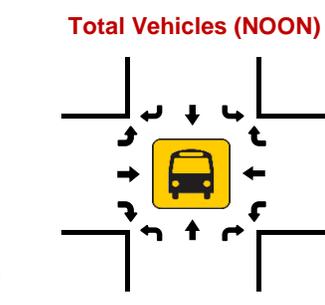
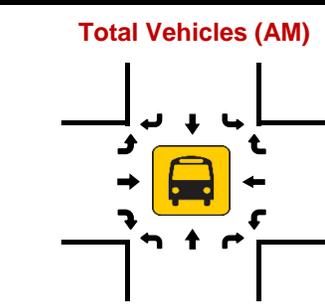
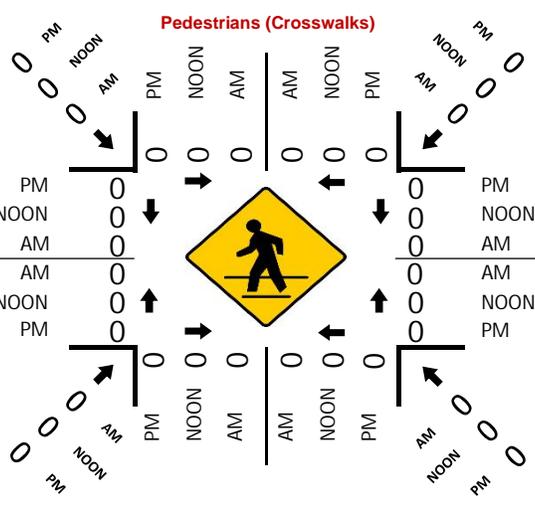
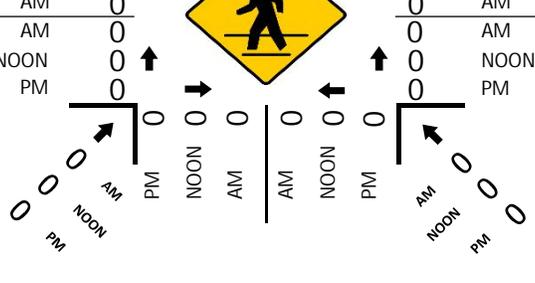
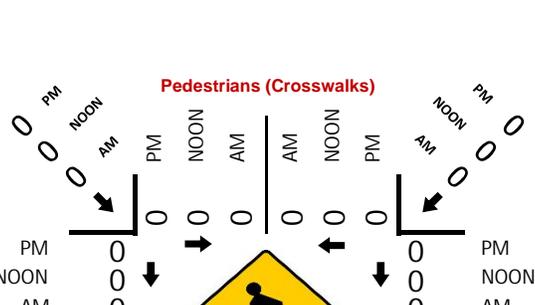
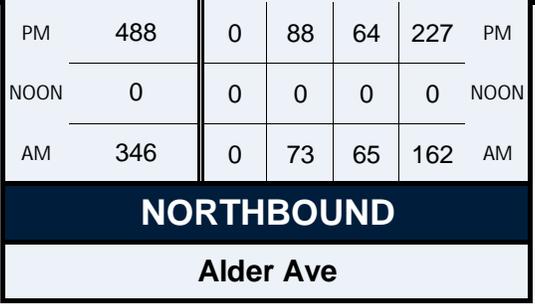
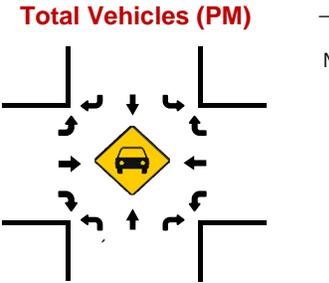
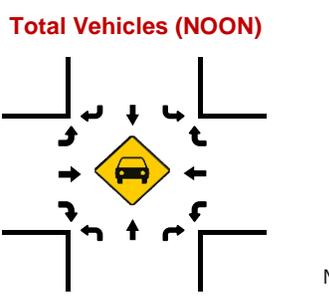
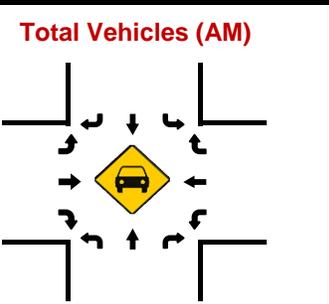
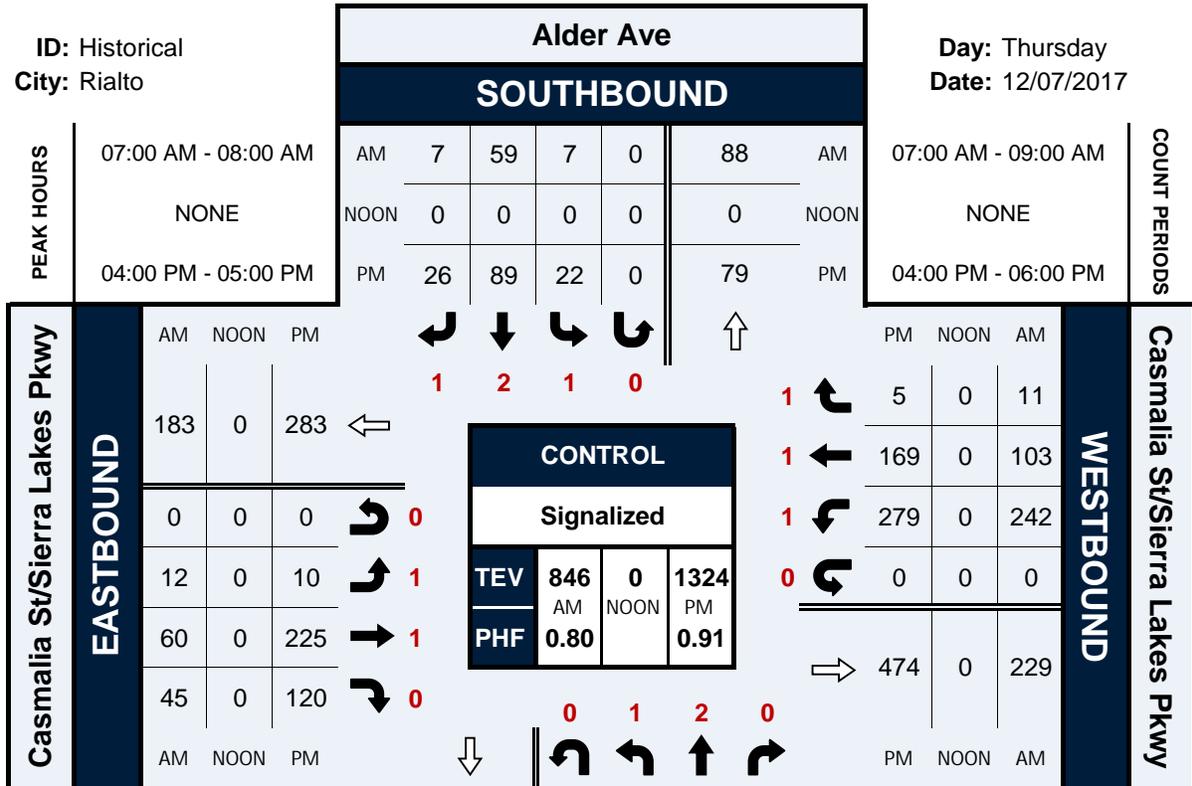
NS/EW Streets:	Alder Ave				Alder Ave				Casmalia St/Sierra Lakes Pkwy				Casmalia St/Sierra Lakes Pkwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	1 SR	0 SU	1 EL	1 ET	0 ER	0 EU	1 WL	1 WT	1 WR	0 WU	
7:00 AM	24	14	58	0	4	16	4	0	3	14	11	0	81	32	2	0	263
7:15 AM	16	12	38	0	1	12	0	0	4	24	12	0	83	29	4	0	235
7:30 AM	18	19	34	0	1	12	2	0	5	14	15	0	37	13	1	0	171
7:45 AM	15	20	32	0	1	19	1	0	0	8	7	0	41	29	4	0	177
8:00 AM	14	14	32	0	1	7	4	0	5	17	10	0	52	22	3	0	181
8:15 AM	11	8	41	0	3	14	1	0	0	8	12	0	41	29	1	0	169
8:30 AM	22	16	32	0	2	16	7	0	0	20	18	0	47	26	1	0	207
8:45 AM	7	10	32	0	0	8	2	0	2	15	16	0	30	23	1	0	146
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	127	113	299	0	13	104	21	0	19	120	101	0	412	203	17	0	1549
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	73	65	162	0	7	59	7	0	12	60	45	0	242	103	11	0	846
PEAK HR FACTOR :	0.760	0.813	0.698	0.000	0.438	0.776	0.438	0.000	0.600	0.625	0.750	0.000	0.729	0.805	0.688	0.000	0.804
	0.781				0.760				0.731				0.767				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	1 SR	0 SU	1 EL	1 ET	0 ER	0 EU	1 WL	1 WT	1 WR	0 WU	
4:00 PM	21	16	67	0	9	26	14	0	6	64	32	0	59	44	1	0	359
4:15 PM	21	18	60	0	5	23	5	0	1	68	23	0	37	29	2	0	292
4:30 PM	26	15	56	0	5	25	6	0	3	53	32	0	99	45	0	0	365
4:45 PM	20	15	44	0	3	15	1	0	0	40	33	0	84	51	2	0	308
5:00 PM	30	10	43	0	2	19	3	0	1	61	31	0	77	27	1	0	305
5:15 PM	17	14	51	0	1	21	2	0	1	48	31	0	52	41	0	0	279
5:30 PM	27	7	52	0	1	20	0	0	1	50	34	0	67	34	1	0	294
5:45 PM	32	9	48	0	3	11	2	0	2	49	28	0	38	32	2	0	256
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	194	104	421	0	29	160	33	0	15	433	244	0	513	303	9	0	2458
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	88	64	227	0	22	89	26	0	10	225	120	0	279	169	5	0	1324
PEAK HR FACTOR :	0.846	0.889	0.847	0.000	0.611	0.856	0.464	0.000	0.417	0.827	0.909	0.000	0.705	0.828	0.625	0.000	0.907
	0.911				0.699				0.870				0.786				

Alder Ave & Casmalia St/Sierra Lakes Pkwy

Peak Hour Turning Movement Count

ID: Historical
City: Rialto

Day: Thursday
Date: 12/07/2017



National Data & Surveying Services

Intersection Turning Movement Count

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

Project ID: 20-06033-002
 Date: 3/5/2020

Total

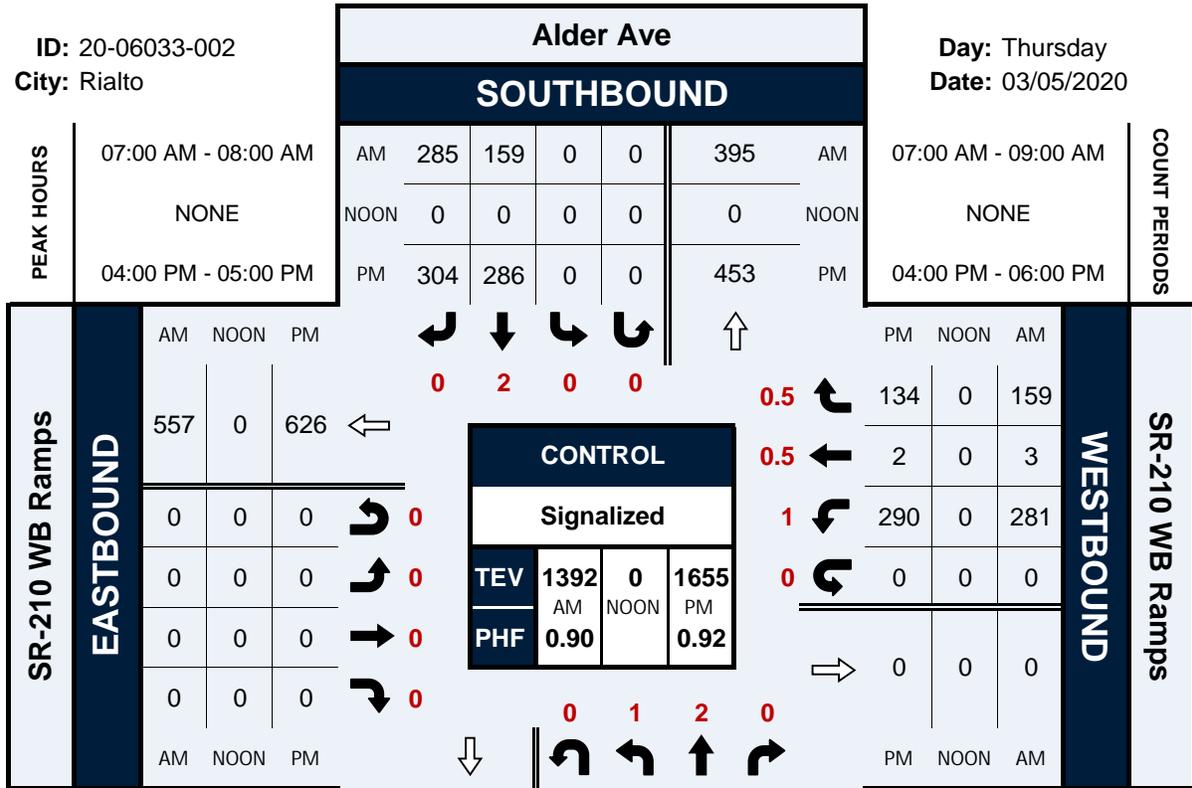
NS/EW Streets:	Alder Ave				Alder Ave				SR-210 WB Ramps				SR-210 WB Ramps				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	1	2	0	0	0	2	0	0	0	0	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	87	84	0	0	0	24	95	0	0	0	0	0	65	0	31	0	386
7:15 AM	74	51	0	0	0	47	76	0	0	0	0	0	56	0	35	0	339
7:30 AM	56	43	0	0	0	46	60	0	0	0	0	0	72	1	48	0	326
7:45 AM	52	58	0	0	0	42	54	0	0	0	0	0	88	2	45	0	341
8:00 AM	62	46	0	0	0	50	44	0	0	0	0	0	59	0	34	0	295
8:15 AM	52	55	0	0	0	31	49	0	0	0	0	0	54	1	37	0	279
8:30 AM	36	69	0	0	0	40	57	0	0	0	0	0	56	1	40	0	299
8:45 AM	65	56	0	0	0	49	50	0	0	0	0	0	44	0	28	0	292
TOTAL VOLUMES :	484	462	0	0	0	329	485	0	0	0	0	0	494	5	298	0	2557
APPROACH %'s :	51.16%	48.84%	0.00%	0.00%	0.00%	40.42%	59.58%	0.00%	0.00%	0.00%	0.00%	0.00%	61.98%	0.63%	37.39%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	269	236	0	0	0	159	285	0	0	0	0	0	281	3	159	0	1392
PEAK HR FACTOR :	0.773	0.702	0.000	0.000	0.000	0.846	0.750	0.000	0.000	0.000	0.000	0.000	0.798	0.375	0.828	0.000	0.902
	0.738				0.902								0.820				
PM	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	
4:00 PM	83	84	0	0	0	77	73	0	0	0	0	0	83	1	42	0	443
4:15 PM	69	84	0	0	0	50	59	0	0	0	0	0	55	0	40	0	357
4:30 PM	88	72	0	0	0	87	98	0	0	0	0	0	77	1	28	0	451
4:45 PM	80	79	0	0	0	72	74	0	0	0	0	0	75	0	24	0	404
5:00 PM	93	66	0	0	0	58	77	0	0	0	0	0	62	0	23	0	379
5:15 PM	80	51	0	0	0	56	48	0	0	0	0	0	72	0	25	0	332
5:30 PM	94	80	0	0	0	60	58	0	0	0	0	0	87	3	27	0	409
5:45 PM	68	76	0	0	0	48	42	0	0	0	0	0	94	0	24	0	352
TOTAL VOLUMES :	655	592	0	0	0	508	529	0	0	0	0	0	605	5	233	0	3127
APPROACH %'s :	52.53%	47.47%	0.00%	0.00%	0.00%	48.99%	51.01%	0.00%	0.00%	0.00%	0.00%	0.00%	71.77%	0.59%	27.64%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	320	319	0	0	0	286	304	0	0	0	0	0	290	2	134	0	1655
PEAK HR FACTOR :	0.909	0.949	0.000	0.000	0.000	0.822	0.776	0.000	0.000	0.000	0.000	0.000	0.873	0.500	0.798	0.000	0.917
	0.957				0.797								0.845				

Alder Ave & SR-210 WB Ramps

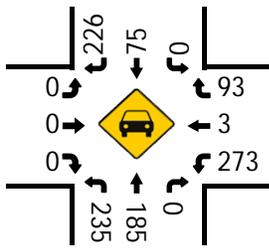
Peak Hour Turning Movement Count

ID: 20-06033-002
City: Rialto

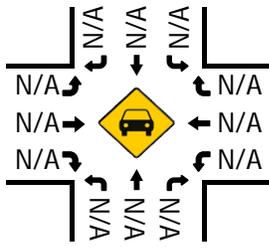
Day: Thursday
Date: 03/05/2020



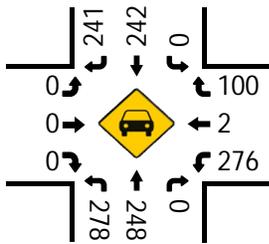
Cars (AM)



Cars (NOON)



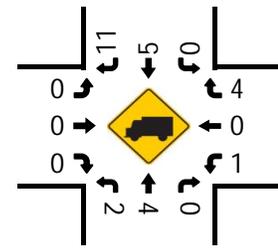
Cars (PM)



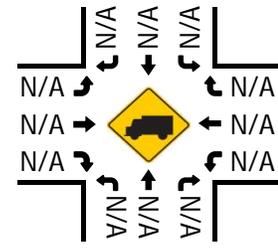
Alder Ave NORTHBOUND

PM	576	0	320	319	0	PM
NOON	0	0	0	0	0	NOON
AM	440	0	269	236	0	AM

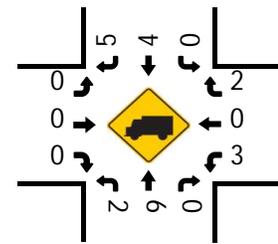
2axle (AM)



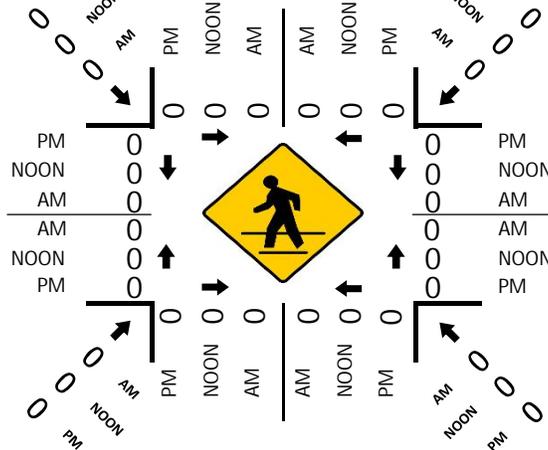
2axle (NOON)



2axle (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

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

Project ID: 20-06033-001
 Date: 3/5/2020

Total

NS/EW Streets:	Alder Ave				Alder Ave				SR-210 EB Ramps				SR-210 EB Ramps				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	108	55	0	19	65	0	0	59	0	93	0	0	0	0	0	399
7:15 AM	0	91	65	0	30	81	0	0	37	0	95	0	0	0	0	0	399
7:30 AM	0	66	73	0	33	93	0	0	26	1	94	0	0	0	0	0	386
7:45 AM	0	75	68	0	27	99	0	0	46	0	95	0	0	0	0	0	410
8:00 AM	0	72	32	0	29	83	0	0	30	1	75	0	0	0	0	0	322
8:15 AM	0	70	67	0	21	56	0	0	36	0	82	0	0	0	0	0	332
8:30 AM	0	70	49	0	27	73	0	0	42	1	63	0	0	0	0	0	325
8:45 AM	0	77	44	0	24	63	0	0	42	4	54	0	0	0	0	0	308
TOTAL VOLUMES :	0	629	453	0	210	613	0	0	318	7	651	0	0	0	0	0	2881
APPROACH %'s :	0.00%	58.13%	41.87%	0.00%	25.52%	74.48%	0.00%	0.00%	32.58%	0.72%	66.70%	0.00%					
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	340	261	0	109	338	0	0	168	1	377	0	0	0	0	0	1594
PEAK HR FACTOR :	0.000	0.787	0.894	0.000	0.826	0.854	0.000	0.000	0.712	0.250	0.992	0.000	0.000	0.000	0.000	0.000	0.972
	0.922				0.887				0.898								
PM	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	112	93	0	48	113	0	0	51	2	82	0	0	0	0	0	501
4:15 PM	0	96	70	0	28	74	0	0	54	0	80	0	0	0	0	0	402
4:30 PM	0	142	99	0	58	108	0	0	34	1	82	0	0	0	0	0	524
4:45 PM	0	94	86	0	26	112	0	0	46	0	69	0	0	0	0	0	433
5:00 PM	0	136	113	0	39	80	0	0	28	1	87	0	0	0	0	0	484
5:15 PM	0	114	85	0	26	106	0	0	30	1	98	0	0	0	0	0	460
5:30 PM	0	116	84	0	27	121	0	0	44	1	84	0	0	0	0	0	477
5:45 PM	0	105	82	0	27	113	0	0	39	1	116	0	0	0	0	0	483
TOTAL VOLUMES :	0	915	712	0	279	827	0	0	326	7	698	0	0	0	0	0	3764
APPROACH %'s :	0.00%	56.24%	43.76%	0.00%	25.23%	74.77%	0.00%	0.00%	31.62%	0.68%	67.70%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	471	364	0	119	420	0	0	141	4	385	0	0	0	0	0	1904
PEAK HR FACTOR :	0.000	0.866	0.805	0.000	0.763	0.868	0.000	0.000	0.801	1.000	0.830	0.000	0.000	0.000	0.000	0.000	0.983
	0.838				0.910				0.849								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Alder Ave & Renaissance Pkwy
 City: Rialto
 Control: Signalized

Project ID: 20-06033-003
 Date: 3/5/2020

Total

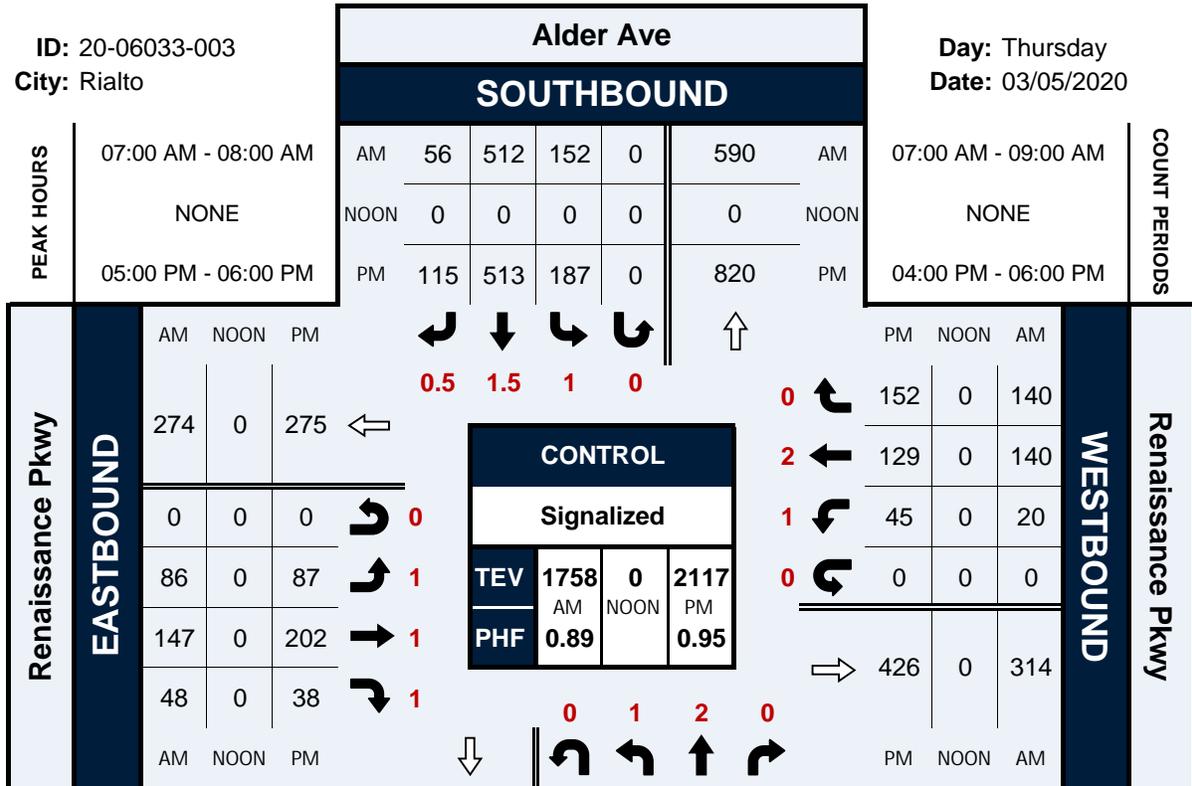
NS/EW Streets:	Alder Ave				Alder Ave				Renaissance Pkwy				Renaissance Pkwy				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	1 NL	2 NT	0 NR	0 NU	1 SL	1.5 ST	0.5 SR	0 SU	1 EL	1 ET	1 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
7:00 AM	30	103	5	0	44	103	9	0	16	36	5	0	3	37	45	0	436
7:15 AM	34	94	7	0	43	126	13	0	20	45	16	0	8	50	38	0	494
7:30 AM	7	82	1	0	38	130	13	0	33	48	20	0	5	31	26	0	434
7:45 AM	7	85	2	0	27	153	21	0	17	18	7	0	4	22	31	0	394
8:00 AM	2	71	1	0	23	115	15	0	9	9	1	0	6	23	32	0	307
8:15 AM	4	79	3	0	33	105	9	0	23	25	5	0	1	12	22	0	321
8:30 AM	0	81	2	0	29	90	13	0	18	11	3	0	10	11	24	0	292
8:45 AM	2	85	0	0	12	92	17	0	10	10	4	0	5	20	31	0	288
TOTAL VOLUMES :	86	680	21	0	249	914	110	0	146	202	61	0	42	206	249	0	2966
APPROACH %'s :	10.93%	86.40%	2.67%	0.00%	19.56%	71.80%	8.64%	0.00%	35.70%	49.39%	14.91%	0.00%	8.45%	41.45%	50.10%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	78	364	15	0	152	512	56	0	86	147	48	0	20	140	140	0	1758
PEAK HR FACTOR :	0.574	0.883	0.536	0.000	0.864	0.837	0.667	0.000	0.652	0.766	0.600	0.000	0.625	0.700	0.778	0.000	0.890
	0.828				0.896				0.696				0.781				
PM	1 NL	2 NT	0 NR	0 NU	1 SL	1.5 ST	0.5 SR	0 SU	1 EL	1 ET	1 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
4:00 PM	8	127	10	0	47	116	26	0	28	56	7	0	0	30	43	0	498
4:15 PM	8	94	5	0	40	90	31	0	23	71	13	0	4	41	42	0	462
4:30 PM	8	180	7	0	40	123	29	0	22	50	13	0	8	39	48	0	567
4:45 PM	5	132	7	0	23	118	33	0	15	45	18	0	3	26	43	0	468
5:00 PM	5	168	11	0	40	108	21	0	22	41	7	0	15	24	40	0	502
5:15 PM	7	139	9	0	42	119	37	0	19	60	9	0	13	48	37	0	539
5:30 PM	11	151	11	0	48	135	27	0	27	62	13	0	10	32	33	0	560
5:45 PM	8	123	6	0	57	151	30	0	19	39	9	0	7	25	42	0	516
TOTAL VOLUMES :	60	1114	66	0	337	960	234	0	175	424	89	0	60	265	328	0	4112
APPROACH %'s :	4.84%	89.84%	5.32%	0.00%	22.01%	62.70%	15.28%	0.00%	25.44%	61.63%	12.94%	0.00%	9.19%	40.58%	50.23%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	31	581	37	0	187	513	115	0	87	202	38	0	45	129	152	0	2117
PEAK HR FACTOR :	0.705	0.865	0.841	0.000	0.820	0.849	0.777	0.000	0.806	0.815	0.731	0.000	0.750	0.672	0.905	0.000	0.945
	0.882				0.856				0.801				0.832				

Alder Ave & Renaissance Pkwy

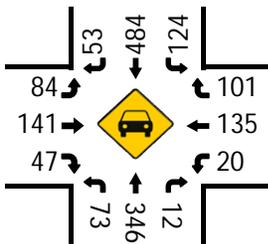
Peak Hour Turning Movement Count

ID: 20-06033-003
City: Rialto

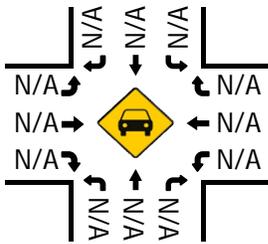
Day: Thursday
Date: 03/05/2020



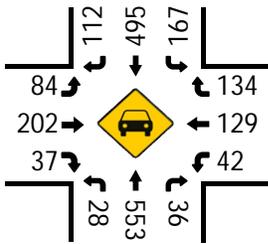
Cars (AM)



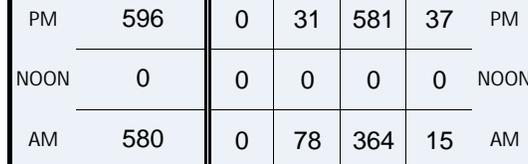
Cars (NOON)



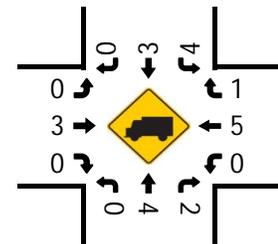
Cars (PM)



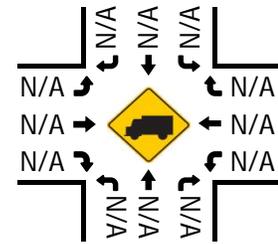
Alder Ave NORTHBOUND



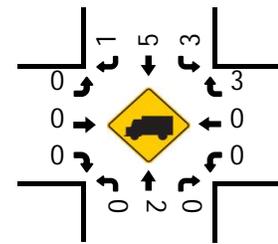
2axle (AM)



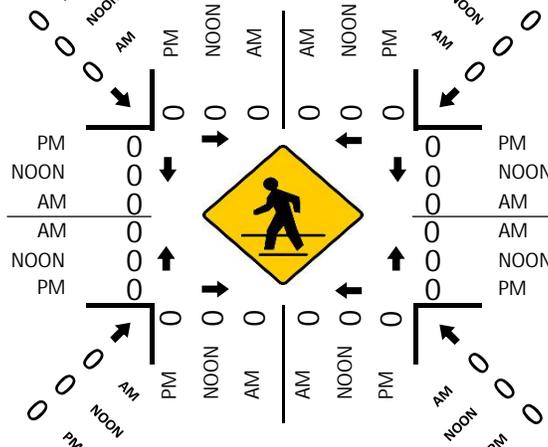
2axle (NOON)



2axle (PM)



Pedestrians (Crosswalks)



APPENDIX C

PCE WORKSHEETS

Existing Peak Hour Volumes - Non-Classification Counts

1 Alder Ave at Sierra Lakes Pkwy/ Casmalia St

	AM Peak Hour Volumes						Total PCE Volume
	Total Vehicles	Truck Volumes				Truck PCE	
		Truck %age	Passgr Vehicles	Truck	Avg Truck PCE		
NL	79		79	0		0	79
NT	70	5.0%	67	3	2.5	8	75
NR	175		175	0		0	175
SL	8		8	0		0	8
ST	64	5.0%	61	3	2.5	8	69
SR	8		8	0		0	8
EL	13		13	0		0	13
ET	65	5.0%	62	3	2.5	8	70
ER	49		49	0		0	49
WL	261		261	0		0	261
WT	111	5.0%	105	6	2.5	15	120
WR	12		12	0		0	12
							939

	PM Peak Hour Volumes						Total PCE Volume
	Total Vehicles	Truck Volumes				Truck PCE	
		Truck %age	Passgr Vehicles	Truck	Avg Truck PCE		
NL	95		95	0		0	95
NT	69	4.0%	66	3	2.5	8	74
NR	245		245	0		0	245
SL	24		24	0		0	24
ST	96	4.0%	92	4	2.5	10	102
SR	28		28	0		0	28
EL	11		11	0		0	11
ET	243	4.0%	233	10	2.5	25	258
ER	130		130	0		0	130
WL	301		301	0		0	301
WT	183	4.0%	176	7	2.5	18	194
WR	5		5	0		0	5
							1,467

North Leg Volumes

Approach	80	0	77	3	2.5	85
Depart	95	0	92	3	2.5	100
Total	175	0	169	6	5.0	185

North Leg Volumes

Approach	148	0	144	4	2.5	154
Depart	85	0	82	3	2.5	90
Total	233	0	226	7	5.0	244

South Leg Volumes

Approach	324	0	321	3	2.5	329
Depart	374	0	371	3	2.5	379
Total	698	0	692	6	5.0	708

South Leg Volumes

Approach	409	0	406	3	2.5	414
Depart	527	0	523	4	2.5	533
Total	936	0	929	7	5.0	947

East Leg Volumes

Approach	384	0	378	6	2.5	393
Depart	248	0	245	3	2.5	253
Total	632	0	623	9	5.0	646

East Leg Volumes

Approach	489	0	482	7	2.5	500
Depart	512	0	502	10	2.5	527
Total	1,001	0	984	17	5.0	1,027

West Leg Volumes

Approach	127	0	124	3	2.5	132
Depart	198	0	192	6	2.5	207
Total	325	0	316	9	5.0	339

West Leg Volumes

Approach	384	0	374	10	2.5	399
Depart	306	0	299	7	2.5	317
Total	690	0	673	17	5.0	716

All Legs

Approach	915	0	900	15	10.0	939
Depart	915	0	900	15	10.0	939
Total	1,830	0	1,800	30	20.0	1,878

All Legs

Approach	1,430	0	1,406	24	10.0	1,467
Depart	1,430	0	1,406	24	10.0	1,467
Total	2,860	0	2,812	48	20.0	2,934

Existing Peak Hour Volumes - Classification Counts

2 Alder Ave at SR-210 WB Ramps

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes					Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes					Average PCE	Total PCE Volume		
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age				PCE	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks			Truck %-age	PCE
NL	240	2	7	26	35	12.7%	95	2.7	335	284	2	2	39	43	13.1%	124	2.9	408
NT	189	4	11	37	52	21.6%	139	2.7	328	253	6	32	35	73	22.4%	178	2.4	431
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	77	5	6	74	85	52.5%	242	2.8	319	247	4	7	34	45	15.4%	122	2.7	369
SR	231	11	16	33	60	20.6%	148	2.5	379	246	5	5	54	64	20.6%	180	2.8	426
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	278	1	2	5	8	2.8%	21	2.6	299	282	3	1	10	14	4.7%	37	2.6	319
WT	3	0	0	0	0	0.0%	0	0.0	3	2	0	0	0	0	0.0%	0	0.0	2
WR	95	4	5	58	67	41.4%	190	2.8	285	102	2	3	30	35	25.5%	99	2.8	201
									1,948									2,156
North Leg Volumes																		
Approach	308	16	22	107	145		390		698	493	9	12	88	109		302		795
Depart	284	8	16	95	119		329		613	355	8	35	65	108		277		632
Total	592	24	38	202	264	30.8%	719	2.7	1,311	848	17	47	153	217	20.4%	579	2.7	1,427
South Leg Volumes																		
Approach	429	6	18	63	87		234		663	537	8	34	74	116		302		839
Depart	355	6	8	79	93		263		618	529	7	8	44	59		159		688
Total	784	12	26	142	180	18.7%	497	2.8	1,281	1,066	15	42	118	175	14.1%	461	2.6	1,527
East Leg Volumes																		
Approach	376	5	7	63	75		211		587	386	5	4	40	49		136		522
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	376	5	7	63	75	16.6%	211	2.8	587	386	5	4	40	49	11.3%	136	2.8	522
West Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	474	13	23	59	95		243		717	532	7	7	93	107		304		836
Total	474	13	23	59	95	16.7%	243	2.6	717	532	7	7	93	107	16.7%	304	2.8	836
All Legs																		
Approach	1,113	27	47	233	307		835		1,948	1,416	22	50	202	274		740		2,156
Depart	1,113	27	47	233	307		835		1,948	1,416	22	50	202	274		740		2,156
Total	2,226	54	94	466	614	21.6%	1,670	2.7	3,896	2,832	44	100	404	548	16.2%	1,480	2.7	4,312

Existing Peak Hour Volumes - Classification Counts

3 Alder Ave at SR-210 EB Ramps

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE		
NL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0.0%	0	0.0	0	
NT	304	4	9	30	43	12.4%	114	2.7	418	450	2	7	21	30	6.3%	80	2.7	530
NR	249	1	3	13	17	6.4%	47	2.8	296	352	3	2	14	19	5.1%	51	2.7	403
SL	35	0	5	71	76	68.5%	223	2.9	258	111	2	0	8	10	8.3%	27	2.7	138
ST	327	6	3	8	17	4.9%	39	2.3	366	407	4	6	11	21	4.9%	51	2.4	458
SR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
EL	124	4	9	34	47	27.5%	126	2.7	250	117	1	8	17	26	18.2%	69	2.7	186
ET	1	0	0	0	0	0.0%	0	0.0	1	4	0	0	0	0	0.0%	0	0.0	4
ER	343	2	5	35	42	10.9%	118	2.8	461	372	5	2	13	20	5.1%	51	2.6	423
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
									2,050									2,142
North Leg Volumes																		
Approach	362	6	8	79	93		262		624	518	6	6	19	31		78		596
Depart	428	8	18	64	90		240		668	567	3	15	38	56		149		716
Total	790	14	26	143	183	18.8%	502	2.7	1,292	1,085	9	21	57	87	7.4%	227	2.6	1,312
South Leg Volumes																		
Approach	553	5	12	43	60		161		714	802	5	9	35	49		131		933
Depart	670	8	8	43	59		157		827	779	9	8	24	41		102		881
Total	1,223	13	20	86	119	8.9%	318	2.7	1,541	1,581	14	17	59	90	5.4%	233	2.6	1,814
East Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	285	1	8	84	93		270		555	467	5	2	22	29		78		545
Total	285	1	8	84	93	24.6%	270	2.9	555	467	5	2	22	29	5.8%	78	2.7	545
West Leg Volumes																		
Approach	468	6	14	69	89		244		712	493	6	10	30	46		120		613
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	468	6	14	69	89	16.0%	244	2.7	712	493	6	10	30	46	8.5%	120	2.6	613
All Legs																		
Approach	1,383	17	34	191	242		667		2,050	1,813	17	25	84	126		329		2,142
Depart	1,383	17	34	191	242		667		2,050	1,813	17	25	84	126		329		2,142
Total	2,766	34	68	382	484	14.9%	1,334	2.8	4,100	3,626	34	50	168	252	6.5%	658	2.6	4,284

Existing Peak Hour Volumes - Classification Counts

4 Alder Ave at Renaissance Pkwy

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE		
NL	74	0	1	4	5	6.3%	14	2.8	88	29	0	3	0	3	9.4%	6	2.0	35
NT	353	4	4	10	18	4.9%	44	2.4	397	564	2	7	19	28	4.7%	74	2.6	638
NR	12	2	1	0	3	20.0%	5	1.7	17	37	0	1	0	1	2.6%	2	2.0	39
SL	126	4	3	21	28	18.2%	75	2.7	201	170	3	1	16	20	10.5%	55	2.8	225
ST	494	3	5	20	28	5.4%	75	2.7	569	505	5	6	7	18	3.4%	41	2.3	546
SR	54	0	0	3	3	5.3%	9	3.0	63	114	1	1	1	3	2.6%	7	2.3	121
EL	86	0	1	1	2	2.3%	5	2.5	91	86	0	0	3	3	3.4%	9	3.0	95
ET	144	3	3	0	6	4.0%	11	1.8	155	206	0	0	0	0	0.0%	0	0.0	206
ER	48	0	0	1	1	2.0%	3	3.0	51	38	0	0	1	1	2.6%	3	3.0	41
WL	20	0	0	0	0	0.0%	0	0.0	20	43	0	2	1	3	6.5%	7	2.3	50
WT	138	5	0	0	5	3.5%	8	1.6	146	132	0	0	0	0	0.0%	0	0.0	132
WR	103	1	7	32	40	28.0%	112	2.8	215	137	3	2	13	18	11.6%	48	2.7	185
									2,013									2,313
North Leg Volumes																		
Approach	674	7	8	44	59		159		833	789	9	8	24	41		103		892
Depart	542	5	12	43	60		161		703	787	5	9	35	49		131		918
Total	1,216	12	20	87	119	8.9%	320	2.7	1,536	1,576	14	17	59	90	5.4%	234	2.6	1,810
South Leg Volumes																		
Approach	439	6	6	14	26		63		502	630	2	11	19	32		82		712
Depart	562	3	5	21	29		78		640	586	5	8	9	22		51		637
Total	1,001	9	11	35	55	5.2%	141	2.6	1,142	1,216	7	19	28	54	4.3%	133	2.5	1,349
East Leg Volumes																		
Approach	261	6	7	32	45		120		381	312	3	4	14	21		55		367
Depart	282	9	7	21	37		91		373	413	3	2	16	21		57		470
Total	543	15	14	53	82	13.1%	211	2.6	754	725	6	6	30	42	5.5%	112	2.7	837
West Leg Volumes																		
Approach	278	3	4	2	9		19		297	330	0	0	4	4		12		342
Depart	266	5	1	7	13		31		297	275	1	4	1	6		13		288
Total	544	8	5	9	22	3.9%	50	2.3	594	605	1	4	5	10	1.6%	25	2.5	630
All Legs																		
Approach	1,652	22	25	92	139		361		2,013	2,061	14	23	61	98		252		2,313
Depart	1,652	22	25	92	139		361		2,013	2,061	14	23	61	98		252		2,313
Total	3,304	44	50	184	278	7.8%	722	2.6	4,026	4,122	28	46	122	196	4.5%	504	2.6	4,626

APPENDIX D

INTERSECTION ANALYSIS WORKSHEETS

Rialto Travel Center

Vistro File: K:\...\Updated_Rialto Travel Ctr AM.vistro

Scenario 1 EX AM

Report File: K:\...\1 EX AM.pdf

9/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave at Casmalia St	Signalized	HCM 6th Edition	WB Left	0.277	46.2	D
2	Alder Ave at SR-210 WB Ramps	Signalized	HCM 6th Edition	NB Left	0.662	28.4	C
3	Alder Ave at SR-210 EB Ramps	Signalized	HCM 6th Edition	SB Left	0.662	26.9	C
4	Alder Ave at Renaissance Pkwy	Signalized	HCM 6th Edition	WB Left	0.455	27.9	C

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

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

Control Type:	Signalized	Delay (sec / veh):	46.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.277

Intersection Setup

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	2	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	210.0	100.0	100.0	180.0	100.0	100.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
Base Volume Input [veh/h]	79	75	175	8	69	8	13	70	49	261	120	12
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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]	79	75	175	8	69	8	13	70	49	261	120	12
Peak Hour Factor	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	25	23	54	2	21	2	4	22	15	81	37	4
Total Analysis Volume [veh/h]	98	93	218	10	86	10	16	87	61	325	149	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	25	55	0	9	39	0	13	41	0	15	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	30	0	0	32	0	0	32	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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]	120	120	120	120	120	120	120	120	120	120	120	120
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
I1_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
I2, 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	84	84	1	77	77	2	7	7	11	16	16
g / C, Green / Cycle	0.07	0.70	0.70	0.01	0.64	0.64	0.02	0.06	0.06	0.09	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.13	0.01	0.02	0.01	0.01	0.04	0.04	0.09	0.04	0.04
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1654	3514	1900	1840
c, Capacity [veh/h]	124	1331	1132	22	2330	1040	32	118	103	322	259	251
d1, Uniform Delay [s]	55.03	5.65	6.21	58.90	7.79	7.65	58.44	54.94	55.17	54.50	46.78	46.79
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.56	0.10	0.38	14.66	0.03	0.02	12.01	5.61	8.35	25.51	0.70	0.73
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	0.07	0.19	0.46	0.04	0.01	0.51	0.64	0.70	1.01	0.32	0.32
d, Delay for Lane Group [s/veh]	65.59	5.75	6.59	73.57	7.82	7.67	70.45	60.55	63.52	80.01	47.48	47.53
Lane Group LOS	E	A	A	E	A	A	E	E	E	F	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.19	0.64	1.67	0.38	0.36	0.09	0.57	2.33	2.30	5.80	2.20	2.15
50th-Percentile Queue Length [ft/ln]	79.71	16.02	41.85	9.52	9.11	2.15	14.23	58.29	57.51	144.9	55.01	53.75
95th-Percentile Queue Length [veh/ln]	5.74	1.15	3.01	0.69	0.66	0.15	1.02	4.20	4.14	9.78	3.96	3.87
95th-Percentile Queue Length [ft/ln]	143.4	28.84	75.33	17.14	16.40	3.87	25.61	104.9	103.5	244.4	99.01	96.75

Movement, Approach, & Intersection Results

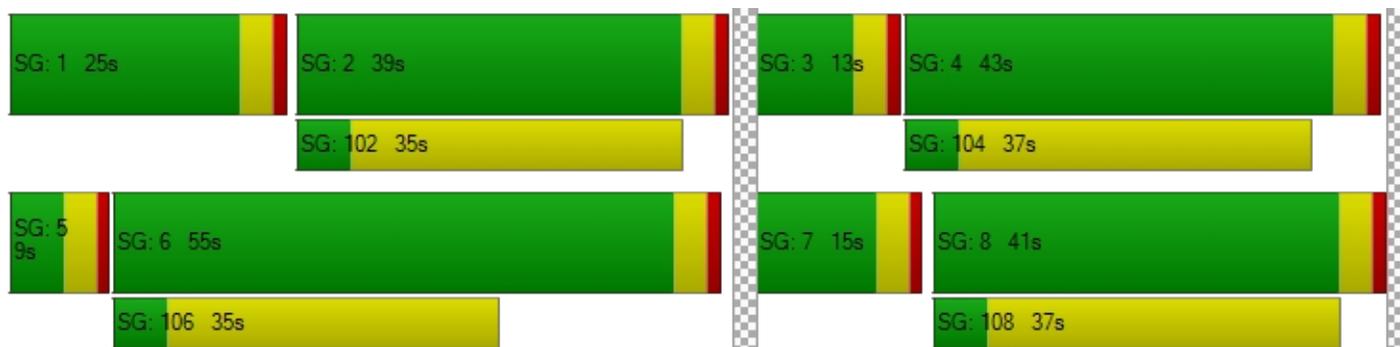
d_M, Delay for Movement [s/veh]	65.59	5.75	6.59	73.57	7.82	7.67	70.45	60.94	63.52	80.01	47.50	47.53
Movement LOS	E	A	A	E	A	A	E	E	E	F	D	D
d_A, Approach Delay [s/veh]	20.54		14.01		62.82		69.11					
Approach LOS	C		B		E		E					
d_I, Intersection Delay [s/veh]	46.22											
Intersection LOS	D											
Intersection V/C	0.277											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
I_p,int, Pedestrian LOS Score for Intersection	2.601	2.530	2.466	2.708
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	850	583	617	650
d_b, Bicycle Delay [s]	19.84	30.10	28.70	27.34
I_b,int, Bicycle LOS Score for Intersection	1.897	1.647	1.695	1.963
Bicycle LOS	A	A	A	A

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 at SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	28.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	405.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Base Volume Input [veh/h]	335	328	0	0	319	379	0	0	0	299	3	285
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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]	335	328	0	0	319	379	0	0	0	299	3	285
Peak Hour Factor	0.902	0.902	1.000	1.000	0.902	0.902	1.000	1.000	1.000	0.902	0.902	0.902
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	93	91	0	0	88	105	0	0	0	83	1	79
Total Analysis Volume [veh/h]	371	364	0	0	354	420	0	0	0	331	3	316
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi											
Signal Group	1	6	0	0	2	0	0	0	0	0	7	4	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	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	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	1.0	0.0
Split [s]	32	53	0	0	21	0	0	0	0	0	37	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	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	3	0	0	0	0	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	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	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	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	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	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
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	21	61	37	37		21	21
g / C, Green / Cycle	0.23	0.68	0.41	0.41		0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.21	0.10	0.19	0.26		0.18	0.20
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1617
c, Capacity [veh/h]	414	2464	776	659		416	372
d1, Uniform Delay [s]	33.69	5.09	19.37	21.30		32.66	33.24
k, delay calibration	0.17	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]	10.42	0.13	1.93	4.66		3.50	6.06
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	0.90	0.15	0.46	0.64		0.80	0.86
d, Delay for Lane Group [s/veh]	44.12	5.21	21.30	25.96		36.16	39.30
Lane Group LOS	D	A	C	C		D	D
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	8.43	0.89	5.19	7.08		7.04	7.14
50th-Percentile Queue Length [ft/ln]	210.82	22.14	129.79	177.09		176.04	178.41
95th-Percentile Queue Length [veh/ln]	13.20	1.59	8.93	11.45		11.39	11.52
95th-Percentile Queue Length [ft/ln]	329.88	39.85	223.21	286.21		284.84	287.94

Movement, Approach, & Intersection Results

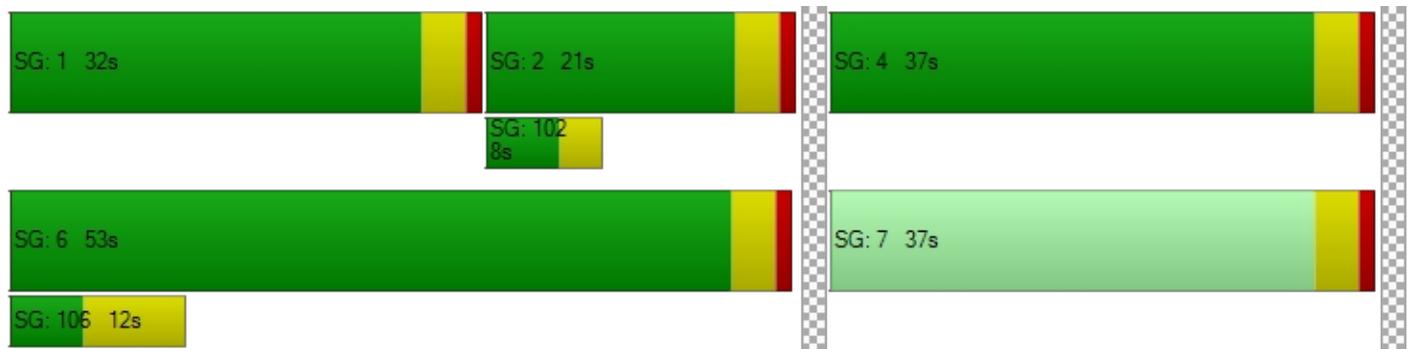
d_M, Delay for Movement [s/veh]	44.12	5.21	0.00	0.00	21.30	25.96	0.00	0.00	0.00	36.16	39.30	39.30
Movement LOS	D	A			C	C				D	D	D
d_A, Approach Delay [s/veh]	24.85		23.83		0.00		37.70					
Approach LOS	C		C		A		D					
d_I, Intersection Delay [s/veh]	28.35											
Intersection LOS	C											
Intersection V/C	0.662											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.199	2.153
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1089	378	0	733
d_b, Bicycle Delay [s]	9.34	29.61	45.00	18.05
I_b,int, Bicycle LOS Score for Intersection	2.166	2.198	4.132	2.632
Bicycle LOS	B	B	D	B

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	26.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	120.0	100.0	100.0	100.0	100.0	415.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Base Volume Input [veh/h]	0	418	296	258	366	0	250	1	461	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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	418	296	258	366	0	250	1	461	0	0	0
Peak Hour Factor	1.000	0.972	0.972	0.972	0.972	1.000	0.972	0.972	0.972	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	108	76	66	94	0	64	0	119	0	0	0
Total Analysis Volume [veh/h]	0	430	305	265	377	0	257	1	474	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
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Protec	Permi							
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	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	12	0	22	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	3	0	0	7	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
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	
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	34	34	15	53	29	29	
g / C, Green / Cycle	0.37	0.37	0.17	0.59	0.33	0.33	
(v / s)_i Volume / Saturation Flow Rate	0.19	0.22	0.15	0.10	0.14	0.29	
s, saturation flow rate [veh/h]	1900	1657	1810	3618	1810	1615	
c, Capacity [veh/h]	709	619	303	2117	590	526	
d1, Uniform Delay [s]	21.91	22.71	36.54	8.64	23.85	28.95	
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]	2.69	4.16	7.85	0.18	0.51	5.92	
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	0.52	0.59	0.87	0.18	0.44	0.90	
d, Delay for Lane Group [s/veh]	24.61	26.87	44.39	8.83	24.36	34.86	
Lane Group LOS	C	C	D	A	C	C	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.93	6.31	5.95	1.44	4.29	10.24	
50th-Percentile Queue Length [ft/ln]	148.35	157.87	148.67	35.90	107.25	256.08	
95th-Percentile Queue Length [veh/ln]	9.93	10.44	9.95	2.58	7.69	15.49	
95th-Percentile Queue Length [ft/ln]	248.22	260.90	248.66	64.62	192.17	387.30	

Movement, Approach, & Intersection Results

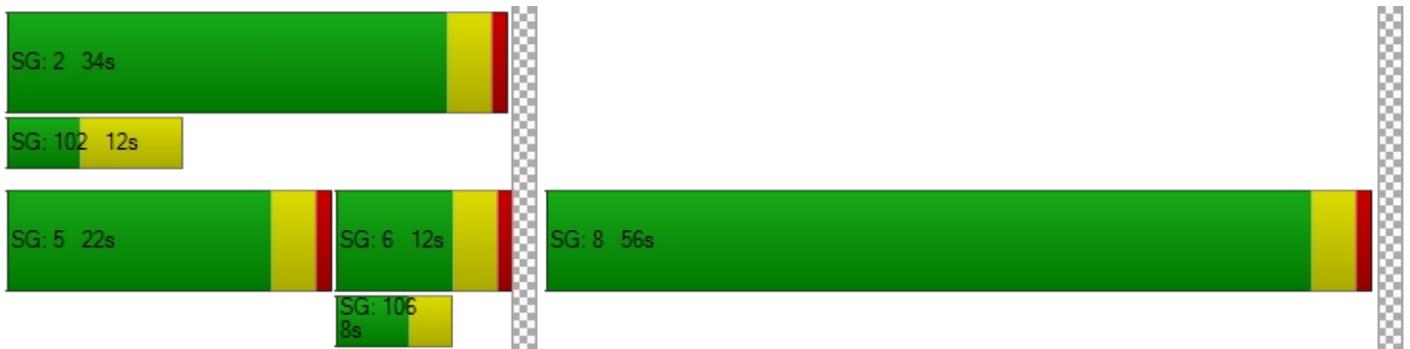
d_M, Delay for Movement [s/veh]	0.00	24.93	26.87	44.39	8.83	0.00	24.36	24.36	34.86	0.00	0.00	0.00
Movement LOS		C	C	D	A		C	C	C			
d_A, Approach Delay [s/veh]		25.74		23.51			31.16			0.00		
Approach LOS		C		C			C			A		
d_I, Intersection Delay [s/veh]		26.94										
Intersection LOS		C										
Intersection V/C		0.662										

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		9.0		9.0	
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]		0.00		0.00		36.45		36.45	
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.180		1.982	
Crosswalk LOS		F		F		B		A	
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]		2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]		178		667		1156		0	
d_b, Bicycle Delay [s]		37.36		20.00		8.02		45.00	
I_b,int, Bicycle LOS Score for Intersection		2.166		2.089		2.767		4.132	
Bicycle LOS		B		B		C		D	

Sequence

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



Intersection Level Of Service Report
Intersection 4: Alder Ave at Renaissance Pkwy

Control Type:	Signalized	Delay (sec / veh):	27.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.455

Intersection Setup

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐			⇐⇐⇐			⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	305.0	100.0	100.0	280.0	100.0	100.0	315.0	100.0	100.0	315.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
	88	397	17	201	569	63	91	155	51	20	146	215
Base Volume Input [veh/h]	88	397	17	201	569	63	91	155	51	20	146	215
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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]	88	397	17	201	569	63	91	155	51	20	146	215
Peak Hour Factor	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	25	112	5	56	160	18	26	44	14	6	41	60
Total Analysis Volume [veh/h]	99	446	19	226	639	71	102	174	57	22	164	242
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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	23	0	25	28	0	13	26	0	16	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	14	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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	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
I1_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
I2, 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	13	45	45	6	20	20	2	16	16
g / C, Green / Cycle	0.07	0.43	0.43	0.15	0.50	0.50	0.07	0.22	0.22	0.02	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.05	0.12	0.12	0.12	0.19	0.19	0.06	0.06	0.06	0.01	0.09	0.15
s, saturation flow rate [veh/h]	1810	1900	1873	1810	1900	1834	1810	1900	1744	1810	1900	1615
c, Capacity [veh/h]	130	809	797	267	952	919	131	426	391	46	336	286
d1, Uniform Delay [s]	41.01	16.93	16.93	37.38	13.83	13.83	41.05	28.90	28.97	43.29	33.36	35.86
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
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.81	0.90	0.92	7.32	1.15	1.19	9.64	0.35	0.40	7.68	1.10	6.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.29	0.29	0.85	0.38	0.38	0.78	0.28	0.29	0.48	0.49	0.85
d, Delay for Lane Group [s/veh]	49.82	17.83	17.85	44.70	14.98	15.02	50.69	29.25	29.37	50.97	34.46	42.70
Lane Group LOS	D	B	B	D	B	B	D	C	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.35	3.02	2.98	5.07	4.16	4.03	2.45	2.01	1.92	0.56	3.12	5.32
50th-Percentile Queue Length [ft/ln]	58.82	75.39	74.61	126.7	104.0	100.7	61.19	50.26	48.05	13.90	77.90	133.0
95th-Percentile Queue Length [veh/ln]	4.24	5.43	5.37	8.76	7.49	7.25	4.41	3.62	3.46	1.00	5.61	9.11
95th-Percentile Queue Length [ft/ln]	105.8	135.7	134.2	219.0	187.3	181.3	110.1	90.46	86.49	25.02	140.2	227.6

Movement, Approach, & Intersection Results

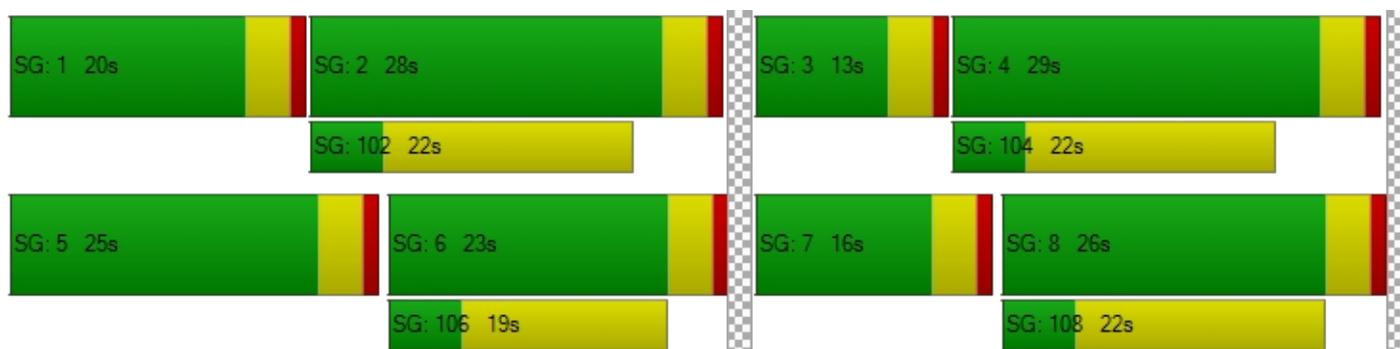
d_M, Delay for Movement [s/veh]	49.82	17.84	17.85	44.70	14.99	15.02	50.69	29.29	29.37	50.97	34.46	42.70
Movement LOS	D	B	B	D	B	B	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	23.46		22.17		35.86		39.97					
Approach LOS	C		C		D		D					
d_I, Intersection Delay [s/veh]	27.87											
Intersection LOS	C											
Intersection V/C	0.455											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.718	2.862	2.518	2.577
Crosswalk LOS	B	C	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	533	489	556
d_b, Bicycle Delay [s]	28.01	24.20	25.69	23.47
I_b,int, Bicycle LOS Score for Intersection	2.025	2.332	1.834	1.913
Bicycle LOS	B	B	A	A

Sequence

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



Rialto Travel Center

Vistro File: K:\...\Updated_Rialto Travel Ctr PM.vistro

Scenario 1 EX PM

Report File: K:\...\1 EX PM.pdf

9/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave at Casmalia St	Signalized	HCM 6th Edition	EB Left	0.397	43.4	D
2	Alder Ave at SR-210 WB Ramps	Signalized	HCM 6th Edition	WB Left	0.726	29.7	C
3	Alder Ave at SR-210 EB Ramps	Signalized	HCM 6th Edition	SB Left	0.631	23.7	C
4	Alder Ave at Renaissance Pkwy	Signalized	HCM 6th Edition	EB Left	0.499	26.3	C

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

**Intersection Level Of Service Report
Intersection 1: Alder Ave at Casmalia St**

Control Type:	Signalized	Delay (sec / veh):	43.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.397

Intersection Setup

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T			T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	2	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	210.0	100.0	100.0	180.0	100.0	100.0	290.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
	95	74	245	24	102	28	11	258	130	301	194	5
Base Volume Input [veh/h]	95	74	245	24	102	28	11	258	130	301	194	5
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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]	95	74	245	24	102	28	11	258	130	301	194	5
Peak Hour Factor	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	26	20	68	7	28	8	3	71	36	83	53	1
Total Analysis Volume [veh/h]	105	82	270	26	112	31	12	284	143	332	214	6
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	24	54	0	9	39	0	9	41	0	16	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	30	0	0	30	0	0	32	0	0	32	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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]	120	120	120	120	120	120	120	120	120	120	120	120
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
I1_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
I2, 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]	9	72	72	3	66	66	2	17	17	12	27	27
g / C, Green / Cycle	0.07	0.60	0.60	0.02	0.55	0.55	0.01	0.14	0.14	0.10	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.06	0.04	0.17	0.01	0.03	0.02	0.01	0.12	0.12	0.09	0.06	0.06
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1691	3514	1900	1882
c, Capacity [veh/h]	132	1139	968	44	1992	889	25	271	242	351	435	431
d1, Uniform Delay [s]	54.73	10.06	11.56	57.95	12.50	12.35	58.73	49.92	50.15	53.67	37.88	37.88
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]	10.21	0.12	0.72	12.03	0.05	0.07	13.21	6.03	7.98	12.57	0.30	0.31
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	0.07	0.28	0.59	0.06	0.03	0.48	0.82	0.85	0.94	0.25	0.25
d, Delay for Lane Group [s/veh]	64.94	10.18	12.27	69.98	12.55	12.42	71.93	55.96	58.13	66.24	38.18	38.19
Lane Group LOS	E	B	B	E	B	B	E	E	E	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.40	0.86	3.29	0.90	0.66	0.37	0.44	6.64	6.25	5.38	2.58	2.56
50th-Percentile Queue Length [ft/ln]	84.93	21.42	82.19	22.62	16.50	9.27	11.03	165.9	156.3	134.4	64.49	64.00
95th-Percentile Queue Length [veh/ln]	6.12	1.54	5.92	1.63	1.19	0.67	0.79	10.86	10.36	9.18	4.64	4.61
95th-Percentile Queue Length [ft/ln]	152.8	38.56	147.9	40.72	29.71	16.69	19.85	271.6	258.9	229.4	116.0	115.2

Movement, Approach, & Intersection Results

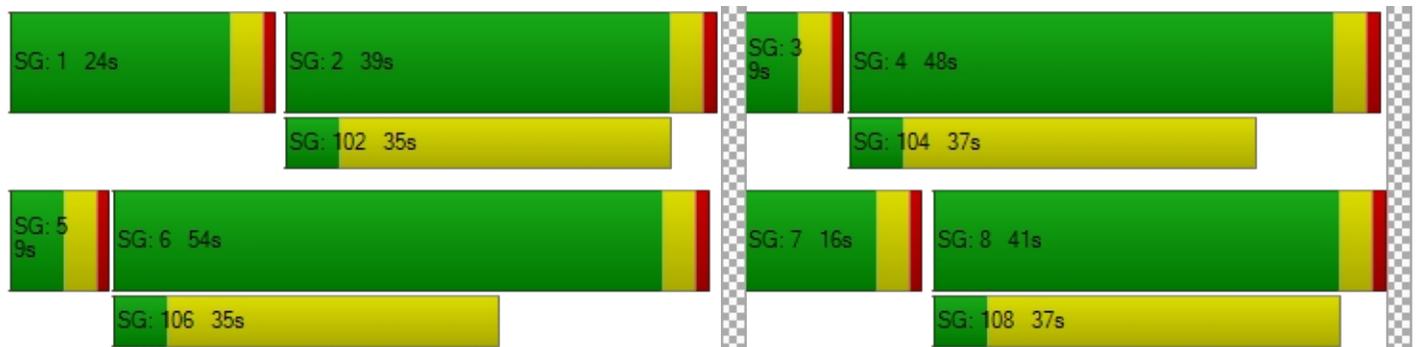
d_M, Delay for Movement [s/veh]	64.94	10.18	12.27	69.98	12.55	12.42	71.93	56.43	58.13	66.24	38.18	38.19
Movement LOS	E	B	B	E	B	B	E	E	E	E	D	D
d_A, Approach Delay [s/veh]	24.00			21.36			57.41			55.06		
Approach LOS	C			C			E			E		
d_I, Intersection Delay [s/veh]	43.40											
Intersection LOS	D											
Intersection V/C	0.397											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
I_p,int, Pedestrian LOS Score for Intersection	2.654	2.541	2.597	2.805
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	833	583	617	733
d_b, Bicycle Delay [s]	20.42	30.10	28.70	24.07
I_b,int, Bicycle LOS Score for Intersection	1.937	1.699	1.922	2.015
Bicycle LOS	A	A	A	B

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	29.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.726

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	405.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Base Volume Input [veh/h]	408	431	0	0	369	426	0	0	0	319	2	201
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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]	408	431	0	0	369	426	0	0	0	319	2	201
Peak Hour Factor	0.917	0.917	1.000	1.000	0.917	0.917	1.000	1.000	1.000	0.917	0.917	0.917
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	111	118	0	0	101	116	0	0	0	87	1	55
Total Analysis Volume [veh/h]	445	470	0	0	402	465	0	0	0	348	2	219
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi											
Signal Group	1	6	0	0	2	0	0	0	0	0	7	4	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	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	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	1.0	0.0
Split [s]	37	66	0	0	29	0	0	0	0	0	24	24	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	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	3	0	0	0	0	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	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	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	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	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	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
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	24	63	35	35		19	19
g / C, Green / Cycle	0.27	0.70	0.38	0.38		0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.25	0.13	0.21	0.29		0.19	0.14
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1617
c, Capacity [veh/h]	490	2527	728	619		385	344
d1, Uniform Delay [s]	31.73	4.70	21.71	24.04		34.54	32.31
k, delay calibration	0.21	0.50	0.50	0.50		0.14	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	11.92	0.16	3.00	8.19		10.06	2.01
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	0.91	0.19	0.55	0.75		0.90	0.64
d, Delay for Lane Group [s/veh]	43.65	4.86	24.72	32.23		44.60	34.32
Lane Group LOS	D	A	C	C		D	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	10.15	1.07	6.52	8.98		8.32	4.49
50th-Percentile Queue Length [ft/ln]	253.87	26.69	163.06	224.59		207.89	112.34
95th-Percentile Queue Length [veh/ln]	15.38	1.92	10.71	13.90		13.04	7.97
95th-Percentile Queue Length [ft/ln]	384.53	48.04	267.77	347.48		326.12	199.25

Movement, Approach, & Intersection Results

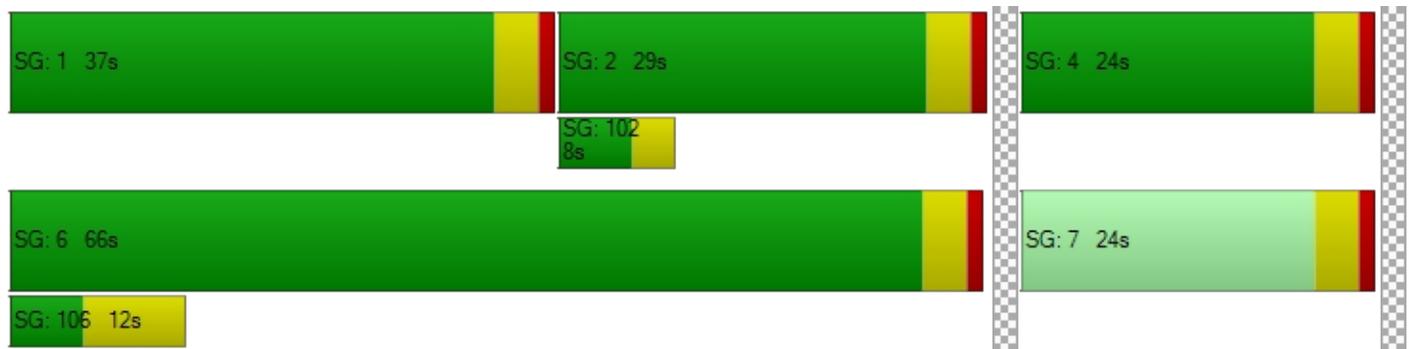
d_M, Delay for Movement [s/veh]	43.65	4.86	0.00	0.00	24.72	32.23	0.00	0.00	0.00	44.60	34.32	34.32
Movement LOS	D	A			C	C				D	C	C
d_A, Approach Delay [s/veh]	23.73				28.75		0.00		40.61			
Approach LOS	C				C		A		D			
d_I, Intersection Delay [s/veh]	29.66											
Intersection LOS	C											
Intersection V/C	0.726											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.314	2.127
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1378	556	0	444
d_b, Bicycle Delay [s]	4.36	23.47	45.00	27.22
I_b,int, Bicycle LOS Score for Intersection	2.314	2.275	4.132	2.498
Bicycle LOS	B	B	D	B

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	23.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.631

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	120.0	100.0	100.0	100.0	100.0	415.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Base Volume Input [veh/h]	0	530	403	138	458	0	186	4	423	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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	530	403	138	458	0	186	4	423	0	0	0
Peak Hour Factor	1.000	0.983	0.983	0.983	0.983	1.000	0.983	0.983	0.983	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	135	102	35	116	0	47	1	108	0	0	0
Total Analysis Volume [veh/h]	0	539	410	140	466	0	189	4	430	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
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Protec	Permi							
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	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	35	0	13	48	0	0	42	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	3	0	0	7	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
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	
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	43	43	9	55	27	27	
g / C, Green / Cycle	0.48	0.48	0.10	0.62	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.25	0.29	0.08	0.13	0.11	0.27	
s, saturation flow rate [veh/h]	1900	1649	1810	3618	1811	1615	
c, Capacity [veh/h]	902	783	173	2224	537	478	
d1, Uniform Delay [s]	16.53	17.42	39.91	7.66	24.94	30.37	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.19	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.19	3.47	8.76	0.21	0.41	10.14	
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	0.53	0.61	0.81	0.21	0.36	0.90	
d, Delay for Lane Group [s/veh]	18.72	20.88	48.67	7.88	25.35	40.51	
Lane Group LOS	B	C	D	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.43	6.95	3.28	1.62	3.24	9.98	
50th-Percentile Queue Length [ft/ln]	160.85	173.85	81.92	40.52	81.08	249.53	
95th-Percentile Queue Length [veh/ln]	10.59	11.28	5.90	2.92	5.84	15.16	
95th-Percentile Queue Length [ft/ln]	264.85	281.97	147.45	72.93	145.94	379.06	

Movement, Approach, & Intersection Results

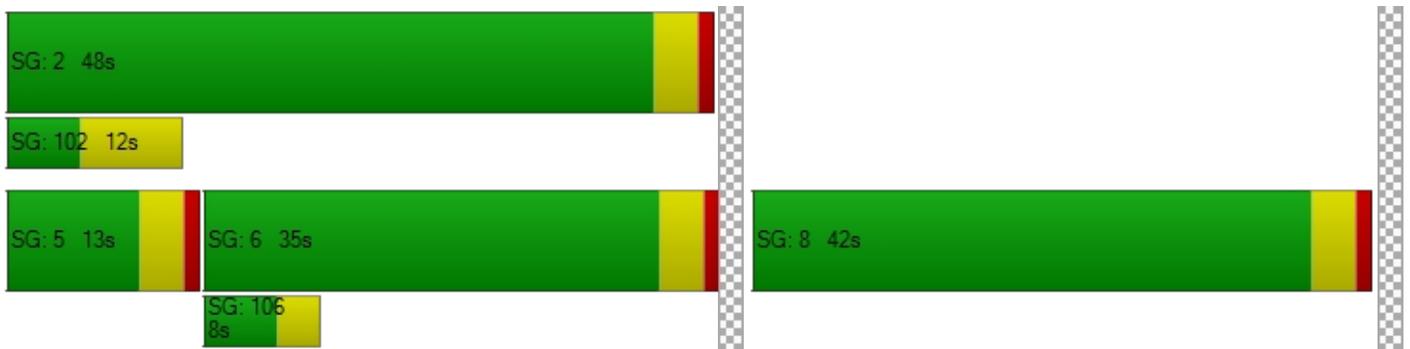
d_M, Delay for Movement [s/veh]	0.00	18.98	20.88	48.67	7.88	0.00	25.35	25.35	40.51	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	C	D			
d_A, Approach Delay [s/veh]		19.80		17.30			35.81			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	23.69											
Intersection LOS	C											
Intersection V/C	0.631											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		9.0		9.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		36.45		36.45
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.144		1.965
Crosswalk LOS		F		F		B		A
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		689		978		844		0
d_b, Bicycle Delay [s]		19.34		11.76		15.02		45.00
I_b,int, Bicycle LOS Score for Intersection		2.343		2.060		2.588		4.132
Bicycle LOS		B		B		B		D

Sequence

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



Intersection Level Of Service Report
Intersection 4: Alder Ave at Renaissance Pkwy

Control Type:	Signalized	Delay (sec / veh):	26.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.499

Intersection Setup

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	305.0	100.0	100.0	280.0	100.0	100.0	315.0	100.0	100.0	315.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Base Volume Input [veh/h]	35	638	39	225	546	121	95	206	41	50	132	185
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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]	35	638	39	225	546	121	95	206	41	50	132	185
Peak Hour Factor	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	9	169	10	60	144	32	25	54	11	13	35	49
Total Analysis Volume [veh/h]	37	675	41	238	578	128	101	218	43	53	140	196
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	9	23	0	31	45	0	10	26	0	10	26	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	14	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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	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
I1_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
I2, 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]	3	41	41	14	52	52	6	16	16	4	13	13
g / C, Green / Cycle	0.03	0.45	0.45	0.15	0.58	0.58	0.07	0.17	0.17	0.04	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.02	0.19	0.19	0.13	0.19	0.19	0.06	0.07	0.07	0.03	0.07	0.12
s, saturation flow rate [veh/h]	1810	1900	1862	1810	1900	1782	1810	1900	1794	1810	1900	1615
c, Capacity [veh/h]	61	861	844	281	1092	1024	121	328	310	75	280	238
d1, Uniform Delay [s]	42.88	16.63	16.63	36.96	10.08	10.08	41.52	33.12	33.18	42.62	35.34	37.26
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]	9.19	1.51	1.54	6.92	0.82	0.88	13.93	0.80	0.88	11.77	1.39	7.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.60	0.42	0.42	0.85	0.33	0.33	0.84	0.40	0.41	0.71	0.50	0.82
d, Delay for Lane Group [s/veh]	52.07	18.13	18.17	43.88	10.90	10.95	55.45	33.93	34.06	54.39	36.73	44.33
Lane Group LOS	D	B	B	D	B	B	E	C	C	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.93	4.76	4.68	5.29	3.33	3.14	2.56	2.49	2.41	1.35	2.76	4.38
50th-Percentile Queue Length [ft/ln]	23.14	119.0	116.9	132.2	83.19	78.43	63.93	62.14	60.23	33.64	68.96	109.4
95th-Percentile Queue Length [veh/ln]	1.67	8.34	8.23	9.06	5.99	5.65	4.60	4.47	4.34	2.42	4.97	7.81
95th-Percentile Queue Length [ft/ln]	41.66	208.4	205.6	226.5	149.7	141.1	115.0	111.8	108.4	60.56	124.1	195.2

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.07	18.15	18.17	43.88	10.92	10.95	55.45	33.98	34.06	54.39	36.73	44.33
Movement LOS	D	B	B	D	B	B	E	C	C	D	D	D
d_A, Approach Delay [s/veh]	19.82		19.23		39.98		42.97					
Approach LOS	B		B		D		D					
d_I, Intersection Delay [s/veh]	26.25											
Intersection LOS	C											
Intersection V/C	0.499											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.765	2.924	2.518	2.589
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	911	489	489
d_b, Bicycle Delay [s]	28.01	13.34	25.69	25.69
I_b,int, Bicycle LOS Score for Intersection	2.181	2.338	1.858	1.881
Bicycle LOS	B	B	A	A

Sequence

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



Rialto Travel Center

Vistro File: K:\...\Updated_Rialto Travel Ctr AM.vistro

Scenario 3 OY 2022 AM

Report File: K:\...\3 OY 2022 AM.pdf

9/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave at Casmalia St	Signalized	HCM 6th Edition	WB Left	0.282	47.6	D
2	Alder Ave at SR-210 WB Ramps	Signalized	HCM 6th Edition	NB Left	0.677	29.6	C
3	Alder Ave at SR-210 EB Ramps	Signalized	HCM 6th Edition	SB Left	0.675	27.3	C
4	Alder Ave at Renaissance Pkwy	Signalized	HCM 6th Edition	WB Left	0.463	28.0	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 at Casmalia St

Control Type:	Signalized	Delay (sec / veh):	47.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.282

Intersection Setup

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	2	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	210.0	100.0	100.0	180.0	100.0	100.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
	79	75	175	8	69	8	13	70	49	261	120	12
Base Volume Input [veh/h]	79	75	175	8	69	8	13	70	49	261	120	12
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
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]	81	77	179	8	70	8	13	71	50	266	122	12
Peak Hour Factor	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	25	24	56	2	22	2	4	22	16	83	38	4
Total Analysis Volume [veh/h]	101	96	223	10	87	10	16	88	62	331	152	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	25	55	0	9	39	0	13	41	0	15	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	30	0	0	32	0	0	32	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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]	120	120	120	120	120	120	120	120	120	120	120	120
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
I1_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
I2, 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	84	84	1	77	77	2	8	8	11	16	16
g / C, Green / Cycle	0.07	0.70	0.70	0.01	0.64	0.64	0.02	0.06	0.06	0.09	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.06	0.05	0.14	0.01	0.02	0.01	0.01	0.04	0.04	0.09	0.04	0.04
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1653	3514	1900	1841
c, Capacity [veh/h]	127	1330	1131	22	2321	1036	32	120	104	322	261	253
d1, Uniform Delay [s]	54.91	5.68	6.26	58.90	7.90	7.76	58.44	54.90	55.12	54.50	46.74	46.76
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]	10.46	0.11	0.39	14.66	0.03	0.02	12.01	5.61	8.36	30.63	0.71	0.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.07	0.20	0.46	0.04	0.01	0.51	0.64	0.70	1.03	0.32	0.33
d, Delay for Lane Group [s/veh]	65.36	5.79	6.65	73.57	7.93	7.77	70.45	60.51	63.48	85.13	47.46	47.51
Lane Group LOS	E	A	A	E	A	A	E	E	E	F	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.28	0.66	1.72	0.38	0.37	0.09	0.57	2.36	2.33	6.03	2.24	2.19
50th-Percentile Queue Length [ft/ln]	81.99	16.62	43.11	9.52	9.31	2.17	14.23	59.07	58.24	150.6	56.01	54.74
95th-Percentile Queue Length [veh/ln]	5.90	1.20	3.10	0.69	0.67	0.16	1.02	4.25	4.19	10.15	4.03	3.94
95th-Percentile Queue Length [ft/ln]	147.5	29.92	77.60	17.14	16.76	3.90	25.61	106.3	104.8	253.7	100.8	98.53

Movement, Approach, & Intersection Results

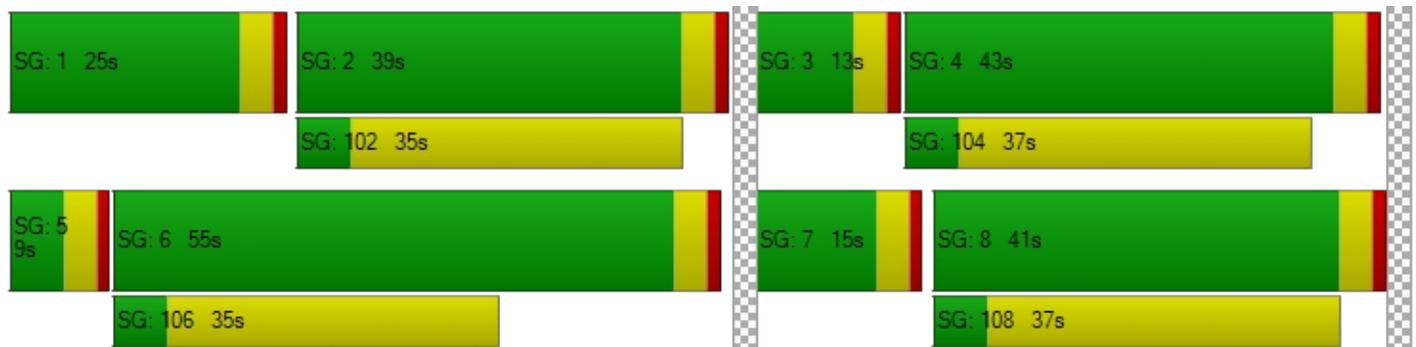
d_M, Delay for Movement [s/veh]	65.36	5.79	6.65	73.57	7.93	7.77	70.45	60.89	63.48	85.13	47.48	47.51
Movement LOS	E	A	A	E	A	A	E	E	E	F	D	D
d_A, Approach Delay [s/veh]	20.57			14.05			62.78			72.50		
Approach LOS	C			B			E			E		
d_I, Intersection Delay [s/veh]	47.58											
Intersection LOS	D											
Intersection V/C	0.282											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
I_p,int, Pedestrian LOS Score for Intersection	2.608	2.531	2.468	2.712
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	850	583	617	650
d_b, Bicycle Delay [s]	19.84	30.10	28.70	27.34
I_b,int, Bicycle LOS Score for Intersection	1.906	1.648	1.697	1.970
Bicycle LOS	A	A	A	A

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 at SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	29.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.677

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	405.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Base Volume Input [veh/h]	335	328	0	0	319	379	0	0	0	299	3	285
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.000	1.000	1.020	1.020	1.000	1.000	1.000	1.020	1.020	1.020
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]	342	335	0	0	325	387	0	0	0	305	3	291
Peak Hour Factor	0.902	0.902	1.000	1.000	0.902	0.902	1.000	1.000	1.000	0.902	0.902	0.902
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	95	93	0	0	90	107	0	0	0	85	1	81
Total Analysis Volume [veh/h]	379	371	0	0	360	429	0	0	0	338	3	323
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi											
Signal Group	1	6	0	0	2	0	0	0	0	0	7	4	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	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	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	1.0	0.0
Split [s]	25	60	0	0	35	0	0	0	0	0	30	30	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	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	3	0	0	0	0	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	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	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	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	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	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
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	20	61	37	37		21	21
g / C, Green / Cycle	0.23	0.68	0.41	0.41		0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.21	0.10	0.19	0.27		0.19	0.20
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1617
c, Capacity [veh/h]	412	2461	776	659		417	373
d1, Uniform Delay [s]	33.95	5.12	19.44	21.46		32.75	33.36
k, delay calibration	0.18	0.50	0.50	0.50		0.13	0.16
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	13.07	0.13	1.99	4.93		4.46	9.22
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	0.92	0.15	0.46	0.65		0.81	0.87
d, Delay for Lane Group [s/veh]	47.01	5.25	21.44	26.39		37.21	42.58
Lane Group LOS	D	A	C	C		D	D
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	8.93	0.91	5.31	7.32		7.32	7.64
50th-Percentile Queue Length [ft/ln]	223.35	22.69	132.66	182.93		183.01	190.97
95th-Percentile Queue Length [veh/ln]	13.84	1.63	9.08	11.75		11.76	12.17
95th-Percentile Queue Length [ft/ln]	345.90	40.85	227.10	293.84		293.94	304.29

Movement, Approach, & Intersection Results

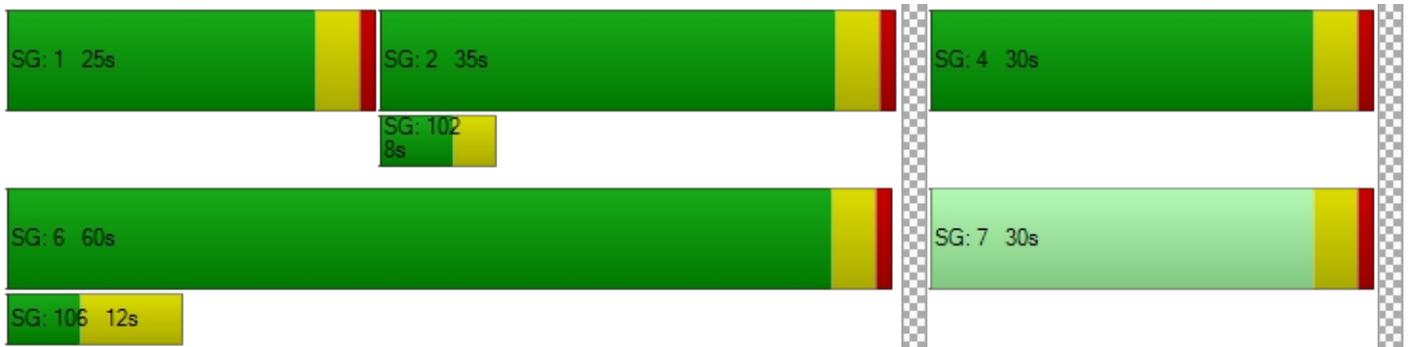
d_M, Delay for Movement [s/veh]	47.01	5.25	0.00	0.00	21.44	26.39	0.00	0.00	0.00	37.21	42.58	42.58
Movement LOS	D	A			C	C				D	D	D
d_A, Approach Delay [s/veh]	26.35		24.13		0.00		39.84					
Approach LOS	C		C		A		D					
d_I, Intersection Delay [s/veh]	29.62											
Intersection LOS	C											
Intersection V/C	0.677											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.216	2.158
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1244	689	0	578
d_b, Bicycle Delay [s]	6.42	19.34	45.00	22.76
I_b,int, Bicycle LOS Score for Intersection	2.178	2.211	4.132	2.655
Bicycle LOS	B	B	D	B

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	27.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.675

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	120.0	100.0	100.0	100.0	100.0	415.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Base Volume Input [veh/h]	0	418	296	258	366	0	250	1	461	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.020	1.020	1.020	1.020	1.000	1.020	1.020	1.020	1.000	1.000	1.000
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	426	302	263	373	0	255	1	470	0	0	0
Peak Hour Factor	1.000	0.972	0.972	0.972	0.972	1.000	0.972	0.972	0.972	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	110	78	68	96	0	66	0	121	0	0	0
Total Analysis Volume [veh/h]	0	438	311	271	384	0	262	1	484	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
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Protec	Permi							
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	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	12	0	22	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	3	0	0	7	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
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	
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	33	33	15	52	30	30	
g / C, Green / Cycle	0.36	0.36	0.17	0.58	0.33	0.33	
(v / s)_i Volume / Saturation Flow Rate	0.20	0.23	0.15	0.11	0.15	0.30	
s, saturation flow rate [veh/h]	1900	1657	1810	3618	1810	1615	
c, Capacity [veh/h]	692	603	309	2095	601	536	
d1, Uniform Delay [s]	22.67	23.52	36.41	8.92	23.49	28.66	
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]	3.03	4.75	7.92	0.19	0.50	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	0.54	0.62	0.88	0.18	0.44	0.90	
d, Delay for Lane Group [s/veh]	25.70	28.27	44.33	9.12	23.99	34.58	
Lane Group LOS	C	C	D	A	C	C	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.22	6.65	6.08	1.50	4.34	10.43	
50th-Percentile Queue Length [ft/ln]	155.57	166.20	152.02	37.51	108.43	260.83	
95th-Percentile Queue Length [veh/ln]	10.31	10.88	10.12	2.70	7.75	15.73	
95th-Percentile Queue Length [ft/ln]	257.85	271.92	253.12	67.51	193.81	393.26	

Movement, Approach, & Intersection Results

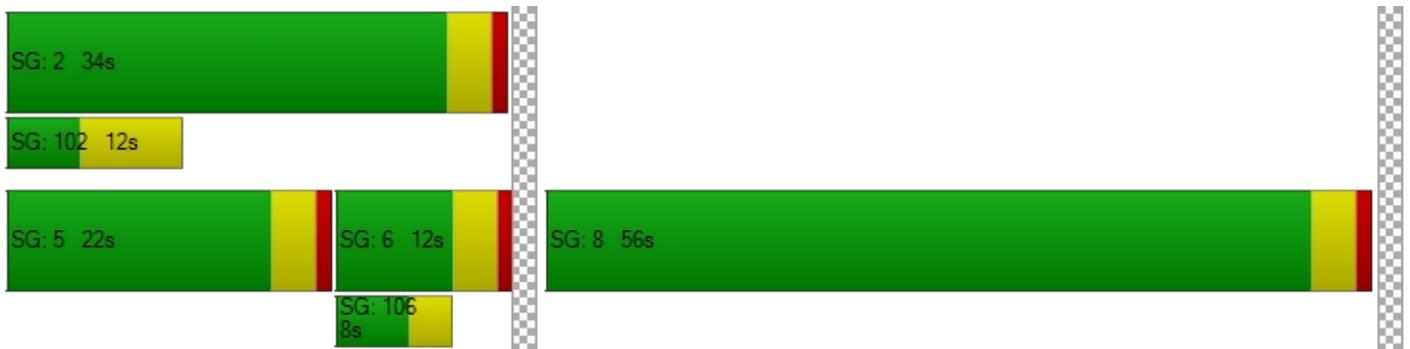
d_M, Delay for Movement [s/veh]	0.00	26.08	28.27	44.33	9.12	0.00	23.99	23.99	34.58	0.00	0.00	0.00
Movement LOS		C	C	D	A		C	C	C			
d_A, Approach Delay [s/veh]		26.99		23.68			30.85			0.00		
Approach LOS		C		C			C			A		
d_I, Intersection Delay [s/veh]	27.32											
Intersection LOS	C											
Intersection V/C	0.675											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		9.0		9.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		36.45		36.45
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.184		1.993
Crosswalk LOS		F		F		B		A
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		178		667		1156		0
d_b, Bicycle Delay [s]		37.36		20.00		8.02		45.00
I_b,int, Bicycle LOS Score for Intersection		2.178		2.100		2.792		4.132
Bicycle LOS		B		B		C		D

Sequence

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



Intersection Level Of Service Report
Intersection 4: Alder Ave at Renaissance Pkwy

Control Type:	Signalized	Delay (sec / veh):	28.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.463

Intersection Setup

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐			⇐⇐⇐			⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	305.0	100.0	100.0	280.0	100.0	100.0	315.0	100.0	100.0	315.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
	88	397	17	201	569	63	91	155	51	20	146	215
Base Volume Input [veh/h]	88	397	17	201	569	63	91	155	51	20	146	215
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
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	405	17	205	580	64	93	158	52	20	149	219
Peak Hour Factor	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	25	114	5	58	163	18	26	44	15	6	42	62
Total Analysis Volume [veh/h]	101	455	19	230	652	72	104	178	58	22	167	246
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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	23	0	25	28	0	13	26	0	16	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	14	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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	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
I1_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
I2, 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	38	38	13	45	45	7	21	21	2	16	16
g / C, Green / Cycle	0.07	0.42	0.42	0.15	0.50	0.50	0.07	0.23	0.23	0.02	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.06	0.13	0.13	0.13	0.19	0.19	0.06	0.06	0.07	0.01	0.09	0.15
s, saturation flow rate [veh/h]	1810	1900	1873	1810	1900	1834	1810	1900	1745	1810	1900	1615
c, Capacity [veh/h]	132	797	786	271	943	910	133	433	397	46	341	290
d1, Uniform Delay [s]	40.94	17.33	17.33	37.28	14.17	14.17	40.98	28.67	28.74	43.29	33.22	35.75
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]	8.73	0.96	0.98	7.33	1.22	1.26	9.56	0.35	0.40	7.68	1.09	6.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.30	0.30	0.85	0.39	0.39	0.78	0.28	0.29	0.48	0.49	0.85
d, Delay for Lane Group [s/veh]	49.67	18.29	18.31	44.61	15.39	15.43	50.55	29.01	29.13	50.97	34.31	42.60
Lane Group LOS	D	B	B	D	B	B	D	C	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.40	3.13	3.10	5.16	4.33	4.19	2.49	2.04	1.95	0.56	3.17	5.41
50th-Percentile Queue Length [ft/ln]	59.89	78.21	77.39	128.8	108.2	104.7	62.27	51.12	48.84	13.90	79.15	135.1
95th-Percentile Queue Length [veh/ln]	4.31	5.63	5.57	8.88	7.74	7.54	4.48	3.68	3.52	1.00	5.70	9.22
95th-Percentile Queue Length [ft/ln]	107.8	140.7	139.3	221.9	193.5	188.6	112.0	92.01	87.91	25.02	142.4	230.4

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.67	18.30	18.31	44.61	15.41	15.43	50.55	29.05	29.13	50.97	34.31	42.60
Movement LOS	D	B	B	D	B	B	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	23.81		22.45		35.64		39.84					
Approach LOS	C		C		D		D					
d_I, Intersection Delay [s/veh]	28.02											
Intersection LOS	C											
Intersection V/C	0.463											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.726	2.873	2.522	2.582
Crosswalk LOS	B	C	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	533	489	556
d_b, Bicycle Delay [s]	28.01	24.20	25.69	23.47
l_b,int, Bicycle LOS Score for Intersection	2.034	2.347	1.840	1.918
Bicycle LOS	B	B	A	A

Sequence

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



Rialto Travel Center

Vistro File: K:\...\Updated_Rialto Travel Ctr PM.vistro

Scenario 3 OY 2022 PM

Report File: K:\...\3 OY 2022 PM.pdf

9/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave at Casmalia St	Signalized	HCM 6th Edition	EB Left	0.405	43.9	D
2	Alder Ave at SR-210 WB Ramps	Signalized	HCM 6th Edition	NB Left	0.740	31.1	C
3	Alder Ave at SR-210 EB Ramps	Signalized	HCM 6th Edition	SB Left	0.644	24.1	C
4	Alder Ave at Renaissance Pkwy	Signalized	HCM 6th Edition	EB Left	0.509	26.5	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 at Casmalia St

Control Type:	Signalized	Delay (sec / veh):	43.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.405

Intersection Setup

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	2	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	210.0	100.0	100.0	180.0	100.0	100.0	290.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
	95	74	245	24	102	28	11	258	130	301	194	5
Base Volume Input [veh/h]	95	74	245	24	102	28	11	258	130	301	194	5
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
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]	97	75	250	24	104	29	11	263	133	307	198	5
Peak Hour Factor	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	27	21	69	7	29	8	3	72	37	85	55	1
Total Analysis Volume [veh/h]	107	83	276	26	115	32	12	290	147	338	218	6
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	24	54	0	9	39	0	9	41	0	16	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	30	0	0	30	0	0	32	0	0	32	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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]	120	120	120	120	120	120	120	120	120	120	120	120
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
I1_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
I2, 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]	9	72	72	3	66	66	2	17	17	12	28	28
g / C, Green / Cycle	0.07	0.60	0.60	0.02	0.55	0.55	0.01	0.15	0.15	0.10	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.06	0.04	0.17	0.01	0.03	0.02	0.01	0.12	0.12	0.10	0.06	0.06
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1690	3514	1900	1882
c, Capacity [veh/h]	134	1134	964	44	1978	883	25	277	246	351	440	436
d1, Uniform Delay [s]	54.65	10.21	11.77	57.95	12.74	12.58	58.73	49.75	49.97	53.77	37.64	37.64
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]	10.16	0.13	0.75	12.03	0.06	0.08	13.21	6.04	7.97	14.92	0.30	0.31
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	0.80	0.07	0.29	0.59	0.06	0.04	0.48	0.82	0.85	0.96	0.26	0.26
d, Delay for Lane Group [s/veh]	64.81	10.33	12.52	69.98	12.79	12.66	71.93	55.79	57.94	68.70	37.94	37.95
Lane Group LOS	E	B	B	E	B	B	E	E	E	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.46	0.88	3.41	0.90	0.69	0.39	0.44	6.79	6.39	5.59	2.62	2.60
50th-Percentile Queue Length [ft/ln]	86.46	21.91	85.25	22.62	17.17	9.69	11.03	169.8	159.7	139.6	65.43	64.94
95th-Percentile Queue Length [veh/ln]	6.23	1.58	6.14	1.63	1.24	0.70	0.79	11.07	10.53	9.46	4.71	4.68
95th-Percentile Queue Length [ft/ln]	155.6	39.44	153.4	40.72	30.90	17.45	19.85	276.7	263.3	236.5	117.7	116.8

Movement, Approach, & Intersection Results

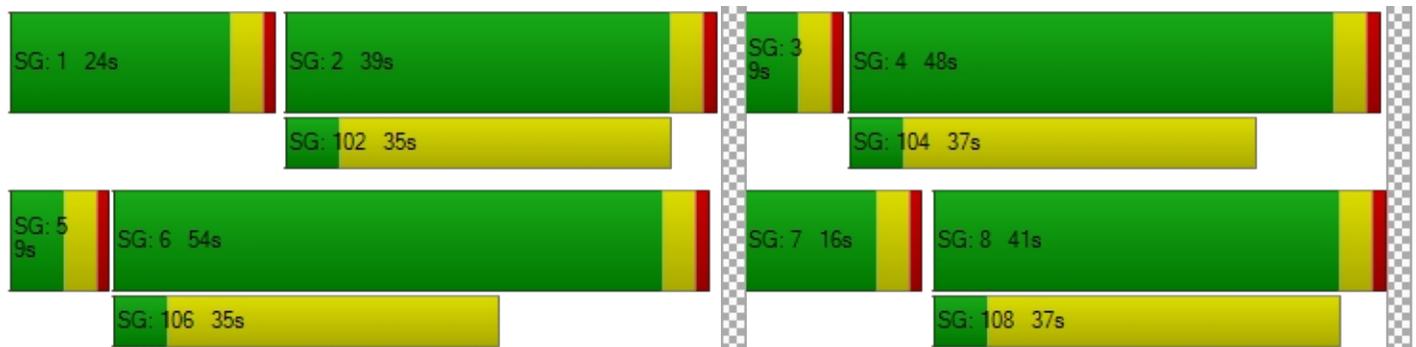
d_M, Delay for Movement [s/veh]	64.81	10.33	12.52	69.98	12.79	12.66	71.93	56.25	57.94	68.70	37.94	37.95
Movement LOS	E	B	B	E	B	B	E	E	E	E	D	D
d_A, Approach Delay [s/veh]	24.14		21.36		57.22		56.44					
Approach LOS	C		C		E		E					
d_I, Intersection Delay [s/veh]	43.85											
Intersection LOS	D											
Intersection V/C	0.405											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
I_p,int, Pedestrian LOS Score for Intersection	2.662	2.542	2.603	2.812
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	833	583	617	733
d_b, Bicycle Delay [s]	20.42	30.10	28.70	24.07
I_b,int, Bicycle LOS Score for Intersection	1.944	1.702	1.930	2.023
Bicycle LOS	A	A	A	B

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	31.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.740

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	405.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Base Volume Input [veh/h]	408	431	0	0	369	426	0	0	0	319	2	201
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.000	1.000	1.020	1.020	1.000	1.000	1.000	1.020	1.020	1.020
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]	416	440	0	0	376	435	0	0	0	325	2	205
Peak Hour Factor	0.917	0.917	1.000	1.000	0.917	0.917	1.000	1.000	1.000	0.917	0.917	0.917
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	113	120	0	0	103	119	0	0	0	89	1	56
Total Analysis Volume [veh/h]	454	480	0	0	410	474	0	0	0	354	2	224
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi											
Signal Group	1	6	0	0	2	0	0	0	0	0	7	4	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	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	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	1.0	0.0
Split [s]	29	66	0	0	37	0	0	0	0	0	24	24	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	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	3	0	0	0	0	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	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	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	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	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	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
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	24	63	34	34		19	19
g / C, Green / Cycle	0.27	0.70	0.38	0.38		0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.25	0.13	0.22	0.29		0.20	0.14
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1617
c, Capacity [veh/h]	487	2516	726	617		390	349
d1, Uniform Delay [s]	32.09	4.81	21.92	24.33		34.42	32.19
k, delay calibration	0.27	0.50	0.50	0.50		0.15	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	17.41	0.17	3.17	8.92		10.63	2.03
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	0.93	0.19	0.56	0.77		0.91	0.65
d, Delay for Lane Group [s/veh]	49.50	4.98	25.09	33.25		45.06	34.22
Lane Group LOS	D	A	C	C		D	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	11.13	1.11	6.73	9.34		8.52	4.59
50th-Percentile Queue Length [ft/ln]	278.35	27.84	168.18	233.53		212.91	114.82
95th-Percentile Queue Length [veh/ln]	16.61	2.00	10.98	14.35		13.30	8.11
95th-Percentile Queue Length [ft/ln]	415.16	50.11	274.53	358.85		332.56	202.69

Movement, Approach, & Intersection Results

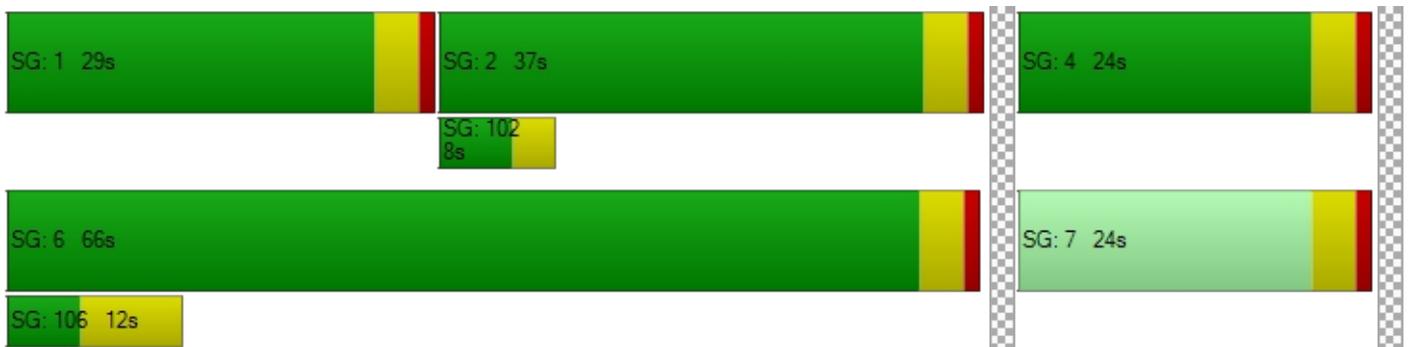
d_M, Delay for Movement [s/veh]	49.50	4.98	0.00	0.00	25.09	33.25	0.00	0.00	0.00	45.06	34.22	34.22
Movement LOS	D	A			C	C				D	C	C
d_A, Approach Delay [s/veh]	26.62		29.47		0.00		40.83					
Approach LOS	C		C		A		D					
d_I, Intersection Delay [s/veh]	31.11											
Intersection LOS	C											
Intersection V/C	0.740											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.332	2.130
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1378	733	0	444
d_b, Bicycle Delay [s]	4.36	18.05	45.00	27.22
I_b,int, Bicycle LOS Score for Intersection	2.330	2.289	4.132	2.517
Bicycle LOS	B	B	D	B

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.644

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	120.0	100.0	100.0	100.0	100.0	415.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Base Volume Input [veh/h]	0	530	403	138	458	0	186	4	423	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.020	1.020	1.020	1.020	1.000	1.020	1.020	1.020	1.000	1.000	1.000
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	541	411	141	467	0	190	4	431	0	0	0
Peak Hour Factor	1.000	0.983	0.983	0.983	0.983	1.000	0.983	0.983	0.983	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	138	105	36	119	0	48	1	110	0	0	0
Total Analysis Volume [veh/h]	0	550	418	143	475	0	193	4	438	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
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Protec	Permi							
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	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	35	0	13	48	0	0	42	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	3	0	0	7	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
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	
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	42	42	9	55	27	27	
g / C, Green / Cycle	0.47	0.47	0.10	0.61	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.25	0.29	0.08	0.13	0.11	0.27	
s, saturation flow rate [veh/h]	1900	1649	1810	3618	1811	1615	
c, Capacity [veh/h]	890	772	176	2207	545	486	
d1, Uniform Delay [s]	17.05	17.99	39.84	7.88	24.67	30.16	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.19	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.38	3.82	8.78	0.22	0.40	10.57	
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	0.54	0.63	0.81	0.22	0.36	0.90	
d, Delay for Lane Group [s/veh]	19.44	21.81	48.62	8.10	25.07	40.74	
Lane Group LOS	B	C	D	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.74	7.31	3.34	1.69	3.29	10.21	
50th-Percentile Queue Length [ft/ln]	168.47	182.71	83.62	42.27	82.27	255.23	
95th-Percentile Queue Length [veh/ln]	11.00	11.74	6.02	3.04	5.92	15.45	
95th-Percentile Queue Length [ft/ln]	274.91	293.54	150.51	76.09	148.08	386.23	

Movement, Approach, & Intersection Results

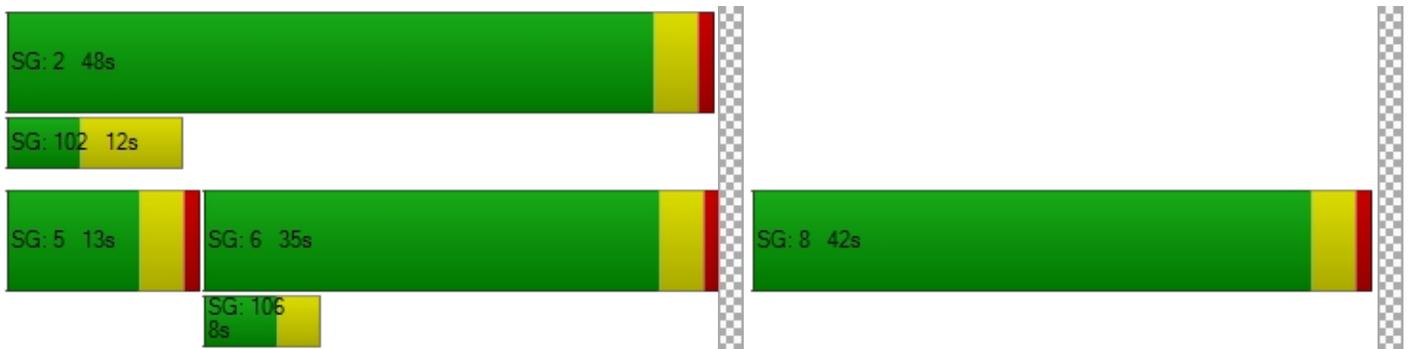
d_M, Delay for Movement [s/veh]	0.00	19.72	21.81	48.62	8.10	0.00	25.07	25.07	40.74	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	C	D			
d_A, Approach Delay [s/veh]	20.63		17.48			35.88			0.00			
Approach LOS	C		B			D			A			
d_I, Intersection Delay [s/veh]	24.11											
Intersection LOS	C											
Intersection V/C	0.644											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.148	1.976
Crosswalk LOS	F	F	B	A
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	689	978	844	0
d_b, Bicycle Delay [s]	19.34	11.76	15.02	45.00
I_b,int, Bicycle LOS Score for Intersection	2.358	2.069	2.607	4.132
Bicycle LOS	B	B	B	D

Sequence

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



Intersection Level Of Service Report
Intersection 4: Alder Ave at Renaissance Pkwy

Control Type:	Signalized	Delay (sec / veh):	26.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.509

Intersection Setup

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐			⇐⇐⇐			⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	305.0	100.0	100.0	280.0	100.0	100.0	315.0	100.0	100.0	315.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Base Volume Input [veh/h]	35	638	39	225	546	121	95	206	41	50	132	185
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
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]	36	651	40	230	557	123	97	210	42	51	135	189
Peak Hour Factor	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	10	172	11	61	147	33	26	56	11	13	36	50
Total Analysis Volume [veh/h]	38	689	42	243	589	130	103	222	44	54	143	200
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	9	23	0	31	45	0	10	26	0	10	26	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	14	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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	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
I1_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
I2, 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]	3	40	40	14	51	51	6	16	16	4	13	13
g / C, Green / Cycle	0.03	0.45	0.45	0.16	0.57	0.57	0.07	0.17	0.17	0.04	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.02	0.19	0.19	0.13	0.20	0.20	0.06	0.07	0.07	0.03	0.08	0.12
s, saturation flow rate [veh/h]	1810	1900	1862	1810	1900	1783	1810	1900	1793	1810	1900	1615
c, Capacity [veh/h]	62	851	834	286	1086	1019	121	332	313	75	284	242
d1, Uniform Delay [s]	42.86	17.03	17.03	36.83	10.26	10.26	41.57	33.00	33.06	42.61	35.19	37.15
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.29	1.61	1.65	6.93	0.86	0.91	15.28	0.80	0.88	12.04	1.38	7.10
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	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	0.61	0.43	0.43	0.85	0.34	0.34	0.85	0.41	0.42	0.72	0.50	0.83
d, Delay for Lane Group [s/veh]	52.15	18.64	18.68	43.76	11.12	11.18	56.85	33.81	33.94	54.65	36.57	44.24
Lane Group LOS	D	B	B	D	B	B	E	C	C	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.95	4.96	4.87	5.40	3.44	3.24	2.65	2.53	2.45	1.37	2.81	4.47
50th-Percentile Queue Length [ft/ln]	23.77	123.9	121.7	134.9	86.04	81.12	66.15	63.24	61.25	34.36	70.28	111.6
95th-Percentile Queue Length [veh/ln]	1.71	8.61	8.49	9.21	6.19	5.84	4.76	4.55	4.41	2.47	5.06	7.93
95th-Percentile Queue Length [ft/ln]	42.78	215.2	212.2	230.1	154.8	146.0	119.0	113.8	110.2	61.84	126.5	198.2

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.15	18.66	18.68	43.76	11.14	11.18	56.85	33.86	33.94	54.65	36.57	44.24
Movement LOS	D	B	B	D	B	B	E	C	C	D	D	D
d_A, Approach Delay [s/veh]	20.31		19.39		40.29		42.90					
Approach LOS	C		B		D		D					
d_I, Intersection Delay [s/veh]	26.50											
Intersection LOS	C											
Intersection V/C	0.509											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.775	2.936	2.522	2.595
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	911	489	489
d_b, Bicycle Delay [s]	28.01	13.34	25.69	25.69
I_b,int, Bicycle LOS Score for Intersection	2.194	2.353	1.864	1.887
Bicycle LOS	B	B	A	A

Sequence

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



Rialto Travel Center

Vistro File: K:\...\Updated_Rialto Travel Ctr AM.vistro

Scenario 4 OY 2022 WP AM

Report File: K:\...\4 OY 2022 WP AM.pdf

9/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave at Casmalia St	Signalized	HCM 6th Edition	NB Left	0.550	74.4	E
2	Alder Ave at SR-210 WB Ramps	Signalized	HCM 6th Edition	WB Right	0.792	35.0	C
3	Alder Ave at SR-210 EB Ramps	Signalized	HCM 6th Edition	SB Left	0.740	31.5	C
4	Alder Ave at Renaissance Pkwy	Signalized	HCM 6th Edition	WB Left	0.507	28.9	C
101	Sierra Lakes Pkwy at Truck Dwy (1)	Two-way stop	HCM 6th Edition	NB Right	0.025	8.8	A
102	Sierra Lakes Pkwy at Truck Dwy (2)	Two-way stop	HCM 6th Edition	NB Right	0.026	8.9	A
103	Sierra Lakes Pkwy at Truck Dwy (3)	Two-way stop	HCM 6th Edition	NB Right	0.026	9.0	A
104	Sierra Lakes Pkwy at Truck Dwy (4)	Two-way stop	HCM 6th Edition	NB Right	0.026	9.0	A
105	Sierra Lakes Pkwy at PC Dwy	Two-way stop	HCM 6th Edition	NB Right	0.285	10.6	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 at Casmalia St

Control Type:	Signalized	Delay (sec / veh):	74.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.550

Intersection Setup

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	2	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	210.0	100.0	100.0	180.0	100.0	100.0	290.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
	79	75	175	8	69	8	13	70	49	261	120	12
Base Volume Input [veh/h]	79	75	175	8	69	8	13	70	49	261	120	12
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	232	0	0	0	0	9	9	18	231	0	18	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]	313	77	179	8	70	17	22	89	281	266	140	12
Peak Hour Factor	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	97	24	56	2	22	5	7	28	87	83	44	4
Total Analysis Volume [veh/h]	389	96	223	10	87	21	27	111	350	331	174	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	25	55	0	9	39	0	13	41	0	15	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	30	0	0	32	0	0	32	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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]	120	120	120	120	120	120	120	120	120	120	120	120
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
I1_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
I2, 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]	21	63	63	1	44	44	3	28	28	11	36	36
g / C, Green / Cycle	0.18	0.53	0.53	0.01	0.36	0.36	0.03	0.24	0.24	0.09	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.21	0.05	0.14	0.01	0.02	0.01	0.01	0.06	0.22	0.09	0.05	0.05
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1615	3514	1900	1848
c, Capacity [veh/h]	317	1000	850	23	1316	588	48	449	381	322	573	557
d1, Uniform Delay [s]	49.50	14.19	15.63	58.81	24.88	24.60	57.75	37.18	44.70	54.50	30.83	30.84
k, delay calibration	0.35	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.24	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]	120.8	0.19	0.75	12.32	0.10	0.11	10.19	0.28	17.19	30.63	0.14	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.23	0.10	0.26	0.43	0.07	0.04	0.57	0.25	0.92	1.03	0.17	0.17
d, Delay for Lane Group [s/veh]	170.3	14.38	16.38	71.12	24.97	24.71	67.93	37.47	61.89	85.13	30.96	30.98
Lane Group LOS	F	B	B	E	C	C	E	D	E	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	19.73	1.26	3.28	0.37	0.79	0.39	0.91	2.56	11.41	6.03	1.96	1.92
50th-Percentile Queue Length [ft/ln]	493.3	31.60	81.91	9.30	19.83	9.72	22.87	64.11	285.1	150.6	48.94	47.91
95th-Percentile Queue Length [veh/ln]	29.77	2.28	5.90	0.67	1.43	0.70	1.65	4.62	16.95	10.15	3.52	3.45
95th-Percentile Queue Length [ft/ln]	744.2	56.88	147.4	16.73	35.70	17.49	41.16	115.4	423.6	253.7	88.10	86.24

Movement, Approach, & Intersection Results

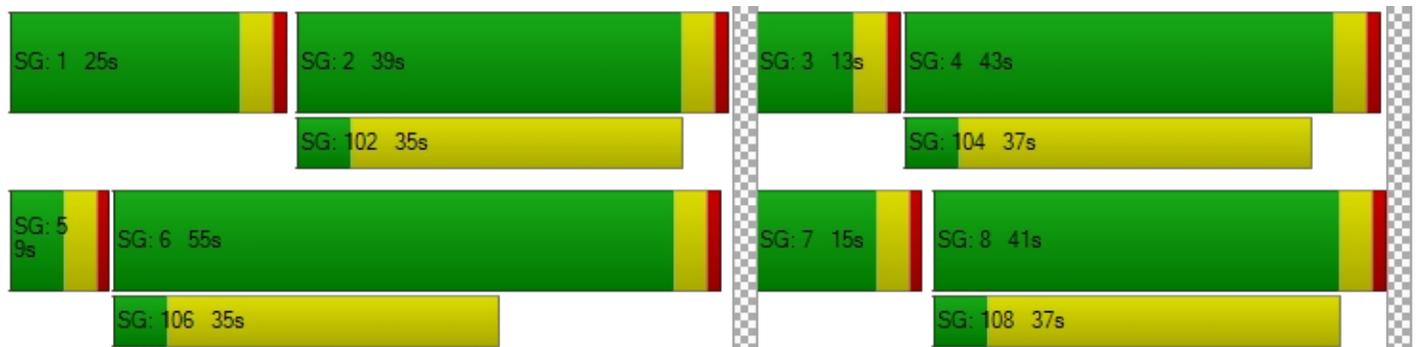
d_M, Delay for Movement [s/veh]	170.3	14.38	16.38	71.12	24.97	24.71	67.93	37.47	61.89	85.13	30.97	30.98
Movement LOS	F	B	B	E	C	C	E	D	E	F	C	C
d_A, Approach Delay [s/veh]	100.72		28.84		56.67		65.44					
Approach LOS	F		C		E		E					
d_I, Intersection Delay [s/veh]	74.37											
Intersection LOS	E											
Intersection V/C	0.550											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
I_p,int, Pedestrian LOS Score for Intersection	2.795	2.537	2.698	2.726
Crosswalk LOS	C	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	850	583	617	650
d_b, Bicycle Delay [s]	19.84	30.10	28.70	27.34
I_b,int, Bicycle LOS Score for Intersection	2.144	1.657	1.962	1.989
Bicycle LOS	B	A	A	A

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 at SR-210 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	35.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.792

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	405.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Base Volume Input [veh/h]	335	328	0	0	319	379	0	0	0	299	3	285
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.000	1.000	1.020	1.020	1.000	1.000	1.000	1.020	1.020	1.020
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	148	0	0	147	84	0	0	0	0	0	84
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]	342	483	0	0	472	471	0	0	0	305	3	375
Peak Hour Factor	0.902	0.902	1.000	1.000	0.902	0.902	1.000	1.000	1.000	0.902	0.902	0.902
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	95	134	0	0	131	131	0	0	0	85	1	104
Total Analysis Volume [veh/h]	379	535	0	0	523	522	0	0	0	338	3	416
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi										
Signal Group	1	6	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	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	1.0	1.0	0.0
Split [s]	25	60	0	0	35	0	0	0	0	30	30	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	3	0	0	0	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	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	2.0	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
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	20	57	32	32		25	25
g / C, Green / Cycle	0.23	0.63	0.36	0.36		0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.21	0.15	0.28	0.32		0.19	0.26
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1617
c, Capacity [veh/h]	412	2286	683	581		505	452
d1, Uniform Delay [s]	33.93	7.16	25.47	27.29		28.74	31.55
k, delay calibration	0.18	0.50	0.50	0.50		0.13	0.29
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	12.97	0.24	7.98	19.47		1.82	18.71
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	0.92	0.23	0.77	0.90		0.67	0.93
d, Delay for Lane Group [s/veh]	46.90	7.40	33.45	46.77		30.56	50.26
Lane Group LOS	D	A	C	D		C	D
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	8.92	1.77	10.31	12.57		6.55	10.91
50th-Percentile Queue Length [ft/ln]	223.09	44.32	257.82	314.24		163.71	272.76
95th-Percentile Queue Length [veh/ln]	13.82	3.19	15.58	18.38		10.75	16.33
95th-Percentile Queue Length [ft/ln]	345.57	79.77	389.48	459.60		268.63	408.19

Movement, Approach, & Intersection Results

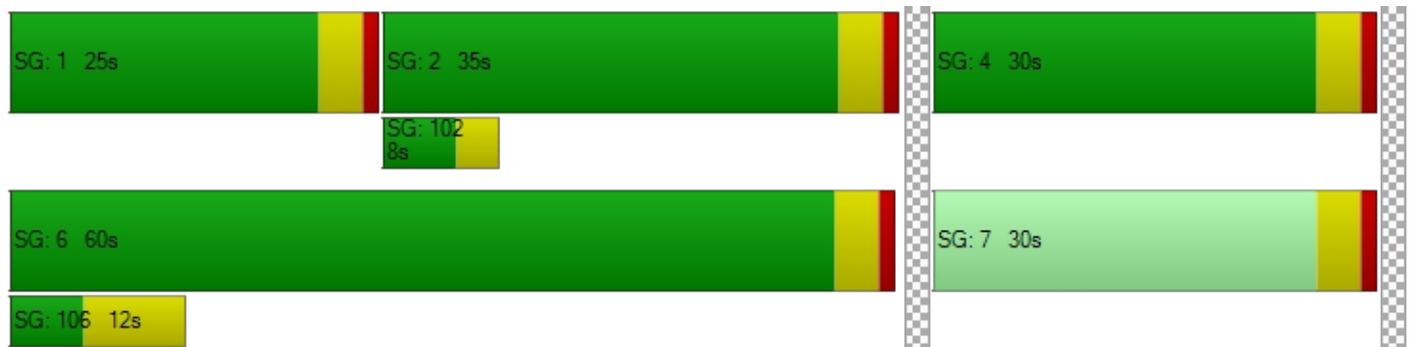
d_M, Delay for Movement [s/veh]	46.90	7.40	0.00	0.00	33.46	46.77	0.00	0.00	0.00	30.56	50.26	50.26
Movement LOS	D	A			C	D				C	D	D
d_A, Approach Delay [s/veh]	23.78		40.11		0.00		41.46					
Approach LOS	C		D		A		D					
d_I, Intersection Delay [s/veh]	34.99											
Intersection LOS	C											
Intersection V/C	0.792											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.306	2.188
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1244	689	0	578
d_b, Bicycle Delay [s]	6.42	19.34	45.00	22.76
I_b,int, Bicycle LOS Score for Intersection	2.314	2.422	4.132	2.809
Bicycle LOS	B	B	D	C

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	31.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.740

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	120.0	100.0	100.0	100.0	100.0	415.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Base Volume Input [veh/h]	0	418	296	258	366	0	250	1	461	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.020	1.020	1.020	1.020	1.000	1.020	1.020	1.020	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	64	0	84	63	0	84	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	490	302	347	436	0	339	1	470	0	0	0
Peak Hour Factor	1.000	0.972	0.972	0.972	0.972	1.000	0.972	0.972	0.972	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	126	78	89	112	0	87	0	121	0	0	0
Total Analysis Volume [veh/h]	0	504	311	357	449	0	349	1	484	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
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Protec	Permi							
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	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	12	0	22	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	3	0	0	7	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
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	
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	30	30	18	52	30	30	
g / C, Green / Cycle	0.33	0.33	0.20	0.58	0.33	0.33	
(v / s)_i Volume / Saturation Flow Rate	0.21	0.24	0.20	0.12	0.19	0.30	
s, saturation flow rate [veh/h]	1900	1674	1810	3618	1810	1615	
c, Capacity [veh/h]	632	557	362	2088	605	540	
d1, Uniform Delay [s]	25.52	26.49	35.88	9.19	24.74	28.50	
k, delay calibration	0.50	0.50	0.15	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]	5.01	8.25	22.96	0.24	0.88	5.61	
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	0.64	0.73	0.99	0.22	0.58	0.90	
d, Delay for Lane Group [s/veh]	30.53	34.74	58.83	9.43	25.62	34.10	
Lane Group LOS	C	C	E	A	C	C	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.56	8.21	9.52	1.80	6.12	10.36	
50th-Percentile Queue Length [ft/ln]	189.09	205.37	237.90	45.11	153.10	258.97	
95th-Percentile Queue Length [veh/ln]	12.07	12.92	14.57	3.25	10.18	15.64	
95th-Percentile Queue Length [ft/ln]	301.85	322.88	364.37	81.19	254.57	390.93	

Movement, Approach, & Intersection Results

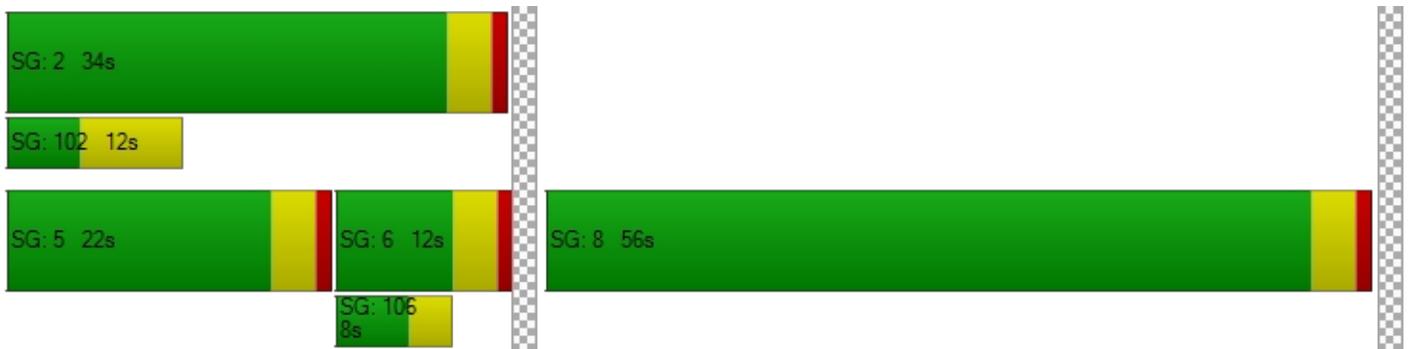
d_M, Delay for Movement [s/veh]	0.00	31.34	34.74	58.83	9.43	0.00	25.62	25.62	34.10	0.00	0.00	0.00
Movement LOS		C	C	E	A		C	C	C			
d_A, Approach Delay [s/veh]		32.63		31.31			30.54			0.00		
Approach LOS		C		C			C			A		
d_I, Intersection Delay [s/veh]	31.49											
Intersection LOS	C											
Intersection V/C	0.740											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]		0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection		0.000	0.000	2.213	2.077
Crosswalk LOS		F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]		2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]		178	667	1156	0
d_b, Bicycle Delay [s]		37.36	20.00	8.02	45.00
I_b,int, Bicycle LOS Score for Intersection		2.232	2.225	2.936	4.132
Bicycle LOS		B	B	C	D

Sequence

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



Intersection Level Of Service Report
Intersection 4: Alder Ave at Renaissance Pkwy

Control Type:	Signalized	Delay (sec / veh):	28.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.507

Intersection Setup

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐			⇐⇐⇐			⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	305.0	100.0	100.0	280.0	100.0	100.0	315.0	100.0	100.0	315.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
	88	397	17	201	569	63	91	155	51	20	146	215
Base Volume Input [veh/h]	88	397	17	201	569	63	91	155	51	20	146	215
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	28	0	18	27	18	18	0	0	0	0	18
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	433	17	223	607	82	111	158	52	20	149	237
Peak Hour Factor	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	25	122	5	63	171	23	31	44	15	6	42	67
Total Analysis Volume [veh/h]	101	487	19	251	682	92	125	178	58	22	167	266
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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	23	0	25	28	0	13	26	0	16	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	14	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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	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
I1_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
I2, 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	35	35	14	43	43	8	23	23	2	17	17
g / C, Green / Cycle	0.07	0.38	0.38	0.16	0.47	0.47	0.09	0.25	0.25	0.02	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.06	0.13	0.13	0.14	0.21	0.21	0.07	0.06	0.07	0.01	0.09	0.16
s, saturation flow rate [veh/h]	1810	1900	1875	1810	1900	1822	1810	1900	1745	1810	1900	1615
c, Capacity [veh/h]	132	729	719	291	896	859	156	479	440	46	363	309
d1, Uniform Delay [s]	40.94	19.74	19.75	36.78	15.87	15.87	40.35	26.87	26.93	43.29	32.28	35.25
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.73	1.32	1.34	7.41	1.58	1.64	9.01	0.27	0.31	7.68	0.91	7.05
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	0.76	0.35	0.35	0.86	0.44	0.44	0.80	0.25	0.26	0.48	0.46	0.86
d, Delay for Lane Group [s/veh]	49.67	21.06	21.08	44.19	17.45	17.51	49.36	27.14	27.24	50.97	33.19	42.30
Lane Group LOS	D	C	C	D	B	B	D	C	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.40	3.68	3.64	5.61	5.08	4.89	2.95	1.96	1.87	0.56	3.10	5.84
50th-Percentile Queue Length [ft/ln]	59.89	91.89	90.97	140.2	126.9	122.1	73.73	49.04	46.73	13.90	77.51	145.9
95th-Percentile Queue Length [veh/ln]	4.31	6.62	6.55	9.49	8.78	8.51	5.31	3.53	3.36	1.00	5.58	9.80
95th-Percentile Queue Length [ft/ln]	107.8	165.4	163.7	237.3	219.3	212.8	132.7	88.27	84.11	25.02	139.5	245.0

Movement, Approach, & Intersection Results

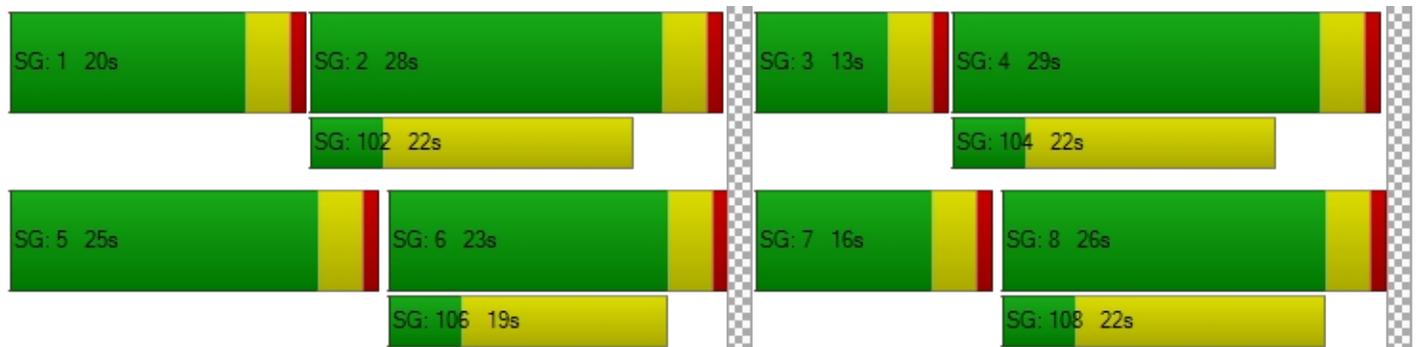
d_M, Delay for Movement [s/veh]	49.67	21.07	21.08	44.19	17.47	17.51	49.36	27.17	27.24	50.97	33.19	42.30
Movement LOS	D	C	C	D	B	B	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	25.83		24.02		34.86		39.37					
Approach LOS	C		C		C		D					
d_I, Intersection Delay [s/veh]	28.92											
Intersection LOS	C											
Intersection V/C	0.507											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.746	2.920	2.536	2.595
Crosswalk LOS	B	C	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	533	489	556
d_b, Bicycle Delay [s]	28.01	24.20	25.69	23.47
I_b,int, Bicycle LOS Score for Intersection	2.060	2.405	1.857	1.935
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 101: Sierra Lakes Pkwy at Truck Dwy (1)

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	132	0	0	207
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	18	0	31	18
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	23	153	0	31	229
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	40	0	8	60
Total Analysis Volume [veh/h]	0	24	161	0	33	241
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	10.97	8.81	0.00	0.00	7.58	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.07	0.04
95th-Percentile Queue Length [ft/ln]	1.90	1.90	0.00	0.00	1.77	0.89
d_A, Approach Delay [s/veh]	8.81		0.00		0.91	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.01					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 102: Sierra Lakes Pkwy at Truck Dwy (2)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	132	0	0	207
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	41	0	31	49
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	1	0	0	2	-2
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	24	176	0	33	258
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	46	0	9	68
Total Analysis Volume [veh/h]	0	25	185	0	35	272
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	11.36	8.88	0.00	0.00	7.63	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.08	0.04
95th-Percentile Queue Length [ft/ln]	2.02	2.02	0.00	0.00	1.92	0.96
d_A, Approach Delay [s/veh]	8.88		0.00		0.87	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.95					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 103: Sierra Lakes Pkwy at Truck Dwy (3)

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	132	0	0	207
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	65	0	31	81
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	23	200	0	31	292
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	53	0	8	77
Total Analysis Volume [veh/h]	0	24	211	0	33	307
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	11.72	8.95	0.00	0.00	7.69	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.07	0.04
95th-Percentile Queue Length [ft/ln]	1.97	1.97	0.00	0.00	1.85	0.92
d_A, Approach Delay [s/veh]	8.95		0.00		0.75	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.81					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 104: Sierra Lakes Pkwy at Truck Dwy (4)

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	← T →		↑		↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	132	0	0	207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	0.00
Growth Factor	1.0200	1.0200	1.0200	1.0000	1.0000	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	88	0	0	112
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	23	223	0	0	323
Peak Hour Factor	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	59	0	0	85
Total Analysis Volume [veh/h]	0	24	235	0	0	340
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.32	9.02	0.00	0.00	0.00	0.00
Movement LOS	B	A	A			A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.01	2.01	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.02		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.36					
Intersection LOS	A					

**Intersection Level Of Service Report
Intersection 105: Sierra Lakes Pkwy at PC Dwy**

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.285

Intersection Setup

Name	PC Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	PC Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	132	0	0	207
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	183	93	18	165	112
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	61	-31	31	31	-31
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	244	197	49	196	292
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	64	52	13	52	77
Total Analysis Volume [veh/h]	0	257	207	52	206	307
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.28	0.00	0.00	0.16	0.00
d_M, Delay for Movement [s/veh]	19.85	10.57	0.00	0.00	8.24	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.18	1.18	0.00	0.00	0.55	0.28
95th-Percentile Queue Length [ft/ln]	29.42	29.42	0.00	0.00	13.85	6.92
d_A, Approach Delay [s/veh]	10.57		0.00		3.31	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	4.29					
Intersection LOS	B					

Rialto Travel Center

Vistro File: K:\...\Updated_Rialto Travel Ctr PM.vistro

Scenario 4 OY 2022 WP PM

Report File: K:\...\4 OY 2022 WP PM.pdf

9/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave at Casmalia St	Signalized	HCM 6th Edition	NB Left	0.562	59.3	E
2	Alder Ave at SR-210 WB Ramps	Signalized	HCM 6th Edition	NB Left	0.798	35.2	D
3	Alder Ave at SR-210 EB Ramps	Signalized	HCM 6th Edition	SB Left	0.706	26.3	C
4	Alder Ave at Renaissance Pkwy	Signalized	HCM 6th Edition	EB Left	0.543	28.0	C
101	Sierra Lakes Pkwy at Truck Dwy (1)	Two-way stop	HCM 6th Edition	NB Right	0.037	9.7	A
102	Sierra Lakes Pkwy at Truck Dwy (2)	Two-way stop	HCM 6th Edition	NB Right	0.042	9.9	A
103	Sierra Lakes Pkwy at Truck Dwy (3)	Two-way stop	HCM 6th Edition	NB Right	0.038	10.0	A
104	Sierra Lakes Pkwy at Truck Dwy (4)	Two-way stop	HCM 6th Edition	NB Right	0.039	10.1	B
105	Sierra Lakes Pkwy at PC Dwy	Two-way stop	HCM 6th Edition	NB Right	0.288	12.0	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 at Casmalia St

Control Type:	Signalized	Delay (sec / veh):	59.3
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.562

Intersection Setup

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	2	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	210.0	100.0	100.0	180.0	100.0	100.0	290.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
	95	74	245	24	102	28	11	258	130	301	194	5
Base Volume Input [veh/h]	95	74	245	24	102	28	11	258	130	301	194	5
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	219	0	0	0	0	8	7	15	222	0	15	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]	316	75	250	24	104	37	18	278	355	307	213	5
Peak Hour Factor	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	87	21	69	7	29	10	5	77	98	85	59	1
Total Analysis Volume [veh/h]	348	83	276	26	115	41	20	307	391	338	235	6
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	24	54	0	9	39	0	9	41	0	16	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	30	0	0	30	0	0	32	0	0	32	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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]	120	120	120	120	120	120	120	120	120	120	120	120
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
I1_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
I2, 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]	20	58	58	3	41	41	2	31	31	12	41	41
g / C, Green / Cycle	0.17	0.48	0.48	0.02	0.34	0.34	0.02	0.26	0.26	0.10	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.19	0.04	0.17	0.01	0.03	0.03	0.01	0.16	0.24	0.10	0.06	0.06
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1615	3514	1900	1883
c, Capacity [veh/h]	302	911	775	45	1221	545	38	499	424	351	649	643
d1, Uniform Delay [s]	50.00	16.99	19.60	57.90	27.19	27.01	58.16	38.94	43.07	53.77	27.79	27.79
k, delay calibration	0.28	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]	88.88	0.20	1.28	11.41	0.15	0.27	10.91	1.24	19.50	14.92	0.14	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.15	0.09	0.36	0.58	0.09	0.08	0.53	0.62	0.92	0.96	0.19	0.19
d, Delay for Lane Group [s/veh]	138.8	17.19	20.88	69.32	27.34	27.28	69.06	40.18	62.58	68.70	27.93	27.93
Lane Group LOS	F	B	C	E	C	C	E	D	E	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	16.13	1.23	4.78	0.90	1.11	0.81	0.69	7.70	12.91	5.59	2.34	2.32
50th-Percentile Queue Length [ft/ln]	403.1	30.63	119.5	22.49	27.79	20.24	17.34	192.6	322.7	139.6	58.50	58.09
95th-Percentile Queue Length [veh/ln]	24.31	2.21	8.37	1.62	2.00	1.46	1.25	12.26	18.80	9.46	4.21	4.18
95th-Percentile Queue Length [ft/ln]	607.7	55.13	209.2	40.47	50.02	36.43	31.22	306.4	470.0	236.5	105.3	104.5

Movement, Approach, & Intersection Results

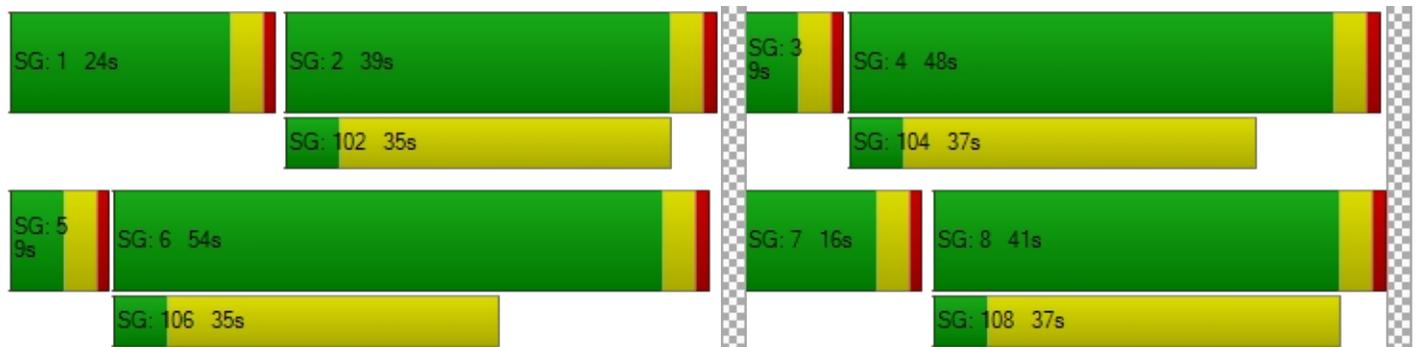
d_M, Delay for Movement [s/veh]	138.8	17.19	20.88	69.32	27.34	27.28	69.06	40.18	62.58	68.70	27.93	27.93
Movement LOS	F	B	C	E	C	C	E	D	E	E	C	C
d_A, Approach Delay [s/veh]	78.53			33.32			53.18			51.73		
Approach LOS	E			C			D			D		
d_I, Intersection Delay [s/veh]	59.34											
Intersection LOS	E											
Intersection V/C	0.562											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
I_p,int, Pedestrian LOS Score for Intersection	2.819	2.547	2.795	2.822
Crosswalk LOS	C	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	833	583	617	733
d_b, Bicycle Delay [s]	20.42	30.10	28.70	24.07
I_b,int, Bicycle LOS Score for Intersection	2.143	1.710	2.152	2.037
Bicycle LOS	B	A	B	B

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	35.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.798

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	405.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Base Volume Input [veh/h]	408	431	0	0	369	426	0	0	0	319	2	201
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.000	1.000	1.020	1.020	1.000	1.000	1.000	1.020	1.020	1.020
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	136	0	0	136	86	0	0	0	0	0	83
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]	416	576	0	0	512	521	0	0	0	325	2	288
Peak Hour Factor	0.917	0.917	1.000	1.000	0.917	0.917	1.000	1.000	1.000	0.917	0.917	0.917
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	113	157	0	0	140	142	0	0	0	89	1	79
Total Analysis Volume [veh/h]	454	628	0	0	558	568	0	0	0	354	2	314
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi										
Signal Group	1	6	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	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	1.0	1.0	0.0
Split [s]	29	66	0	0	37	0	0	0	0	24	24	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	3	0	0	0	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	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	2.0	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
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	24	63	34	34		19	19
g / C, Green / Cycle	0.27	0.70	0.38	0.38		0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.25	0.17	0.29	0.35		0.20	0.20
s, saturation flow rate [veh/h]	1810	3618	1900	1615		1810	1617
c, Capacity [veh/h]	487	2515	725	616		391	349
d1, Uniform Delay [s]	32.09	5.06	24.36	26.54		34.39	34.39
k, delay calibration	0.27	0.50	0.50	0.50		0.15	0.15
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	17.41	0.24	7.72	21.39		10.50	11.44
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	0.93	0.25	0.77	0.92		0.91	0.91
d, Delay for Lane Group [s/veh]	49.50	5.30	32.08	47.93		44.89	45.83
Lane Group LOS	D	A	C	D		D	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	11.13	1.53	10.76	13.87		8.50	7.68
50th-Percentile Queue Length [ft/ln]	278.35	38.37	269.03	346.78		212.50	191.96
95th-Percentile Queue Length [veh/ln]	16.61	2.76	16.14	19.98		13.28	12.22
95th-Percentile Queue Length [ft/ln]	415.16	69.06	403.53	499.49		332.03	305.58

Movement, Approach, & Intersection Results

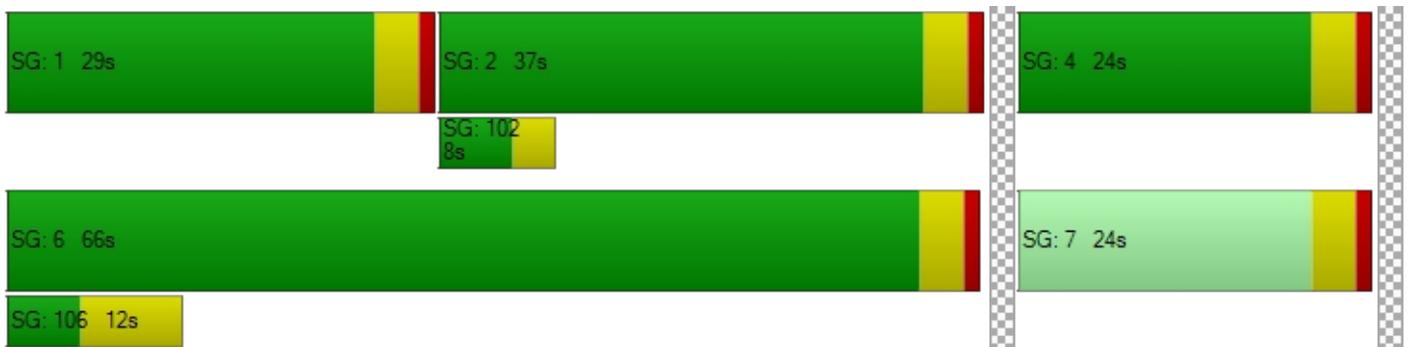
d_M, Delay for Movement [s/veh]	49.50	5.30	0.00	0.00	32.08	47.93	0.00	0.00	0.00	44.89	45.83	45.83
Movement LOS	D	A			C	D				D	D	D
d_A, Approach Delay [s/veh]	23.84				40.08		0.00		45.33			
Approach LOS	C				D		A		D			
d_I, Intersection Delay [s/veh]	35.20											
Intersection LOS	D											
Intersection V/C	0.798											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.423	2.159
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1378	733	0	444
d_b, Bicycle Delay [s]	4.36	18.05	45.00	27.22
I_b,int, Bicycle LOS Score for Intersection	2.452	2.489	4.132	2.665
Bicycle LOS	B	B	D	B

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	26.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	120.0	100.0	100.0	100.0	100.0	415.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Base Volume Input [veh/h]	0	530	403	138	458	0	186	4	423	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.020	1.020	1.020	1.020	1.000	1.020	1.020	1.020	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	53	0	84	52	0	83	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	594	411	225	519	0	273	4	431	0	0	0
Peak Hour Factor	1.000	0.983	0.983	0.983	0.983	1.000	0.983	0.983	0.983	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	151	105	57	132	0	69	1	110	0	0	0
Total Analysis Volume [veh/h]	0	604	418	229	528	0	278	4	438	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
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Protec	Permi							
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	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	21	0	18	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	3	0	0	7	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
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	
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	38	38	13	55	27	27	
g / C, Green / Cycle	0.42	0.42	0.15	0.61	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.27	0.31	0.13	0.15	0.16	0.27	
s, saturation flow rate [veh/h]	1900	1660	1810	3618	1811	1615	
c, Capacity [veh/h]	791	692	264	2196	550	491	
d1, Uniform Delay [s]	20.95	22.13	37.56	8.13	25.82	29.91	
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]	4.04	6.95	8.34	0.26	0.74	5.85	
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	0.65	0.74	0.87	0.24	0.51	0.89	
d, Delay for Lane Group [s/veh]	25.00	29.08	45.90	8.39	26.56	35.77	
Lane Group LOS	C	C	D	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	8.42	9.29	5.22	1.94	4.97	9.53	
50th-Percentile Queue Length [ft/ln]	210.58	232.32	130.38	48.47	124.15	238.25	
95th-Percentile Queue Length [veh/ln]	13.18	14.29	8.96	3.49	8.62	14.59	
95th-Percentile Queue Length [ft/ln]	329.58	357.31	224.02	87.25	215.52	364.82	

Movement, Approach, & Intersection Results

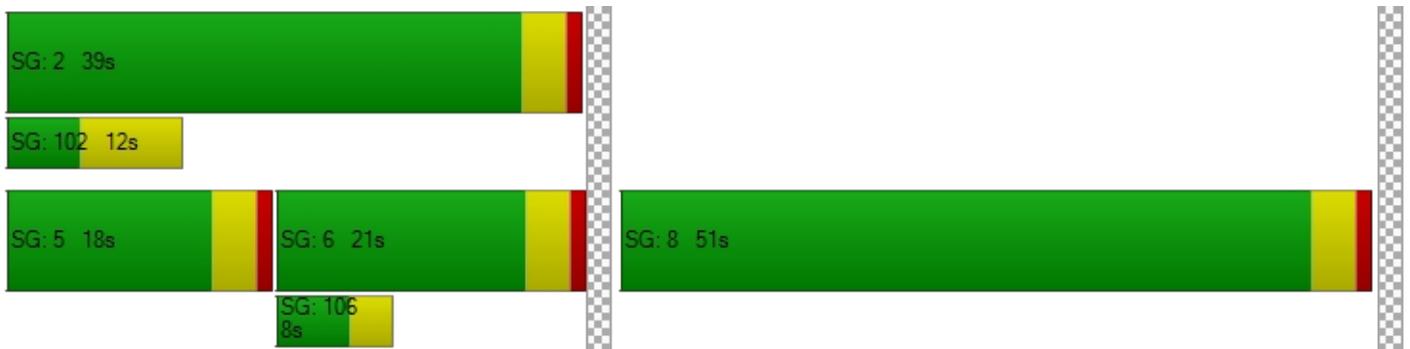
d_M, Delay for Movement [s/veh]	0.00	25.62	29.08	45.90	8.39	0.00	26.56	26.56	35.77	0.00	0.00	0.00
Movement LOS		C	C	D	A		C	C	D			
d_A, Approach Delay [s/veh]		27.04		19.74			32.16		0.00			
Approach LOS		C		B			C		A			
d_I, Intersection Delay [s/veh]	26.30											
Intersection LOS	C											
Intersection V/C	0.706											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]		0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection		0.000	0.000	2.176	2.060
Crosswalk LOS		F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]		2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]		378	778	1044	0
d_b, Bicycle Delay [s]		29.61	16.81	10.27	45.00
I_b,int, Bicycle LOS Score for Intersection		2.403	2.184	2.748	4.132
Bicycle LOS		B	B	B	D

Sequence

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



Intersection Level Of Service Report
Intersection 4: Alder Ave at Renaissance Pkwy

Control Type:	Signalized	Delay (sec / veh):	28.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.543

Intersection Setup

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐			⇐⇐⇐			⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	305.0	100.0	100.0	280.0	100.0	100.0	315.0	100.0	100.0	315.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Base Volume Input [veh/h]	35	638	39	225	546	121	95	206	41	50	132	185
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	0	15	22	15	15	0	0	0	0	15
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	674	40	245	579	138	112	210	42	51	135	204
Peak Hour Factor	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	10	178	11	65	153	37	30	56	11	13	36	54
Total Analysis Volume [veh/h]	38	713	42	259	613	146	119	222	44	54	143	216
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	9	23	0	31	45	0	10	26	0	10	26	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	14	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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	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
I1_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
I2, 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]	3	39	39	15	51	51	6	17	17	4	14	14
g / C, Green / Cycle	0.03	0.43	0.43	0.17	0.56	0.56	0.07	0.18	0.18	0.04	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.20	0.20	0.14	0.21	0.21	0.07	0.07	0.07	0.03	0.08	0.13
s, saturation flow rate [veh/h]	1810	1900	1863	1810	1900	1775	1810	1900	1793	1810	1900	1615
c, Capacity [veh/h]	62	816	800	302	1068	998	121	350	330	75	302	257
d1, Uniform Delay [s]	42.86	18.33	18.33	36.44	10.88	10.88	41.96	32.24	32.29	42.61	34.41	36.73
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.29	1.92	1.96	6.96	0.98	1.04	34.90	0.70	0.77	12.04	1.15	7.24
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	0.61	0.47	0.47	0.86	0.37	0.37	0.99	0.39	0.40	0.72	0.47	0.84
d, Delay for Lane Group [s/veh]	52.15	20.25	20.29	43.40	11.86	11.92	76.86	32.94	33.06	54.65	35.55	43.97
Lane Group LOS	D	C	C	D	B	B	E	C	C	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.95	5.42	5.33	5.74	3.82	3.59	3.66	2.49	2.41	1.37	2.76	4.81
50th-Percentile Queue Length [ft/ln]	23.77	135.4	133.1	143.3	95.57	89.78	91.46	62.24	60.19	34.36	69.04	120.3
95th-Percentile Queue Length [veh/ln]	1.71	9.24	9.11	9.66	6.88	6.46	6.59	4.48	4.33	2.47	4.97	8.41
95th-Percentile Queue Length [ft/ln]	42.78	230.9	227.7	241.5	172.0	161.6	164.6	112.0	108.3	61.84	124.2	210.3

Movement, Approach, & Intersection Results

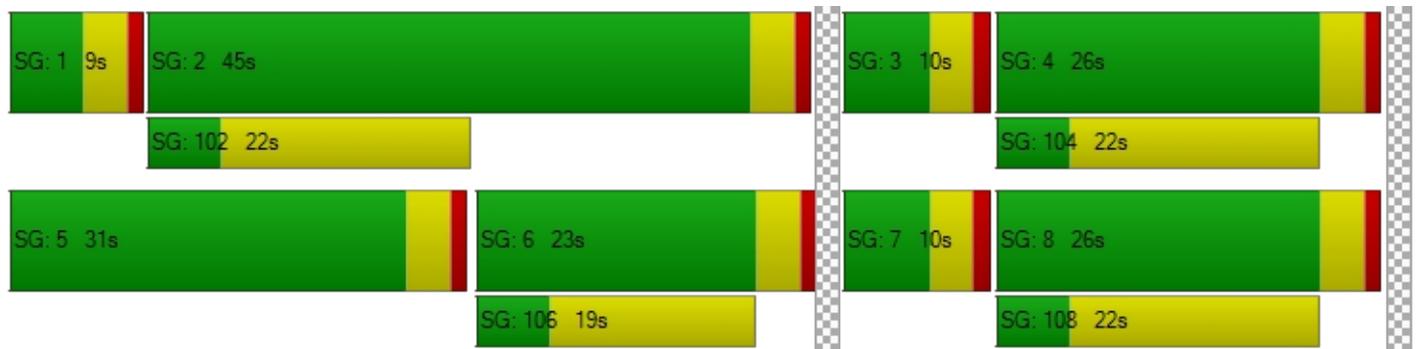
d_M, Delay for Movement [s/veh]	52.15	20.27	20.29	43.40	11.88	11.92	76.86	32.99	33.06	54.65	35.55	43.97
Movement LOS	D	C	C	D	B	B	E	C	C	D	D	D
d_A, Approach Delay [s/veh]	21.80		19.91		46.56		42.45					
Approach LOS	C		B		D		D					
d_I, Intersection Delay [s/veh]	27.98											
Intersection LOS	C											
Intersection V/C	0.543											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.790	2.973	2.533	2.606
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	911	489	489
d_b, Bicycle Delay [s]	28.01	13.34	25.69	25.69
I_b,int, Bicycle LOS Score for Intersection	2.214	2.399	1.877	1.900
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 101: Sierra Lakes Pkwy at Truck Dwy (1)

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.037

Intersection Setup

Name	Truck Driveway (1)		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Truck Driveway (1)		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	399	0	0	317
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	28	15	0	35	15
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	28	422	0	35	338
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	111	0	9	89
Total Analysis Volume [veh/h]	0	29	444	0	37	356
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	15.00	9.74	0.00	0.00	8.30	0.00
Movement LOS	C	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.00	0.00	0.10	0.05
95th-Percentile Queue Length [ft/ln]	2.86	2.86	0.00	0.00	2.54	1.27
d_A, Approach Delay [s/veh]	9.74		0.00		0.78	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.68					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 102: Sierra Lakes Pkwy at Truck Dwy (2)

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.042

Intersection Setup

Name			Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⇐		⇐		⇐⇐	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name			Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	399	0	0	317
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	28	43	0	35	50
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	2	0	0	2	-2
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	30	450	0	37	371
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	8	118	0	10	98
Total Analysis Volume [veh/h]	0	32	474	0	39	391
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	15.83	9.87	0.00	0.00	8.40	0.00
Movement LOS	C	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.00	0.00	0.11	0.06
95th-Percentile Queue Length [ft/ln]	3.24	3.24	0.00	0.00	2.76	1.38
d_A, Approach Delay [s/veh]	9.87		0.00		0.76	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.69					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 103: Sierra Lakes Pkwy at Truck Dwy (3)

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.038

Intersection Setup

Name	PC Driveway		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	PC Driveway		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	399	0	0	317
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	28	71	0	35	86
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	28	478	0	35	409
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	126	0	9	108
Total Analysis Volume [veh/h]	0	29	503	0	37	431
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.01	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	16.54	9.96	0.00	0.00	8.48	0.00
Movement LOS	C	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.00	0.00	0.11	0.05
95th-Percentile Queue Length [ft/ln]	2.99	2.99	0.00	0.00	2.68	1.34
d_A, Approach Delay [s/veh]	9.96		0.00		0.67	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.60					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 104: Sierra Lakes Pkwy at Truck Dwy (4)

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.039

Intersection Setup

Name			Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	←		↑		↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	399	0	0	317
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	0.00
Growth Factor	1.0200	1.0200	1.0200	1.0000	1.0000	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	28	98	0	0	121
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	28	505	0	0	444
Peak Hour Factor	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	133	0	0	117
Total Analysis Volume [veh/h]	0	29	532	0	0	467
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.68	10.08	0.00	0.00	0.00	0.00
Movement LOS	C	B	A			A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.06	3.06	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.08		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.28					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 105: Sierra Lakes Pkwy at PC Dwy

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.288

Intersection Setup

Name			Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⇐		⇐		⇐⇐	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	399	0	0	317
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	148	111	15	136	121
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	50	-25	25	26	-26
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	198	493	40	162	418
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	52	130	11	43	110
Total Analysis Volume [veh/h]	0	208	519	42	171	440
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.29	0.01	0.00	0.17	0.00
d_M, Delay for Movement [s/veh]	28.28	11.98	0.00	0.00	9.24	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.19	1.19	0.00	0.00	0.60	0.30
95th-Percentile Queue Length [ft/ln]	29.76	29.76	0.00	0.00	15.02	7.51
d_A, Approach Delay [s/veh]	11.98		0.00		2.59	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.95					
Intersection LOS	B					

Rialto Travel Center

Vistro File: K:\...\Updated_Rialto Travel Ctr AM.vistro

Scenario 5 OY 2022 Cum AM

Report File: K:\...\5 OY 2022 CUM AM.pdf

9/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave at Casmalia St	Signalized	HCM 6th Edition	WB Left	0.460	86.1	F
2	Alder Ave at SR-210 WB Ramps	Signalized	HCM 6th Edition	WB Left	1.031	90.0	F
3	Alder Ave at SR-210 EB Ramps	Signalized	HCM 6th Edition	EB Right	1.082	98.2	F
4	Alder Ave at Renaissance Pkwy	Signalized	HCM 6th Edition	EB Left	0.956	81.5	F

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 at Casmalia St

Control Type:	Signalized	Delay (sec / veh):	86.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

Intersection Setup

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	2	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	210.0	100.0	100.0	180.0	100.0	100.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
Base Volume Input [veh/h]	79	75	175	8	69	8	13	70	49	261	120	12
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
In-Process Volume [veh/h]	56	106	131	0	101	0	0	21	56	111	20	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]	137	183	310	8	171	8	13	92	106	377	142	12
Peak Hour Factor	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	43	57	96	2	53	2	4	29	33	117	44	4
Total Analysis Volume [veh/h]	170	228	386	10	213	10	16	114	132	469	177	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	25	55	0	9	39	0	13	41	0	15	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	30	0	0	32	0	0	32	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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]	120	120	120	120	120	120	120	120	120	120	120	120
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
I1_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
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	79	79	1	68	68	2	12	12	11	21	21
g / C, Green / Cycle	0.11	0.66	0.66	0.01	0.56	0.56	0.02	0.10	0.10	0.09	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.09	0.12	0.24	0.01	0.06	0.01	0.01	0.06	0.08	0.13	0.05	0.05
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1615	3514	1900	1848
c, Capacity [veh/h]	200	1256	1067	22	2035	909	32	194	165	322	334	325
d1, Uniform Delay [s]	52.40	7.84	9.06	58.89	12.20	11.55	58.41	51.48	52.69	54.50	42.94	42.94
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.67	0.32	0.95	14.29	0.10	0.02	11.58	2.83	8.69	208.9	0.48	0.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.18	0.36	0.46	0.10	0.01	0.50	0.59	0.80	1.46	0.29	0.29
d, Delay for Lane Group [s/veh]	62.07	8.15	10.01	73.18	12.30	11.58	69.99	54.30	61.38	263.4	43.41	43.44
Lane Group LOS	E	A	B	E	B	B	E	D	E	F	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.39	2.05	4.08	0.38	1.25	0.11	0.57	3.30	4.12	14.00	2.45	2.39
50th-Percentile Queue Length [ft/ln]	134.7	51.28	102.0	9.49	31.20	2.85	14.17	82.42	103.1	350.1	61.16	59.71
95th-Percentile Queue Length [veh/ln]	9.20	3.69	7.35	0.68	2.25	0.21	1.02	5.93	7.42	22.71	4.40	4.30
95th-Percentile Queue Length [ft/ln]	229.9	92.30	183.6	17.08	56.16	5.13	25.50	148.3	185.6	567.8	110.1	107.4

Movement, Approach, & Intersection Results

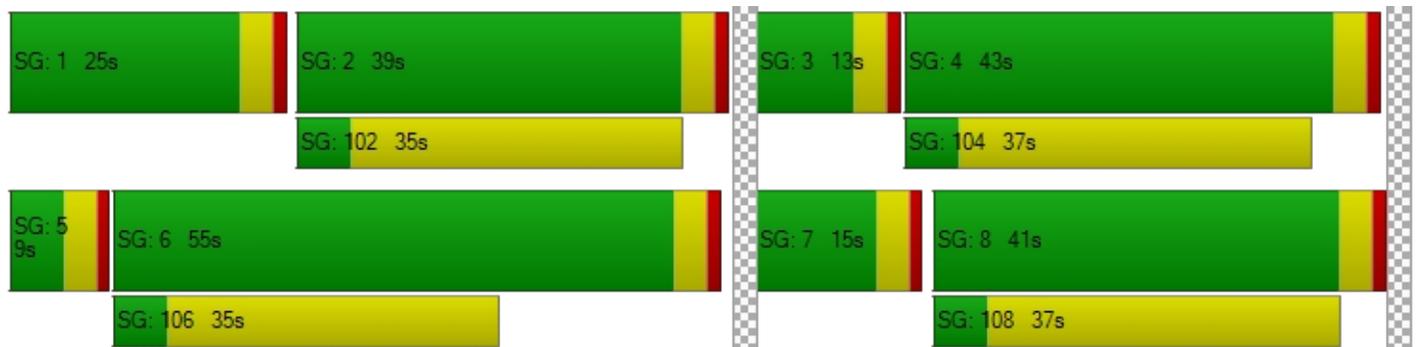
d_M, Delay for Movement [s/veh]	62.07	8.15	10.01	73.18	12.30	11.58	69.99	54.30	61.38	263.4	43.42	43.44
Movement LOS	E	A	B	E	B	B	E	D	E	F	D	D
d_A, Approach Delay [s/veh]	20.76		14.88		58.83		199.55					
Approach LOS	C		B		E		F					
d_I, Intersection Delay [s/veh]	86.11											
Intersection LOS	F											
Intersection V/C	0.460											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
I_p,int, Pedestrian LOS Score for Intersection	2.834	2.601	2.536	2.817
Crosswalk LOS	C	B	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	850	583	617	650
d_b, Bicycle Delay [s]	19.84	30.10	28.70	27.34
I_b,int, Bicycle LOS Score for Intersection	2.206	1.752	1.776	2.105
Bicycle LOS	B	A	A	B

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	90.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.031

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	405.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Base Volume Input [veh/h]	335	328	0	0	319	379	0	0	0	299	3	285
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.000	1.000	1.020	1.020	1.000	1.000	1.000	1.020	1.020	1.020
In-Process Volume [veh/h]	195	286	0	0	239	30	0	0	0	304	0	6
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]	537	621	0	0	564	417	0	0	0	609	3	297
Peak Hour Factor	0.902	0.902	1.000	1.000	0.902	0.902	1.000	1.000	1.000	0.902	0.902	0.902
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	149	172	0	0	156	116	0	0	0	169	1	82
Total Analysis Volume [veh/h]	595	688	0	0	625	462	0	0	0	675	3	329
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi											
Signal Group	1	6	0	0	2	0	0	0	0	0	7	4	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	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	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	1.0	0.0
Split [s]	29	58	0	0	29	0	0	0	0	0	32	32	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	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	3	0	0	0	0	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	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	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	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	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	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]	25	54	25	25		28	28
g / C, Green / Cycle	0.28	0.60	0.28	0.28		0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.33	0.19	0.29	0.33		0.37	0.21
s, saturation flow rate [veh/h]	1810	3618	1900	1652		1810	1617
c, Capacity [veh/h]	503	2171	528	459		563	503
d1, Uniform Delay [s]	32.50	8.89	32.50	32.50		31.00	26.87
k, delay calibration	0.44	0.50	0.50	0.50		0.50	0.17
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	99.58	0.38	47.02	103.18		105.85	2.31
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	1.18	0.32	1.03	1.18		1.20	0.66
d, Delay for Lane Group [s/veh]	132.08	9.28	79.52	135.68		136.85	29.18
Lane Group LOS	F	A	F	F		F	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	23.83	2.75	17.32	22.22		28.27	6.31
50th-Percentile Queue Length [ft/ln]	595.75	68.82	432.90	555.41		706.76	157.81
95th-Percentile Queue Length [veh/ln]	35.08	4.95	24.58	32.98		41.26	10.43
95th-Percentile Queue Length [ft/ln]	877.01	123.87	614.60	824.46		1031.41	260.82

Movement, Approach, & Intersection Results

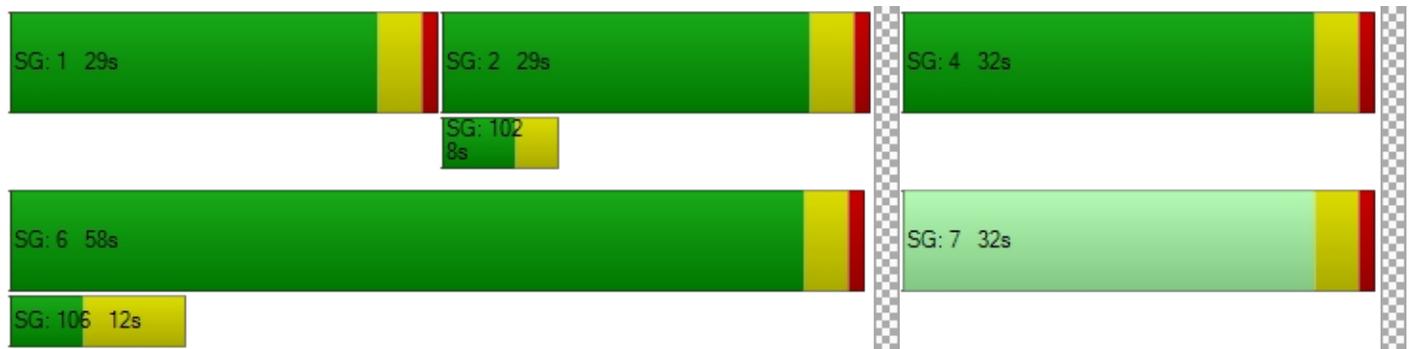
d_M, Delay for Movement [s/veh]	132.0	9.28	0.00	0.00	86.84	135.6	0.00	0.00	0.00	136.8	29.18	29.18
Movement LOS	F	A			F	F				F	C	C
d_A, Approach Delay [s/veh]	66.23		107.60		0.00		101.35					
Approach LOS	E		F		A		F					
d_I, Intersection Delay [s/veh]	90.02											
Intersection LOS	F											
Intersection V/C	1.031											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.458	2.269
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	556	0	622
d_b, Bicycle Delay [s]	7.20	23.47	45.00	21.36
I_b,int, Bicycle LOS Score for Intersection	2.618	2.456	4.132	3.221
Bicycle LOS	B	B	D	C

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	98.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.082

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	120.0	100.0	100.0	100.0	100.0	415.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Base Volume Input [veh/h]	0	418	296	258	366	0	250	1	461	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.020	1.020	1.020	1.020	1.000	1.020	1.020	1.020	1.000	1.000	1.000
In-Process Volume [veh/h]	0	442	192	15	531	0	40	0	327	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	868	494	278	904	0	295	1	797	0	0	0
Peak Hour Factor	1.000	0.972	0.972	0.972	0.972	1.000	0.972	0.972	0.972	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	223	127	72	233	0	76	0	205	0	0	0
Total Analysis Volume [veh/h]	0	893	508	286	930	0	303	1	820	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
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Protec	Permi							
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	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	34	0	16	50	0	0	40	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	3	0	0	7	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
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	
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	30	30	12	46	36	36	
g / C, Green / Cycle	0.33	0.33	0.13	0.51	0.40	0.40	
(v / s)_i Volume / Saturation Flow Rate	0.37	0.42	0.16	0.26	0.17	0.51	
s, saturation flow rate [veh/h]	1900	1684	1810	3618	1810	1615	
c, Capacity [veh/h]	633	561	241	1849	724	646	
d1, Uniform Delay [s]	30.00	30.00	39.00	14.48	19.47	27.00	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.50	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	68.40	125.73	92.70	0.98	0.39	133.16	
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	1.11	1.25	1.19	0.50	0.42	1.27	
d, Delay for Lane Group [s/veh]	98.40	155.73	131.70	15.46	19.86	160.16	
Lane Group LOS	F	F	F	B	B	F	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	24.26	30.45	11.19	5.53	4.50	36.94	
50th-Percentile Queue Length [ft/ln]	606.60	761.32	279.72	138.20	112.62	923.49	
95th-Percentile Queue Length [veh/ln]	34.52	45.10	17.88	9.38	7.99	54.59	
95th-Percentile Queue Length [ft/ln]	863.07	1127.38	446.98	234.60	199.64	1364.74	

Movement, Approach, & Intersection Results

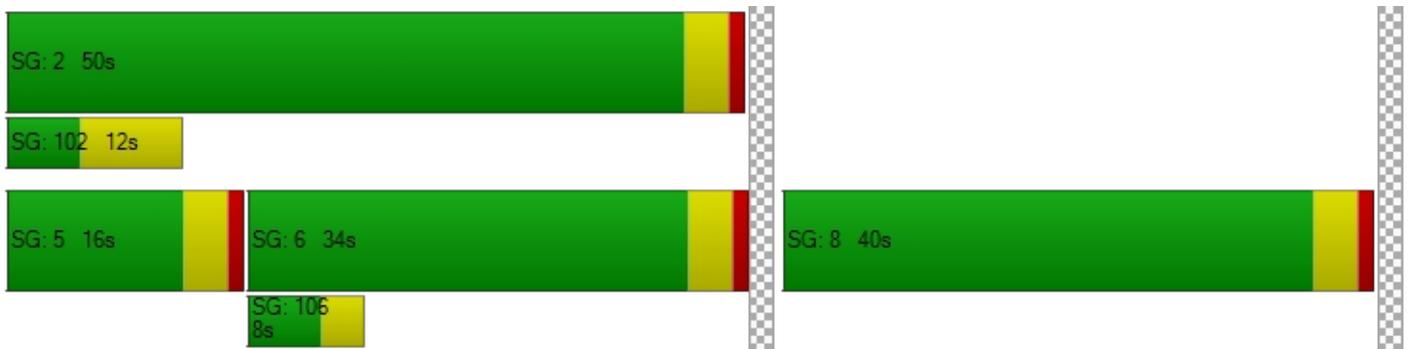
d_M, Delay for Movement [s/veh]	0.00	110.7	155.7	131.7	15.46	0.00	19.86	19.86	160.1	0.00	0.00	0.00
Movement LOS		F	F	F	B		B	B	F			
d_A, Approach Delay [s/veh]		127.07		42.80			122.21		0.00			
Approach LOS		F		D			F		A			
d_I, Intersection Delay [s/veh]	98.22											
Intersection LOS	F											
Intersection V/C	1.082											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		9.0		9.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		36.45		36.45
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.307		2.200
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		667		1022		800		0
d_b, Bicycle Delay [s]		20.00		10.76		16.20		45.00
I_b,int, Bicycle LOS Score for Intersection		2.715		2.563		3.414		4.132
Bicycle LOS		B		B		C		D

Sequence

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



Intersection Level Of Service Report
Intersection 4: Alder Ave at Renaissance Pkwy

Control Type:	Signalized	Delay (sec / veh):	81.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.956

Intersection Setup

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐			⇐⇐⇐			⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	305.0	100.0	100.0	280.0	100.0	100.0	315.0	100.0	100.0	315.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
	88	397	17	201	569	63	91	155	51	20	146	215
Base Volume Input [veh/h]	88	397	17	201	569	63	91	155	51	20	146	215
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
In-Process Volume [veh/h]	0	356	23	268	490	18	35	85	0	21	81	276
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	761	40	473	1070	82	128	243	52	41	230	495
Peak Hour Factor	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	25	214	11	133	301	23	36	68	15	12	65	139
Total Analysis Volume [veh/h]	101	855	45	531	1202	92	144	273	58	46	258	556
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	9	23	0	27	41	0	10	26	0	14	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	14	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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	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
I1_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
I2, 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]	5	19	19	23	37	37	6	29	29	3	26	26
g / C, Green / Cycle	0.06	0.21	0.21	0.26	0.41	0.41	0.07	0.32	0.32	0.04	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.06	0.24	0.24	0.29	0.34	0.35	0.08	0.09	0.09	0.03	0.14	0.34
s, saturation flow rate [veh/h]	1810	1900	1867	1810	1900	1853	1810	1900	1787	1810	1900	1615
c, Capacity [veh/h]	101	401	394	462	781	762	121	601	565	71	549	467
d1, Uniform Delay [s]	42.50	35.50	35.50	33.50	23.70	23.94	42.00	23.08	23.12	42.63	26.33	32.00
k, delay calibration	0.11	0.50	0.50	0.36	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.48
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]	42.89	85.90	86.27	84.09	10.00	11.22	103.8	0.25	0.28	9.62	0.63	105.0
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	1.00	1.13	1.13	1.15	0.83	0.85	1.19	0.28	0.29	0.65	0.47	1.19
d, Delay for Lane Group [s/veh]	85.39	121.4	121.7	117.5	33.70	35.16	145.8	23.34	23.39	52.25	26.96	137.0
Lane Group LOS	F	F	F	F	C	D	F	C	C	D	C	F
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.31	17.67	17.40	20.01	12.94	13.19	6.01	2.51	2.40	1.14	4.27	22.78
50th-Percentile Queue Length [ft/ln]	82.68	441.7	435.0	500.1	323.4	329.7	150.1	62.76	60.12	28.62	106.7	569.5
95th-Percentile Queue Length [veh/ln]	5.95	26.22	25.87	29.55	18.84	19.15	10.56	4.52	4.33	2.06	7.66	33.86
95th-Percentile Queue Length [ft/ln]	148.8	655.5	646.8	738.8	470.9	478.6	263.9	112.9	108.2	51.51	191.4	846.6

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	85.39	121.5	121.7	117.5	34.37	35.16	145.8	23.36	23.39	52.25	26.96	137.0
Movement LOS	F	F	F	F	C	D	F	C	C	D	C	F
d_A, Approach Delay [s/veh]	117.93			58.62			60.49			99.45		
Approach LOS	F			E			E			F		
d_I, Intersection Delay [s/veh]	81.54											
Intersection LOS	F											
Intersection V/C	0.956											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	3.051	3.400	2.602	2.857
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	822	489	578
d_b, Bicycle Delay [s]	28.01	15.61	25.69	22.76
I_b,int, Bicycle LOS Score for Intersection	2.385	3.065	1.951	2.269
Bicycle LOS	B	C	A	B

Sequence

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



Rialto Travel Center

Vistro File: K:\...\Updated_Rialto Travel Ctr PM.vistro

Scenario 5 OY 2022 Cum PM

Report File: K:\...\5 OY 2022 CUM PM.pdf

9/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave at Casmalia St	Signalized	HCM 6th Edition	WB Left	0.532	68.2	E
2	Alder Ave at SR-210 WB Ramps	Signalized	HCM 6th Edition	NB Left	1.108	113.9	F
3	Alder Ave at SR-210 EB Ramps	Signalized	HCM 6th Edition	EB Right	1.010	73.7	E
4	Alder Ave at Renaissance Pkwy	Signalized	HCM 6th Edition	NB Right	0.971	88.1	F

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 at Casmalia St**

Control Type:	Signalized	Delay (sec / veh):	68.2
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.532

Intersection Setup

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	2	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	210.0	100.0	100.0	180.0	100.0	100.0	290.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
	95	74	245	24	102	28	11	258	130	301	194	5
Base Volume Input [veh/h]	95	74	245	24	102	28	11	258	130	301	194	5
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
In-Process Volume [veh/h]	45	149	102	0	135	0	0	18	45	117	17	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]	142	224	352	24	239	29	11	281	178	424	215	5
Peak Hour Factor	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	39	62	97	7	66	8	3	77	49	117	59	1
Total Analysis Volume [veh/h]	157	247	388	26	264	32	12	310	196	467	237	6
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	24	54	0	9	39	0	9	41	0	16	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	30	0	0	30	0	0	32	0	0	32	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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]	120	120	120	120	120	120	120	120	120	120	120	120
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
I1_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
I2, 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]	12	69	69	3	60	60	2	20	20	12	30	30
g / C, Green / Cycle	0.10	0.58	0.58	0.02	0.50	0.50	0.01	0.17	0.17	0.10	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.09	0.13	0.24	0.01	0.07	0.02	0.01	0.14	0.14	0.13	0.06	0.06
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1660	3514	1900	1884
c, Capacity [veh/h]	187	1093	929	44	1795	801	26	318	277	351	481	476
d1, Uniform Delay [s]	52.82	12.45	14.26	57.94	16.43	15.54	58.70	48.41	48.63	54.00	35.78	35.78
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]	9.58	0.48	1.38	11.82	0.17	0.09	12.66	5.91	7.83	152.3	0.27	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	0.84	0.23	0.42	0.59	0.15	0.04	0.47	0.84	0.86	1.33	0.25	0.25
d, Delay for Lane Group [s/veh]	62.39	12.93	15.64	69.75	16.61	15.63	71.37	54.32	56.47	206.3	36.06	36.06
Lane Group LOS	E	B	B	E	B	B	E	D	E	F	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.99	3.08	5.64	0.90	1.89	0.44	0.44	7.89	7.25	12.51	2.76	2.74
50th-Percentile Queue Length [ft/ln]	124.6	77.12	141.0	22.57	47.28	11.11	10.97	197.1	181.3	312.7	68.99	68.45
95th-Percentile Queue Length [veh/ln]	8.65	5.55	9.54	1.63	3.40	0.80	0.79	12.49	11.67	20.21	4.97	4.93
95th-Percentile Queue Length [ft/ln]	216.1	138.8	238.4	40.63	85.10	20.00	19.74	312.2	291.7	505.3	124.1	123.2

Movement, Approach, & Intersection Results

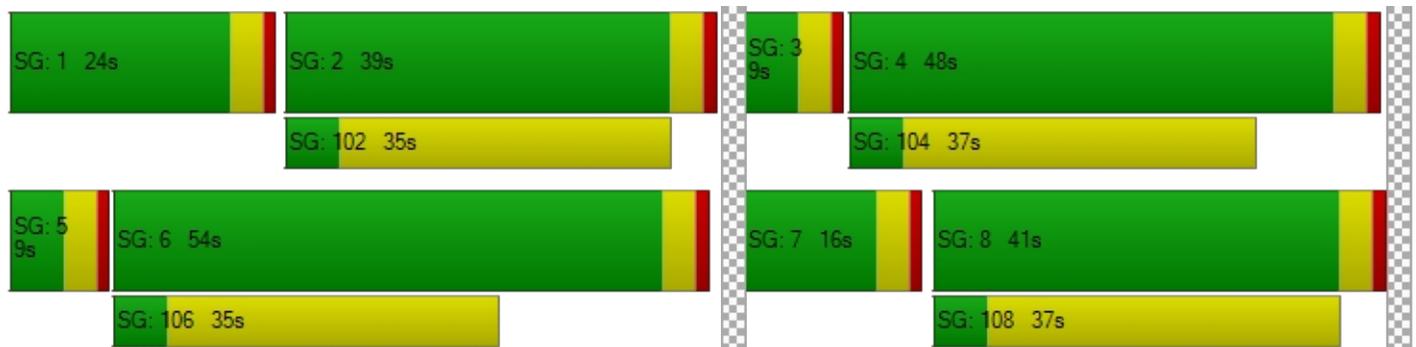
d_M, Delay for Movement [s/veh]	62.39	12.93	15.64	69.75	16.61	15.63	71.37	54.62	56.47	206.3	36.06	36.06
Movement LOS	E	B	B	E	B	B	E	D	E	F	D	D
d_A, Approach Delay [s/veh]	24.06			20.80			55.71			148.08		
Approach LOS	C			C			E			F		
d_I, Intersection Delay [s/veh]	68.21											
Intersection LOS	E											
Intersection V/C	0.532											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
I_p,int, Pedestrian LOS Score for Intersection	2.874	2.627	2.653	2.895
Crosswalk LOS	C	B	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	833	583	617	733
d_b, Bicycle Delay [s]	20.42	30.10	28.70	24.07
I_b,int, Bicycle LOS Score for Intersection	2.213	1.825	1.987	2.145
Bicycle LOS	B	A	A	B

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	113.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.108

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	405.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Base Volume Input [veh/h]	408	431	0	0	369	426	0	0	0	319	2	201
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.000	1.000	1.020	1.020	1.000	1.000	1.000	1.020	1.020	1.020
In-Process Volume [veh/h]	304	257	0	0	248	52	0	0	0	183	0	41
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	697	0	0	624	487	0	0	0	508	2	246
Peak Hour Factor	0.917	0.917	1.000	1.000	0.917	0.917	1.000	1.000	1.000	0.917	0.917	0.917
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	196	190	0	0	170	133	0	0	0	138	1	67
Total Analysis Volume [veh/h]	785	760	0	0	680	531	0	0	0	554	2	268
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi											
Signal Group	1	6	0	0	2	0	0	0	0	0	7	4	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	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	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	1.0	0.0
Split [s]	34	64	0	0	30	0	0	0	0	0	26	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	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	3	0	0	0	0	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	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	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	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	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	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]	30	60	26	26		22	22
g / C, Green / Cycle	0.33	0.67	0.29	0.29		0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.43	0.21	0.32	0.37		0.31	0.17
s, saturation flow rate [veh/h]	1810	3618	1900	1645		1810	1617
c, Capacity [veh/h]	603	2412	549	475		442	395
d1, Uniform Delay [s]	30.00	6.33	32.00	32.00		34.00	30.84
k, delay calibration	0.50	0.50	0.50	0.50		0.39	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	147.50	0.34	69.75	138.87		127.66	2.09
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	1.30	0.32	1.10	1.27		1.25	0.68
d, Delay for Lane Group [s/veh]	177.50	6.67	101.75	170.87		161.66	32.93
Lane Group LOS	F	A	F	F		F	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	36.36	2.30	21.43	27.68		25.06	5.42
50th-Percentile Queue Length [ft/ln]	909.03	57.48	535.74	692.09		626.38	135.43
95th-Percentile Queue Length [veh/ln]	53.99	4.14	30.81	41.55		37.48	9.23
95th-Percentile Queue Length [ft/ln]	1349.78	103.46	770.32	1038.71		937.01	230.86

Movement, Approach, & Intersection Results

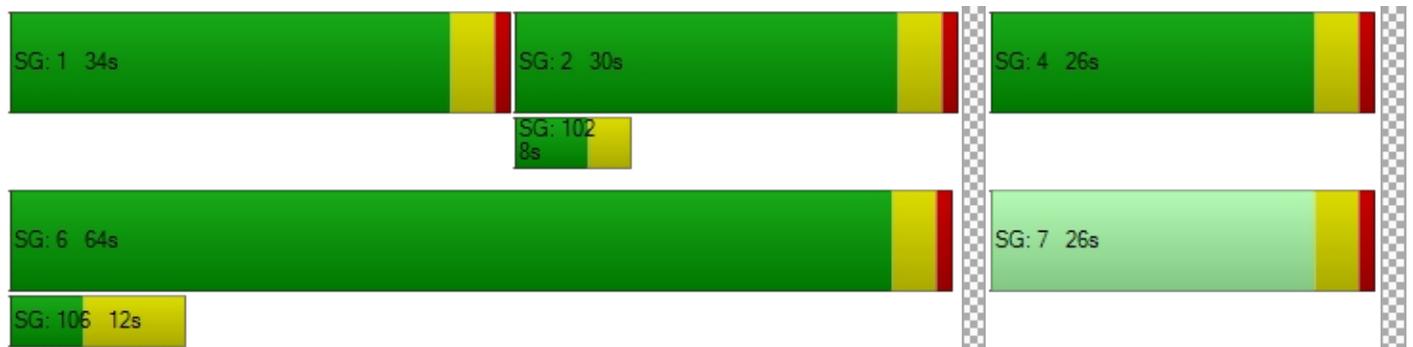
d_M, Delay for Movement [s/veh]	177.5	6.67	0.00	0.00	109.3	170.8	0.00	0.00	0.00	161.6	32.93	32.93
Movement LOS	F	A			F	F				F	C	C
d_A, Approach Delay [s/veh]	93.47		136.31		0.00		119.48					
Approach LOS	F		F		A		F					
d_I, Intersection Delay [s/veh]	113.95											
Intersection LOS	F											
Intersection V/C	1.108											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.710	2.210
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1333	578	0	489
d_b, Bicycle Delay [s]	5.00	22.76	45.00	25.69
I_b,int, Bicycle LOS Score for Intersection	2.834	2.559	4.132	2.919
Bicycle LOS	C	B	D	C

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	73.7
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.010

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	120.0	100.0	100.0	100.0	100.0	415.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Base Volume Input [veh/h]	0	530	403	138	458	0	186	4	423	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.020	1.020	1.020	1.020	1.000	1.020	1.020	1.020	1.000	1.000	1.000
In-Process Volume [veh/h]	0	530	282	6	424	0	32	0	187	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	1071	693	147	891	0	222	4	618	0	0	0
Peak Hour Factor	1.000	0.983	0.983	0.983	0.983	1.000	0.983	0.983	0.983	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	272	176	37	227	0	56	1	157	0	0	0
Total Analysis Volume [veh/h]	0	1090	705	150	906	0	226	4	629	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
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Protec	Permi							
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	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	45	0	11	56	0	0	34	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	3	0	0	7	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
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	
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	41	41	7	52	30	30	
g / C, Green / Cycle	0.46	0.46	0.08	0.58	0.33	0.33	
(v / s)_i Volume / Saturation Flow Rate	0.47	0.54	0.08	0.25	0.13	0.39	
s, saturation flow rate [veh/h]	1900	1669	1810	3618	1811	1615	
c, Capacity [veh/h]	866	760	141	2090	604	538	
d1, Uniform Delay [s]	24.50	24.50	41.50	10.70	22.91	30.00	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.50	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	40.54	94.59	54.10	0.66	0.40	94.41	
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	1.04	1.18	1.07	0.43	0.38	1.17	
d, Delay for Lane Group [s/veh]	65.04	119.09	95.60	11.36	23.31	124.41	
Lane Group LOS	F	F	F	B	C	F	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	25.36	33.68	5.05	4.28	3.70	25.25	
50th-Percentile Queue Length [ft/ln]	633.92	842.06	126.37	106.95	92.44	631.18	
95th-Percentile Queue Length [veh/ln]	34.56	48.52	8.92	7.67	6.66	36.88	
95th-Percentile Queue Length [ft/ln]	863.89	1213.09	223.08	191.75	166.39	922.06	

Movement, Approach, & Intersection Results

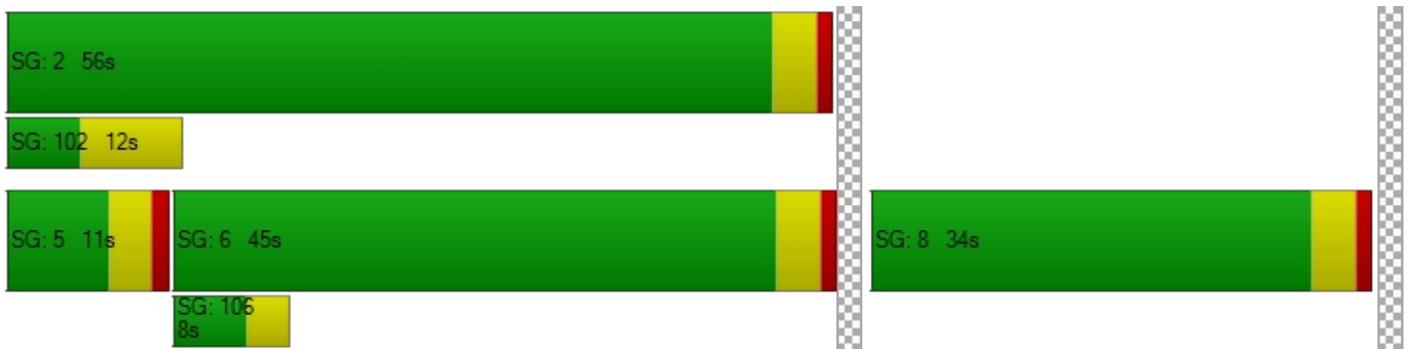
d_M, Delay for Movement [s/veh]	0.00	74.59	119.0	95.60	11.36	0.00	23.31	23.31	124.4	0.00	0.00	0.00
Movement LOS		E	F	F	B		C	C	F			
d_A, Approach Delay [s/veh]		92.07			23.33			97.34			0.00	
Approach LOS		F			C			F			A	
d_I, Intersection Delay [s/veh]		73.72										
Intersection LOS		E										
Intersection V/C		1.010										

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		9.0		9.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		36.45		36.45
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.221		2.262
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		911		1156		667		0
d_b, Bicycle Delay [s]		13.34		8.02		20.00		45.00
I_b,int, Bicycle LOS Score for Intersection		3.040		2.431		2.977		4.132
Bicycle LOS		C		B		C		D

Sequence

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



Intersection Level Of Service Report
Intersection 4: Alder Ave at Renaissance Pkwy

Control Type:	Signalized	Delay (sec / veh):	88.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.971

Intersection Setup

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	305.0	100.0	100.0	280.0	100.0	100.0	315.0	100.0	100.0	315.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Base Volume Input [veh/h]	35	638	39	225	546	121	95	206	41	50	132	185
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
In-Process Volume [veh/h]	0	481	20	247	342	40	28	70	0	18	70	244
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]	36	1132	60	477	899	163	125	280	42	69	205	433
Peak Hour Factor	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	10	299	16	126	238	43	33	74	11	18	54	115
Total Analysis Volume [veh/h]	38	1198	63	505	951	172	132	296	44	73	217	458
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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	29	0	25	34	0	10	26	0	10	26	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	14	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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	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
I1_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
I2, 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]	3	25	25	21	43	43	6	23	23	5	22	22
g / C, Green / Cycle	0.03	0.28	0.28	0.23	0.48	0.48	0.07	0.26	0.26	0.05	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.02	0.33	0.34	0.28	0.30	0.31	0.07	0.09	0.09	0.04	0.11	0.28
s, saturation flow rate [veh/h]	1810	1900	1867	1810	1900	1801	1810	1900	1816	1810	1900	1615
c, Capacity [veh/h]	64	528	519	422	904	857	121	492	470	94	464	395
d1, Uniform Delay [s]	42.79	32.50	32.50	34.50	17.65	17.84	42.00	27.19	27.22	42.13	29.00	34.00
k, delay calibration	0.11	0.50	0.50	0.33	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.34
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.63	108.7	109.9	102.9	3.32	3.73	66.33	0.43	0.46	12.50	0.73	90.10
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	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	0.60	1.20	1.21	1.20	0.63	0.65	1.09	0.35	0.36	0.77	0.47	1.16
d, Delay for Lane Group [s/veh]	51.41	141.2	142.4	137.4	20.98	21.57	108.3	27.61	27.68	54.62	29.73	124.1
Lane Group LOS	D	F	F	F	C	C	F	C	C	D	C	F
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.94	26.37	26.08	20.55	8.40	8.31	4.75	2.86	2.77	1.84	3.79	17.77
50th-Percentile Queue Length [ft/ln]	23.55	659.2	652.1	513.6	210.0	207.7	118.7	71.50	69.29	46.05	94.82	444.2
95th-Percentile Queue Length [veh/ln]	1.70	38.70	38.36	30.77	13.15	13.04	8.55	5.15	4.99	3.32	6.83	26.75
95th-Percentile Queue Length [ft/ln]	42.40	967.5	959.1	769.1	328.8	325.9	213.6	128.7	124.7	82.88	170.6	668.7

Movement, Approach, & Intersection Results

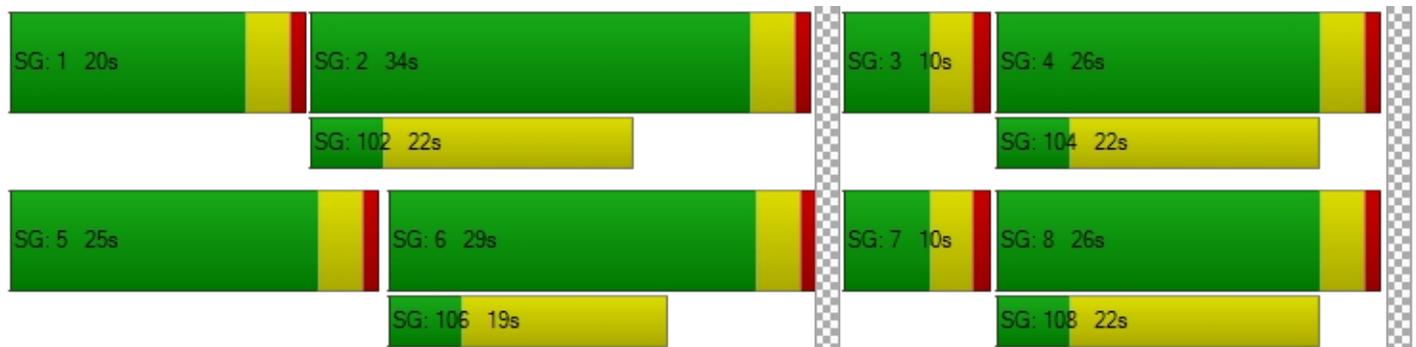
d_M, Delay for Movement [s/veh]	51.41	141.8	142.4	137.4	21.22	21.57	108.3	27.64	27.68	54.62	29.73	124.1
Movement LOS	D	F	F	F	C	C	F	C	C	D	C	F
d_A, Approach Delay [s/veh]	139.23			57.32			50.21			89.94		
Approach LOS	F			E			D			F		
d_I, Intersection Delay [s/veh]	88.05											
Intersection LOS	F											
Intersection V/C	0.971											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	3.071	3.412	2.594	2.825
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	667	489	489
d_b, Bicycle Delay [s]	23.47	20.00	25.69	25.69
I_b,int, Bicycle LOS Score for Intersection	2.631	2.903	1.949	2.177
Bicycle LOS	B	C	A	B

Sequence

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



Rialto Travel Center

Vistro File: K:\...\Updated_Rialto Travel Ctr AM.vistro

Scenario 6 OY 2022 Cum WP AM

Report File: K:\...\6 OY 2022 CUM WP AM.pdf

9/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave at Casmalia St	Signalized	HCM 6th Edition	NB Left	0.705	118.8	F
2	Alder Ave at SR-210 WB Ramps	Signalized	HCM 6th Edition	SB Right	1.107	122.8	F
3	Alder Ave at SR-210 EB Ramps	Signalized	HCM 6th Edition	SB Left	1.147	118.7	F
4	Alder Ave at Renaissance Pkwy	Signalized	HCM 6th Edition	EB Left	1.000	93.7	F
101	Sierra Lakes Pkwy at Truck Dwy (1)	Two-way stop	HCM 6th Edition	NB Right	0.026	9.0	A
102	Sierra Lakes Pkwy at Truck Dwy (2)	Two-way stop	HCM 6th Edition	NB Right	0.028	9.1	A
103	Sierra Lakes Pkwy at Truck Dwy (3)	Two-way stop	HCM 6th Edition	NB Right	0.027	9.2	A
104	Sierra Lakes Pkwy at Truck Dwy (4)	Two-way stop	HCM 6th Edition	NB Right	0.028	9.3	A
105	Sierra Lakes Pkwy at PC Dwy	Two-way stop	HCM 6th Edition	NB Right	0.302	11.1	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 at Casmalia St

Control Type:	Signalized	Delay (sec / veh):	118.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

Intersection Setup

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	2	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	210.0	100.0	100.0	180.0	100.0	100.0	290.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
	79	75	175	8	69	8	13	70	49	261	120	12
Base Volume Input [veh/h]	79	75	175	8	69	8	13	70	49	261	120	12
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
In-Process Volume [veh/h]	56	106	131	0	101	0	0	21	56	111	20	0
Site-Generated Trips [veh/h]	232	0	0	0	0	9	9	18	231	0	18	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]	369	183	310	8	171	17	22	110	337	377	160	12
Peak Hour Factor	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804	0.804
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	115	57	96	2	53	5	7	34	105	117	50	4
Total Analysis Volume [veh/h]	459	228	386	10	213	21	27	137	419	469	199	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	25	55	0	9	39	0	13	41	0	15	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	30	0	0	32	0	0	32	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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]	120	120	120	120	120	120	120	120	120	120	120	120
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
I1_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
I2, 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]	21	58	58	1	39	39	3	33	33	11	41	41
g / C, Green / Cycle	0.18	0.49	0.49	0.01	0.32	0.32	0.03	0.28	0.28	0.09	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.25	0.12	0.24	0.01	0.06	0.01	0.01	0.07	0.26	0.13	0.06	0.06
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1615	3514	1900	1854
c, Capacity [veh/h]	317	923	785	23	1170	522	48	525	447	322	650	634
d1, Uniform Delay [s]	49.50	18.03	20.85	58.81	29.17	27.82	57.75	33.85	42.41	54.50	27.56	27.56
k, delay calibration	0.46	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]	217.9	0.64	2.20	12.32	0.34	0.14	10.19	0.26	22.96	208.9	0.12	0.12
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	1.45	0.25	0.49	0.43	0.18	0.04	0.57	0.26	0.94	1.46	0.17	0.17
d, Delay for Lane Group [s/veh]	267.4	18.67	23.05	71.12	29.52	27.96	67.93	34.11	65.38	263.4	27.68	27.69
Lane Group LOS	F	B	C	E	C	C	E	C	E	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	28.27	3.62	7.24	0.37	2.18	0.42	0.91	3.01	14.22	14.00	2.07	2.03
50th-Percentile Queue Length [ft/ln]	706.8	90.43	181.0	9.30	54.44	10.50	22.87	75.14	355.5	350.1	51.87	50.74
95th-Percentile Queue Length [veh/ln]	43.37	6.51	11.65	0.67	3.92	0.76	1.65	5.41	20.41	22.71	3.73	3.65
95th-Percentile Queue Length [ft/ln]	1084.	162.7	291.3	16.73	98.00	18.90	41.16	135.2	510.1	567.8	93.37	91.32

Movement, Approach, & Intersection Results

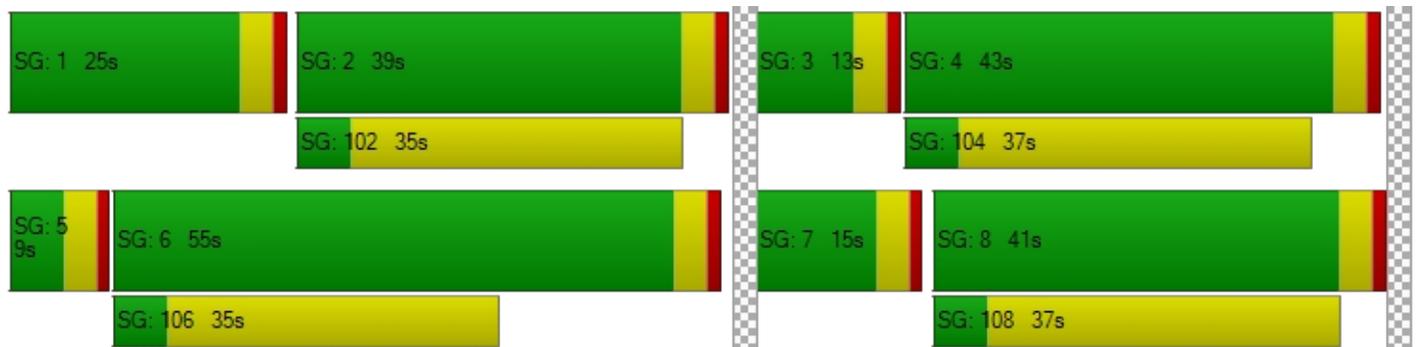
d_M, Delay for Movement [s/veh]	267.4	18.67	23.05	71.12	29.52	27.96	67.93	34.11	65.38	263.4	27.68	27.69
Movement LOS	F	B	C	E	C	C	E	C	E	F	C	C
d_A, Approach Delay [s/veh]	126.68		31.09			58.15			189.59			
Approach LOS	F		C			E			F			
d_I, Intersection Delay [s/veh]	118.81											
Intersection LOS	F											
Intersection V/C	0.705											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
I_p,int, Pedestrian LOS Score for Intersection	3.022	2.607	2.766	2.830
Crosswalk LOS	C	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	850	583	617	650
d_b, Bicycle Delay [s]	19.84	30.10	28.70	27.34
I_b,int, Bicycle LOS Score for Intersection	2.445	1.761	2.041	2.123
Bicycle LOS	B	A	B	B

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	122.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.107

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	405.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Base Volume Input [veh/h]	335	328	0	0	319	379	0	0	0	299	3	285
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.000	1.000	1.020	1.020	1.000	1.000	1.000	1.020	1.020	1.020
In-Process Volume [veh/h]	195	286	0	0	239	30	0	0	0	304	0	6
Site-Generated Trips [veh/h]	0	148	0	0	147	84	0	0	0	0	0	84
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]	537	769	0	0	711	501	0	0	0	609	3	381
Peak Hour Factor	0.902	0.902	1.000	1.000	0.902	0.902	1.000	1.000	1.000	0.902	0.902	0.902
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	149	213	0	0	197	139	0	0	0	169	1	106
Total Analysis Volume [veh/h]	595	853	0	0	788	555	0	0	0	675	3	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
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi											
Signal Group	1	6	0	0	2	0	0	0	0	0	7	4	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	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	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	1.0	0.0
Split [s]	29	58	0	0	29	0	0	0	0	0	32	32	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	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	3	0	0	0	0	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	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	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	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	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	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]	25	54	25	25		28	28
g / C, Green / Cycle	0.28	0.60	0.28	0.28		0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.33	0.24	0.35	0.40		0.37	0.26
s, saturation flow rate [veh/h]	1810	3618	1900	1658		1810	1617
c, Capacity [veh/h]	503	2171	528	461		563	503
d1, Uniform Delay [s]	32.50	9.42	32.50	32.50		31.00	28.97
k, delay calibration	0.44	0.50	0.50	0.50		0.50	0.30
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	99.58	0.54	136.81	217.82		105.85	10.08
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	1.18	0.39	1.27	1.46		1.20	0.84
d, Delay for Lane Group [s/veh]	132.08	9.96	169.31	250.32		136.85	39.05
Lane Group LOS	F	A	F	F		F	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	23.83	3.63	30.48	36.96		28.27	9.67
50th-Percentile Queue Length [ft/ln]	595.75	90.64	762.01	924.12		706.76	241.87
95th-Percentile Queue Length [veh/ln]	35.08	6.53	45.20	56.75		41.26	14.78
95th-Percentile Queue Length [ft/ln]	877.01	163.16	1130.04	1418.79		1031.41	369.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	132.0	9.96	0.00	0.00	181.2	250.3	0.00	0.00	0.00	136.8	39.05	39.05
Movement LOS	F	A			F	F				F	D	D
d_A, Approach Delay [s/veh]	60.14		209.82		0.00		99.07					
Approach LOS	E		F		A		F					
d_I, Intersection Delay [s/veh]	122.81											
Intersection LOS	F											
Intersection V/C	1.107											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.549	2.299
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	556	0	622
d_b, Bicycle Delay [s]	7.20	23.47	45.00	21.36
I_b,int, Bicycle LOS Score for Intersection	2.754	2.668	4.132	3.375
Bicycle LOS	C	B	D	C

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	118.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.147

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	120.0	100.0	100.0	100.0	100.0	415.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Base Volume Input [veh/h]	0	418	296	258	366	0	250	1	461	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.020	1.020	1.020	1.020	1.000	1.020	1.020	1.020	1.000	1.000	1.000
In-Process Volume [veh/h]	0	442	192	15	531	0	40	0	327	0	0	0
Site-Generated Trips [veh/h]	0	64	0	84	63	0	84	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	932	494	362	967	0	379	1	797	0	0	0
Peak Hour Factor	1.000	0.972	0.972	0.972	0.972	1.000	0.972	0.972	0.972	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	240	127	93	249	0	97	0	205	0	0	0
Total Analysis Volume [veh/h]	0	959	508	372	995	0	390	1	820	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
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Protec	Permi							
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	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	34	0	16	50	0	0	40	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	3	0	0	7	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
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	
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	30	30	12	46	36	36	
g / C, Green / Cycle	0.33	0.33	0.13	0.51	0.40	0.40	
(v / s)_i Volume / Saturation Flow Rate	0.39	0.43	0.21	0.28	0.22	0.51	
s, saturation flow rate [veh/h]	1900	1693	1810	3618	1810	1615	
c, Capacity [veh/h]	633	564	241	1849	724	646	
d1, Uniform Delay [s]	30.00	30.00	39.00	14.84	20.66	27.00	
k, delay calibration	0.50	0.50	0.17	0.50	0.12	0.50	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	88.00	147.51	250.82	1.13	0.68	133.16	
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	1.16	1.30	1.54	0.54	0.54	1.27	
d, Delay for Lane Group [s/veh]	118.00	177.51	289.82	15.96	21.35	160.16	
Lane Group LOS	F	F	F	B	C	F	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	27.71	34.02	21.79	6.07	6.18	36.94	
50th-Percentile Queue Length [ft/ln]	692.80	850.58	544.64	151.86	154.50	923.49	
95th-Percentile Queue Length [veh/ln]	39.88	50.80	34.45	10.12	10.26	54.59	
95th-Percentile Queue Length [ft/ln]	996.97	1270.05	861.23	252.91	256.43	1364.74	

Movement, Approach, & Intersection Results

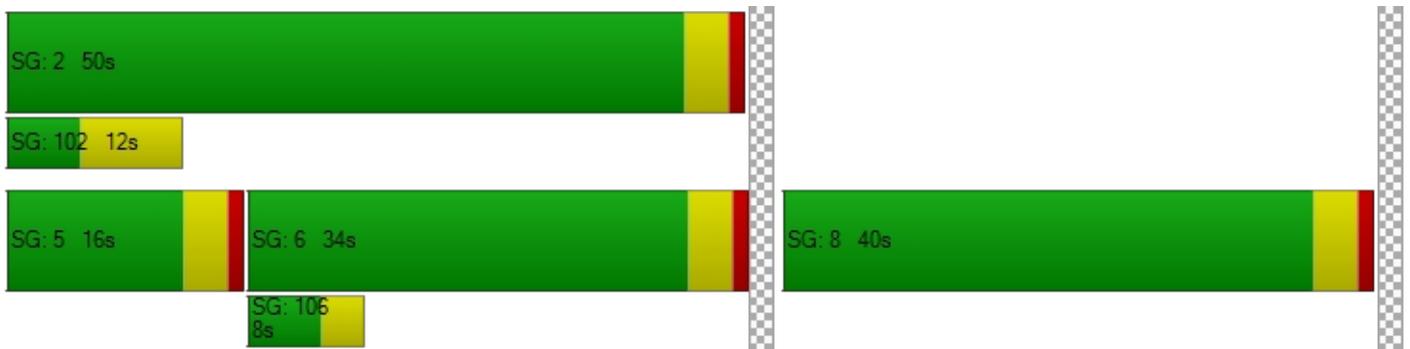
d_M, Delay for Movement [s/veh]	0.00	132.0	177.5	289.8	15.96	0.00	21.35	21.35	160.1	0.00	0.00	0.00
Movement LOS		F	F	F	B		C	C	F			
d_A, Approach Delay [s/veh]	147.76		90.49			115.34			0.00			
Approach LOS	F		F			F			A			
d_I, Intersection Delay [s/veh]	118.70											
Intersection LOS	F											
Intersection V/C	1.147											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.335	2.284
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	667	1022	800	0
d_b, Bicycle Delay [s]	20.00	10.76	16.20	45.00
I_b,int, Bicycle LOS Score for Intersection	2.770	2.687	3.558	4.132
Bicycle LOS	C	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 4: Alder Ave at Renaissance Pkwy

Control Type:	Signalized	Delay (sec / veh):	93.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.000

Intersection Setup

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	305.0	100.0	100.0	280.0	100.0	100.0	315.0	100.0	100.0	315.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
	88	397	17	201	569	63	91	155	51	20	146	215
Base Volume Input [veh/h]	88	397	17	201	569	63	91	155	51	20	146	215
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
In-Process Volume [veh/h]	0	356	23	268	490	18	35	85	0	21	81	276
Site-Generated Trips [veh/h]	0	28	0	18	27	18	18	0	0	0	0	18
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	789	40	491	1097	100	146	243	52	41	230	513
Peak Hour Factor	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.890
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	25	222	11	138	308	28	41	68	15	12	65	144
Total Analysis Volume [veh/h]	101	887	45	552	1233	112	164	273	58	46	258	576
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	9	23	0	27	41	0	10	26	0	14	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	14	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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	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
I1_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
I2, 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]	5	19	19	23	37	37	6	29	29	3	26	26
g / C, Green / Cycle	0.06	0.21	0.21	0.26	0.41	0.41	0.07	0.32	0.32	0.04	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.06	0.25	0.25	0.31	0.35	0.36	0.09	0.09	0.09	0.03	0.14	0.36
s, saturation flow rate [veh/h]	1810	1900	1868	1810	1900	1846	1810	1900	1787	1810	1900	1615
c, Capacity [veh/h]	101	401	394	462	781	759	121	601	565	71	549	467
d1, Uniform Delay [s]	42.50	35.50	35.50	33.50	24.17	24.53	42.00	23.08	23.12	42.63	26.33	32.00
k, delay calibration	0.11	0.50	0.50	0.39	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	42.89	100.7	101.0	102.9	12.07	14.30	173.1	0.25	0.28	9.62	0.63	122.9
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	1.00	1.17	1.17	1.19	0.86	0.89	1.36	0.28	0.29	0.65	0.47	1.23
d, Delay for Lane Group [s/veh]	85.39	136.2	136.5	136.4	36.24	38.84	215.1	23.34	23.39	52.25	26.96	154.9
Lane Group LOS	F	F	F	F	D	D	F	C	C	D	C	F
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.31	19.32	19.03	22.43	14.02	14.55	8.33	2.51	2.40	1.14	4.27	25.11
50th-Percentile Queue Length [ft/ln]	82.68	483.0	475.8	560.7	350.5	363.8	208.2	62.81	60.08	28.62	106.7	627.8
95th-Percentile Queue Length [veh/ln]	5.95	28.80	28.43	33.30	20.16	20.81	14.24	4.52	4.33	2.06	7.66	37.55
95th-Percentile Queue Length [ft/ln]	148.8	720.0	710.6	832.4	504.0	520.2	356.0	113.0	108.1	51.51	191.4	938.7

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	85.39	136.3	136.5	136.4	37.42	38.84	215.1	23.36	23.39	52.25	26.96	154.9
Movement LOS	F	F	F	F	D	D	F	C	C	D	C	F
d_A, Approach Delay [s/veh]	131.41		66.32		86.91		112.08					
Approach LOS	F		E		F		F					
d_I, Intersection Delay [s/veh]	93.66											
Intersection LOS	F											
Intersection V/C	1.000											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	3.072	3.447	2.615	2.870
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	822	489	578
d_b, Bicycle Delay [s]	28.01	15.61	25.69	22.76
I_b,int, Bicycle LOS Score for Intersection	2.412	3.125	1.968	2.286
Bicycle LOS	B	C	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 101: Sierra Lakes Pkwy at Truck Dwy (1)

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	132	0	0	207
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	77	0	0	76
Site-Generated Trips [veh/h]	0	23	18	0	31	18
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	23	230	0	31	305
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	61	0	8	80
Total Analysis Volume [veh/h]	0	24	242	0	33	321
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	12.11	9.05	0.00	0.00	7.76	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.08	0.04
95th-Percentile Queue Length [ft/ln]	2.02	2.02	0.00	0.00	1.90	0.95
d_A, Approach Delay [s/veh]	9.05		0.00		0.72	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.76					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 102: Sierra Lakes Pkwy at Truck Dwy (2)

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	T		T		T	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	132	0	0	207
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	77	0	0	76
Site-Generated Trips [veh/h]	0	23	41	0	31	49
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	1	0	0	2	-2
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	24	253	0	33	334
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	67	0	9	88
Total Analysis Volume [veh/h]	0	25	266	0	35	352
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	12.59	9.12	0.00	0.00	7.82	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.00	0.00	0.08	0.04
95th-Percentile Queue Length [ft/ln]	2.15	2.15	0.00	0.00	2.06	1.03
d_A, Approach Delay [s/veh]	9.12		0.00		0.71	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.74					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 103: Sierra Lakes Pkwy at Truck Dwy (3)

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	132	0	0	207
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	77	0	0	76
Site-Generated Trips [veh/h]	0	23	65	0	31	81
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	23	277	0	31	368
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	73	0	8	97
Total Analysis Volume [veh/h]	0	24	292	0	33	387
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	13.02	9.20	0.00	0.00	7.88	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.08	0.04
95th-Percentile Queue Length [ft/ln]	2.10	2.10	0.00	0.00	1.98	0.99
d_A, Approach Delay [s/veh]	9.20		0.00		0.62	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.65					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 104: Sierra Lakes Pkwy at Truck Dwy (4)

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	← T →		↑		↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Truck Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	132	0	0	207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	0.00
Growth Factor	1.0200	1.0200	1.0200	1.0000	1.0000	1.0200
In-Process Volume [veh/h]	0	0	77	0	0	76
Site-Generated Trips [veh/h]	0	23	88	0	0	112
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	23	300	0	0	399
Peak Hour Factor	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	79	0	0	105
Total Analysis Volume [veh/h]	0	24	316	0	0	420
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.52	9.28	0.00	0.00	0.00	0.00
Movement LOS	B	A	A			A
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.14	2.14	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.28		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.29					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 105: Sierra Lakes Pkwy at PC Dwy

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.302

Intersection Setup

Name	PC Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	PC Dwy		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	132	0	0	207
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	77	0	0	76
Site-Generated Trips [veh/h]	0	183	93	18	165	112
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	61	-31	31	31	-31
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	244	274	49	196	368
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	64	72	13	52	97
Total Analysis Volume [veh/h]	0	257	288	52	206	387
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.30	0.00	0.00	0.17	0.00
d_M, Delay for Movement [s/veh]	23.00	11.06	0.00	0.00	8.51	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.28	1.28	0.00	0.00	0.60	0.30
95th-Percentile Queue Length [ft/ln]	31.93	31.93	0.00	0.00	15.01	7.51
d_A, Approach Delay [s/veh]	11.06		0.00		2.96	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.86					
Intersection LOS	B					

Rialto Travel Center

Vistro File: K:\...\Updated_Rialto Travel Ctr PM.vistro

Scenario 6 OY 2022 Cum WP PM

Report File: K:\...\6 OY 2022 CUM WP PM.pdf

9/19/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Alder Ave at Casmalia St	Signalized	HCM 6th Edition	NB Left	0.699	89.0	F
2	Alder Ave at SR-210 WB Ramps	Signalized	HCM 6th Edition	SB Right	1.181	146.2	F
3	Alder Ave at SR-210 EB Ramps	Signalized	HCM 6th Edition	SB Left	1.071	92.9	F
4	Alder Ave at Renaissance Pkwy	Signalized	HCM 6th Edition	EB Left	1.005	96.7	F
101	Sierra Lakes Pkwy at Truck Dwy (1)	Two-way stop	HCM 6th Edition	NB Right	0.039	10.0	A
102	Sierra Lakes Pkwy at Truck Dwy (2)	Two-way stop	HCM 6th Edition	NB Right	0.044	10.1	B
103	Sierra Lakes Pkwy at Truck Dwy (3)	Two-way stop	HCM 6th Edition	NB Right	0.040	10.2	B
104	Sierra Lakes Pkwy at Truck Dwy (4)	Two-way stop	HCM 6th Edition	NB Right	0.041	10.3	B
105	Sierra Lakes Pkwy at PC Dwy	Two-way stop	HCM 6th Edition	NB Right	0.302	12.5	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 at Casmalia St

Control Type:	Signalized	Delay (sec / veh):	89.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.699

Intersection Setup

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	2	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	210.0	100.0	100.0	180.0	100.0	100.0	290.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			Casmalia St		
	95	74	245	24	102	28	11	258	130	301	194	5
Base Volume Input [veh/h]	95	74	245	24	102	28	11	258	130	301	194	5
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
In-Process Volume [veh/h]	45	149	102	0	135	0	0	18	45	117	17	0
Site-Generated Trips [veh/h]	219	0	0	0	0	8	7	15	222	0	15	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]	361	224	352	24	239	37	18	296	400	424	230	5
Peak Hour Factor	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907	0.907
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	100	62	97	7	66	10	5	82	110	117	63	1
Total Analysis Volume [veh/h]	398	247	388	26	264	41	20	326	441	467	254	6
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	24	54	0	9	39	0	9	41	0	16	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	30	0	0	30	0	0	32	0	0	32	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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]	120	120	120	120	120	120	120	120	120	120	120	120
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
I1_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
I2, 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]	20	54	54	3	37	37	3	35	35	12	44	44
g / C, Green / Cycle	0.17	0.45	0.45	0.02	0.31	0.31	0.02	0.29	0.29	0.10	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.22	0.13	0.24	0.01	0.07	0.03	0.01	0.17	0.27	0.13	0.07	0.07
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	1900	1615	3514	1900	1885
c, Capacity [veh/h]	302	858	729	46	1121	501	39	551	468	351	700	694
d1, Uniform Delay [s]	50.00	20.76	23.77	57.84	30.82	29.31	58.08	36.51	41.60	54.00	25.70	25.70
k, delay calibration	0.36	0.50	0.50	0.11	0.50	0.50	0.11	0.13	0.37	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	159.9	0.85	2.77	10.66	0.49	0.32	9.96	1.22	24.16	152.3	0.13	0.13
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	1.32	0.29	0.53	0.57	0.24	0.08	0.51	0.59	0.94	1.33	0.19	0.19
d, Delay for Lane Group [s/veh]	209.9	21.60	26.54	68.50	31.31	29.63	68.04	37.73	65.77	206.3	25.83	25.83
Lane Group LOS	F	C	C	E	C	C	E	D	E	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	22.08	4.31	7.95	0.89	2.81	0.85	0.69	7.92	15.07	12.51	2.41	2.39
50th-Percentile Queue Length [ft/ln]	551.9	107.7	198.7	22.32	70.28	21.31	17.17	198.0	376.6	312.7	60.22	59.77
95th-Percentile Queue Length [veh/ln]	33.69	7.71	12.58	1.61	5.06	1.53	1.24	12.54	21.43	20.21	4.34	4.30
95th-Percentile Queue Length [ft/ln]	842.1	192.8	314.4	40.18	126.5	38.36	30.91	313.3	535.7	505.3	108.4	107.5

Movement, Approach, & Intersection Results

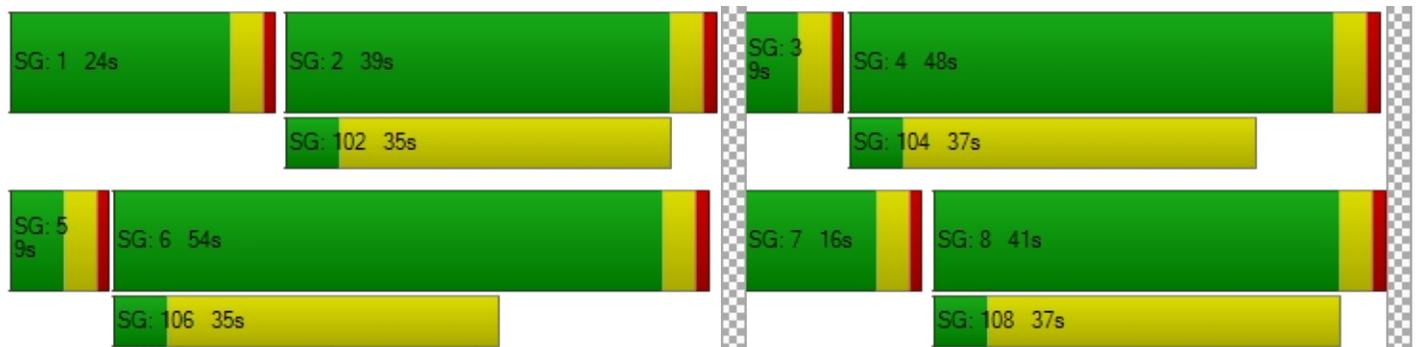
d_M, Delay for Movement [s/veh]	209.9	21.60	26.54	68.50	31.31	29.63	68.04	37.73	65.77	206.3	25.83	25.83
Movement LOS	F	C	C	E	C	C	E	D	E	F	C	C
d_A, Approach Delay [s/veh]	96.02			34.02			54.21			141.80		
Approach LOS	F			C			D			F		
d_I, Intersection Delay [s/veh]	89.02											
Intersection LOS	F											
Intersection V/C	0.699											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0			9.0			9.0			9.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	51.34			51.34			51.34			51.34		
I_p,int, Pedestrian LOS Score for Intersection	3.032			2.632			2.844			2.905		
Crosswalk LOS	C			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	833			583			617			733		
d_b, Bicycle Delay [s]	20.42			30.10			28.70			24.07		
I_b,int, Bicycle LOS Score for Intersection	2.412			1.833			2.209			2.159		
Bicycle LOS	B			A			B			B		

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	146.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.181

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	115.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	405.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
Base Volume Input [veh/h]	408	431	0	0	369	426	0	0	0	319	2	201
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.000	1.000	1.020	1.020	1.000	1.000	1.000	1.020	1.020	1.020
In-Process Volume [veh/h]	304	257	0	0	248	52	0	0	0	183	0	41
Site-Generated Trips [veh/h]	0	136	0	0	136	86	0	0	0	0	0	83
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	833	0	0	760	573	0	0	0	508	2	329
Peak Hour Factor	0.917	0.917	1.000	1.000	0.917	0.917	1.000	1.000	1.000	0.917	0.917	0.917
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	196	227	0	0	207	156	0	0	0	138	1	90
Total Analysis Volume [veh/h]	785	908	0	0	829	625	0	0	0	554	2	359
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi										
Signal Group	1	6	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	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	1.0	1.0	0.0
Split [s]	34	64	0	0	30	0	0	0	0	26	26	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	3	0	0	0	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	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	2.0	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]	30	60	26	26		22	22
g / C, Green / Cycle	0.33	0.67	0.29	0.29		0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.43	0.25	0.38	0.44		0.31	0.22
s, saturation flow rate [veh/h]	1810	3618	1900	1650		1810	1616
c, Capacity [veh/h]	603	2412	549	477		442	395
d1, Uniform Delay [s]	30.00	6.68	32.00	32.00		34.00	33.08
k, delay calibration	0.50	0.50	0.50	0.50		0.39	0.21
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	147.50	0.45	158.36	246.94		127.66	14.61
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	1.30	0.38	1.32	1.53		1.25	0.91
d, Delay for Lane Group [s/veh]	177.50	7.13	190.36	278.94		161.66	47.69
Lane Group LOS	F	A	F	F		F	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	36.36	2.90	34.94	42.06		25.06	9.04
50th-Percentile Queue Length [ft/ln]	909.03	72.57	873.51	1051.61		626.38	226.07
95th-Percentile Queue Length [veh/ln]	53.99	5.23	52.12	64.97		37.48	13.97
95th-Percentile Queue Length [ft/ln]	1349.78	130.63	1302.90	1624.26		937.01	349.36

Movement, Approach, & Intersection Results

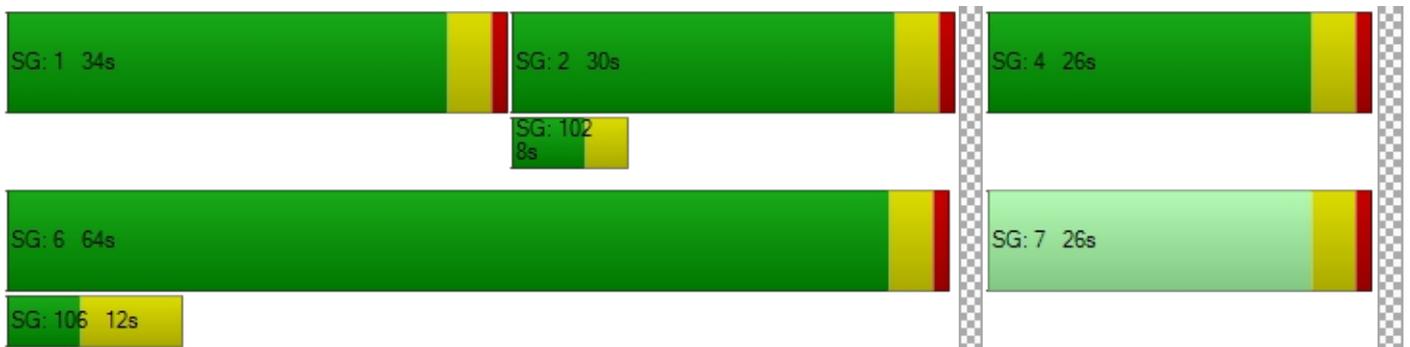
d_M, Delay for Movement [s/veh]	177.5	7.13	0.00	0.00	201.2	278.9	0.00	0.00	0.00	161.6	47.69	47.69
Movement LOS	F	A			F	F				F	D	D
d_A, Approach Delay [s/veh]	86.12		234.65		0.00		116.69					
Approach LOS	F		F		A		F					
d_I, Intersection Delay [s/veh]	146.18											
Intersection LOS	F											
Intersection V/C	1.181											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.802	2.239
Crosswalk LOS	F	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1333	578	0	489
d_b, Bicycle Delay [s]	5.00	22.76	45.00	25.69
I_b,int, Bicycle LOS Score for Intersection	2.956	2.759	4.132	3.069
Bicycle LOS	C	C	D	C

Sequence

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



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

Control Type:	Signalized	Delay (sec / veh):	92.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.071

Intersection Setup

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	120.0	100.0	100.0	100.0	100.0	415.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
Base Volume Input [veh/h]	0	530	403	138	458	0	186	4	423	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.000	1.020	1.020	1.020	1.020	1.000	1.020	1.020	1.020	1.000	1.000	1.000
In-Process Volume [veh/h]	0	530	282	6	424	0	32	0	187	0	0	0
Site-Generated Trips [veh/h]	0	53	0	84	52	0	83	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	1124	693	231	943	0	305	4	618	0	0	0
Peak Hour Factor	1.000	0.983	0.983	0.983	0.983	1.000	0.983	0.983	0.983	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	286	176	59	240	0	78	1	157	0	0	0
Total Analysis Volume [veh/h]	0	1143	705	235	959	0	310	4	629	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
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Protec	Permi							
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	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	45	0	11	56	0	0	34	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	3	0	0	7	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
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	
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	41	41	7	52	30	30	
g / C, Green / Cycle	0.46	0.46	0.08	0.58	0.33	0.33	
(v / s)_i Volume / Saturation Flow Rate	0.49	0.55	0.13	0.27	0.17	0.39	
s, saturation flow rate [veh/h]	1900	1675	1810	3618	1811	1615	
c, Capacity [veh/h]	866	763	141	2090	604	538	
d1, Uniform Delay [s]	24.50	24.50	41.50	10.92	24.20	30.00	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.50	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	50.26	107.08	308.12	0.73	0.70	94.41	
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	1.07	1.21	1.67	0.46	0.52	1.17	
d, Delay for Lane Group [s/veh]	74.76	131.58	349.62	11.64	24.89	124.41	
Lane Group LOS	F	F	F	B	C	F	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	27.69	36.45	14.99	4.62	5.35	25.25	
50th-Percentile Queue Length [ft/ln]	692.34	911.17	374.64	115.59	133.81	631.18	
95th-Percentile Queue Length [veh/ln]	38.15	52.89	24.55	8.15	9.15	36.88	
95th-Percentile Queue Length [ft/ln]	953.69	1322.35	613.78	203.76	228.67	922.06	

Movement, Approach, & Intersection Results

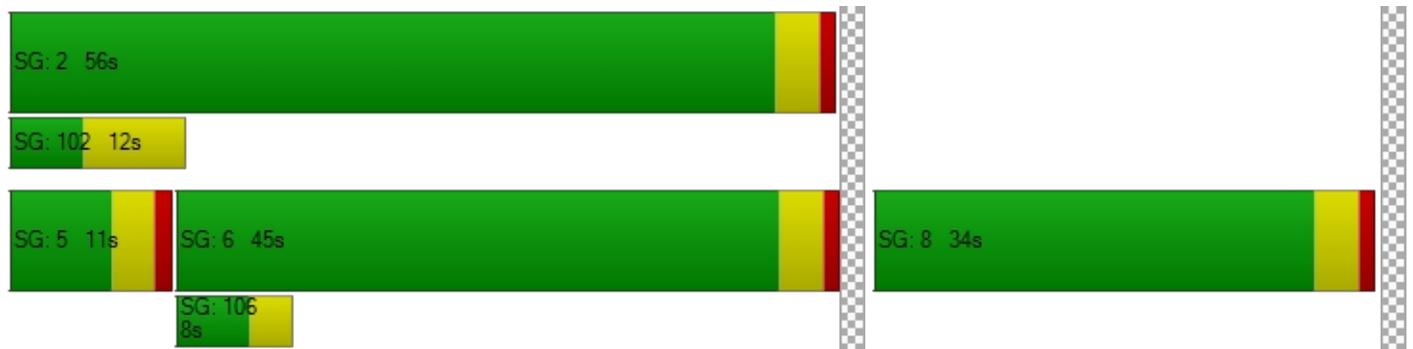
d_M, Delay for Movement [s/veh]	0.00	85.65	131.5	349.6	11.64	0.00	24.89	24.89	124.4	0.00	0.00	0.00
Movement LOS		F	F	F	B		C	C	F			
d_A, Approach Delay [s/veh]	103.17			78.16			91.27			0.00		
Approach LOS	F			E			F			A		
d_I, Intersection Delay [s/veh]	92.86											
Intersection LOS	F											
Intersection V/C	1.071											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.248	2.345
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	911	1156	667	0
d_b, Bicycle Delay [s]	13.34	8.02	20.00	45.00
I_b,int, Bicycle LOS Score for Intersection	3.084	2.545	3.116	4.132
Bicycle LOS	C	B	C	D

Sequence

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



Intersection Level Of Service Report
Intersection 4: Alder Ave at Renaissance Pkwy

Control Type:	Signalized	Delay (sec / veh):	96.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.005

Intersection Setup

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐ ⇐ ⇐			⇐ ⇐ ⇐			⇐ ⇐ ⇐			⇐ ⇐ ⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	305.0	100.0	100.0	280.0	100.0	100.0	315.0	100.0	100.0	315.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
Base Volume Input [veh/h]	35	638	39	225	546	121	95	206	41	50	132	185
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Factor	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020	1.020
In-Process Volume [veh/h]	0	481	20	247	342	40	28	70	0	18	70	244
Site-Generated Trips [veh/h]	0	23	0	15	22	15	15	0	0	0	0	15
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	1155	60	492	921	178	140	280	42	69	205	448
Peak Hour Factor	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	10	306	16	130	244	47	37	74	11	18	54	119
Total Analysis Volume [veh/h]	38	1222	63	521	975	188	148	296	44	73	217	474
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protec	Permi	Permi									
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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	29	0	25	34	0	10	26	0	10	26	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	14	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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										
Maximum Recall	No	No										
Pedestrian Recall	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	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
I1_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
I2, 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]	3	25	25	21	43	43	6	23	23	5	22	22
g / C, Green / Cycle	0.03	0.28	0.28	0.23	0.48	0.48	0.07	0.26	0.26	0.05	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.02	0.34	0.34	0.29	0.31	0.32	0.08	0.09	0.09	0.04	0.11	0.29
s, saturation flow rate [veh/h]	1810	1900	1867	1810	1900	1796	1810	1900	1816	1810	1900	1615
c, Capacity [veh/h]	64	528	519	422	904	855	121	492	470	94	464	395
d1, Uniform Delay [s]	42.79	32.50	32.50	34.50	17.92	18.16	42.00	27.19	27.22	42.13	29.00	34.00
k, delay calibration	0.11	0.50	0.50	0.35	0.50	0.50	0.11	0.11	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	1.00
d2, Incremental Delay [s]	8.63	117.9	119.2	119.2	3.64	4.18	117.2	0.43	0.46	12.50	0.73	107.0
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	0.60	1.23	1.23	1.23	0.65	0.67	1.23	0.35	0.36	0.77	0.47	1.20
d, Delay for Lane Group [s/veh]	51.41	150.4	151.7	153.7	21.55	22.34	159.2	27.62	27.67	54.62	29.73	141.0
Lane Group LOS	D	F	F	F	C	C	F	C	C	D	C	F
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.94	27.71	27.43	22.45	8.85	8.83	6.45	2.86	2.77	1.84	3.79	19.62
50th-Percentile Queue Length [ft/ln]	23.55	692.7	685.7	561.2	221.3	220.7	161.3	71.53	69.26	46.05	94.82	490.6
95th-Percentile Queue Length [veh/ln]	1.70	40.81	40.48	33.72	13.73	13.70	11.27	5.15	4.99	3.32	6.83	29.64
95th-Percentile Queue Length [ft/ln]	42.40	1020.	1012.	843.1	343.3	342.5	281.8	128.7	124.6	82.88	170.6	741.0

Movement, Approach, & Intersection Results

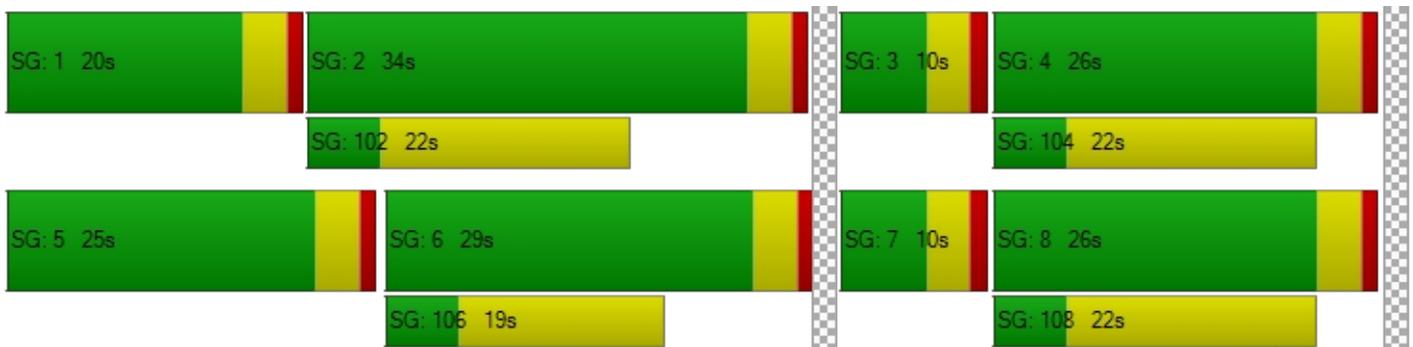
d_M, Delay for Movement [s/veh]	51.41	151.0	151.7	153.7	21.87	22.34	159.2	27.64	27.67	54.62	29.73	141.0
Movement LOS	D	F	F	F	C	C	F	C	C	D	C	F
d_A, Approach Delay [s/veh]	148.22		62.71		67.56		101.16					
Approach LOS	F		E		E		F					
d_I, Intersection Delay [s/veh]	96.72											
Intersection LOS	F											
Intersection V/C	1.005											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	3.086	3.448	2.604	2.836
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	667	489	489
d_b, Bicycle Delay [s]	23.47	20.00	25.69	25.69
I_b,int, Bicycle LOS Score for Intersection	2.651	2.949	1.962	2.190
Bicycle LOS	B	C	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 101: Sierra Lakes Pkwy at Truck Dwy (1)

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.039

Intersection Setup

Name	Truck Driveway (1)		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Truck Driveway (1)		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	399	0	0	317
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	63	0	0	62
Site-Generated Trips [veh/h]	0	28	15	0	35	15
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	28	485	0	35	400
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	128	0	9	105
Total Analysis Volume [veh/h]	0	29	511	0	37	421
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.01	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	16.59	9.99	0.00	0.00	8.50	0.00
Movement LOS	C	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.00	0.00	0.11	0.05
95th-Percentile Queue Length [ft/ln]	3.01	3.01	0.00	0.00	2.70	1.35
d_A, Approach Delay [s/veh]	9.99		0.00		0.69	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.61					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 102: Sierra Lakes Pkwy at Truck Dwy (2)

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.044

Intersection Setup

Name			Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⇐		⇐		⇐⇐	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name			Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	399	0	0	317
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	63	0	0	62
Site-Generated Trips [veh/h]	0	28	43	0	35	50
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	2	0	0	2	-2
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	30	513	0	37	433
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	8	135	0	10	114
Total Analysis Volume [veh/h]	0	32	540	0	39	456
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.01	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	17.55	10.13	0.00	0.00	8.60	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.00	0.00	0.12	0.06
95th-Percentile Queue Length [ft/ln]	3.41	3.41	0.00	0.00	2.92	1.46
d_A, Approach Delay [s/veh]	10.13		0.00		0.68	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.62					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 103: Sierra Lakes Pkwy at Truck Dwy (3)

Control Type:	Two-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.040

Intersection Setup

Name	PC Driveway		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⇌		⇌		⇌⇌	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	PC Driveway		Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	399	0	0	317
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	63	0	0	62
Site-Generated Trips [veh/h]	0	28	71	0	35	86
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	28	541	0	35	471
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	142	0	9	124
Total Analysis Volume [veh/h]	0	29	569	0	37	496
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.01	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	18.37	10.22	0.00	0.00	8.69	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.00	0.00	0.11	0.06
95th-Percentile Queue Length [ft/ln]	3.15	3.15	0.00	0.00	2.84	1.42
d_A, Approach Delay [s/veh]	10.22		0.00		0.60	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.55					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 104: Sierra Lakes Pkwy at Truck Dwy (4)

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.041

Intersection Setup

Name			Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	T		↑		↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	399	0	0	317
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	0.00
Growth Factor	1.0200	1.0200	1.0200	1.0000	1.0000	1.0200
In-Process Volume [veh/h]	0	0	63	0	0	62
Site-Generated Trips [veh/h]	0	28	98	0	0	121
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	28	568	0	0	506
Peak Hour Factor	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	149	0	0	133
Total Analysis Volume [veh/h]	0	29	598	0	0	533
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	17.34	10.34	0.00	0.00	0.00	0.00
Movement LOS	C	B	A			A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.22	3.22	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.34		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.26					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 105: Sierra Lakes Pkwy at PC Dwy

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.302

Intersection Setup

Name			Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⇐		⇐		⇐⇐	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Sierra Lakes Pkwy		Sierra Lakes Pkwy	
Base Volume Input [veh/h]	0	0	399	0	0	317
Base Volume Adjustment Factor	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
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	63	0	0	62
Site-Generated Trips [veh/h]	0	148	111	15	136	121
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	50	-25	25	26	-26
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	198	556	40	162	480
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	52	146	11	43	126
Total Analysis Volume [veh/h]	0	208	585	42	171	505
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.30	0.01	0.00	0.18	0.01
d_M, Delay for Movement [s/veh]	32.37	12.48	0.00	0.00	9.54	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.27	1.27	0.00	0.00	0.64	0.32
95th-Percentile Queue Length [ft/ln]	31.81	31.81	0.00	0.00	16.06	8.03
d_A, Approach Delay [s/veh]	12.48		0.00		2.41	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.80					
Intersection LOS	B					

Option 3: 2 EB Right - Split Phase

Number	1											
Intersection	Alder Ave at Casmalia St											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			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]	79	75	175	8	69	8	13	70	49	261	120	12
Total Analysis Volume [veh/h]	459	228	386	10	213	21	27	137	419	469	199	15

Intersection Settings

Cycle Length [s]	130											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	0.00											
Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									6,8			
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	5	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	41	0	0	39	0	9	41	41	9	41	0
Walk [s]	0	5	0	0	5	0	0	5	5	0	5	0
Pedestrian Clearance [s]	0	30	0	0	30	0	0	32	32	0	32	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	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	
Maximum Recall		No			No		No	No	No	No	No	
Pedestrian Recall		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	0.29	0.29	0.29	0.29	0.29	0.29	0.02	0.10	0.65	0.20	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.13	0.13	0.13	0.24	0.01	0.06	0.01	0.01	0.07	0.26	0.17	0.06	0.06
so, Base Saturation Flow per Lane [pc/h/ln]	1900	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	1812	1729	1615	1810	3618	1615	1810	1900	1615	2796	1900	1854
c, Capacity [veh/h]	522	523	499	466	522	1044	466	43	183	1050	568	524	512
X, volume / capacity	0.45	0.45	0.44	0.83	0.02	0.20	0.05	0.62	0.75	0.40	0.83	0.21	0.21
d, Delay for Lane Group [s/veh]	40.49	40.49	40.61	58.78	33.16	35.41	33.52	76.57	63.23	11.89	55.22	36.32	36.33
Lane Group LOS	D	D	D	E	C	D	C	E	E	B	E	D	D

Critical Lane Group	No	No	No	Yes	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.23	6.24	5.97	13.11	0.23	2.54	0.49	1.02	4.53	5.21	7.43	2.57	2.51
50th-Percentile Queue Length [ft/ln]	155.8	156.0	149.2	327.8	5.75	63.52	12.23	25.52	113.26	130.36	185.77	64.24	62.83
95th-Percentile Queue Length [veh/ln]	10.33	10.34	9.98	19.05	0.41	4.57	0.88	1.84	8.02	8.96	11.90	4.63	4.52
95th-Percentile Queue Length [ft/ln]	258.1	258.4	249.4	476.2	10.34	114.34	22.02	45.94	200.53	223.99	297.53	115.63	113.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.49	40.61	58.78	33.16	35.41	33.52	76.57	63.23	11.89	55.22	36.33	36.33
Movement LOS	D	D	E	C	D	C	E	E	B	E	D	D
Critical Movement	No	No	No	No	No	No	Yes	No	No	No	No	No
d_A, Approach Delay [s/veh]	47.09			35.15			26.95			49.30		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	42.00											
Intersection LOS	D											
Intersection V/C	0.538											

Option 2: Copy of Feasibility Report Improvements

Number	2											
Intersection	Alder Ave at SR-210 WB Ramps											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
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]	335	328	0	0	319	379	0	0	0	299	3	285
Total Analysis Volume [veh/h]	595	853	0	0	788	555	0	0	0	675	3	422

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	0.00											
Control Type	Protecte	Permiss										
Signal Group	1	6	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	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	1.0	1.0	0.0
Split [s]	18	55	0	0	37	0	0	0	0	35	35	0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	3	0	0	0	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	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	0.16	0.57	0.37	0.37		0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.17	0.24	0.35	0.40		0.37	0.26
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900		1900	1900
Arrival type	3		3			3	3
s, saturation flow rate [veh/h]	3514	3618	1900	1658		1810	1617
c, Capacity [veh/h]	547	2050	697	608		623	557
X, volume / capacity	1.09	0.42	0.96	1.10		1.08	0.76
d, Delay for Lane Group [s/veh]	85.20	11.68	54.24	96.99		90.08	31.75
Lane Group LOS	F	B	D	F		F	C

Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	9.19	4.11	17.60	23.13		23.33	8.64
50th-Percentile Queue Length [ft/ln]	229.72	102.68	439.96	578.15		583.18	215.97
95th-Percentile Queue Length [veh/ln]	14.70	7.39	24.48	33.13		32.94	13.46
95th-Percentile Queue Length [ft/ln]	367.62	184.82	611.95	828.20		823.60	336.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	85.20	11.68	0.00	0.00	60.56	96.99	0.00	0.00	0.00	90.08	31.75	31.75
Movement LOS	F	B			E	F				F	C	C
Critical Movement	No	No			No	Yes				No	No	No
d_A, Approach Delay [s/veh]	41.89				75.61		0.00		67.54			
Approach LOS	D				E		A		E			
d_I, Intersection Delay [s/veh]	60.78											
Intersection LOS	E											
Intersection V/C	0.947											

Option 2: Copy of Feasibility Report Improvements

Number	3											
Intersection	Alder Ave at SR-210 EB Ramps											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
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]	0	418	296	258	366	0	250	1	461	0	0	0
Total Analysis Volume [veh/h]	0	959	508	372	995	0	390	1	820	0	0	0

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	0.00											
Control Type	Permiss	Permiss	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	5	0	5	5	0	0	5	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	36	0	12	48	0	0	42	0	0	0	0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	3	0	0	7	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, 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
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	0.36	0.36	0.09	0.49	0.42	0.42	
(v / s)_i Volume / Saturation Flow Rate	0.39	0.43	0.11	0.28	0.22	0.51	
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900	
Arrival type	3		3		3		3
s, saturation flow rate [veh/h]	1900	1693	3514	3618	1810	1615	
c, Capacity [veh/h]	676	602	312	1769	764	682	
X, volume / capacity	1.09	1.22	1.19	0.56	0.51	1.20	
d, Delay for Lane Group [s/veh]	89.22	141.84	134.08	17.52	19.69	130.78	
Lane Group LOS	F	F	F	B	B	F	

Critical Lane Group	NO	Yes	Yes	NO	NO	Yes	
50th-Percentile Queue Length [veh/ln]	24.21	30.38	7.29	6.49	5.88	33.49	
50th-Percentile Queue Length [ft/ln]	605.33	759.40	182.32	162.13	146.97	837.24	
95th-Percentile Queue Length [veh/ln]	34.12	44.58	12.43	10.66	9.86	48.65	
95th-Percentile Queue Length [ft/ln]	852.90	1114.48	310.63	266.55	246.38	1216.26	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	101.59	141.84	134.08	17.52	0.00	19.69	19.69	130.78	0.00	0.00	0.00
Movement LOS		F	F	F	B		B	B	F			
Critical Movement		No	Yes	No	No		No	No	No			
d_A, Approach Delay [s/veh]	115.53			49.24			94.91			0.00		
Approach LOS	F			D			F			A		
d_I, Intersection Delay [s/veh]	86.95											
Intersection LOS	F											
Intersection V/C	1.047											

Option 1: Feasibility Report Improvements

Number	4											
Intersection	Alder Ave at Renaissance Pkwy											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
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]	88	397	17	201	569	63	91	155	51	20	146	215
Total Analysis Volume [veh/h]	101	887	45	552	1233	112	164	273	58	46	258	576

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	0.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	9	26	0	18	35	0	12	33	0	13	34	0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	14	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	0.06	0.24	0.24	0.16	0.34	0.34	0.09	0.38	0.38	0.04	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.06	0.25	0.25	0.16	0.35	0.36	0.09	0.09	0.09	0.03	0.14	0.36
so, Base Saturation Flow per Lane [pc/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	1868	3514	1900	1846	1810	1900	1787	1810	1900	1615
c, Capacity [veh/h]	101	464	457	547	654	636	161	726	683	72	633	538
X, volume / capacity	1.00	1.01	1.01	1.01	1.03	1.06	1.02	0.23	0.24	0.64	0.41	1.07
d, Delay for Lane Group [s/veh]	85.39	78.76	79.14	58.32	72.32	80.98	79.01	19.01	19.05	51.52	23.56	88.84
Lane Group LOS	F	F	F	F	F	F	F	B	B	D	C	F

Critical Lane Group	Yes	NO	NO	NO	NO	Yes	Yes	NO	NO	NO	NO	Yes
50th-Percentile Queue Length [veh/ln]	3.31	15.05	14.85	7.15	20.36	21.31	5.05	2.19	2.10	1.13	3.92	19.20
50th-Percentile Queue Length [ft/ln]	82.68	376.37	371.20	178.71	508.99	532.66	126.25	54.87	52.48	28.37	97.94	479.88
95th-Percentile Queue Length [veh/ln]	5.95	21.57	21.32	11.58	28.31	29.96	8.79	3.95	3.78	2.04	7.05	27.56
95th-Percentile Queue Length [ft/ln]	148.82	539.19	532.90	289.60	707.66	748.88	219.86	98.76	94.46	51.07	176.29	688.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	85.39	78.94	79.14	58.32	76.25	80.98	79.01	19.03	19.05	51.52	23.56	88.84
Movement LOS	F	E	E	F	E	F	F	B	B	D	C	F
Critical Movement	No	Yes										
d_A, Approach Delay [s/veh]	79.58			71.31			38.90			67.75		
Approach LOS	E			E			D			E		
d_I, Intersection Delay [s/veh]	68.84											
Intersection LOS	E											
Intersection V/C	0.867											

Option 3: EB Right - Split Phase

Number	1											
Intersection	Alder Ave at Casmalia St											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Alder Ave			Alder Ave			Sierra Lakes Pkwy			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]	95	74	245	24	102	28	11	258	130	301	194	5
Total Analysis Volume [veh/h]	398	247	388	26	264	41	20	326	441	467	254	6

Intersection Settings

Cycle Length [s]	130											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	0.00											
Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									6,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	5	5	5	0
Maximum Green [s]	5	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]	9	49	0	9	26	0	25	28	28	27	30	0
Walk [s]	0	5	0	0	5	0	0	5	5	0	5	0
Pedestrian Clearance [s]	0	21	0	0	17	0	0	17	17	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11, 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	
Maximum Recall		No			No		No	No	No	No	No	
Pedestrian Recall		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	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.02	0.19	0.68	0.18	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.12	0.12	0.12	0.24	0.01	0.07	0.03	0.01	0.17	0.27	0.17	0.07	0.07
so, Base Saturation Flow per Lane [pc/h/ln]	1900	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	1825	1729	1615	1810	3618	1615	1810	1900	1615	2796	1900	1885
c, Capacity [veh/h]	466	470	446	416	466	932	416	36	353	1099	497	649	644
X, volume / capacity	0.47	0.47	0.47	0.93	0.06	0.28	0.10	0.56	0.92	0.40	0.94	0.20	0.20
d, Delay for Lane Group [s/veh]	44.03	44.00	44.18	77.06	36.56	39.39	37.22	75.92	72.46	10.21	62.32	30.41	30.41
Lane Group LOS	D	D	D	E	D	D	D	E	E	B	E	C	C

Critical Lane Group	No	No	No	Yes	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.12	6.17	5.87	15.21	0.64	3.38	1.02	0.76	12.00	4.89	7.85	2.79	2.77
50th-Percentile Queue Length [ft/ln]	153.0	154.3	146.7	380.3	15.91	84.38	25.57	19.05	299.99	122.20	196.35	69.87	69.35
95th-Percentile Queue Length [veh/ln]	10.18	10.25	9.84	21.61	1.15	6.08	1.84	1.37	17.68	8.51	12.45	5.03	4.99
95th-Percentile Queue Length [ft/ln]	254.5	256.1	246.0	540.2	28.64	151.89	46.02	34.29	442.01	212.85	311.25	125.77	124.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.02	44.15	77.06	36.56	39.39	37.22	75.92	72.46	10.21	62.32	30.41	30.41
Movement LOS	D	D	E	D	D	D	E	E	B	E	C	C
Critical Movement	No	No	Yes	No								
d_A, Approach Delay [s/veh]	56.46			38.90			37.67			50.91		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	47.90											
Intersection LOS	D											
Intersection V/C	0.652											

Option 2: Copy of Feasibility Report Improvements

Number	2											
Intersection	Alder Ave at SR-210 WB Ramps											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Alder Ave			Alder Ave			SR-210 WB On-Ramp			SR-210 WB Off-Ramp		
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]	408	431	0	0	369	426	0	0	0	319	2	201
Total Analysis Volume [veh/h]	785	908	0	0	829	625	0	0	0	554	2	359

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	0.00											
Control Type	Protecte	Permiss										
Signal Group	1	6	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	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	1.0	1.0	0.0
Split [s]	22	61	0	0	39	0	0	0	0	29	29	0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	3	0	0	0	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	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	0.20	0.63	0.39	0.39		0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.22	0.25	0.38	0.44		0.31	0.22
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900		1900	1900
Arrival type	3		3			3	3
s, saturation flow rate [veh/h]	3514	3618	1900	1650		1810	1616
c, Capacity [veh/h]	703	2291	739	642		503	449
X, volume / capacity	1.12	0.40	0.98	1.13		1.10	0.80
d, Delay for Lane Group [s/veh]	93.46	8.59	56.64	105.72		99.28	36.62
Lane Group LOS	F	A	E	F		F	D

Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	12.73	3.42	19.56	26.00		19.88	7.85
50th-Percentile Queue Length [ft/ln]	318.20	85.53	489.07	649.93		497.07	196.24
95th-Percentile Queue Length [veh/ln]	19.63	6.16	26.82	37.37		28.82	12.44
95th-Percentile Queue Length [ft/ln]	490.83	153.95	670.42	934.16		720.56	311.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	93.46	8.59	0.00	0.00	62.68	105.72	0.00	0.00	0.00	99.28	36.62	36.62
Movement LOS	F	A			E	F				F	D	D
Critical Movement	No	No			No	Yes				No	No	No
d_A, Approach Delay [s/veh]	47.94				81.18		0.00		74.56			
Approach LOS	D				F		A		E			
d_I, Intersection Delay [s/veh]	65.84											
Intersection LOS	E											
Intersection V/C	0.970											

Option 2: Copy of Feasibility Report Improvements

Number	3											
Intersection	Alder Ave at SR-210 EB Ramps											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Alder Ave			Alder Ave			SR-210 EB Off-Ramp			SR-210 EB On-Ramp		
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]	0	530	403	138	458	0	186	4	423	0	0	0
Total Analysis Volume [veh/h]	0	1143	705	235	959	0	310	4	629	0	0	0

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	0.00											
Control Type	Permiss	Permiss	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	5	0	5	5	0	0	5	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	46	0	10	56	0	0	34	0	0	0	0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	3	0	0	7	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11, 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
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	0.47	0.47	0.07	0.58	0.33	0.33	
(v / s)_i Volume / Saturation Flow Rate	0.49	0.55	0.07	0.27	0.17	0.39	
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900	
Arrival type	3		3		3		3
s, saturation flow rate [veh/h]	1900	1675	3514	3618	1811	1615	
c, Capacity [veh/h]	887	781	234	2090	604	538	
X, volume / capacity	1.04	1.18	1.00	0.46	0.52	1.17	
d, Delay for Lane Group [s/veh]	65.75	118.99	70.08	11.64	24.89	124.41	
Lane Group LOS	F	F	F	B	C	F	

Critical Lane Group	NO	Yes	Yes	NO	NO	Yes	
50th-Percentile Queue Length [veh/ln]	26.14	34.60	3.37	4.62	5.35	25.25	
50th-Percentile Queue Length [ft/ln]	653.60	864.97	84.15	115.59	133.81	631.18	
95th-Percentile Queue Length [veh/ln]	35.64	49.80	6.06	8.15	9.15	36.88	
95th-Percentile Queue Length [ft/ln]	890.97	1245.05	151.48	203.76	228.67	922.06	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	75.95	118.99	70.08	11.64	0.00	24.89	24.89	124.41	0.00	0.00	0.00
Movement LOS		E	F	F	B		C	C	F			
Critical Movement		No	No	No	No		No	No	Yes			
d_A, Approach Delay [s/veh]	92.37			23.15			91.27			0.00		
Approach LOS	F			C			F			A		
d_I, Intersection Delay [s/veh]	71.37											
Intersection LOS	E											
Intersection V/C	1.008											

Option 1: Feasibility Report Improvements

Number	4											
Intersection	Alder Ave at Renaissance Pkwy											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Alder Ave			Alder Ave			Renaissance Pkwy			Renaissance Pkwy		
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]	35	638	39	225	546	121	95	206	41	50	132	185
Total Analysis Volume [veh/h]	38	1222	63	521	975	188	148	296	44	73	217	474

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	0.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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	33	0	17	36	0	11	26	0	14	29	0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	14	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	0.03	0.32	0.32	0.14	0.43	0.43	0.08	0.30	0.30	0.05	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.02	0.34	0.34	0.15	0.31	0.32	0.08	0.09	0.09	0.04	0.11	0.29
so, Base Saturation Flow per Lane [pc/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	1867	3514	1900	1796	1810	1900	1816	1810	1900	1615
c, Capacity [veh/h]	64	612	602	508	820	775	141	575	549	96	528	449
X, volume / capacity	0.60	1.06	1.06	1.03	0.72	0.74	1.05	0.30	0.30	0.76	0.41	1.06
d, Delay for Lane Group [s/veh]	51.34	82.97	84.02	64.17	26.48	27.67	91.08	24.38	24.43	53.58	27.01	84.58
Lane Group LOS	D	F	F	F	C	C	F	C	C	D	C	F

Critical Lane Group	No	No	Yes	Yes	NO	NO	Yes	NO	NO	NO	NO	Yes
50th-Percentile Queue Length [veh/ln]	0.94	20.80	20.62	7.03	10.12	10.13	4.88	2.64	2.56	1.82	3.57	15.35
50th-Percentile Queue Length [ft/ln]	23.53	520.08	515.55	175.74	252.88	253.21	121.95	66.02	63.92	45.52	89.23	383.72
95th-Percentile Queue Length [veh/ln]	1.69	29.33	29.15	11.51	15.33	15.35	8.64	4.75	4.60	3.28	6.42	22.50
95th-Percentile Queue Length [ft/ln]	42.36	733.29	728.72	287.67	383.28	383.69	215.98	118.83	115.05	81.94	160.62	562.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.34	83.47	84.02	64.17	26.95	27.67	91.08	24.40	24.43	53.58	27.01	84.58
Movement LOS	D	F	F	F	C	C	F	C	C	D	C	F
Critical Movement	No	No	No	No	No	No	Yes	No	No	No	No	No
d_A, Approach Delay [s/veh]	82.57			38.54			44.63			65.26		
Approach LOS	F			D			D			E		
d_I, Intersection Delay [s/veh]	57.71											
Intersection LOS	E											
Intersection V/C	0.865											

APPENDIX E

CUMULATIVE PROJECTS INFORMATION

Enter only in blue cells Yellow cells calculate

Int. #: 1 Alder Ave at Sierra Lakes Pkwy/Casmalia St

Mirror distribution? Y Entire Intersection

Mirror distribution?

TOTAL CUMULATIVE PROJECTS TRAFFIC												
Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	75	0	40	0	0	21	56	56	0	0
AM Out	56	38	56	0	0	0	0	0	55	20	0	0
AM Tot	56	38	131	0	40	0	0	21	56	111	20	0
PM In	0	0	57	0	33	0	0	18	45	45	0	0
PM Out	45	32	45	0	0	0	0	0	72	17	0	0
PM Tot	45	32	102	0	33	0	0	18	45	117	17	0

Zone # 1 Sater Bros

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%							
Y	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
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	205	0	0	0	0	10	0	0	0	0	0	0	0
AM Out	184	0	9	0	0	0	0	0	0	0	0	0	0
PM In	185	0	0	0	0	9	0	0	0	0	0	0	0
PM Out	170	0	8	0	0	0	0	0	0	0	0	0	0

Zone # 2 Fuel / FF / Market

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%				10%	10%		
Y	10%	5%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	5%	0%	0%	0%	10%	10%	0%	0%
PM Out	10%	5%	10%	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	557	0	0	0	0	28	0	0	0	56	56	0	0
AM Out	556	56	28	56	0	0	0	0	0	0	0	0	0
PM In	454	0	0	0	0	23	0	0	0	45	45	0	0
PM Out	454	45	23	45	0	0	0	0	0	0	0	0	0

Zone # 3 Warehouses on Baseline West of Alder - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	112	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	52	0	0	0	0	0	0	0	0	0	0	0	0
PM In	62	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	114	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 4 Warehouses on Baseline West of Alder - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	142	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	41	0	0	0	0	0	0	0	0	0	0	0	0
PM In	47	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	144	0	0	0	0	0	0	0	0	0	0	0	0

Int. #: 1 Alder Ave at Sierra Lakes Pkwy/Casmalia St

Zone # 5 Morin Warehouse - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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 # 6 Morin Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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 # 7 Warehouse (SEC Casmalia/Linden)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			80%					5%				
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	80%	5%	0%
AM Out												
PM In	0%	0%	80%	0%	0%	0%	0%	5%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	80%	5%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	25	0	0	20	0	0	0	0	1	0	0	0	0
AM Out	24	0	0	0	0	0	0	0	0	0	19	1	0
PM In	26	0	0	21	0	0	0	0	1	0	0	0	0
PM Out	25	0	0	0	0	0	0	0	0	0	20	1	0

Zone # 8 Fuel Station /Fast Food SWC Ayala/Casmalia

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			10%					10%				
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	0%
AM Out												
PM In	0%	0%	10%	0%	0%	0%	0%	10%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	202	0	0	20	0	0	0	0	20	0	0	0	0
AM Out	188	0	0	0	0	0	0	0	0	0	19	19	0
PM In	174	0	0	17	0	0	0	0	17	0	0	0	0
PM Out	164	0	0	0	0	0	0	0	0	0	16	16	0

Zone # 9 East Casmalia Warehouse

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			45%									
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	0%	0%
AM Out												
PM In	0%	0%	45%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	78	0	0	35	0	0	0	0	0	0	0	0	0
AM Out	37	0	0	0	0	0	0	0	0	0	17	0	0
PM In	43	0	0	19	0	0	0	0	0	0	0	0	0
PM Out	80	0	0	0	0	0	0	0	0	0	36	0	0

Int. #: 1 Alder Ave at Sierra Lakes Pkwy/Casmalia St

Zone # 10 Ayala Shopping Center

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					2%							
Y	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	2%	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	48	0	0	0	0	1	0	0	0	0	0	0	0
AM Out	40	0	1	0	0	0	0	0	0	0	0	0	0
PM In	58	0	0	0	0	1	0	0	0	0	0	0	0
PM Out	39	0	1	0	0	0	0	0	0	0	0	0	0

Zone # 11 Hotel

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					1%							
Y	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	1%	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	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 # 12 Crow Holding (N/S Baseline E/O Ayala) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	39	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	15	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	41	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 13 Crow Holding (N/S Baseline E/O Ayala) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	11	0	0	0	0	0	0	0	0	0	0	0	0
PM In	15	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	52	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 14 Orbis (NEC Renaissance and Laurel) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Int. #: 1 Alder Ave at Sierra Lakes Pkwy/Casmalia St

Zone # 15 Orbis (NEC Renaissance and Laurel) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	10	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	2	0	0	0	0	0	0	0	0	0	0	0	0
PM In	3	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	11	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 22 0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%							
Y	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Zone # 23 0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%							
Y	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Zone # 24 0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Zone # 25 Emaar Enterprise Homes-Not included since it looks like it's been built for a while

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Zone # 26 B+B Plastics - Trip Assignment from study

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												

Pk Hr	T Gen	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	0

		Int. #: 1 Alder Ave at Sierra Lakes Pkwy/Casmalia St																				
Y		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
AM Out																						
PM In		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
PM Out		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
AM Out		0	0	0	0	0	0	0	0	0	0	0										
PM In		0	0	0	0	0	0	0	0	0	0	0										
PM Out		0	0	0	0	0	0	0	0	0	0	0										

Enter only in blue cells Yellow cells calculate

Int. #: 2 Alder Ave at SR-210 WB Ramps

N

TOTAL CUMULATIVE PROJECTS TRAFFIC												
Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	69	0	0	152	0	0	0	0	303	0	6
AM Out	179	149	0	0	43	13	0	0	0	0	0	0
AM Tot	179	218	0	0	195	13	0	0	0	303	0	6
PM In	0	50	0	0	125	0	0	0	0	180	0	7
PM Out	245	124	0	0	54	19	0	0	0	0	0	0
PM Tot	245	174	0	0	179	19	0	0	0	180	0	7

Zone # 1 Sater Bros

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%					17%		
N	17%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	205	0	0	0	0	10	0	0	0	0	35	0	0
AM Out	184	31	9	0	0	0	0	0	0	0	0	0	0
PM In	185	0	0	0	0	9	0	0	0	0	31	0	0
PM Out	170	29	8	0	0	0	0	0	0	0	0	0	0

Zone # 2 Fuel / FF / Market

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					25%					20%		
N	20%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	20%	25%										
PM In	0%	0%	0%	0%	25%	0%	0%	0%	0%	20%	0%	0%
PM Out	20%	25%	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	557	0	0	0	0	139	0	0	0	0	111	0	0
AM Out	556	111	139	0	0	0	0	0	0	0	0	0	0
PM In	454	0	0	0	0	114	0	0	0	0	91	0	0
PM Out	454	91	114	0	0	0	0	0	0	0	0	0	0

Zone # 3 Warehouses on Baseline West of Alder - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										20%		
N	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	15%											
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	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	112	0	0	0	0	0	0	0	0	0	22	0	0
AM Out	52	8	0	0	0	0	0	0	0	0	0	0	0
PM In	62	0	0	0	0	0	0	0	0	0	12	0	0
PM Out	114	17	0	0	0	0	0	0	0	0	0	0	0

Zone # 4 Warehouses on Baseline West of Alder - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										50%		
N	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	50%											
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%
PM Out	50%	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	142	0	0	0	0	0	0	0	0	0	71	0	0
AM Out	41	20	0	0	0	0	0	0	0	0	0	0	0
PM In	47	0	0	0	0	0	0	0	0	0	23	0	0
PM Out	144	72	0	0	0	0	0	0	0	0	0	0	0

Zone # 5 Morin Warehouse - PC

Int. #: 2 Alder Ave at SR-210 WB Ramps

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%					15%		
N	15%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	15%	5%										
PM In	0%	0%	0%	0%	5%	0%	0%	0%	0%	15%	0%	0%
PM Out	15%	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	28	0	0	0	0	1	0	0	0	0	4	0	0
AM Out	8	1	0	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	1	0	0	0	0	2	0	0
PM Out	29	4	1	0	0	0	0	0	0	0	0	0	0

Zone # 6 Morin Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										55%		
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	49	0	0	0	0	0	0	0	0	0	27	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	9	0	0
PM Out	49	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 7 Warehouse (SEC Casmalia/Linden)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		55%										25%
N	0%	0%	0%	0%	55%	25%	0%	0%	0%	0%	0%	0%
AM Out					55%	25%						
PM In	0%	55%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%
PM Out	0%	0%	0%	0%	55%	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	25	0	14	0	0	0	0	0	0	0	0	0	6
AM Out	24	0	0	0	0	13	6	0	0	0	0	0	0
PM In	26	0	14	0	0	0	0	0	0	0	0	0	7
PM Out	25	0	0	0	0	14	6	0	0	0	0	0	0

Zone # 8 Fuel Station /Fast Food SWC Ayala/Casmalia

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		10%										
N	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%
AM Out					10%							
PM In	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	10%	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	202	0	20	0	0	0	0	0	0	0	0	0	0
AM Out	188	0	0	0	0	19	6	0	0	0	0	0	0
PM In	174	0	17	0	0	0	0	0	0	0	0	0	0
PM Out	164	0	0	0	0	16	0	0	0	0	0	0	0

Zone # 9 East Casmalia Warehouse

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		45%										
N	0%	0%	0%	0%	30%	15%	0%	0%	0%	0%	0%	0%
AM Out					30%	15%						
PM In	0%	45%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	30%	15%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	78	0	35	0	0	0	0	0	0	0	0	0	0
AM Out	37	0	0	0	0	11	6	0	0	0	0	0	0
PM In	43	0	19	0	0	0	0	0	0	0	0	0	0
PM Out	80	0	0	0	0	24	12	0	0	0	0	0	0

Zone # 10 Ayala Shopping Center

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					2%							
N	0%	2%	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	48	0	0	0	0	1	0	0	0	0	0	0	0

Int. #:	2	Alder Ave at SR-210 WB Ramps										
AM Out	2%											
PM In	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

AM Out	40	0	1	0	0	0	0	0	0	0	0	0
PM In	58	0	0	0	0	1	0	0	0	0	0	0
PM Out	39	0	1	0	0	0	0	0	0	0	0	0

Zone # 11 Hotel

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					1%							
N	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%
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 # 12 Crow Holding (N/S Baseline E/O Ayala) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										20%		
N	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	15%											
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	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	39	0	0	0	0	0	0	0	0	0	8	0	0
AM Out	15	2	0	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	0	0	0	0	0	4	0	0
PM Out	41	6	0	0	0	0	0	0	0	0	0	0	0

Zone # 13 Crow Holding (N/S Baseline E/O Ayala) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										50%		
N	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	50%											
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%
PM Out	50%	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	25	0	0
AM Out	11	6	0	0	0	0	0	0	0	0	0	0	0
PM In	15	0	0	0	0	0	0	0	0	0	8	0	0
PM Out	52	26	0	0	0	0	0	0	0	0	0	0	0

Zone # 14 Orbis (NEC Renaissance and Laurel) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 15 Orbis (NEC Renaissance and Laurel) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	10	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	2	0	0	0	0	0	0	0	0	0	0	0	0
PM In	3	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	11	0	0	0	0	0	0	0	0	0	0	0	0

Int. #: 2 Alder Ave at SR-210 WB Ramps

Zone # 22 0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%							
N	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Zone # 23 0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%							
N	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Zone # 24 0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Zone # 25 Emaar Enterprise Homes-Not included since it looks like it's been built for a while

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Zone # 26 B+B Plastics - Trip Assignment from study

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Int. #: 3 Alder Ave at SR-210 EB Ramps

N

TOTAL CUMULATIVE PROJECTS TRAFFIC													
Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	51	0	0	457	0	18	0	269	0	0	0
AM Out		0	329	190	6	37	0	0	0	0	0	0	0
AM Tot		0	380	190	6	494	0	18	0	269	0	0	0
PM In		0	38	0	0	304	0	13	0	167	0	0	0
PM Out		0	369	280	6	48	0	0	0	0	0	0	0
PM Tot		0	407	280	6	352	0	13	0	167	0	0	0

Zone # 1 Sater Bros

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					22%				17%			
N	0%	22%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		22%	17%									
PM In	0%	0%	0%	0%	22%	0%	0%	0%	17%		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	205	0	0	0	0	45	0	0	0	35	0	0	0
AM Out	184	0	40	31	0	0	0	0	0	0	0	0	0
PM In	185	0	0	0	0	41	0	0	0	31	0	0	0
PM Out	170	0	37	29	0	0	0	0	0	0	0	0	0

Zone # 2 Fuel / FF / Market

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					45%				20%			
N	0%	45%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		45%	20%									
PM In	0%	0%	0%	0%	45%	0%	0%	0%	20%	0%	0%	0%
PM Out	0%	45%	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	557	0	0	0	0	251	0	0	0	111	0	0	0
AM Out	556	0	250	111	0	0	0	0	0	0	0	0	0
PM In	454	0	0	0	0	204	0	0	0	91	0	0	0
PM Out	454	0	204	91	0	0	0	0	0	0	0	0	0

Zone # 3 Warehouses on Baseline West of Alder - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					20%				15%			
N	0%	15%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		15%	20%									
PM In	0%	0%	0%	0%	20%	0%	0%	0%	15%	0%	0%	0%
PM Out	0%	15%	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	112	0	0	0	0	22	0	0	0	17	0	0	0
AM Out	52	0	8	10	0	0	0	0	0	0	0	0	0
PM In	62	0	0	0	0	12	0	0	0	9	0	0	0
PM Out	114	0	17	23	0	0	0	0	0	0	0	0	0

Zone # 4 Warehouses on Baseline West of Alder - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					50%				50%			
N	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		50%	50%									
PM In	0%	0%	0%	0%	50%	0%	0%	0%	50%	0%	0%	0%
PM Out	0%	50%	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	142	0	0	0	0	71	0	0	0	71	0	0	0
AM Out	41	0	20	20	0	0	0	0	0	0	0	0	0
PM In	47	0	0	0	0	23	0	0	0	23	0	0	0
PM Out	144	0	72	72	0	0	0	0	0	0	0	0	0

Zone # 5 Morin Warehouse - PC

Int. #: 3 Alder Ave at SR-210 EB Ramps

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					20%				10%			
N	0%	20%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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 # 6 Morin Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					55%							
N	0%	0%	55%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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 # 7 Warehouse (SEC Casmalia/Linden)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		30%					25%					
N	0%	0%	0%	25%	30%	0%	0%	0%	0%	0%	0%	0%
AM Out				25%	30%							
PM In	0%	30%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	25%	30%	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	25	0	8	0	0	0	0	6	0	0	0	0	0
AM Out	24	0	0	0	6	7	0	0	0	0	0	0	0
PM In	26	0	8	0	0	0	0	7	0	0	0	0	0
PM Out	25	0	0	0	6	8	0	0	0	0	0	0	0

Zone # 8 Fuel Station /Fast Food SWC Ayala/Casmalia

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		10%										
N	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%
AM Out					10%							
PM In	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	10%	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	202	0	20	0	0	0	0	0	0	0	0	0	0
AM Out	188	0	0	0	0	19	0	0	0	0	0	0	0
PM In	174	0	17	0	0	0	0	0	0	0	0	0	0
PM Out	164	0	0	0	0	16	0	0	0	0	0	0	0

Zone # 9 East Casmalia Warehouse

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		30%					15%					
N	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%
AM Out					30%							
PM In	0%	30%	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	30%	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	78	0	23	0	0	0	0	12	0	0	0	0	0
AM Out	37	0	0	0	0	11	0	0	0	0	0	0	0
PM In	43	0	13	0	0	0	0	6	0	0	0	0	0
PM Out	80	0	0	0	0	24	0	0	0	0	0	0	0

Zone # 10 Ayala Shopping Center

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					2%							
N	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		2%										

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	48	0	0	0	0	1	0	0	0	0	0	0	0
AM Out	40	0	1	0	0	0	0	0	0	0	0	0	0

Int. #: 3 Alder Ave at SR-210 EB Ramps

PM In	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

PM In	58	0	0	0	0	1	0	0	0	0	0	0	0
PM Out	39	0	1	0	0	0	0	0	0	0	0	0	0

Zone # 11 Hotel

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					1%				2%			
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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 # 12 Crow Holding (N/S Baseline E/O Ayala) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					20%				15%			
N	0%	15%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		15%	20%									
PM In	0%	0%	0%	0%	20%	0%	0%	0%	15%	0%	0%	0%
PM Out	0%	15%	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	39	0	0	0	0	8	0	0	0	6	0	0	0
AM Out	15	0	2	3	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	4	0	0	0	3	0	0	0
PM Out	41	0	6	8	0	0	0	0	0	0	0	0	0

Zone # 13 Crow Holding (N/S Baseline E/O Ayala) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					50%				50%			
N	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		50%	50%									
PM In	0%	0%	0%	0%	50%	0%	0%	0%	50%	0%	0%	0%
PM Out	0%	50%	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	49	0	0	0	0	25	0	0	0	25	0	0	0
AM Out	11	0	6	6	0	0	0	0	0	0	0	0	0
PM In	15	0	0	0	0	8	0	0	0	8	0	0	0
PM Out	52	0	26	26	0	0	0	0	0	0	0	0	0

Zone # 14 Orbis (NEC Renaissance and Laurel) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 15 Orbis (NEC Renaissance and Laurel) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	10	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	2	0	0	0	0	0	0	0	0	0	0	0	0
PM In	3	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	11	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 22 0

Int. #: 3 Alder Ave at SR-210 EB Ramps

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%							
N	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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%

Zone # 23 0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%							
N	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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%

Zone # 24 0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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%

Zone # 25 Emaar Enterprise Homes-Not included since it looks like it's been built for a while

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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%

Zone # 26 B+B Plastics - Trip Assignment from study

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Pk Hr	T Gen	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	0
AM Out	0	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	0
PM Out	0	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	0	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	0
PM In	0	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	0

Pk Hr	T Gen	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	0
AM Out	0	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	0
PM Out	0	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	0	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	0
PM In	0	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	0

Enter only in blue cells Yellow cells calculate

Int. #: 4 Alder Ave at Renaissance Pkwy

Y

TOTAL CUMULATIVE PROJECTS TRAFFIC												
Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	55	23	170	411	0	23	82	0	0	0	91
AM Out	0	265	0	40	43	17	0	0	0	21	80	169
AM Tot	0	320	23	210	454	17	23	82	0	21	80	260
PM In	0	44	20	138	240	0	18	69	0	0	0	47
PM Out	0	380	0	89	49	21	0	0	0	18	67	138
PM Tot	0	424	20	227	289	21	18	69	0	18	67	185

Zone # 1 Sater Bros

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		8%		12%	8%	6%	6%	0%	0%	0%	0%	12%
Y	0%	0%	0%	12%	8%	6%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	8%	0%	0%	0%	0%	6%	0%	0%	0%	0%	12%
PM Out	0%	0%	0%	12%	8%	6%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	205	0	16	0	0	0	0	12	0	0	0	0	25
AM Out	184	0	0	0	22	15	11	0	0	0	0	0	0
PM In	185	0	15	0	0	0	0	11	0	0	0	0	22
PM Out	170	0	0	0	20	14	10	0	0	0	0	0	0

Zone # 2 Fuel / FF / Market

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				30%	35%			10%				
Y	0%	35%	0%	0%	0%	0%	0%	0%	0%	0%	10%	30%
AM Out												
PM In	0%	0%	0%	30%	35%	0%	0%	10%	0%	0%	0%	0%
PM Out	0%	35%	0%	0%	0%	0%	0%	0%	0%	0%	10%	30%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	557	0	0	0	167	195	0	0	56	0	0	0	0
AM Out	556	0	195	0	0	0	0	0	0	0	56	167	0
PM In	454	0	0	0	136	159	0	0	45	0	0	0	0
PM Out	454	0	159	0	0	0	0	0	0	0	45	136	0

Zone # 3 Warehouses on Baseline West of Alder - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					35%							
Y	0%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	35%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	35%	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	112	0	0	0	0	39	0	0	0	0	0	0	0
AM Out	52	0	18	0	0	0	0	0	0	0	0	0	0
PM In	62	0	0	0	0	22	0	0	0	0	0	0	0
PM Out	114	0	40	0	0	0	0	0	0	0	0	0	0

Zone # 4 Warehouses on Baseline West of Alder - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					100%							
Y	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	100%	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	142	0	0	0	0	142	0	0	0	0	0	0	0
AM Out	41	0	41	0	0	0	0	0	0	0	0	0	0
PM In	47	0	0	0	0	47	0	0	0	0	0	0	0
PM Out	144	0	144	0	0	0	0	0	0	0	0	0	0

Zone # 5 Morin Warehouse - PC

Int. #: 4 Alder Ave at Renaissance Pkwy

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					30%							
N	0%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		35%										
PM In	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	35%	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	8	0	0	0	0	0	0	0
AM Out	8	0	3	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	3	0	0	0	0	0	0	0
PM Out	29	0	10	0	0	0	0	0	0	0	0	0	0

Zone # 6 Morin Warehouse - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					55%							
Y	0%	55%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	55%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	55%	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	27	0	0	0	0	0	0	0
AM Out	14	0	8	0	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	27	0	0	0	0	0	0	0	0	0	0

Zone # 7 Warehouse (SEC Casmalia/Linden)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		10%					10%					10%
Y	0%	0%	0%	10%	10%	10%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	10%	0%	0%	0%	0%	10%	0%	0%	0%	0%	10%
PM Out	0%	0%	0%	10%	10%	10%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	25	0	3	0	0	0	0	3	0	0	0	0	3
AM Out	24	0	0	0	2	2	2	0	0	0	0	0	0
PM In	26	0	3	0	0	0	0	3	0	0	0	0	3
PM Out	25	0	0	0	3	3	3	0	0	0	0	0	0

Zone # 8 Fuel Station /Fast Food SWC Ayala/Casmalia

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		10%	10%					10%				
Y	0%	0%	0%	0%	10%	0%	0%	0%	0%	10%	10%	0%
AM Out												
PM In	0%	10%	10%	0%	0%	0%	0%	10%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	10%	0%	0%	0%	0%	10%	10%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	202	0	20	20	0	0	0	0	20	0	0	0	0
AM Out	188	0	0	0	0	19	0	0	0	0	19	19	0
PM In	174	0	17	17	0	0	0	0	17	0	0	0	0
PM Out	164	0	0	0	0	16	0	0	0	0	16	16	0

Zone # 9 East Casmalia Warehouse

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		20%					10%					
Y	0%	0%	0%	0%	20%	10%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	20%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	20%	10%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	78	0	16	0	0	0	0	8	0	0	0	0	0
AM Out	37	0	0	0	0	7	4	0	0	0	0	0	0
PM In	43	0	9	0	0	0	0	4	0	0	0	0	0
PM Out	80	0	0	0	0	16	8	0	0	0	0	0	0

Zone # 10 Ayala Shopping Center

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			3%	2%				3%				
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	3%	2%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	48	0	0	1	1	0	0	0	1	0	0	0	0

Int. #: 4 Alder Ave at Renaissance Pkwy

AM Out												
PM In	0%	0%	3%	2%	0%	0%	0%	3%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	3%	2%

AM Out	40	0	0	0	0	0	0	0	0	0	0	1	1	1
PM In	58	0	0	2	1	0	0	0	2	0	0	0	0	0
PM Out	39	0	0	0	0	0	0	0	0	0	0	1	1	1

Zone # 11 Hotel

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			3%	3%				10%				
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	10%	3%
AM Out												
PM In	0%	0%	3%	3%	0%	0%	0%	10%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	10%	3%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	52	0	0	2	2	0	0	0	5	0	0	0	0
AM Out	38	0	0	0	0	0	0	0	0	0	1	4	1
PM In	46	0	0	1	1	0	0	0	5	0	0	0	0
PM Out	48	0	0	0	0	0	0	0	0	0	1	5	1

Zone # 12 Crow Holding (N/S Baseline E/O Ayala) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												35%
Y	0%	0%	0%	35%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%
PM Out	0%	0%	0%	35%	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	39	0	0	0	0	0	0	0	0	0	0	0	14
AM Out	15	0	0	0	5	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	0	0	0	0	0	0	0	7
PM Out	41	0	0	0	14	0	0	0	0	0	0	0	0

Zone # 13 Crow Holding (N/S Baseline E/O Ayala) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												100%
Y	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
PM Out	0%	0%	0%	100%	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	49
AM Out	11	0	0	0	11	0	0	0	0	0	0	0	0
PM In	15	0	0	0	0	0	0	0	0	0	0	0	15
PM Out	52	0	0	0	52	0	0	0	0	0	0	0	0

Zone # 14 Orbis (NEC Renaissance and Laurel) - PC

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 15 Orbis (NEC Renaissance and Laurel) - Trucks

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	10	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	2	0	0	0	0	0	0	0	0	0	0	0	0
PM In	3	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	11	0	0	0	0	0	0	0	0	0	0	0	0

Int. #: 4 Alder Ave at Renaissance Pkwy

Zone # 22 0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				5%								
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%
AM Out												
PM In	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%

Pk Hr	T Gen	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	0
AM Out	0	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	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 23 0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%							
Y	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Zone # 24 0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Zone # 25 Emaar Enterprise Homes-Not included since it looks like it's been built for a while

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

Zone # 26 B+B Plastics - Trip Assignment from study

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	0	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	0
PM In	0	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	0

APPENDIX F

VMT ANALYSIS MEMO



September 20, 2021

Mr. Daniel Casey
Senior Planner
City of Rialto
150 S. Palm Avenue
Rialto, CA 92376

Subject: *Vehicle Miles Traveled Memorandum for the Rialto Travel Center Project
in the City of Rialto*

Dear Mr. Casey:

Kimley-Horn and Associates, Inc. has prepared a Vehicle Miles Traveled (VMT) memorandum, per request from the City of Rialto staff, for the proposed Rialto Travel Center Project. The City has required submittal of this memorandum based on the County of San Bernardino Transportation Impact Study Guidelines (July 2019). VMT analysis is used to evaluate transportation impacts under CEQA.

PROJECT DESCRIPTION

The project is located on the southwest corner of the intersection of Alder Avenue and Sierra Lakes Parkway/Casmalia Street, north of the State Route 210 (SR-210) in the City of Rialto. The project site is shown in its regional setting on a vicinity map on Figure 1. The project site (approximately 13.22 acres) is bounded by Sierra Lakes Parkway to the north, SR-210 to the south, Alder Avenue to the east, and vacant land to the west. The project site is located within the Renaissance Specific Plan area. The project will involve the construction of a gas station with 16 fueling positions and associated convenience store, a 2,400 square-foot fast food restaurant with a drive-through, 6,375 square-foot shop building, and a truck stop with 9 fueling positions on the currently vacant site. The project would also consist of a parking lot with 103 vehicle parking stalls and 91 truck parking stalls. A copy of the project site plan is provided on Figure 2.

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

- Three full-movement driveways on Sierra Lakes Parkway for the truck parking stalls and truck fueling positions.
- One exit only driveway on Sierra Lakes Parkway for the truck fueling positions;
- One driveway on Sierra Lakes Parkway for the vehicle fueling position convenience store, and fast-food restaurant.



NOT TO SCALE

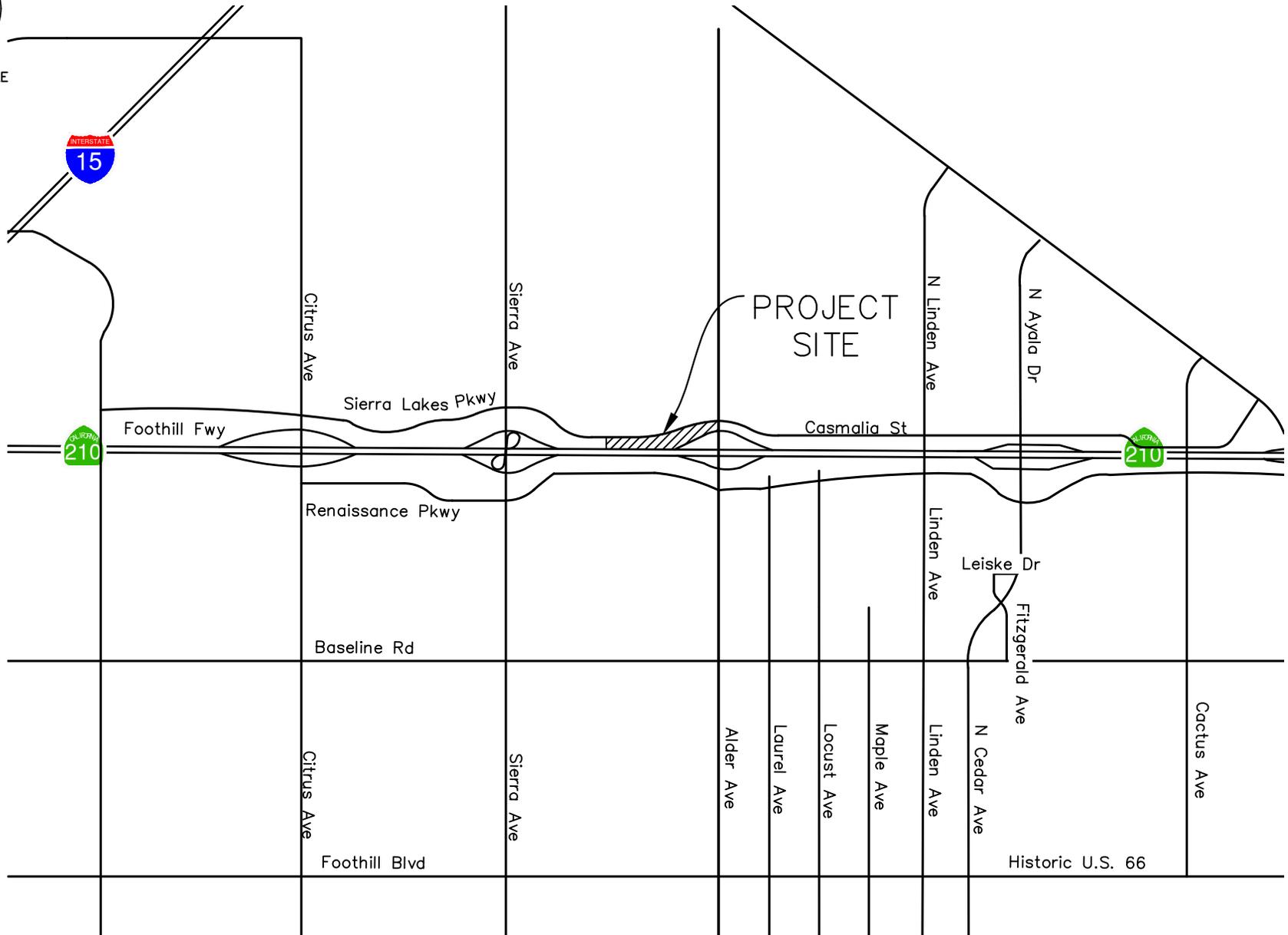


FIGURE 1
VICINITY MAP



NOT TO SCALE

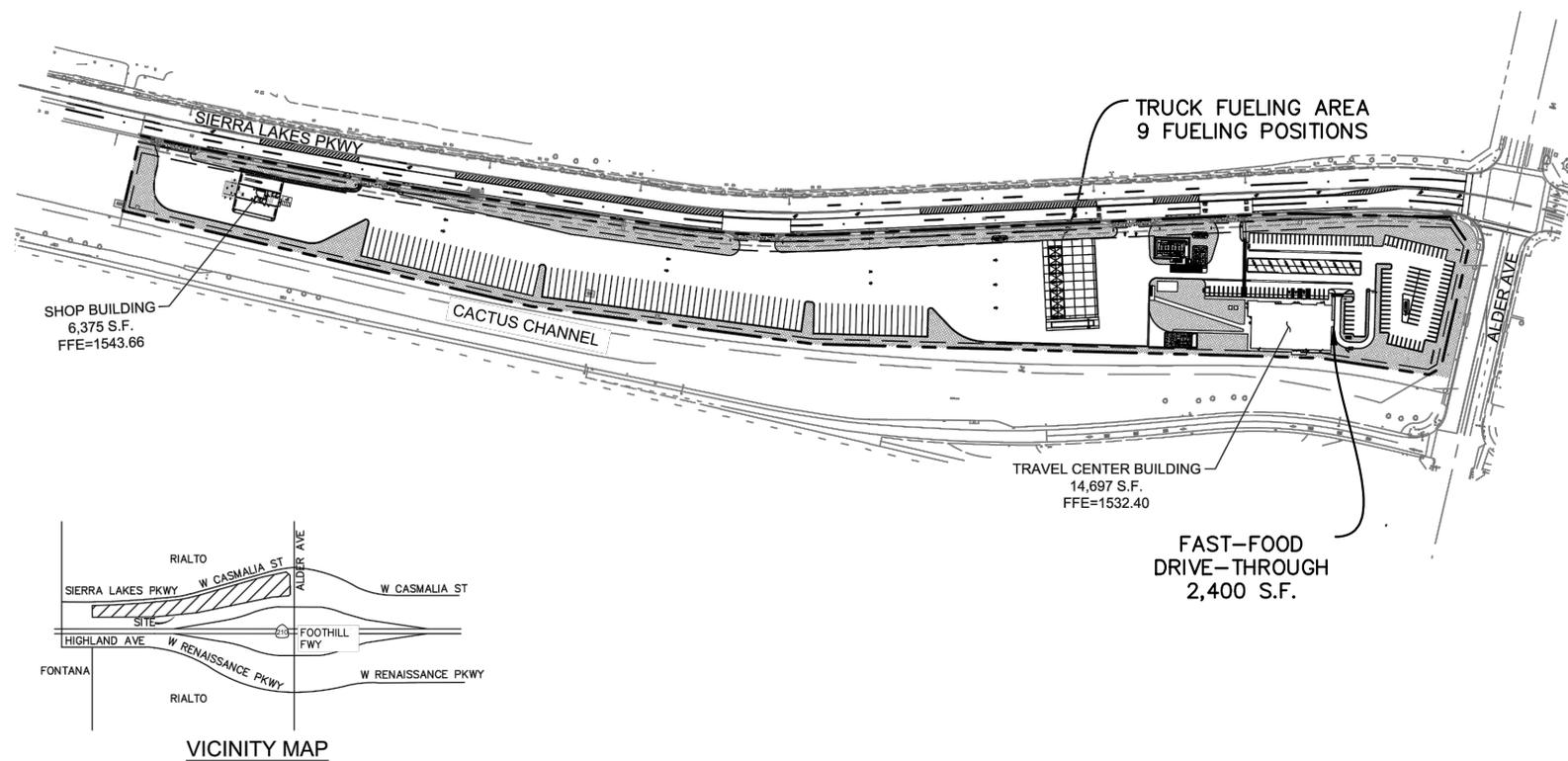


FIGURE 2
PROJECT SITE PLAN

CEQA VEHICLE MILES TRAVELED (VMT) ASSESSMENT

Senate Bill 743 (SB 743) was approved by California legislature in September 2013. SB 743 requires changes to California Environmental Quality Act (CEQA), specifically directing the Governor's Office of Planning and Research (OPR) to develop alternative metrics to the use of vehicular "Level of Service" (LOS) for evaluating transportation projects. OPR has prepared a technical advisory ("OPR Technical Advisory") for evaluating transportation impacts in CEQA and has recommended that Vehicle Miles Traveled (VMT) replace LOS as the primary measure of transportation impacts. The Natural Resources Agency has adopted updates to CEQA Guidelines to incorporate SB 743 that requires VMT for the purposes of determining a significant transportation impact under CEQA.

The City of Rialto has adopted the County of San Bernardino CEQA Assessment – VMT Analysis section of the "Transportation Impact Study Guidelines" (July 2019) which provides details on appropriate screening thresholds that can be used to identify when a proposed land use project is anticipated to result in a less-than-significant impact without conducting a more detailed level analysis. Screening thresholds are broken down into the following four criteria:

1. Land Use Type Screening
2. Small Projects
3. Transit Priority Area (TPA)
4. Low VMT Generating Area

Land development projects that meet one or more of the above screening thresholds may be presumed to create a less than significant impact on transportation and circulation. The screening thresholds were reviewed and evaluated for this project.

Land Use Type Screening

The OPR and SBCTA VMT Guidelines identify that Project types falling under the screening criteria includes the following:

- K-12 Schools
- Local-Serving retail less than 50,000 square feet
- Local parks
- Day care centers
- Local serving gas stations
- Local serving banks
- Student housing projects
- Local serving community colleges

Since the project consists of 16 fueling positions and associated convenience store, a 2,400 square-foot fast food restaurant with a drive-through, 6,375 square-foot shop building, and a truck stop with 9 fueling positions the project is considered to be local serving and should be screened out due to its land use types.

The Land Use Type Screening threshold is met for all the project land uses.

Small Projects

A project would be considered to have a less-than-significant transportation impact if the project generates less than 110 daily vehicle trips. The proposed project land uses would each generate more than 110 daily vehicle trips.

The Small Project threshold is not met.

Transit Priority Area (TPA)

A project located within a TPA as determined by the most recent SCAG RTP/SCS would be considered to have a less-than-significant transportation impact. The proposed project is not located within a TPA.

The Transit Priority Area threshold is not met.

Low VMT Generating Area

A project located within a low VMT generating area as determined by the most recent SCAG RTP/SCS would be considered to have a less-than-significant transportation impact. The proposed project is not located within a low VMT generating area.

The Low VMT Generating Area threshold is not met.

FINDINGS AND CONCLUSIONS

Based on review of the City's VMT screening thresholds, the project meets the Land Use Type Screening threshold; therefore, the project would result in a less-than-significant transportation impact, and no additional VMT analysis is required.

Please contact me if you have any questions or if you need additional information.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

A handwritten signature in black ink that reads "Trevor Briggs". The signature is written in a cursive, flowing style.

Trevor Briggs, P.E (C87664)

APPENDIX G

TRAFFIC SIGNAL WARRANTS

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Sierra Lakes Parkway EB WB # OF APPROACH LANES:

MINOR STREET: Driveway #1 NB SB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: Signal Warrant Study (Opening Year With Project Conditions)
0

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N):
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N):

	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	WARRANT 3
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	Four-Hour	Peak Hour
THRESHOLD VALUES			500	150		750	75		400	120		600	60			
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	0	0														
09:00 AM TO 10:00 AM	413	23						Y								
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	982	28	Y			Y		Y			Y					
05:00 PM TO 06:00 PM	0	0														
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														
	1,395	51	1	0	0	1	0	0	2	0	0	1	0	0	0	
			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	NOT SATISFIED

08/19/21
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Sierra Lakes Parkway EB WB # OF APPROACH LANES:

MINOR STREET: Driveway #1 NB SB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: Signal Warrant Study (Opening Year With Cumulative Projects With Project Conditions)
0

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N):
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N):

	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	WARRANT 3
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	Four-Hour	Peak Hour
THRESHOLD VALUES			500	150		750	75		400	120		600	60			
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	0	0														
09:00 AM TO 10:00 AM	566	23	Y					Y								
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	920	28	Y			Y		Y			Y					
05:00 PM TO 06:00 PM	0	0														
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														
	1,486	51	2	0	0	1	0	0	2	0	0	1	0	0	0	
			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	NOT SATISFIED

08/19/21
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Sierra Lakes Parkway EB WB # OF APPROACH LANES:

MINOR STREET: Driveway #2 NB SB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: Signal Warrant Study (Opening Year With Project Conditions)
0

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N):
 85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N):

	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	WARRANT 3
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	Four-Hour	Peak Hour
THRESHOLD VALUES			500	150		750	75		400	120		600	60			
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	0	0														
09:00 AM TO 10:00 AM	467	24						Y								
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	1,045	30	Y			Y		Y			Y					
05:00 PM TO 06:00 PM	0	0														
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														
	1,512	54	1	0	0	1	0	0	2	0	0	1	0	0	0	
			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	NOT SATISFIED

08/19/21
 Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Sierra Lakes Parkway EB WB # OF APPROACH LANES:

MINOR STREET: Driveway #2 NB SB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: Signal Warrant Study (Opening Year With Cumulative Projects With Project Conditions)
0

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N):
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N):

	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	WARRANT 3
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	Four-Hour	Peak Hour
THRESHOLD VALUES			500	150		750	75		400	120		600	60			
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	0	0														
09:00 AM TO 10:00 AM	620	24	Y					Y			Y					
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	983	30	Y			Y		Y			Y					
05:00 PM TO 06:00 PM	0	0														
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														
	1,603	54	2	0	0	1	0	0	2	0	0	2	0	0	0	
			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	NOT SATISFIED

08/19/21
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Sierra Lakes Parkway EB WB # OF APPROACH LANES:

MINOR STREET: Driveway #3 NB SB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: Signal Warrant Study (Opening Year With Project Conditions)
0

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N):
 85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N):

	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	WARRANT 3
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	Four-Hour	Peak Hour
THRESHOLD VALUES			500	150		750	75		400	120		600	60			
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	0	0														
09:00 AM TO 10:00 AM	523	23	Y					Y								
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	1,109	28	Y			Y		Y			Y					
05:00 PM TO 06:00 PM	0	0														
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														
	1,632	51	2	0	0	1	0	0	2	0	0	1	0	0	0	
			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	NOT SATISFIED

08/19/21
 Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Sierra Lakes Parkway EB WB # OF APPROACH LANES:

MINOR STREET: Driveway #3 NB SB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: Signal Warrant Study (Opening Year With Cumulative Projects With Project Conditions)
0

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N):
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N):

	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	WARRANT 3
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	Four-Hour	Peak Hour
THRESHOLD VALUES			500	150		750	75		400	120		600	60			
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	0	0														
09:00 AM TO 10:00 AM	676	23	Y					Y			Y					
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	1,047	28	Y			Y		Y			Y					
05:00 PM TO 06:00 PM	0	0														
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														
	1,723	51	2	0	0	1	0	0	2	0	0	2	0	0	0	
			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	NOT SATISFIED

08/19/21
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Sierra Lakes Parkway EB WB # OF APPROACH LANES:

MINOR STREET: Driveway #4 NB SB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: Signal Warrant Study (Opening Year With Project Conditions)
0

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N):
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N):

	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	WARRANT 3
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	Four-Hour	Peak Hour
THRESHOLD VALUES			500	150		750	75		400	120		600	60			
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	0	0														
09:00 AM TO 10:00 AM	546	23	Y					Y								
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	1,078	28	Y			Y		Y			Y					
05:00 PM TO 06:00 PM	0	0														
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														
	1,624	51	2	0	0	1	0	0	2	0	0	1	0	0	0	
			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	NOT SATISFIED

08/19/21
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Sierra Lakes Parkway EB WB # OF APPROACH LANES:

MINOR STREET: Driveway #4 NB SB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: Signal Warrant Study (Opening Year With Cumulative Projects With Project Conditions)
0

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N):
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N):

	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	WARRANT 3
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	Four-Hour	Peak Hour
THRESHOLD VALUES			500	150		750	75		400	120		600	60			
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	0	0														
09:00 AM TO 10:00 AM	699	23	Y						Y			Y				
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	1,074	28	Y			Y			Y			Y				
05:00 PM TO 06:00 PM	0	0														
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														
	1,773	51	2	0	0	1	0	0	2	0	0	2	0	0	0	0
			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	NOT SATISFIED

08/19/21
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Sierra Lakes Parkway EB WB # OF APPROACH LANES:

MINOR STREET: Driveway #5 NB SB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: Signal Warrant Study (Opening Year With Project Conditions)
0

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N):
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N):

	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	WARRANT 3
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	Four-Hour	Peak Hour
THRESHOLD VALUES			500	150		750	75		400	120		600	60			
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	0	0														
09:00 AM TO 10:00 AM	734	244	Y	Y	Y		Y		Y	Y	Y	Y	Y	Y		
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	1,176	198	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
05:00 PM TO 06:00 PM	0	0														
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														
	1,910	442	2	2	2	1	2	1	2	2	2	2	2	2	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

08/19/21
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Sierra Lakes Parkway EB WB # OF APPROACH LANES:

MINOR STREET: Driveway #5 NB SB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: Signal Warrant Study (Opening Year With Cumulative Projects With Project Conditions)
0

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N):

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N):

	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			500	150		750	75		400	120		600	60			
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	0	0														
09:00 AM TO 10:00 AM	887	244	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
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	1,238	198	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
05:00 PM TO 06:00 PM	0	0														
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														
	2,125	442	2	2	2	2	2	2	2	2	2	2	2	2	2	
			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

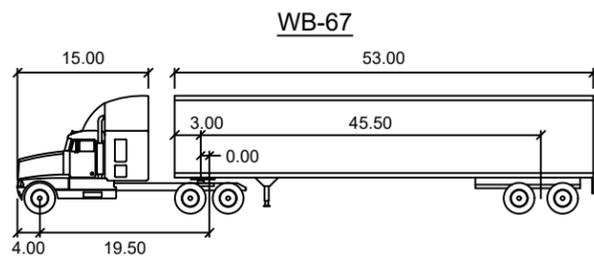
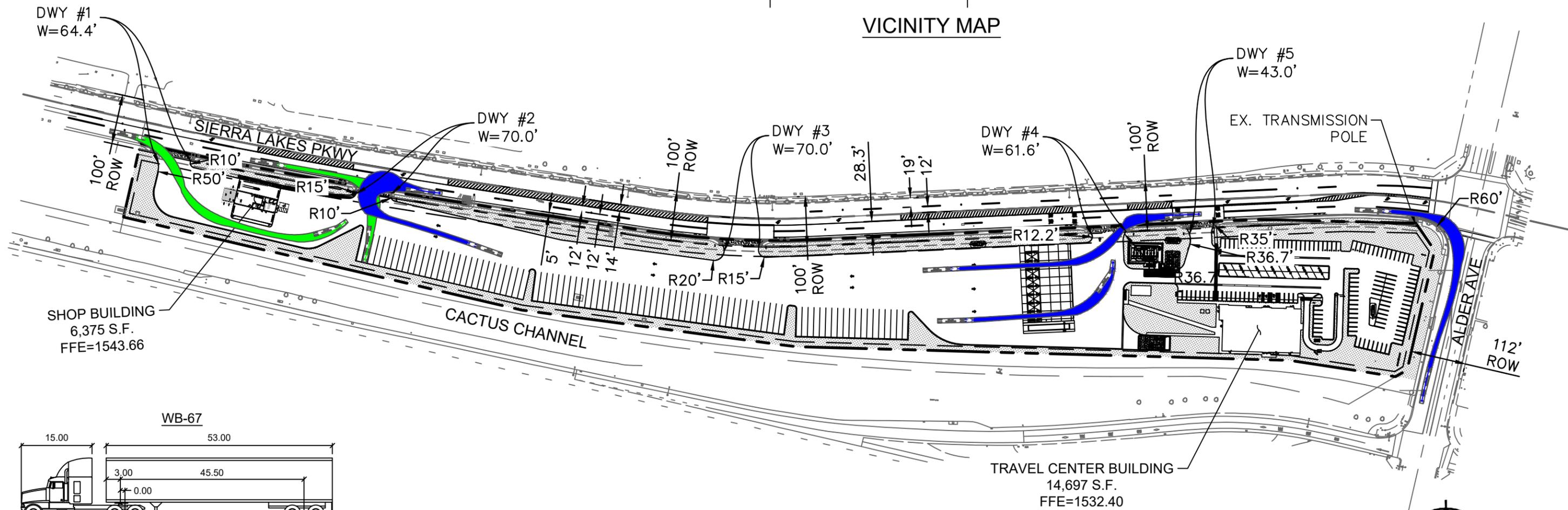
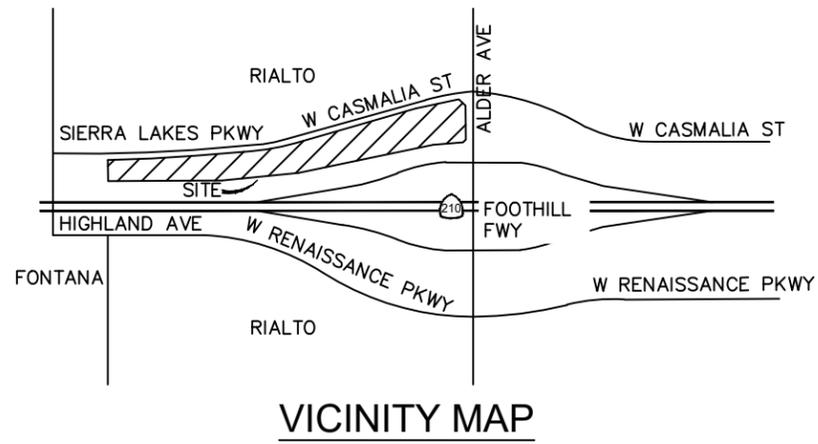
08/19/21
Kimley-Horn and Associates

APPENDIX H

TRUCK TURNING EXHIBIT

LEGEND

- PROJECT INGRESS
- PROJECT EGRESS



	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

WB 67: SIERRA LAKES PKWY INGRESS AND EGRESS

