



Appendix K

Traffic Study



Traffic Study

for:

West Coast and Locust Warehouse Project

In the City of Rialto

May 2024

Kimley»»Horn

TRAFFIC STUDY
FOR THE PROPOSED
WEST COAST AND LOCUST WAREHOUSE PROJECT
IN THE CITY OF RIALTO

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May 2024

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TRAFFIC STUDY
FOR THE PROPOSED
WEST COAST AND LOCUST WAREHOUSE PROJECT
IN THE CITY OF RIALTO

I. INTRODUCTION

A. Purpose of the TIA and Study Objectives

This traffic study has been prepared to address the traffic-related effect of the proposed West Coast and Locust Warehouse project in the City of Rialto.

This traffic study has been conducted in accordance with the traffic study requirements of the City of Rialto, based on the City's *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (LOS)* (October 2021) and in accordance with San Bernardino Association of Governments (SANBAG) Congestion Management Program (CMP) requirements.

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

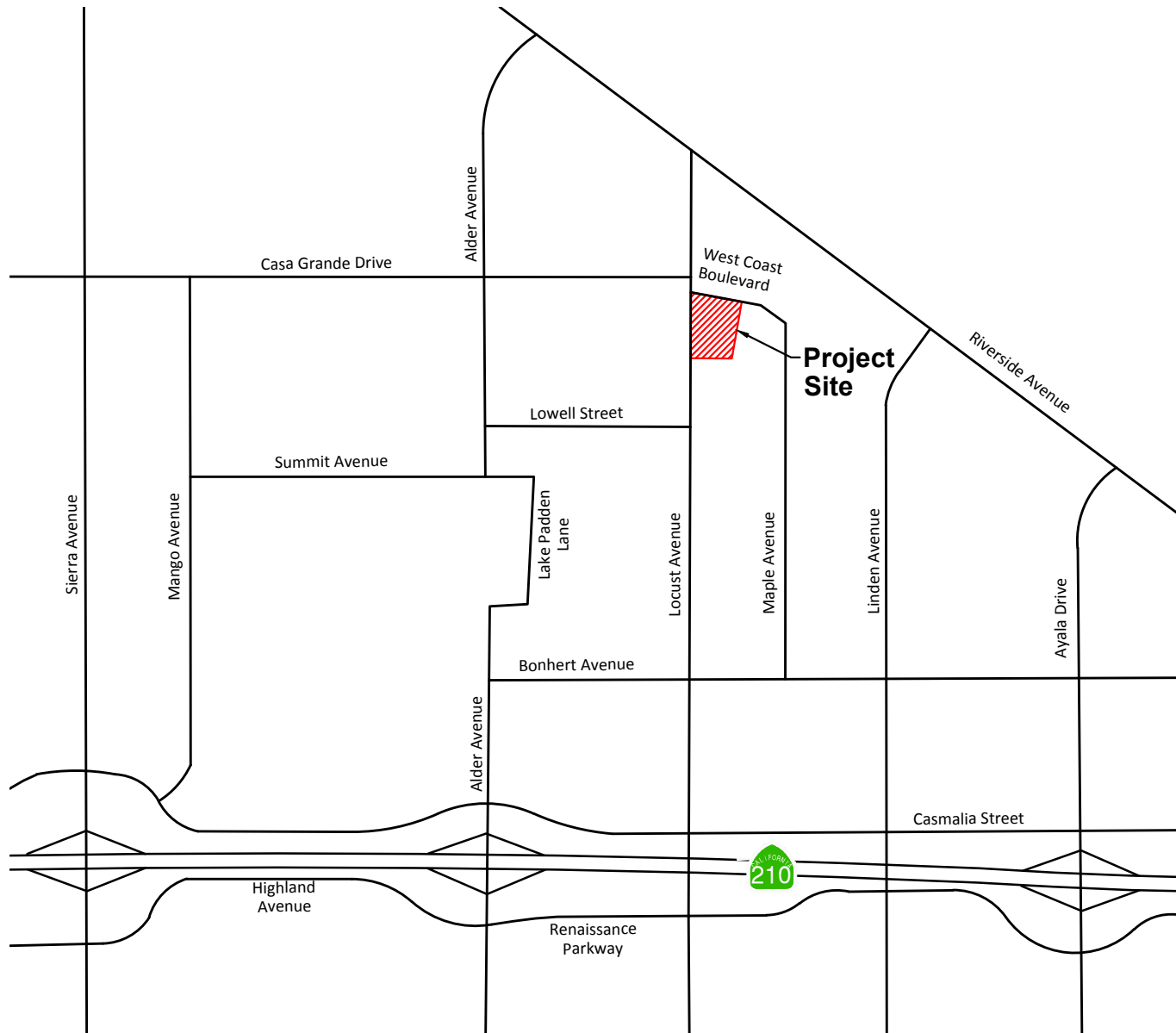
- Existing Conditions
- Opening Year 2025
- Opening Year 2025 Plus Project
- Opening Year 2025 Cumulative
- Opening Year 2025 Cumulative Plus Project

B. Site Plan Location and Study Area

The project is located in the northwestern area of the City of Rialto, and is shown in its regional setting on a vicinity map on Figure 1. The project site (approximately 11.21 acres) is bounded by West Coast Boulevard to the north, industrial uses to the south, residential uses to the east, and Locust Avenue to the west. The project site is located within the Rialto Airport Specific Plan (RASP, Specific Plan) area.



NOT TO SCALE



**FIGURE 1
VICINITY MAP**

C. Development Project Identification

Pending.

D. Development Project Description

The project will involve the construction of an approximately 225,173 square-feet (SF)¹ industrial building on a vacant parcel, out of which 215,173 SF will be for a warehouse and 10,000 SF will be office space for the warehouse. The project would also include a parking lot with 153 vehicle parking stalls and 31 truck docks. A copy of the project site plan is provided on Figure 2.

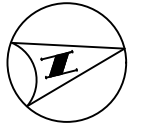
The site is located within the Rialto Airport Specific Plan, which is generally bounded by Casa Grande Drive to the north with a small portion (east of Locust Avenue) extending north to Riverside Avenue, Base Line Road to the south, Locust and Cactus Avenues to the east, and Mango and Palmetto Avenues to the west. The Rialto Airport Specific Plan area covers 3,131 acres and is approved for a variety of land uses, including residential, commercial, mixed-use, industrial, public facilities, recreation, and open space uses. The Specific Plan was anticipated for build-out in phases, over a 30-year-plus period. The Specific Plan was approved in November 1997. Four amendments to the Specific Plan were approved, with the latest amendment in November 2010. The project site area is zoned for Planned Industrial Development (I-PID) in the Rialto Airport Specific Plan Land Use Map.

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

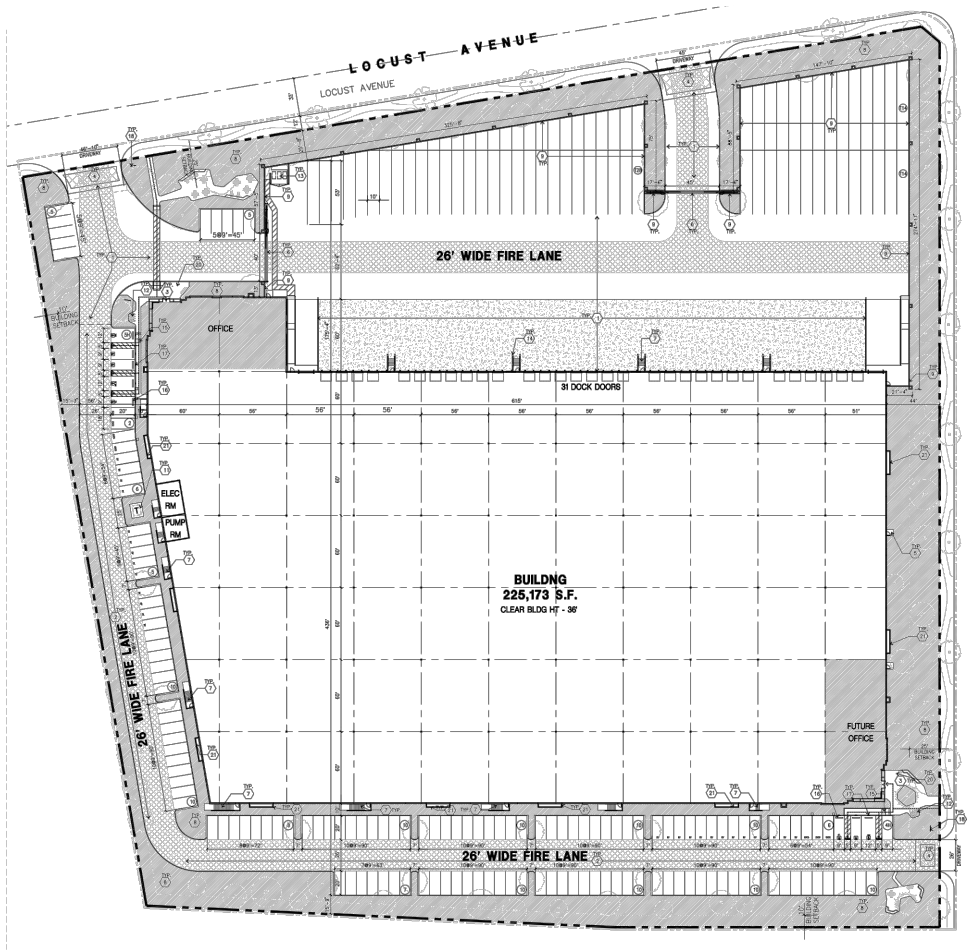
- One proposed full-movement truck driveway on Locust Avenue, northwest corner of the site
- One proposed full-movement passenger car and truck driveway on Locust Avenue, southwest corner of the site
- One proposed full-movement passenger car driveway on West Coast Boulevard, northeast corner of the site

The proposed opening year for the project is Year 2025. The project will be developed in a single project phase. The project site is located approximately 1.25 miles from the City of Rialto's border with the City of Fontana.

¹ The current site plan shows a smaller building square footage (225, 173 SF) than what was previously provided (228, 413 SF) as part of the approved scoping agreement. As a conservative approach, the square footage previously provided in the approved scoping agreement (228, 413 SF) was used in the traffic analysis. As such, the results within the Traffic Study are more conservative than the proposed project.



NOT TO SCALE



**FIGURE 2
PROJECT SITE PLAN**

E. Analysis Methodology

1. Intersection Analysis – HCM Methodology

Peak hour intersection operations at signalized and unsignalized intersections were evaluated using the methods prescribed in the Highway Capacity Manual HCM 7th 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 7th Edition, Exhibit 19-8.

² Source: Highway Capacity Manual HCM 7th Edition, Exhibit 20-2.

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. Locust Avenue at Casa Grande Drive
2. Locust Avenue at West Coast Boulevard
3. Locust Avenue at Casmalia Street

Future Driveway Intersections

- D1. Locust Avenue at North Project Driveway
- D2. Locust Avenue at South Project Driveway
- D3. West Coast Boulevard at Project Driveway

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

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

Regional access to the site is provided primarily by the State Route 210 (SR-210) Freeway, approximately 1.5 miles to the south of the project site. In addition, the Interstate 15 (I-15) Freeway is approximately 3.5 miles to the west of the site, the I-215 Freeway is located approximately 5 miles to the east of the site, and access to the I-10 Freeway is approximately 6 miles to the south.

The following provides a description of the roadways surrounding the project site.

Locust Avenue – Locust Avenue is a two-lane, undivided north-south roadway in the project vicinity. The posted speed limit on Locust Avenue is 45 miles per hour (mph) and on-street parking is generally allowed on both sides of the roadway. Locust Avenue is designated as a Secondary Arterial in the City of Rialto General Plan Circulation Element. Locust Avenue is a designated truck route from Riverside Avenue to Baseline Road. The project site plan depicts two full-movement project driveways on Locust Avenue.

West Coast Boulevard – West Coast Boulevard is a two-lane, undivided east-west roadway in the project vicinity. The posted speed limit on West Coast Boulevard is 25 mph and on-street parking is generally allowed on both sides of the roadway. West Coast Boulevard is designated as a Collector Street in the City's Circulation Element. The project site plan depicts one full-movement project driveway on West Coast Boulevard.

Casa Grande Drive – Casa Grande Drive is a four-lane, undivided east-west roadway. The posted speed limit on Locust Avenue is 40 mph and on-street parking is allowed. Casa Grande Drive is designated as a Secondary Arterial in the City's Circulation Element.

Riverside Avenue – Riverside Avenue is a four-lane, undivided northwest-southeast roadway in the vicinity of the Rialto Airport Specific Plan. The posted speed limit on Riverside Avenue is 50 mph and on-street parking is not allowed in the project vicinity. Riverside Avenue is designated as a Modified Major Arterial I west of Locust Avenue and as a Major Arterial east of Locust Avenue in the City's Circulation Element. Riverside Avenue is a designated truck route from west of Ayala Drive to the I-15 ramps.

Casmalia Street – Casmalia Street is a two-to-four-lane east-west roadway in the project vicinity. The posted speed limit on Casmalia Street is 45 mph and on-street parking is not allowed. Casmalia Street is designated as a Secondary Arterial in the Renaissance Specific Plan Amendment. Casmalia Street is a designated truck route from the western Rialto city limit to Ayala Drive.

Existing lane configurations and intersection controls at the study intersections at the time the traffic counts were collected are shown on Figure 3.

1. Existing Traffic Volumes

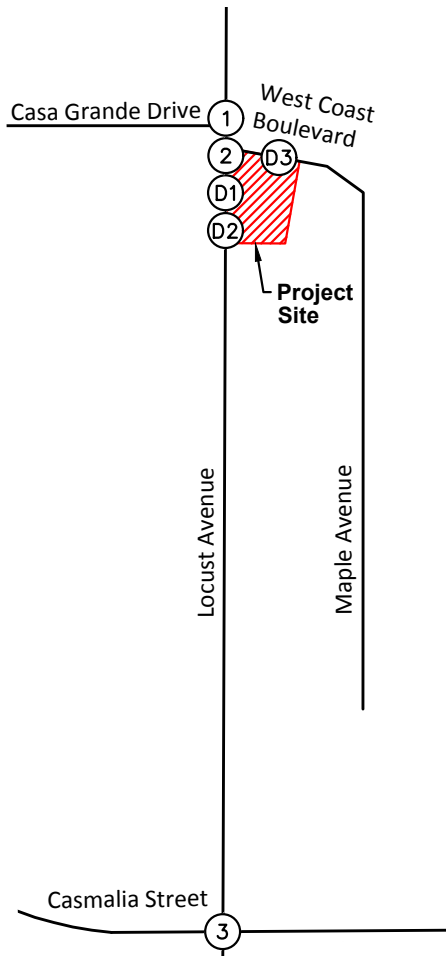
New traffic counts were collected in August 2023 for intersections 2 and 3 and in October 2023 for intersection 1. Copies of the traffic count data worksheets are provided in *Appendix B*.

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

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



NOT TO SCALE



1. Locust Avenue at Casa Grande Drive	
2. Locust Avenue at West Coast Boulevard	D3. West Coast Avenue at Project Car Dwy
	FUTURE INTERSECTION
D1. Locust Avenue at Project Truck Dwy	
FUTURE INTERSECTION	
D2. Locust Avenue at Project Car and Truck Dwy	
FUTURE INTERSECTION	
3. Locust Avenue at Casmalia Street	

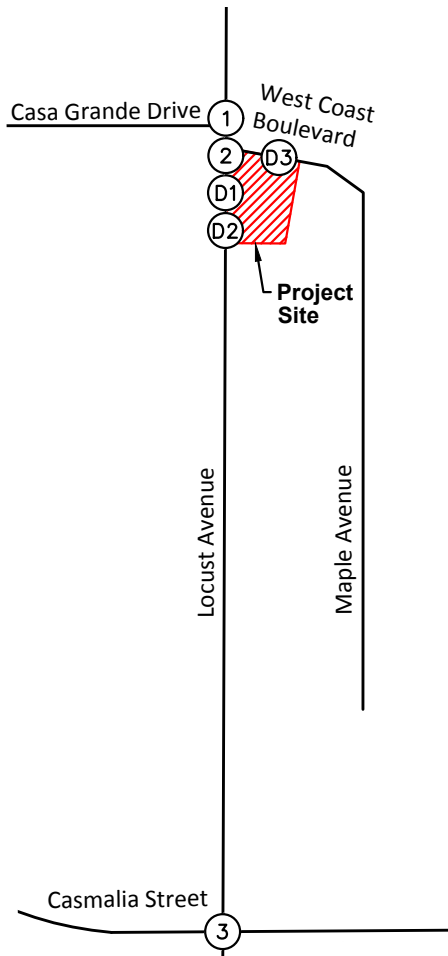
LEGEND:

- = Study Intersection
- = Turn or Through Lane
- = Signal
- = Stop Sign
- OVL = Right-Turn Overlap

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



NOT TO SCALE



1. Locust Avenue at Casa Grande Drive	
2. Locust Avenue at West Coast Boulevard	D3. West Coast Avenue at Project Car Dwy
	FUTURE INTERSECTION
D1. Locust Avenue at Project Truck Dwy	
FUTURE INTERSECTION	
D2. Locust Avenue at Project Car and Truck Dwy	
FUTURE INTERSECTION	
3. Locust Avenue at Casmalia Street	

LEGEND:

(X) = Study Intersection

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

**FIGURE 4
EXISTING PEAK HOUR TRAFFIC VOLUMES**

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

Review of this table indicates that the following study intersections currently operate at unacceptable LOS under Existing Conditions:

- #1 – Locust Avenue at Casa Grande Drive: PM – LOS F
- #2 – Locust Avenue at West Coast Boulevard: AM – LOS E

The Level of Service for an unsignalized intersection is reported based on the single approach movement with the highest delay, which in this case, would be the eastbound approach for intersection #1 and the westbound approach for intersection #2. While the side street approach operates at a deficient Level of Service based on the highest delay approach, the overall intersection delay would be acceptable. Any queuing that occurs on the side street is contained on the minor intersection approach and does not impact the progression of traffic on the main arterial (i.e., Locust Avenue).

C. General Plan Circulation Element

The General Plan Circulation Element provides street classifications near the project vicinity. A copy of the General Plan Street Classifications is provided on Figure 5. Designated truck routes in the City of Rialto General Plan are shown on Figure 6.

D. Transit Service

Transit service to the project area is provided via the OmniTrans transit lines, which serve various cities in San Bernardino County. Bus stops in the project vicinity are located along Casa Grande Drive, Locust Avenue, Riverside Avenue, and Linden Avenue.

A description of the bus routes serving the project area is provided below.

OmniTrans Route 22 operates between the City of Rialto and the City of Colton through Rialto along Locust Avenue, Casa Grande Drive, and Riverside Avenue in the project vicinity. Route 22 operates on weekdays from 5:00 AM to 9:40 PM with approximately 1-hour headways, on Saturdays from 7:15 AM to 6:30 PM with approximately 1-hour headways, and on Sundays from 7:30 AM to 6:40 PM with approximately 1-hour headways. Route 22 has a transfer point with Route 10 at the intersection of Riverside Avenue and Baseline Road.

TABLE 1
SUMMARY OF INTERSECTION OPERATION
EXISTING CONDITIONS

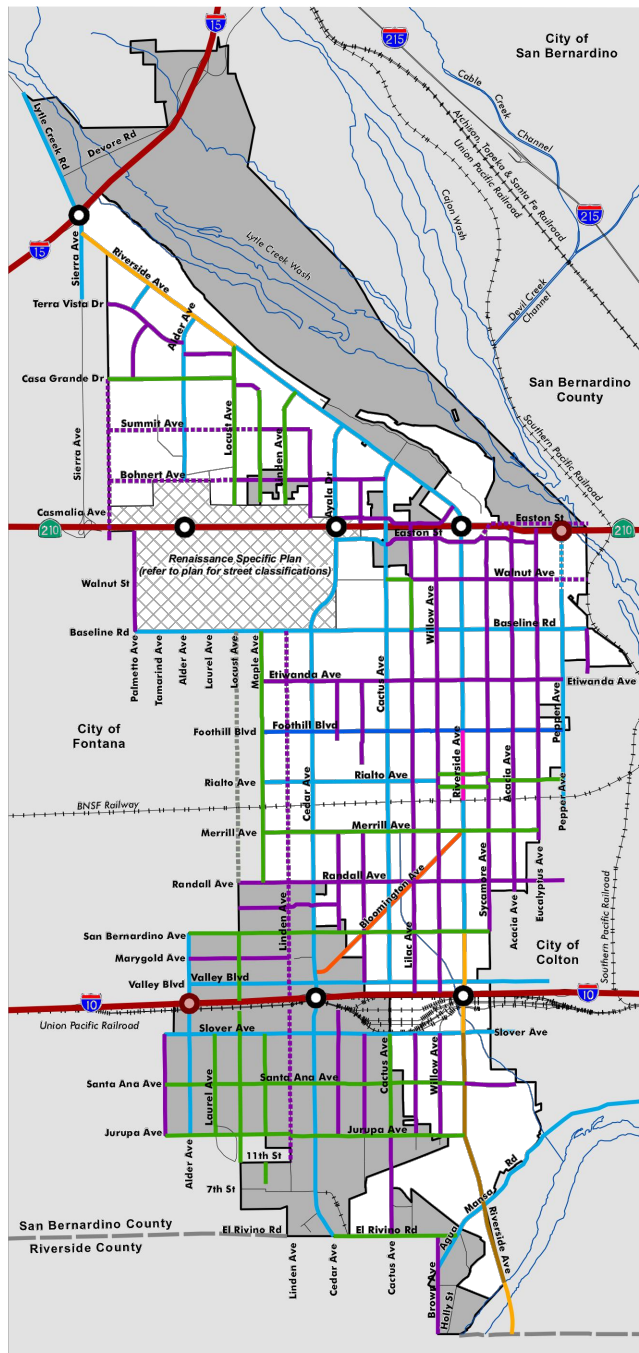
Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Locust Avenue at Casa Grande Drive	U	33.4	D	60.7	F
2	Locust Avenue at West Coast Boulevard	U	35.8	E	24.2	C
3	Locust Avenue at Casmalia Street	S	27.5	C	29.1	C

Notes:

- Bold values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.



NOT TO SCALE



Street Classification

Existing right-of-ways are indicated with a solid line, proposed right-of-ways are indicated with a dotted line, and right-of-ways outside the planning area are indicated with a gray line.

- Freeway
- Major Arterial Highway
- Major Arterial
- Major Arterial
- Modified Major Arterial I
- Modified Major Arterial II
- Modified Arterial I
- Modified Arterial II
- Secondary Arterial
- Secondary Arterial
- Collector Street
- Collector Street

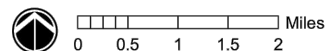
Freeway Interchanges

- Existing Interchange
- Planned Future Interchange

Base Map Features

- Rialto Incorporated Area
- Rialto Sphere of Influence
- County Boundary
- Local Road
- Railroad
- Hydrological Feature

Source: Iteris, Inc. (2008)



**FIGURE 5
CITY OF RIALTO GENERAL PLAN
CIRCULATION ELEMENT**





NOT TO SCALE

DECOMMISSIONED AND FINAL TRUCK ROUTES

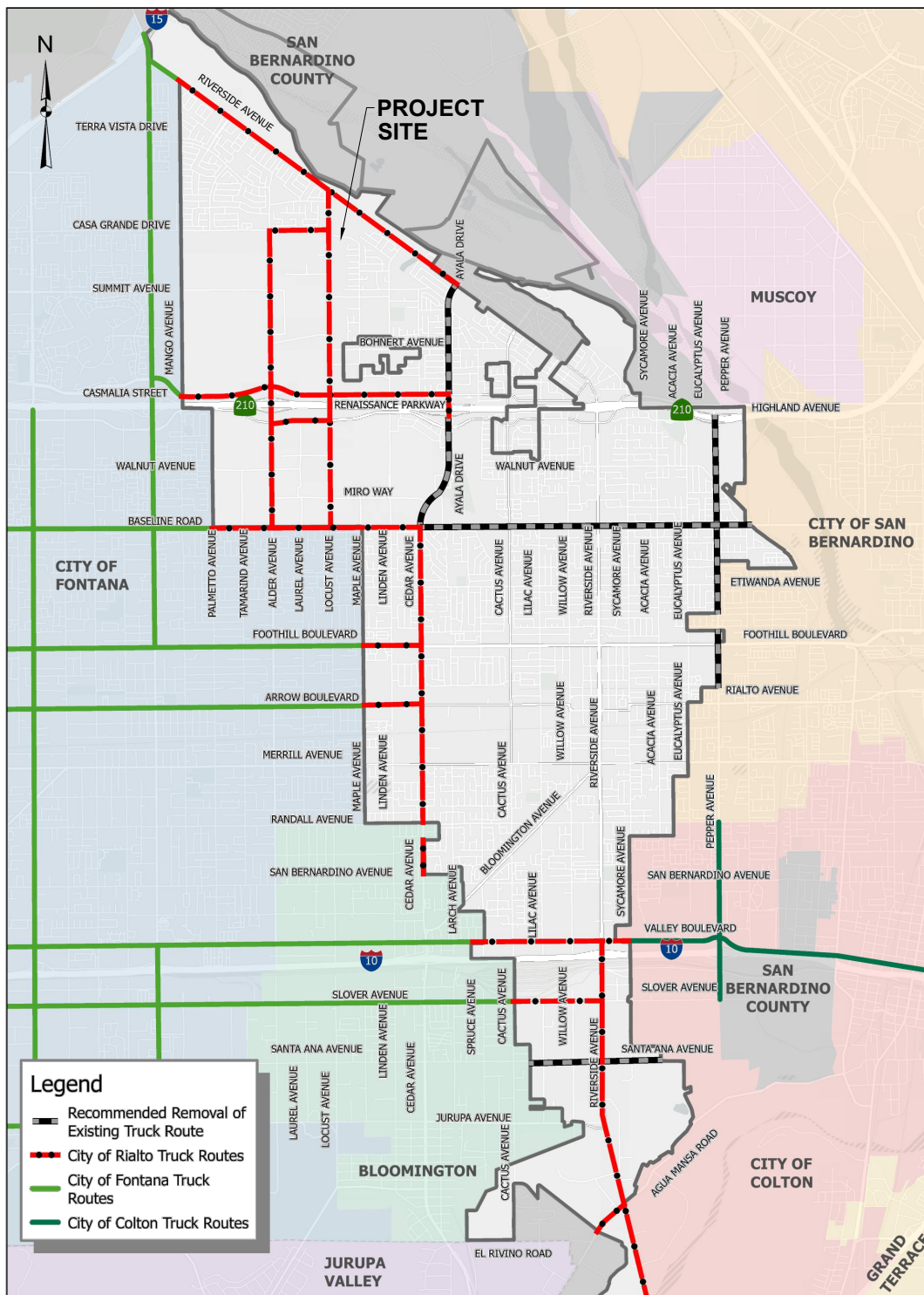


FIGURE 6 CITY OF RIALTO TRUCK ROUTES



III. PROJECTED FUTURE TRAFFIC

A. Opening Year 2025 (Existing Plus Growth)

The project Opening Year is anticipated to be Year 2025.

1. Ambient Growth Rate

An ambient growth rate of 2.0% per year to Opening Year 2025 was applied to existing peak hour traffic volumes to develop Opening Year 2025 forecasts. The resulting peak hour traffic volumes for Opening Year 2025 conditions are shown on Figure 7.

2. Peak Hour Operating Conditions

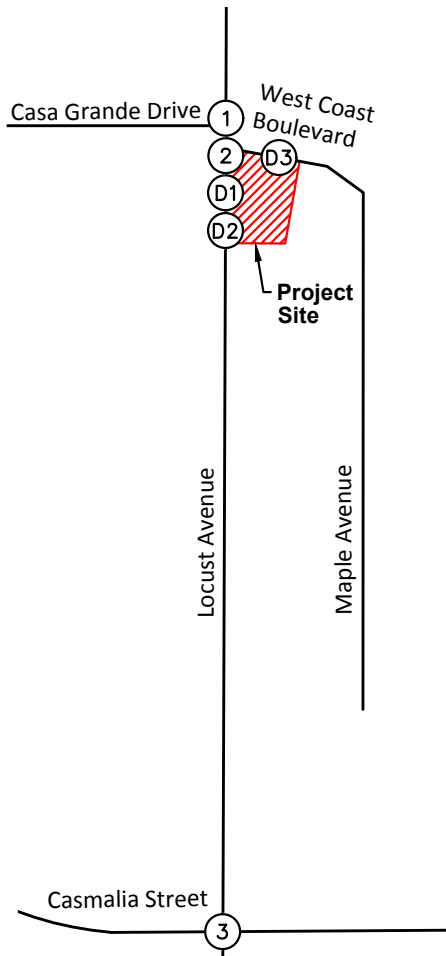
Intersection Level of Service analysis was conducted for Opening Year 2025 conditions. The results are shown on Table 2. Intersection analysis worksheets for this scenario are provided in *Appendix D*.

Review of this table indicates that with the addition of ambient growth, the following study intersections would continue to operate at an unacceptable LOS:

- #1 – Locust Avenue at Casa Grande Drive: AM – LOS E; PM – LOS F
- #2 – Locust Avenue at West Coast Boulevard: AM – LOS E



NOT TO SCALE



1. Locust Avenue at Casa Grande Drive	
2. Locust Avenue at West Coast Boulevard	D3. West Coast Avenue at Project Car Dwy
	FUTURE INTERSECTION
D1. Locust Avenue at Project Truck Dwy	
FUTURE INTERSECTION	
D2. Locust Avenue at Project Car and Truck Dwy	
FUTURE INTERSECTION	
3. Locust Avenue at Casmalia Street	

LEGEND:

(X) = Study Intersection

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

**FIGURE 7
OPENING YEAR 2025
TRAFFIC VOLUMES**

TABLE 2
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2025

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Locust Avenue at Casa Grande Drive	U	37.3	E	77.3	F
2	Locust Avenue at West Coast Boulevard	U	38.7	E	25.6	D
3	Locust Avenue at Casmalia Street	S	27.7	C	29.9	C

Note:

- Bold values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

B. Project Traffic

1. Project Trip Generation

Trip generation estimates for the West Coast and Locust Warehouse project are based on daily and peak hourly trip generation rates obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition). ITE trip generation estimates for the project are based on the trip generation rates for ITE Land Use 150: Warehousing.

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, PCE factors, and trip estimates for the existing and proposed uses are summarized on Table 3. Based on review of Table 3, the proposed project is estimated to generate 655 PCE trips on a daily basis, with 65 PCE trips in the morning peak hour, and 68 PCE trips in the evening peak hour.

It should be noted that the trip estimates for the proposed project based on the ITE Trip Generation Manual are expected to be very conservative compared to the anticipated operations of the proposed project.

It should also be noted that the current site plan shows a smaller building square footage (225, 173 SF) than what was previously provided (228, 413 SF) as part of the approved Scoping Agreement. As a conservative approach, the square footage previously provided in the approved Scoping Agreement (228, 413 SF) was used in the traffic analysis. As such, the results within the Traffic Study are more conservative than the proposed project.

2. Trip Distribution and Assignment

Trip distribution assumptions for the project were developed by considering the proposed site uses, and the routes to and from the freeway system for the warehouse trucks. Separate distribution patterns were assumed for passenger car trips and truck trips. Trip distribution patterns for both passenger vehicles and 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 study intersection. The resulting project-related peak hour trips at the study intersections are also shown on Figure 8 (previously mentioned).

TABLE 3
SUMMARY OF PROJECT TRIP GENERATION

Land Use		ITE Code	Unit	Trip Generation Rates ¹						
				Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Warehousing		150	KSF	1.710	0.131	0.039	0.170	0.050	0.130	0.180

Land Use		Quantity	Unit	Trip Generation Estimates						
				Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Warehousing		228.413	KSF	391	30	9	39	11	30	41
Passenger Vehicles	60.00%			235	18	5	23	7	18	25
Trucks	40.00%			156	12	4	16	4	12	16

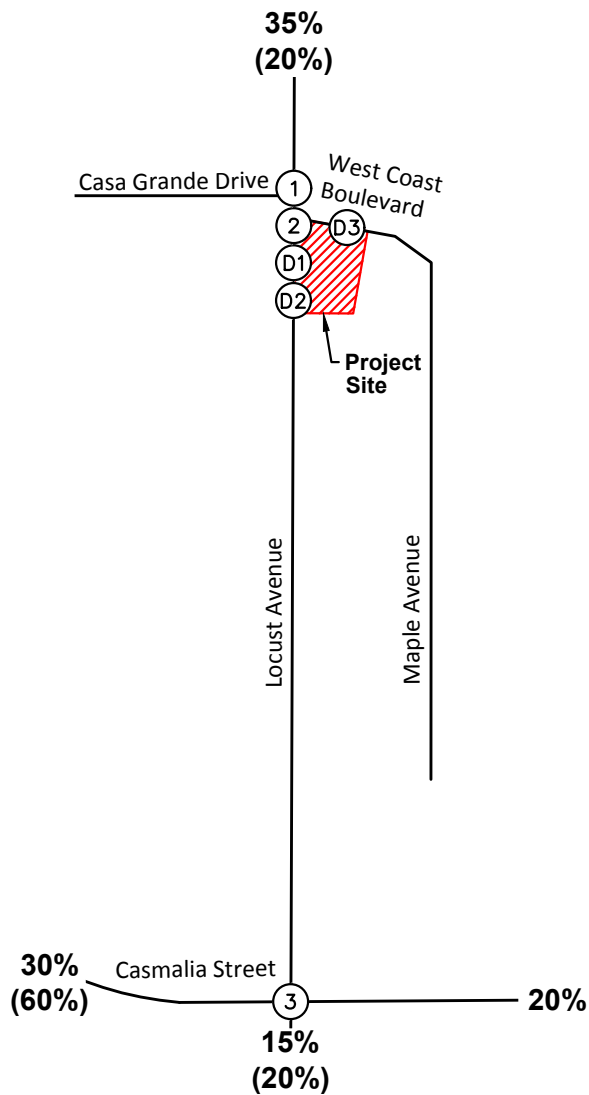
PROJECT TRIPS - PASSENGER CAR EQUIVALENTS (PCE)										
Vehicle Type	Vehicle Mix ²	Daily Vehicles	PCE Factor ²	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Passenger Vehicles	60.00%	235	1.0	235	18	5	23	7	18	25
2-Axle Trucks	0.80%	3	1.5	5	0	0	0	0	0	0
3-Axle Trucks	11.20%	44	2.0	88	7	2	9	2	7	9
4+ Axle Trucks	28.00%	109	3.0	327	25	8	33	9	25	34
Total Truck PCE Trips				420	32	10	42	11	32	43
Total Proposed Project PCE Trips				655	50	15	65	18	50	68

¹ Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition

² Source: City of Rialto Traffic Impact Analysis Report Guidelines and Requirements



NOT TO SCALE



1. Locust Avenue at Casa Grande Drive	
← 16/4	4/12 →
2. Locust Avenue at West Coast Boulevard	
← 10/2 6/2	↗ 1/6 ↘ 1/3 ↖ 3/6 ↗ 3/1
D3. West Coast Avenue at Project Car Dwy	
	↖ 9/3 ↗ 2/9
D1. Locust Avenue at Project Truck Dwy	
← 1/3 10/2	↗ 3/6 ↘ 4/10 ↖ 3/1 ↗ 15/3
D2. Locust Avenue at Project Car and Truck Dwy	
← 5/13	↗ 11/25 ↖ 18/4 ↗ 34/8
3. Locust Avenue at Casmalia Street	
↖ 11/25 ↘ 4/9 ↖ 1/4	↗ 4/1 ↘ 13/3 ↖ 35/8

LEGEND:

- (X) = Study Intersection
- XXX = Trip Distribution Percentage
- (YY%) = Truck Trip Distribution
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

**FIGURE 8
PROJECT-RELATED TRIP DISTRIBUTION
AND TRAFFIC VOLUMES**

3. Opening Year 2025 Plus Project

Project traffic was added to Opening Year 2025 volumes to develop Opening Year 2025 Plus Project traffic forecasts. Peak hour traffic volumes for Opening Year 2025 Plus Project conditions are shown on Figure 9.

Peak Hour Operating Conditions

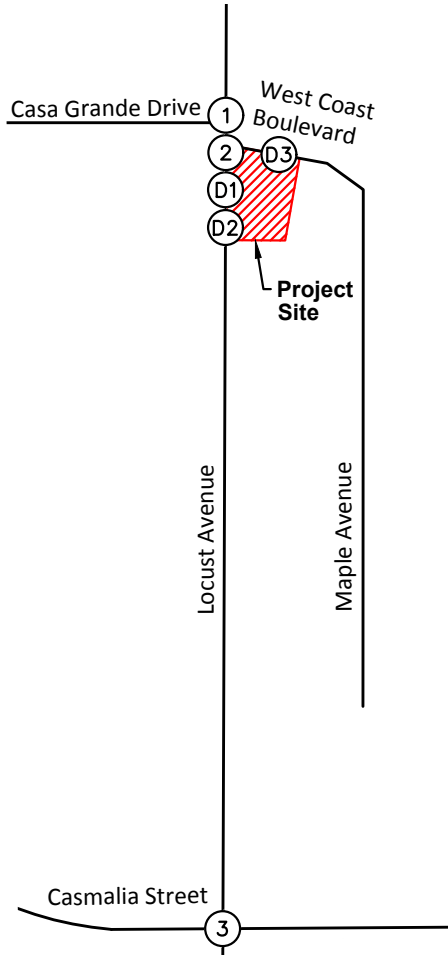
Intersection Level of Service analysis was conducted for the Opening Year 2025 Plus Project conditions. The results of the intersection analysis are shown on Table 4Error! Reference source not found.. Intersection analysis worksheets for this scenario are provided in *Appendix D*.

Review of this table indicates that with the addition of project traffic, the following study intersections would continue to operate at an unacceptable LOS:

- #1 – Locust Avenue at Casa Grande Drive: AM – LOS E; PM – LOS F
- #2 – Locust Avenue at West Coast Boulevard: AM – LOS E



NOT TO SCALE



1. Locust Avenue at Casa Grande Drive	
$\begin{array}{c} \leftarrow 18/101 \\ \leftarrow 422/178 \\ \hline 22/96 \rightarrow \\ 260/291 \rightarrow \end{array}$	$\begin{array}{c} 120/214 \rightarrow \\ 276/194 \rightarrow \end{array}$
2. Locust Avenue at West Coast Boulevard	D3. West Coast Avenue at Project Car Dwy
$\begin{array}{c} \leftarrow 7/0 \\ \leftarrow 650/451 \\ \leftarrow 15/7 \\ \hline 0/3 \rightarrow \\ 4/8 \rightarrow \end{array}$	$\begin{array}{c} \leftarrow 16/9 \\ \leftarrow 2/5 \\ \hline 10/7 \rightarrow \\ 9/3 \rightarrow \\ \leftarrow 2/9 \end{array}$
D1. Locust Avenue at Project Truck Dwy	
$\begin{array}{c} \leftarrow 646/463 \\ \leftarrow 10/2 \\ \hline 3/6 \\ 4/10 \end{array}$	$\begin{array}{c} 462/393 \rightarrow \\ 15/3 \rightarrow \end{array}$
D2. Locust Avenue at Project Car and Truck Dwy	
$\begin{array}{c} \leftarrow 650/473 \\ \hline 11/25 \end{array}$	$\begin{array}{c} 477/396 \rightarrow \\ 34/8 \rightarrow \end{array}$
3. Locust Avenue at Casmalia Street	
$\begin{array}{c} \leftarrow 196/225 \\ \leftarrow 314/240 \\ \leftarrow 105/138 \\ \hline 237/138 \rightarrow \\ 66/218 \rightarrow \\ 33/89 \rightarrow \end{array}$	$\begin{array}{c} 100/69 \rightarrow \\ 123/158 \rightarrow \\ 31/9 \rightarrow \\ \hline 85/94 \rightarrow \\ 224/220 \rightarrow \\ 11/36 \rightarrow \end{array}$

**FIGURE 9
OPENING YEAR 2025 PLUS PROJECT
TRAFFIC VOLUMES**

LEGEND:

(X) = Study Intersection

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

TABLE 4
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2025 PLUS PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Change in Delay	Infrastructure Deficiency?	Without Project		With Project		Change in Delay	Infrastructure Deficiency?
			Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	Locust Avenue at Casa Grande Drive	U	37.3	E	39.1	E	1.8	No	77.3	F	84.4	F	7.1	Yes
2	Locust Avenue at West Coast Boulevard	U	38.7	E	41.5	E	2.8	Yes	25.6	D	26.6	D	1.0	No
3	Locust Avenue at Casmalia Street	S	27.7	C	28.1	C	0.4	No	29.9	C	30.3	C	0.4	No
D1	Locust Avenue at North Project Driveway	U	-	-	23.1	C	-	No	-	-	17.2	C	-	No
D2	Locust Avenue at South Project Driveway	U	-	-	23.8	C	-	No	-	-	18.1	C	-	No
D3	West Coast Boulevard at Project Driveway	U	-	-	8.7	A	-	No	-	-	8.6	A	-	No

Notes:

- Bold values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

C. Opening Year 2025 Cumulative Conditions

1. Cumulative Projects

In addition to ambient growth, traffic volumes for Cumulative Projects (approved and pending projects) were added to the Opening Year 2025 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 5. The locations of the Cumulative Projects are shown on Figure 10. Cumulative Project traffic volumes are shown on Figure 11.

2. 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*.

3. 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*.

4. Opening Year 2025 Cumulative Conditions

Peak Hour Operating Conditions

Cumulative Project peak hour traffic volumes for were added to Opening Year 2025 traffic volumes to develop Opening Year 2025 Cumulative traffic volumes, which are shown on Figure 12.

Intersection Level of Service results for Opening Year 2025 Cumulative conditions are shown on Table 6. Review of this table indicates that, with the addition of Cumulative Project traffic, the following intersections would continue to operate at an unacceptable Level of Service:

- #1 – Locust Avenue at Casa Grande Drive: AM – LOS E; PM – LOS F
- #2 – Locust Avenue at West Coast Boulevard: AM – LOS E

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

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	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
2	Hotel (SWC of Linden and Renaissance)	135	Occupied Room	1,204	52	38	90	46	48	94
3	Morin Warehouse	200.000	KSF	1,193	77	22	99	26	78	104
4	SEC Casmalia / Linden Warehouse	136.220	KSF	813	54	13	67	18	55	73
5	Fuel Station/Fast Food (SWC of Casmalia / Ayala)	7.000	KSF	4,419	202	188	390	174	164	338
6	NWC Baseline / Alder Warehouse	255.655	KSF	1,526	104	28	132	34	104	138
7	NWC Baseline / Tamarind Warehouse	156.500	KSF	935	65	18	83	23	65	88
8	Warehouse (Baseline / Palmetto)	99.999	KSF	599	41	12	53	13	41	54
9	Warehouse (W/S Alder and S/O Miro)	78.680	KSF	698	32	31	63	34	35	67
10	Warehouse (SEC Casmalia/Laurel)	87.189	KSF	524	25	24	49	26	25	51
11	Warehouse (SWC Casmalia/Linden)	116.429	KSF	500	24	24	48	25	25	50
12	Fuel / FF / Market (SEC Renaissance and Alder)		VFP	9,993	557	556	1,113	454	454	908
13	Crow Holdings (N/S Baseline E/O Ayala)	668.524	KSF	1,163	88	26	114	34	93	127
14	Orbis (NEC Renaissance and Laurel)	135.408	KSF	236	18	5	23	7	19	26
15	Warehouse II (Baseline and Palmetto NEC)	90.726	KSF	158	12	4	16	5	13	18
16	Rialto Travel Center	-	VFP	5,532	277	276	553	256	259	515
17	Orbis Rialto II (PCE)	117.255	KSF	704	49	14	63	18	49	67
18	Renaissance Planning Area 19 Warehouse	168.143	KSF	1,005	65	20	85	23	65	88
Total Project Trips				36,972	1,797	1,686	3,483	1,631	1,773	3,404

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



NOT TO SCALE

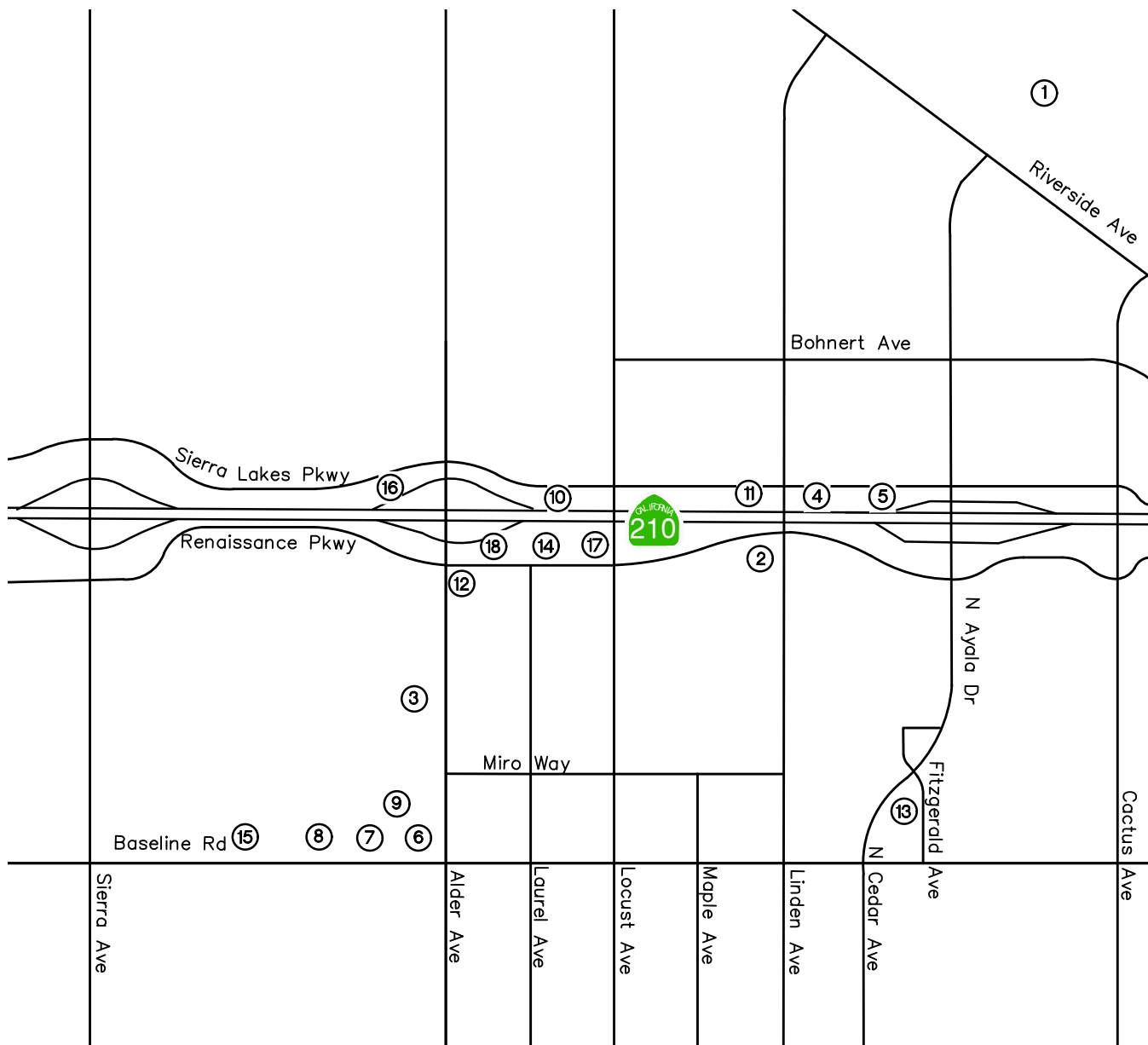


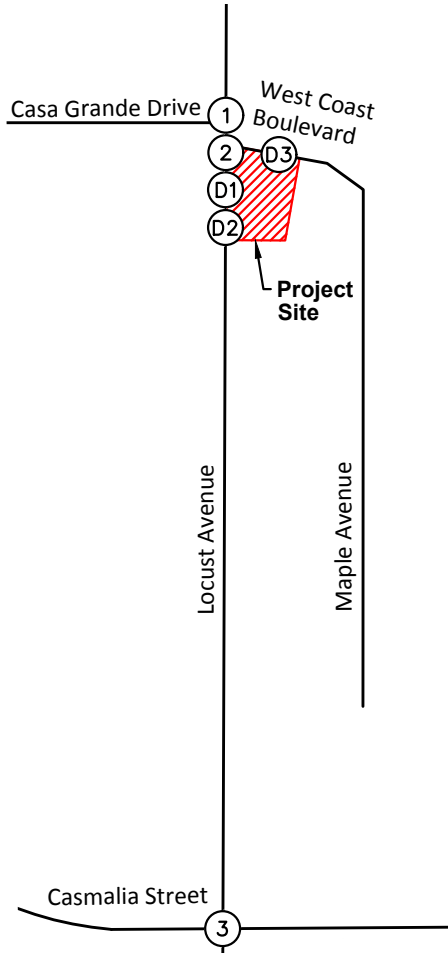
FIGURE 10
LOCATION OF CUMULATIVE PROJECTS

LEGEND:

(X) = Cumulative Project



NOT TO SCALE



1. Locust Avenue at Casa Grande Drive	
← 57/47	44/65 →
2. Locust Avenue at West Coast Boulevard	
← 57/47	44/65 →
D3. West Coast Avenue at Project Car Dwy	
D1. Locust Avenue at Project Truck Dwy	
← 57/47	44/65 →
D2. Locust Avenue at Project Car and Truck Dwy	
← 57/47	44/65 →
3. Locust Avenue at Casmalia Street	
30/28 ← 12/7 15/12	8/25 ↑ 23/39 14/29
30/28 30/26 36/32	33/34 6/12 18/18

**FIGURE 11
CUMULATIVE PROJECT TRAFFIC
VOLUMES**

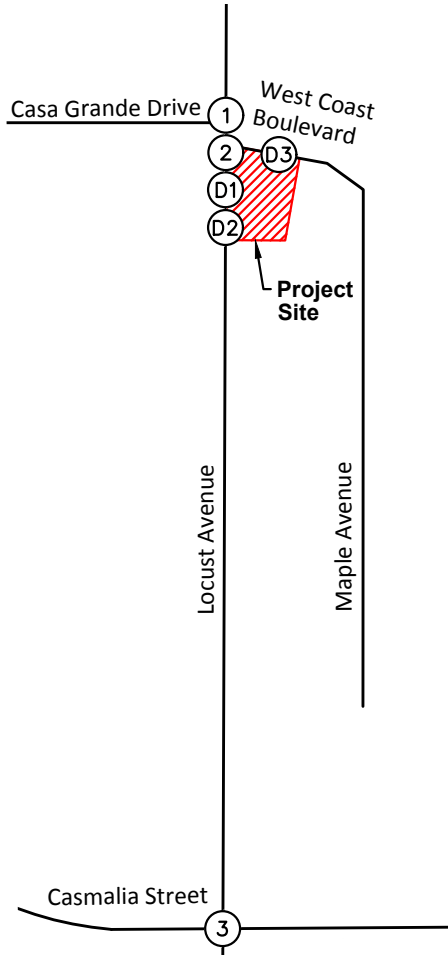
LEGEND:

(X) = Study Intersection

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



NOT TO SCALE



1. Locust Avenue at Casa Grande Drive	
$\begin{array}{c} \leftarrow 18/101 \\ \leftarrow 463/221 \\ \hline 22/96 \rightarrow \\ 260/291 \rightarrow \end{array}$	$\begin{array}{c} \leftarrow 120/214 \\ \leftarrow 316/247 \end{array}$
2. Locust Avenue at West Coast Boulevard	D3. West Coast Avenue at Project Car Dwy
$\begin{array}{c} \leftarrow 7/0 \\ \leftarrow 697/496 \\ \leftarrow 9/5 \\ \hline 0/3 \rightarrow \\ 4/8 \rightarrow \end{array}$	$\begin{array}{c} \leftarrow 15/3 \\ \leftarrow 1/2 \\ \leftarrow 16/5 \\ \hline 10/7 \rightarrow \end{array}$
D1. Locust Avenue at Project Truck Dwy	
$\begin{array}{c} \leftarrow 702/507 \\ \hline \end{array}$	$\begin{array}{c} \rightarrow 503/457 \end{array}$
D2. Locust Avenue at Project Car and Truck Dwy	
$\begin{array}{c} \leftarrow 702/507 \\ \hline \end{array}$	$\begin{array}{c} \rightarrow 503/457 \end{array}$
3. Locust Avenue at Casmalia Street	
$\begin{array}{c} \leftarrow 215/228 \\ \leftarrow 322/238 \\ \leftarrow 119/146 \\ \hline 232/158 \rightarrow \\ 96/244 \rightarrow \\ 69/121 \rightarrow \end{array}$	$\begin{array}{c} \leftarrow 104/93 \\ \leftarrow 146/197 \\ \leftarrow 45/38 \\ \hline 118/128 \rightarrow \\ 217/229 \rightarrow \\ 29/54 \rightarrow \end{array}$

LEGEND:

(X) = Study Intersection

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

**FIGURE 12
OPENING YEAR 2025 CUMULATIVE
TRAFFIC VOLUMES**

TABLE 6
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2025 - CUMULATIVE

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Locust Avenue at Casa Grande Drive	U	48.5	E	146.1	F
2	Locust Avenue at West Coast Boulevard	U	46.5	E	31.0	D
3	Locust Avenue at Casmalia Street	S	29.1	C	31.1	C

Note:

- Bold values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

5. Opening Year 2025 Cumulative Plus Project Conditions

Peak Hour Operating Conditions

Project traffic was added to Opening Year 2025 Cumulative traffic volumes to develop Opening Year 2025 Cumulative Plus Project traffic forecast volumes. The resulting peak hour traffic volumes are shown on Figure 13.

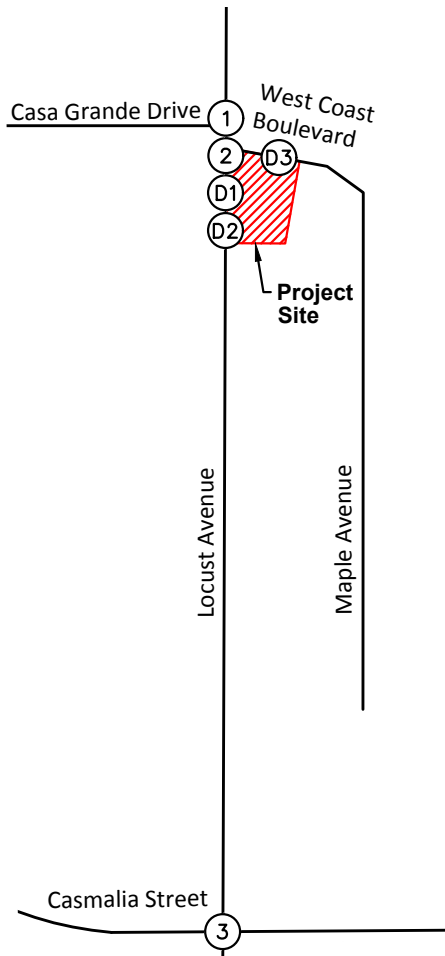
Intersection Level of Service analysis results under Opening Year 2025 Cumulative Plus Project conditions are shown on Table 7. As this table indicates, with the addition of project traffic, the following intersections would continue to operate at an unacceptable Level of Service:

- #1 – Locust Avenue at Casa Grande Drive: AM – LOS F; PM – LOS F
- #2 – Locust Avenue at West Coast Boulevard: AM – LOS F

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



NOT TO SCALE



1. Locust Avenue at Casa Grande Drive	
$\begin{array}{c} \leftarrow 18/101 \\ \leftarrow 479/225 \\ \hline 22/96 \rightarrow \\ 260/291 \rightarrow \end{array}$	$\begin{array}{c} \leftarrow 120/214 \\ \leftarrow 320/259 \end{array}$
2. Locust Avenue at West Coast Boulevard	D3. West Coast Avenue at Project Car Dwy
$\begin{array}{c} \leftarrow 7/0 \\ \leftarrow 707/498 \\ \leftarrow 15/7 \\ \hline 0/3 \rightarrow \\ 4/8 \rightarrow \end{array}$	$\begin{array}{c} \leftarrow 16/9 \\ \leftarrow 2/5 \\ \hline 10/7 \rightarrow \\ 9/3 \rightarrow \\ \leftarrow 2/9 \end{array}$
D1. Locust Avenue at Project Truck Dwy	
$\begin{array}{c} \leftarrow 703/510 \\ \leftarrow 10/2 \\ \hline 3/6 \\ \leftarrow 4/10 \end{array}$	$\begin{array}{c} \leftarrow 506/458 \\ \leftarrow 15/3 \end{array}$
D2. Locust Avenue at Project Car and Truck Dwy	
$\begin{array}{c} \leftarrow 707/520 \\ \hline 11/25 \end{array}$	$\begin{array}{c} \leftarrow 521/461 \\ \leftarrow 34/8 \end{array}$
3. Locust Avenue at Casmalia Street	
$\begin{array}{c} \leftarrow 226/253 \\ \leftarrow 326/247 \\ \leftarrow 120/150 \\ \hline 267/166 \rightarrow \\ 96/244 \rightarrow \\ 69/121 \rightarrow \end{array}$	$\begin{array}{c} \leftarrow 108/94 \\ \leftarrow 146/197 \\ \leftarrow 45/38 \\ \hline 118/128 \rightarrow \\ 230/232 \rightarrow \\ 29/54 \rightarrow \end{array}$

LEGEND:

(X) = Study Intersection

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

**FIGURE 13
OPENING YEAR 2025 CUMULATIVE
PLUS PROJECT TRAFFIC VOLUMES**

TABLE 7
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2025 - CUMULATIVE PLUS PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Change in Delay	Infrastructure Deficiency?	Without Project		With Project		Change in Delay	Infrastructure Deficiency?
			Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	Locust Avenue at Casa Grande Drive	U	48.5	E	51.4	F	2.9	Yes	146.1	F	161.2	F	15.1	Yes
2	Locust Avenue at West Coast Boulevard	U	46.5	E	50.3	F	3.8	Yes	31.0	D	32.5	D	1.5	No
3	Locust Avenue at Casmalia Street	S	29.1	C	29.5	C	0.4	No	31.1	C	31.3	C	0.2	No
D1	Locust Avenue at North Project Driveway	U	-	-	26.1	D	-	No	-	-	19.5	C	-	No
D2	Locust Avenue at South Project Driveway	U	-	-	27.0	D	-	No	-	-	20.6	C	-	No
D3	West Coast Boulevard at Project Driveway	U	-	-	8.7	A	-	No	-	-	8.6	A	-	No

Notes:

- Bold values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

IV. RECOMMENDED IMPROVEMENTS

A. Intersection Improvements

The following unsignalized study intersections would operate an unacceptable Level of Service under all analysis scenarios:

1. Locust Avenue at Casa Grande Drive
2. Locust Avenue at West Coast Boulevard

A traffic signal warrant analysis was conducted for the deficient unsignalized intersections noted above based on the 2014 California Manual on Uniform Traffic Control Devices (CA MUTCD). The warrants were conducted using Warrant 3 (Peak Hour Warrant) for the following analysis scenarios:

- Existing Conditions
- Opening Year 2025
- Opening Year 2025 Plus Project
- Opening Year 2025 Cumulative
- Opening Year 2025 Cumulative Plus Project

Traffic Signal Warrant Analysis worksheets are provided in *Appendix F*. Based on the signal warrant analysis, Warrant 3 was met at the following study intersection under all study scenarios noted above:

1. Locust Avenue at Casa Grande Drive

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

The decision to install a traffic signal should be based on engineering judgement, and not solely upon satisfying a single peak hour warrant. It is recommended that a decision about signalization at the intersection be based on future observations as well as engineering judgement, based on the factors listed above.

Based on the signal warrant analysis, a traffic signal, and other associated signal improvements necessary to construct the traffic signal, is recommended at intersection #1 (Locust Avenue at Casa Grande Drive). The project would pay a fair-share, based on future traffic growth, towards the recommended signal improvements benefitting intersection #1 (Locust Avenue at Casa Grande Drive).

No improvements are recommended at the intersection of Locust Avenue at West Coast Boulevard (#2) since a traffic signal warrant was not met under any analysis scenario due to the nominal amount of traffic on West Coast Boulevard. As noted earlier in the report, the Level of Service for an unsignalized intersection is reported based on the single approach movement with the highest delay, which in this case, would be the westbound approach for intersection #2. While the side street approach operates at a deficient Level of Service based on the highest delay approach, the overall intersection delay would be acceptable. Based on the intersection analysis worksheets provided in Appendix D (previously mentioned), under Opening Year 2025 Cumulative Plus Project conditions, the westbound approach would have a 95th percentile queue of less than one car length in both the AM and PM peak hours. Therefore, any queuing that occurs on the side street would be contained on the minor intersection approach and would not impact the progression of traffic on the main arterial (i.e., Locust Avenue). It should be noted that the project is required to construct the full ultimate pavement width, consistent with industrial street standards, and curb and gutter along the project frontage on West Coast Boulevard. This improvement would provide one travel lane in each direction on West Coast Boulevard along the project frontage and would improve overall circulation within the project vicinity, compared to existing conditions.

A summary of the intersection operation before and after implementation of a traffic signal at intersection #1 (Locust Avenue at Casa Grande Drive) is provided on Table 8 for informational purposes. Fair-share calculations for intersection #1 (Locust Avenue at Casa Grande Drive) are provided on Table 9.

B. Roadway Improvements

Not applicable.

TABLE 8
SUMMARY OF INTERSECTION OPERATION WITH RECCOMENDED IMPROVEMENTS

Int. #	Intersection	AM Peak Hour				PM Peak Hour			
		Without Improvement		With Improvement		Without Improvement		With Improvement	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Locust Avenue at Casa Grande Drive								
	- Traffic signal	51.4	F	39.3	D	161.2	F	38.3	D

Notes:

- Bold values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

TABLE 9
SUMMARY OF PROJECT FAIR SHARE FOR IMPROVEMENTS

Intersection	AM Peak Hour					PM Peak Hour				
	Total Volume		Total Growth	Project Trips	Fair-Share %age	Total Volume		Total Growth	Project Trips	Fair-Share %age
	Existing	OY 2023 Cumulative Plus Project				Existing	OY 2023 Cumulative Plus Project			
#1 - Locust Avenue at Casa Grande Drive	1,055	1,219	164	20	12.2%	1,017	1,186	169	16	9.5%

V. 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. 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.

A VMT Scoping Agreement was prepared for the proposed project based on the City of Rialto *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment* (October 2021), and is provided in *Appendix A*.

B. VMT Assessment

The project site is located within the Rialto Airport Specific Plan. The approved Rialto Airport Specific Plan (dated November 18, 1997) serves as a master plan for the economic development of the 3,131-acre project area which encompasses the northwest portion of the City of Rialto. The existing zoning designations and land uses identified in the City of Rialto General Plan are superseded by the land uses assigned in this Specific Plan.

The project proposes to prepare an addendum to the certified Rialto Airport Specific Plan Environmental Impact Report (EIR). Level of Service was the applicable threshold when the City certifies the Rialto Airport Specific Plan EIR. The mandate requiring lead agencies to use VMT as a threshold for evaluating traffic impacts was adopted in 2018 and effective in 2020. It does not constitute as "new information" requiring additional environmental review nor does it affect the assessment of project environmental impactors or mitigation measures compared to those analyzed in the Rialto Airport Specific Plan EIR.

Per the Specific Plan's land use map, the project site for the West Coast and Locust Avenue Warehouse is classified as 'Planned Industrial Development.' Section 4.0-6 of the Rialto Airport Specific Plan Program EIR describes 'Planned Industrial Development' as "light industrial and industrial/business park uses".

The Rialto Airport Specific Plan assumed a maximum floor area ratio (FAR) of 0.7:1 for planned industrial development. The total area of the proposed project site is 488,624 square feet, resulting in a maximum allowable building size of 342,037 square feet. As such, the proposed 225,173 square-foot industrial building would have fewer VMT than the site based on the land use designation in the Rialto Airport Specific Plan. Therefore, the proposed project would create a less-than-significant VMT impact, and no further VMT analysis is required.

FINDINGS AND RECOMMENDATIONS

A. Improvements

The following unsignalized study intersections would operate an unacceptable Level of Service under all analysis scenarios:

1. Locust Avenue at Casa Grande Drive
2. Locust Avenue at West Coast Boulevard

B. Traffic Signal Warrant Analysis

A traffic signal warrant analysis was conducted for the deficient unsignalized intersections noted above based on the 2014 California Manual on Uniform Traffic Control Devices (CA MUTCD) for the following deficient unsignalized study intersections:

1. Locust Avenue at Casa Grande Drive
2. Locust Avenue at West Coast Boulevard

Based on the signal warrant analysis, Warrant 3 was met at the following study intersection under all study scenarios noted above:

1. Locust Avenue at Casa Grande Drive

C. Site Circulation

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

- One proposed full-movement truck driveway on Locust Avenue, northwest corner of the site
- One proposed full-movement passenger car and truck driveway on Locust Avenue, southwest corner of the site
- One proposed full-movement passenger car driveway on West Coast Boulevard, northeast corner of the site

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

D. Safety and Operational Improvements

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

E. Fair Share Calculations

The project fair share proportion of the improvements are shown on Table 9 (presented previously).

F. Specific Plan Signalization

Not Applicable.

G. General Plan Conformance

The proposed West Coast and Locust Warehouse project is in conformance with the Rialto Airport Specific Plan and the City of Rialto General Plan. Neither a Specific Plan Amendment nor a General Plan Amendment is required for the project.

H. Regional Funding Mechanisms

The project is subject to 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 mitigation measures. In addition, the project may be required to 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.

It should be noted that existing driveway counts for a similar site were conducted on two typical weekdays in December 2021 to estimate existing operations for the project site. The existing use trips are noted in the Scoping Agreement (see *Appendix A*). The existing use credit should be considered when determining traffic development impact fees (DIF) for the proposed project.

APPENDIX A

APPROVED SCOPING AGREEMENT



Exhibit A

SCOPING AGREEMENT FOR TRAFFIC IMPACT ANALYSIS

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

City of Rialto

Traffic Impact Analysis

Scoping Agreement

Case No. PPD2023-0018

Related Cases -

SP No. _____

EIR No. _____

GPA No. _____

ZC No. _____

Project Name: The West Coast & Locust Avenue Warehouse

Project Address: 3115 N Locust Avenue, Rialto CA 92316 (TBD)

Project Description: Construction of a 228,413 SF industrial building on a vacant parcel.

Consultant

Developer

Name: Kimley-Horn and Associates, Inc. Rialto Springs LLC

Address: 1100 W Town and Country Road, Suite 700 13116 Imperial Highway
Orange, CA 92868 Santa Fe Springs, CA 90670

Telephone: (714) 780-2543 (562) 921-3581

Fax: N/A N/A



1. Trip Generation Source: ITE Trip Generation Manual, 11th Edition (2021)

Existing GP Land Use Light Industrial - Proposed Land Use Warehousing (ITE 150)
Specific Plan Overlay

Current Zoning: Planned Industrial Development Proposed Zoning: No change
(I-PID)

Total Daily Project Trips: Net 584 Trips (655 PCE Trips) - See Attachment 2 - Trip Generation Table

	Current Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	<u>7</u>	<u>7</u>	<u>14</u>	<u>50</u>	<u>15</u>	<u>65</u>
PM Trips	<u>0</u>	<u>1</u>	<u>1</u>	<u>18</u>	<u>50</u>	<u>68</u>
Internal Trip Allowance		Yes	<u>No</u> (_____ % Trip Discount)			
Pass-By Trip Allowance		Yes	<u>No</u> (_____ % Trip Discount)			

For appropriate land uses, a pass-by trip discount may be allowed not to exceed 25%. Discount trips shall be indicated on a report figure for intersections and access locations.
See Attachment 3 - Trip Distribution

2. Trip Geographic Distribution: N 35 % S 15 % E 20 % W 30 %
Trucks: 20% 20% 30% 30%
(Detailed exhibits of trip distribution must be attached with Trucks as a separate exhibit)

3. Background Growth Traffic

Project Completion Year: 2025 Annual Background Growth Rate: 2 %

Other Phase Years _____ We will request a list of cumulative projects from the City's Planning Department

Other area projects to be considered: _____

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

Model/Forecast methodology: Existing + Ambient Growth + Cumulative Projects + Project to Opening Year

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

1. Locust Avenue at West Coast Boulevard 6. _____
2. Locust Avenue at Casmalia Street 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____

add Locust/Casa Grande



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

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 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: _____

7. Site Plan (please attach 11" x 17" legible copy) See Attachment 1 - Site Plan

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

Site Adjacent Roadway Cross-Sections, Truck Turning Exhibit, and Line of Sight Exhibit.

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: _____

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.

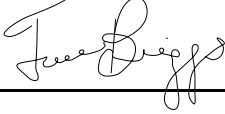
Fees Paid: _____ Date _____



Recommended:

Scoping Agreement Submittal date 4/19/2023

Scoping Agreement Resubmittal date 7/28/2023


 Kimley-Horn and Associates, Inc. July 28, 2023

Applicant/Engineer Date

Land Use Concurrence:

Development Services Department Date

Approved by:

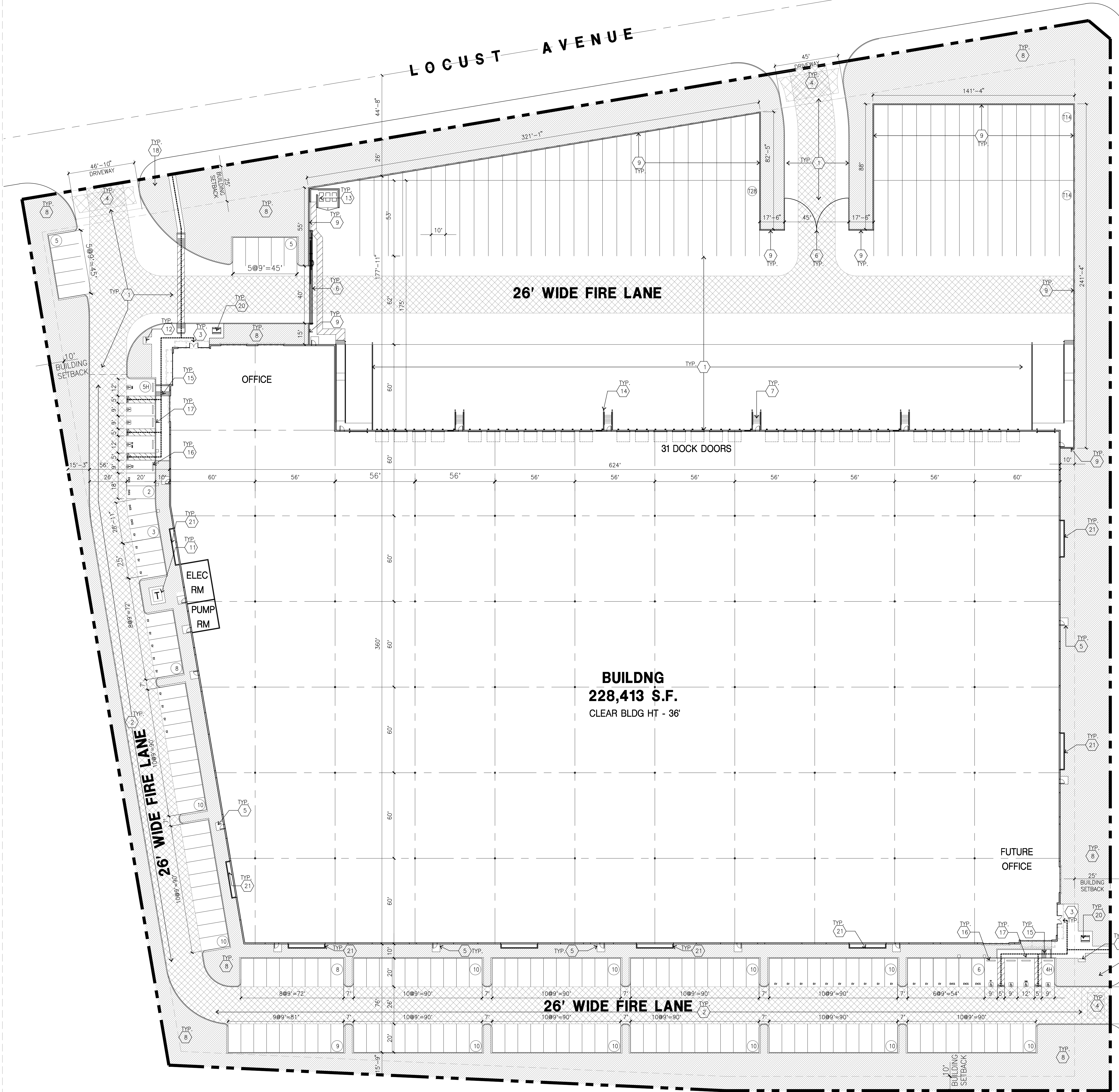
 9/21/23

Public Works Department Date

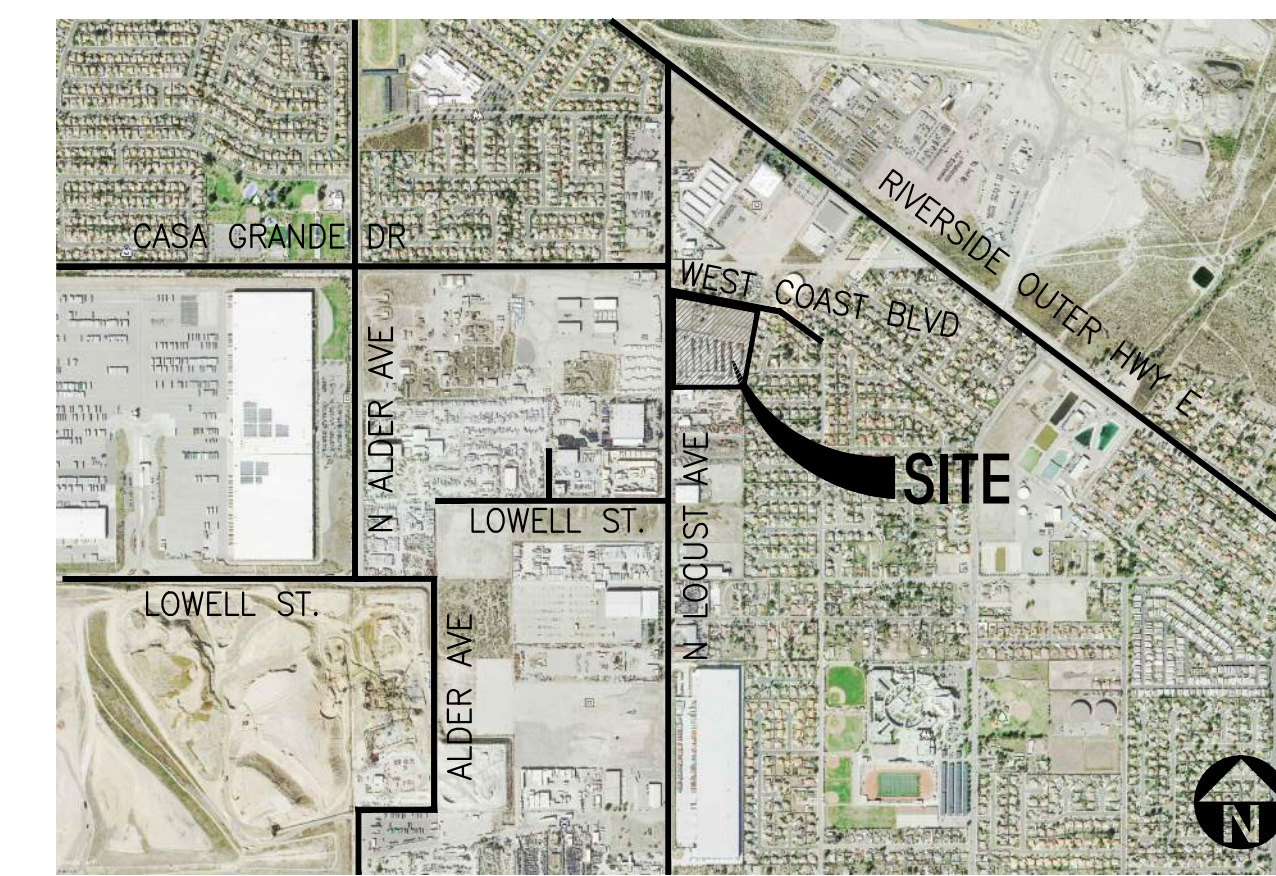
NOTE:

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 Public Works Director/City Engineer review and approval.

ATTACHMENT 1



VICINITY MAP



PROJECT INFORMATION

Owner/Applicant
 RIALTO SPRINGS LLC
 13116 IMPERIAL HIGHWAY
 SANTA FE SPRINGS CA 90670
 TEL: 562-921-3581
 CONTACT: STEPHANE WANDEL

Applicant's Representative
 HPA, INC.
 18831 BARDEEN AVENUE - SUITE 100
 IRVINE, CA 92612
 PHONE: (949) 862-2138
 FAX: (949) 863-0851
 CONTACT: SHERRY WU

Project Address
 TBD

Code Analysis
 2022 CALIFORNIA BUILDING CODE
 2022 CALIFORNIA PLUMBING CODE
 2022 CALIFORNIA MECHANICAL CODE
 2022 CALIFORNIA ELECTRICAL CODE
 2022 CALIFORNIA FIRE CODE
 2022 CALIFORNIA ENERGY CODE

Assessors Parcel Number
 239-301-64
 239-301-51
 239-301-56
 239-301-55
 239-301-40
 239-301-49

Zoning
 I-PID : PLANNED INDUSTRIAL DEVELOPMENT

Construction Type
 CONCRETE TILT-UP BUILDING

BUILDING OCCUPANCY : S-1 / B
CONSTRUCTION TYPE : III-B
ALLOWED BUILDING HEIGHT : TBD
BUILDING MAXIMUM HEIGHT : 44'
BUILDING HEIGHT : 36'-10"

ESFR SYSTEM : YES

SITE PLAN KEYNOTES

- 1 HEAVY BROOM FINISH CONC. PAVEMENT
- 2 ASPHALT PAVEMENT BY CIVIL
- 3 CONCRETE WALKWAY
- 4 DECORATIVE DRIVEWAY APRONS TO BE CONSTRUCTED PER "L" DRAWINGS.
- 5 5'-6" X 5'-6" X 4" MIN. THICK CONCRETE EXTERIOR LANDING PAD TYP. AT ALL EXTERIOR MAN DOORS TO LANDSCAPED AREAS. FINISH TO BE MEDIUM BROOM FINISH. SLOPE TO BE 1/4" : 12" MAX. PROVIDE WALK TO PUBLIC WAY OR DRIVE WAY W/ 1:20 MAX. 45 DEG. BY CITY INSPECTOR.
- 6 8' H PROVIDE METAL MANUAL OPERATED GATES W/ KNOX-PAD LOCK PER FIRE DEPARTMENT STANDARDS PER DRIVEWAY.
- 7 EXTERIOR CONC. STAIR.
- 8 LANDSCAPE. SEE "L" DWGS.
- 9 14"H CONCRETE TILT-UP SCREEN WALL
- 10 2X2 EV CONDUIT CONCRETE PAD.
- 11 APPROXIMATE LOCATION OF TRANSFORMER.
- 12 BIKE RACK.
- 13 TRASH ENCLOSURE
- 14 CONCRETE FILLED GUARD POST "6 DIA. U.N.O. 42" H.
- 15 TRUNCATED DOME.
- 16 PRE-CAST CONCRETE WHEEL STOP.
- 17 ACCESSIBLE PARKING STALL SIGN.
- 18 ACCESSIBLE ENTRY SIGN.
- 19 FIRE HYDRANT. SEE CIVIL DRAWINGS
- 20 BREAK AREA
- 21 NON STRUCTURAL ARCHITECTURAL TREATMENT WITH SMOOTH PLASTER FINISH

SITE PLAN GENERAL NOTES

1. THE SITE PLAN BASED ON THE SOILS REPORT PREPARED BY: TBD
2. IF SOILS ARE EXPANSIVE IN NATURE, USE STEEL REINFORCING FOR ALL SITE CONCRETE.
3. ALL DIMENSIONS ARE TO THE FACE OF CONCRETE WALL, FACE OF CONCRETE CURB OR GRID LINE U.N.O.
4. FOR ALL CONCRETE CURBS, GUTTERS AND SWALES.
5. THE ENTIRE PROJECT SHALL BE PERMANENTLY MAINTAINED WITH AN AUTOMATIC IRRIGATION SYSTEM.
6. FOR POINT OF CONNECTIONS TO OFF-SITE UTILITIES, CONTRACTOR SHALL VERIFY ACTUAL UTILITY LOCATIONS.
7. PROVIDE POSITIVE DRAINAGE AWAY FROM BLDG.
8. SITE PLANS ARE FOR GUIDANCE AND STARTING LAYOUT POINTS.
9. FOR FINISH GRADE ELEVATIONS.
10. CONCRETE SIDEWALKS TO BE A MINIMUM OF 4" THICK W/ TOOLED JOINTS AT 6' O.C. EXPANSION/CONSTRUCTION JOINTS SHALL BE A MAXIMUM 12" EA. WAY. EXPANSION JOINTS TO HAVE COMPRESSIVE EXPANSION FILLER MATERIAL OF 1/4". FINISH TO BE A MEDIUM BROOM FINISH U.N.O.
11. PAINT CURBS AND PROVIDE SIGNS TO INFORM OF FIRE LANES AS REQUIRED BY FIRE DEPARTMENT.
12. CONSTRUCTION DOCUMENTS PERTAINING TO THE LANDSCAPE AND IRRIGATION OF THE ENTIRE PROJECT SITE SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND APPROVED BY PUBLIC FACILITIES DEVELOPMENT PRIOR TO ISSUANCE OF BUILDING PERMITS.
13. PRIOR TO FINAL CITY INSPECTION, THE LANDSCAPE ARCHITECT SHALL SUBMIT A CERTIFICATE OF COMPLETION TO PUBLIC FACILITIES DEVELOPMENT.
14. ALL LANDSCAPE AND IRRIGATION DESIGNS SHALL MEET CURRENT CITY STANDARDS AS LISTED IN GUIDELINES OR AS OBTAINED FROM PUBLIC FACILITIES DEVELOPMENT.
15. LANDSCAPED AREAS SHALL BE DELINEATED WITH A MINIMUM SIX INCHES (6") HIGH CURB.

TABULATION

SITE AREA	
In s.f.	486,624 s.f.
In acres	11.22 ac
BUILDING AREA	
Office - 1st Floor	5,000 s.f.
Office - 2nd Floor	5,000 s.f.
Warehouse	218,413 s.f.
TOTAL	228,413 s.f.
COVERAGE	46.7%
AUTO PARKING REQUIRED	
Office: 1250 s.f.	40 stalls
Warehouse: 1st flr @ 11000 s.f.	10 stalls
Warehouse: above 10k @ 10000 s.f.	104 stalls
TOTAL	154 stalls
AUTO PARKING PROVIDED	
Standard (9' x 20')	123 stalls
Accessible Standard Auto (9' x 20')	4 stalls
Accessible Van (12' x 20')	2 stalls
Standard EV (9' x 20')	26 stalls
Standard Accessible EV Charging (9' x 20')	2 stalls
Accessible Van EV Charging (12' x 20')	1 stalls
EVCS (9' x 20')	7 stalls
TOTAL	165 stalls
TRAILER PARKING PROVIDED	
Standard (10' x 33')	56 stalls
ZONING ORDINANCE FOR CITY	
Zoning Designation - Rialto Airport Specific Plan - I-PID (Planned Industrial Dev.)	
MAXIMUM BUILDING HEIGHT ALLOWED	
Height - 44'	
CLEAR BUILDING HEIGHT	
Height - 36'	
MAXIMUM FLOOR AREA RATIO	
FAR - 3:1	
LANDSCAPE REQUIREMENT	
Percentage - To be verified	
LANDSCAPE PROVIDED	
In s.f.	79,355 s.f.
In percentage	16.24%
SETBACKS	
Building Landscape	
Locust Ave Front - 25'	
West Coast Front - 25'	
Rear - 10'	Residential - 10'

SITE LEGEND

- LANDSCAPED AREA
- CONCRETE PAVING SEE "C" DWGS. FOR THICKNESS
- 26' FIRE WIDE FIRELANE
- EV PARKING WITH CHARGING INFRASTRUCTURE STALL (9' X 20')
- STANDARD PARKING STALL (9' X 20')
- HANDICAP PARKING STALL (9' X 20') + WITH 5' AISLE + VANPOOL (12' X 20')
- PATH OF TRAVEL

OVERALL SITE PLAN

SCALE: 1" = 30'-0"

scale: 1" = 30'-0"



hpa, inc.
 18831 bardeen avenue - ste. #100
 irvine, ca
 92612
 tel: 949-863-1770
 fax: 949-863-0851
 email: hpa@hparchs.com

Owner:

RIALTO SPRINGS LLC

13116 Imperial Highway
 Santa Fe Springs CA 90670
 tel: 562-921-3581

Project:

THE WEST COAST & LOCUST AVENUE WAREHOUSE

SEC West Coast Blvd & N Locust Ave

Consultants:

Civil: ARMSTRONG
 Structural: -
 Mechanical: -
 Plumbing: -
 Electrical: -
 Landscape: HUNTER LANDSCAPE
 Fire Protection: -
 Soils Engineer: -

Title: Overall Site Plan

Project Number: 21376
 Drawn by: SW
 Date: 02/28/23
 Revision: _____

Sheet:

1-DAB-A1.1

ATTACHMENT 2
SUMMARY OF PROJECT TRIP GENERATION

Land Use	ITE Code	Unit	Trip Generation Rates ¹						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Warehousing	150	KSF	1.710	0.131	0.039	0.170	0.050	0.130	0.180

Land Use	Quantity	Unit	Trip Generation Estimates						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
<i>Existing Use</i> ²									
Warehousing	4.900	Acre	71	7	7	14	0	1	1
<i>Total Existing PCE Trips</i>			71	7	7	14	0	1	1
<i>Proposed Use</i>									
Warehousing	228.413	KSF	391	30	9	39	11	30	41
Passenger Vehicles	60.00%		235	18	5	23	7	18	25
Trucks	40.00%		156	12	4	16	4	12	16

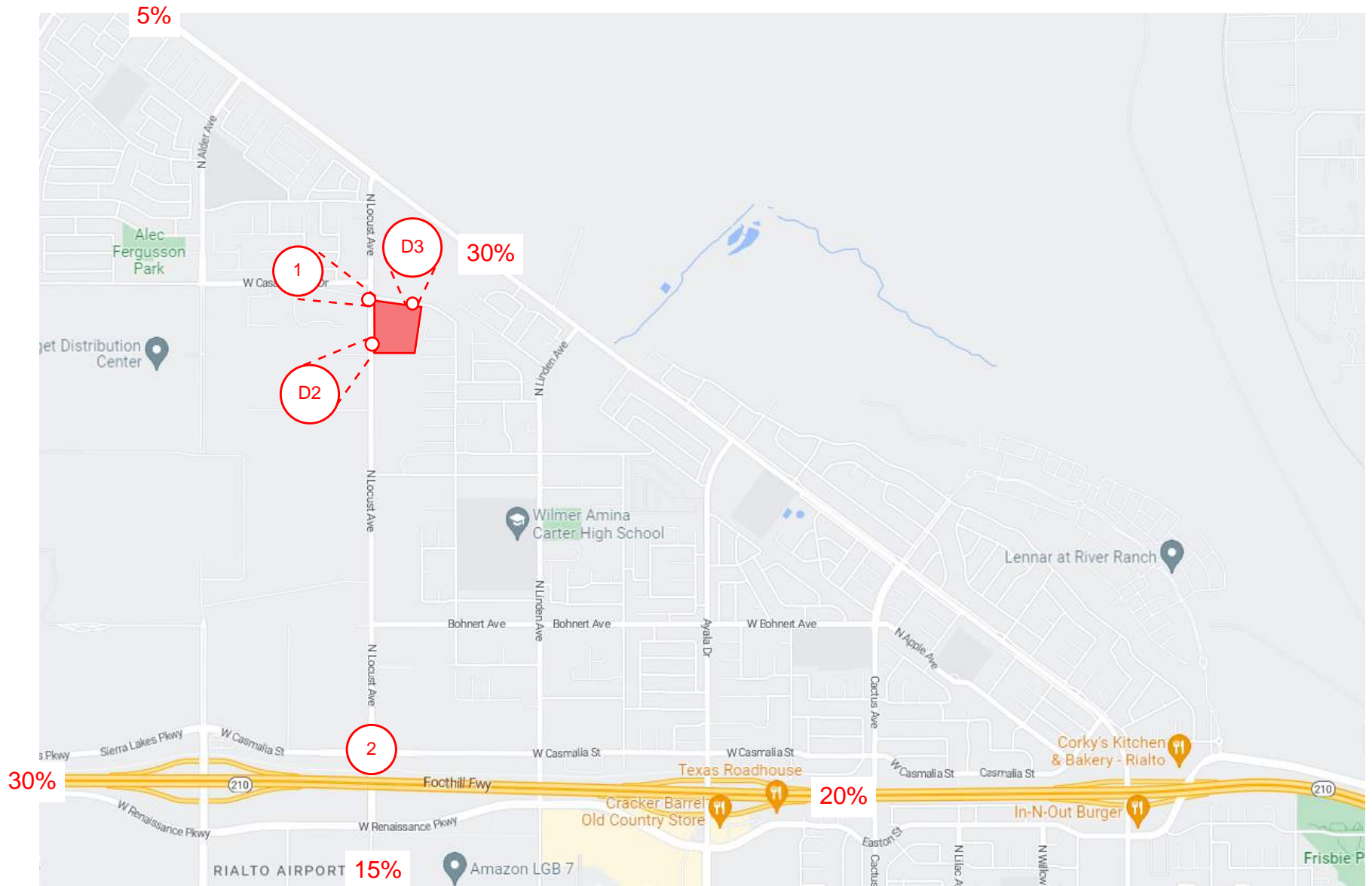
WAREHOUSING PROJECT TRIPS - PASSENGER CAR EQUIVALENTS (PCE)										
Vehicle Type	Vehicle Mix ³	Daily Vehicles	PCE Factor ³	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Passenger Vehicles	60.00%	235	1.0	235	18	5	23	7	18	25
2-Axle Trucks	0.80%	3	1.5	5	0	0	0	0	0	0
3-Axle Trucks	11.20%	44	2.0	88	7	2	9	2	7	9
4+ Axle Trucks	28.00%	109	3.0	327	25	8	33	9	25	34
Total Truck PCE Trips				420	32	10	42	11	32	43
Total Proposed Project PCE Trips				655	50	15	65	18	50	68
Net Difference (Proposed Minus Existing)				584	43	8	51	18	49	67

¹ Source: Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition





² Average of driveway count data collection from similar existing site on Wednesday, December 15, 2021, and Thursday, December 16, 2021.

³ Source: City of Rialto Traffic Impact Analysis Report Guidelines and Requirements

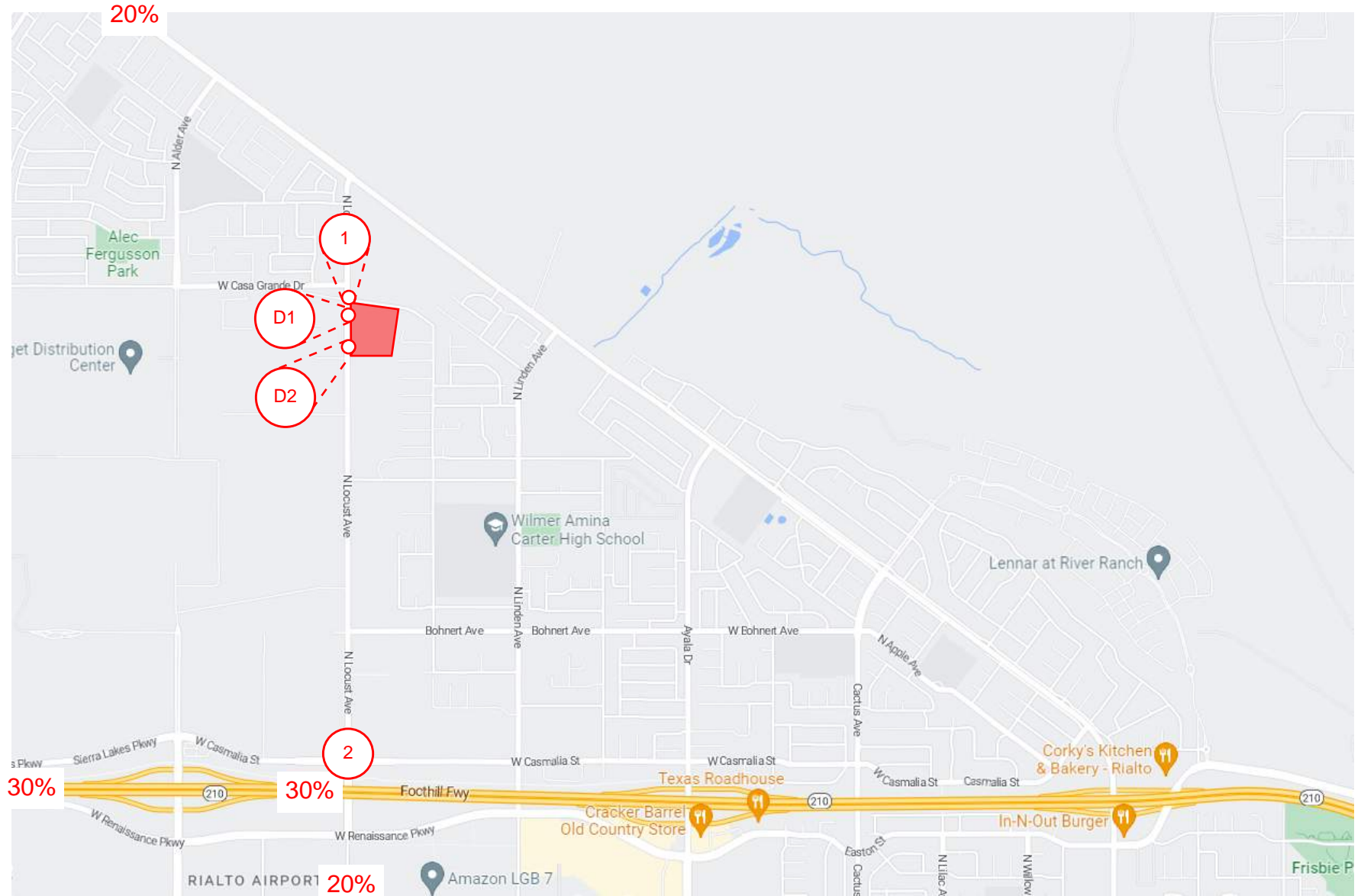
ATTACHMENT 3A - PASSENGER CAR DISTRIBUTION







Legend:

-  Project Site
-  Study Intersection
-  Project Driveway
-  Passenger Car Distribution

ATTACHMENT 3B - TRUCK DISTRIBUTION



Legend:

-  Project Site
-  Study Intersection
-  Project Driveway
-  Truck Distribution



VMT Analysis Project Scoping Form

This scoping form shall be submitted to the City of Rialto to assist in identifying infrastructure improvements that may be required to support traffic from the proposed project.

Project Identification:

Case Number:	PPD2023-0018
Related Cases:	
SP No.	
EIR No.	
GPA No.	
CZ No.	
Project Name:	The West Coast & Locust Avenue Warehouse
Project Address:	3115 N Locust Avenue, Rialto, CA 92316 (TBD)
Project Opening Year:	2025
Project Description:	Construction of a 228,413 SF industrial building on a vacant parcel.

	Consultant:	Developer:
Name:	Kimley-Horn and Associates, Inc.	Rialto Springs LLC
Address:	1100 W Town and Country Road, Suite 700 Orange, CA 92868	13116 Imperial Highway Santa Fe Springs, CA 90670
Telephone:	(714) 780-2543	(562) 921-3581
Fax/Email:	Trevor.Briggs@Kimley-Horn.com	N/A

Trip Generation Information:

Trip Generation Data Source: ITE Trip Generation Manual, 11th Edition (2021)

Current General Plan Land Use:

Light Industrial - Specific Plan Overlay

Proposed General Plan Land Use:

Warehousing (ITE 150)

Current Zoning:

Planned Industrial Development (I-PID)

Proposed Zoning:

No Change



	Existing Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	7	7	14	50	15	65
PM Trips	0	1	1	18	50	68

Trip Internalization: Yes No (_____ % Trip Discount)

Pass-By Allowance: Yes No (_____ % Trip Discount)

Potential Screening Checks

Is the project screened from VMT assessment? Yes No

VMT screening justification <u>Please see attached VMT Screening Memorandum</u> <hr/> <hr/> <hr/> <hr/>
--

VMT Scoping

For projects that are not screened, identify the following:

- Travel Demand Forecasting Model Used _____
- Attach SBCTA Screening VMT Assessment output or describe why it is not appropriate for use
- Attach proposed Model Land Use Inputs and Assumed Conversion Factors (attach)



Approved by:

Justin P. Schlaepf

9/21/23

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 Public Works Director/City Engineer review and approval



July 28, 2023

Daniel Casey
Senior Planner
City of Rialto
150 S. Palm Avenue
Rialto, CA 92376

Subject: *Vehicle Miles Traveled Memorandum for The West Coast and Locust Avenue Warehouse Project in the City of Rialto*

Dear Mr. Casey:

Kimley-Horn and Associates, Inc. has prepared a Vehicle Miles Traveled (VMT) memorandum for the proposed West Coast and Locust Avenue Warehouse Project. This memorandum based on the City of Rialto *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment* (October 2021).

PROJECT DESCRIPTION

The project site is located on southeast corner of Locust Avenue and West Coast Boulevard in the City of Rialto. The project site is bounded by single family homes to the north and east, and industrial buildings to the south and west. The project site is currently occupied by industrial uses and vacant land. The project site will involve the construction of a 228,413 square-foot industrial building. A copy of the project site plan is provided on Attachment 1.

Vehicular access provisions for the project site would be provided via two full-movement driveways on Locust Avenue and one full-movement on West Coast Boulevard. All project driveways would be unsignalized.

PROPOSED TRIP GENERATION

Trip generation estimates for the proposed project are based on the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition) trip generation rates for Warehousing (ITE 150). Trip generation rates and the resulting trip generation estimates for the proposed project are summarized on Attachment 2.

The project is estimated to generate 235 PC trips on a daily basis with 39 PC trips in the morning peak hour and 41 PC trips in the evening peak hour; and 156 truck trips on a daily basis with 16 truck trips in the morning peak hour and 16 truck trips in the evening peak hour.

PCE factors were then applied to the truck types, based on the number of axles, to determine the total PCE volumes generated by the proposed project. Daily and peak hour trip generation estimates for the proposed project are summarized on Table 1 (previously mentioned). The proposed project is estimated to generate 655 daily PCE trips, with 65 PCE trips in the morning peak hour, and 68 PCE trips in the evening peak hour.

CEQA VEHICLE MILES TRAVELED (VMT) SCREENING

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 *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment* (October 2021) provide 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 three criteria:

1. Transit Priority Area (TPA) Screening
2. Low VMT Area Screening
3. Project Type Screening

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.

Transit Priority Area (TPA) Screening

A project located within a Transit Priority Area (TPA), as determined by the San Bernadino County Transportation Authority (SBCTA) VMT Screening Tool, would be considered to have a less-than significant transportation impact. Based on the SBCTA VMT Screening Tool, the proposed project is not located within a TPA.

The Transit Priority Area Screening threshold is not met.

Low VMT Area Screening

A project located within a low VMT area as determined by the City's guidelines and the SBCTA VMT Screening Tool would be considered to have a less-than-significant transportation impact. Based on the City of Rialto VMT thresholds and the SBCTA VMT Screening Tool, the proposed project is not located within a low VMT area. Results of the SBCTA VMT Screening Tool are provided in Attachment 3.

The Low VMT Area Screening threshold is not met.

Project Type Screening

A project would be considered to have a less-than-significant transportation impact if the project generates less than 110 daily vehicle trips.

The following uses would also be presumed to have a less-than-significant VMT impact:

- 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 hotels (e.g., non-destination hotels)
- Local-serving medical
- Student housing projects on or adjacent to college campuses
- Local-serving assembly uses (places of worship, community organizations)
- Community institutions (public libraries, fire stations, local government)
- Local serving community colleges that are consistent with the assumptions noted in the RTP/SCS
- Affordable or supportive housing
- Assisted living facilities
- Senior housing (as defined by HUD)

The project will involve the construction of a 228,413 square-foot industrial building that generates more than 110 daily trips; therefore, the project would not be screened out based on project type.

The Project Type Screening threshold is not met.

VMT ASSESSMENT

The project site is located within the Rialto Airport Specific Plan. The approved Rialto Airport Specific Plan (dated November 18, 1997) serves as a master plan for the economic development of the 3,131-acre project area which encompasses the northwest portion of the City of Rialto. The existing zoning designations and land uses identified in the City of Rialto General Plan are superseded by the land uses assigned in this Specific Plan.

The project proposes to prepare an addendum to the certified Rialto Airport Specific Plan Environmental Impact Report (EIR). Level of Service was the applicable threshold when the City certifies the Rialto Airport Specific Plan EIR. The mandate requiring lead agencies to use VMT as a threshold for evaluating traffic impacts was adopted in 2018 and effective in 2020. It does not constitute as “new information” requiring additional environmental review nor does it affect the assessment of project environmental impactors or mitigation measures compared to those analyzed in the Rialto Airport Specific Plan EIR.

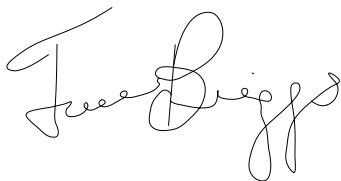
Per the Specific Plan’s land use map, the project site for the West Coast and Locust Avenue Warehouse is classified as ‘Planned Industrial Development’. A copy of the map is provided on Figure 2. Section 4.0-6 of the Rialto Airport Specific Plan Program EIR describes ‘Planned Industrial Development’ as “light industrial and industrial/business park uses”.

The Rialto Airport Specific Plan assumed a maximum floor area ratio (FAR) of 0.7:1 for planned industrial development. The total area of the proposed project site is 488,624 square feet, resulting in a maximum allowable building size of 342,037 square feet. As such, the proposed 228,413 square-foot industrial building would have fewer VMT than the site based on the land use designation in the Rialto Airport Specific Plan. Therefore, the proposed project would create a less-than-significant VMT impact, and no further analysis is required.

Please contact me if you have any questions or if you need additional information.

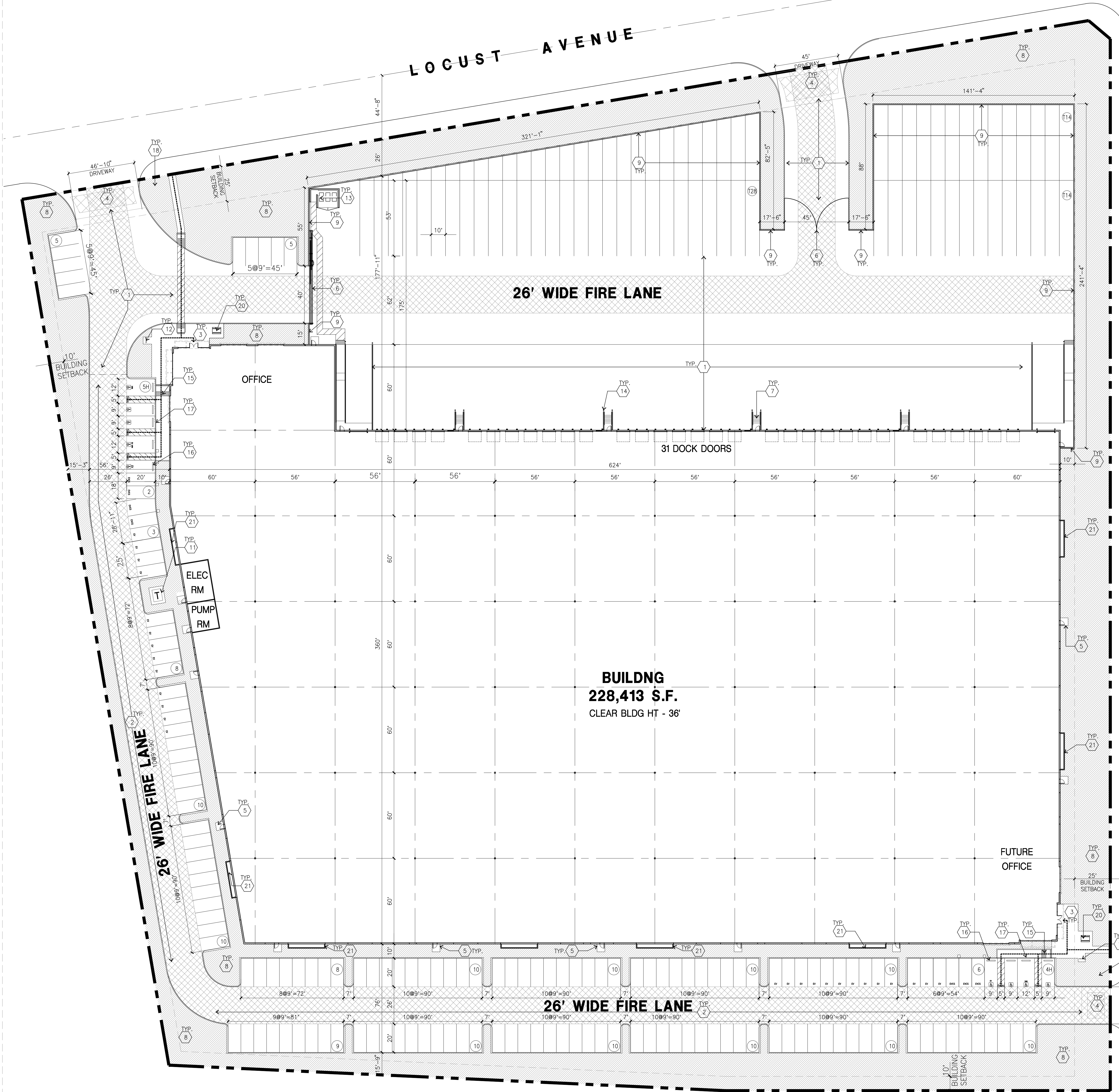
Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

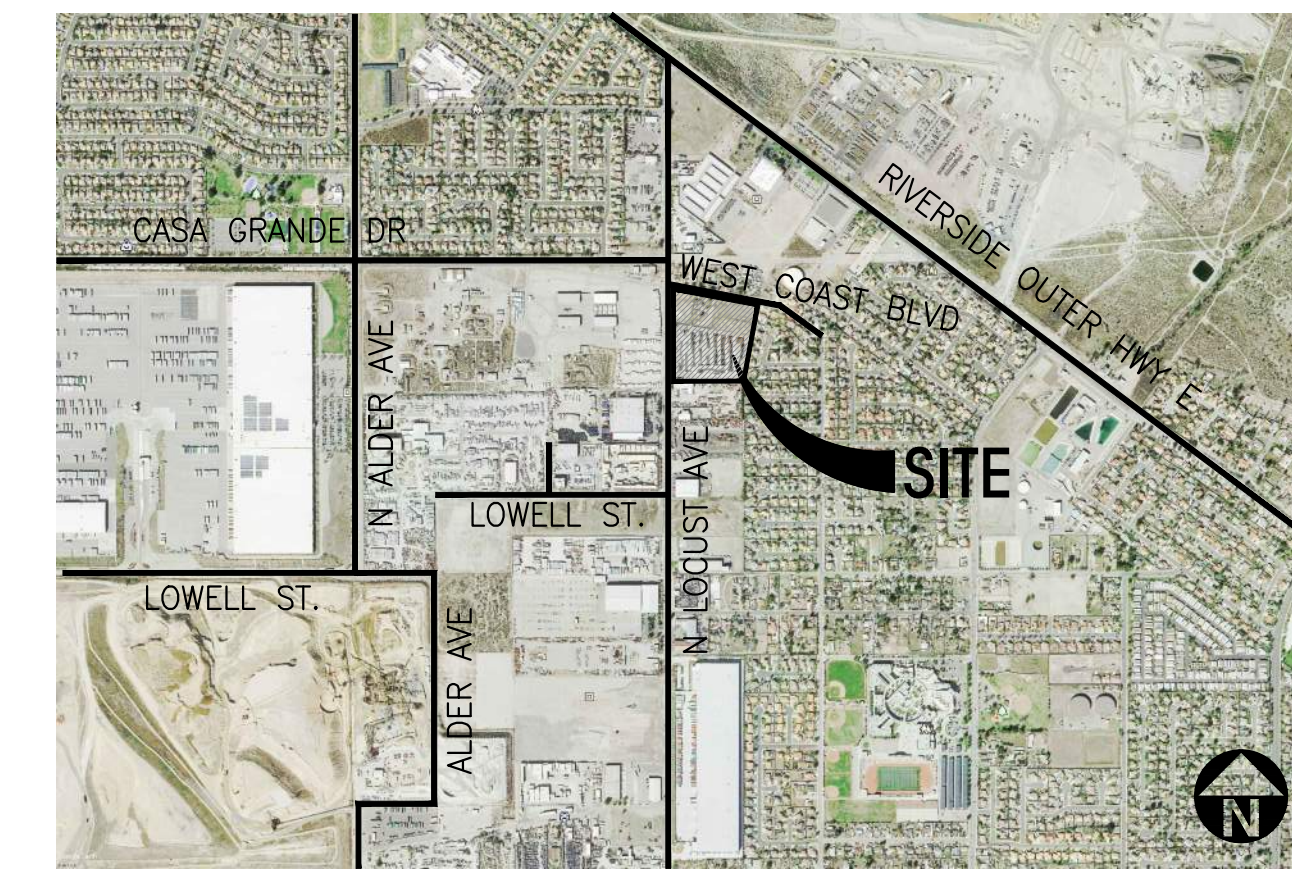


Trevor Briggs, P.E

ATTACHMENT 1



VICINITY MAP



PROJECT INFORMATION

Owner/Applicant
 RIALTO SPRINGS LLC
 13116 IMPERIAL HIGHWAY
 SANTA FE SPRINGS CA 90670
 TEL: 562-921-3581
 CONTACT: STEPHANE WANDEL

Applicant's Representative
 HPA, INC.
 18831 BARDEEN AVENUE - SUITE 100
 IRVINE, CA 92612
 PHONE: (949) 862-2138
 FAX: (949) 863-0851
 CONTACT: SHERRY WU

Project Address
 TBD

Code Analysis
 2022 CALIFORNIA BUILDING CODE
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 2022 CALIFORNIA MECHANICAL CODE
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 2022 CALIFORNIA FIRE CODE
 2022 CALIFORNIA ENERGY CODE

Assessors Parcel Number
 239-301-64
 239-301-51
 239-301-56
 239-301-55
 239-301-40
 239-301-49

Zoning
 I-PID : PLANNED INDUSTRIAL DEVELOPMENT

Construction Type
 CONCRETE TILT-UP BUILDING

BUILDING OCCUPANCY : S-1 / B
CONSTRUCTION TYPE : III-B
ALLOWED BUILDING HEIGHT : TBD
BUILDING MAXIMUM HEIGHT : 44'
BUILDING HEIGHT : 36'-10"

ESFR SYSTEM : YES

SITE PLAN KEYNOTES

- HEAVY BROOM FINISH CONC. PAVEMENT
- ASPHALT PAVEMENT BY CIVIL
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- LANDSCAPE. SEE "L" DWGS.
- 14"H CONCRETE TILT-UP SCREEN WALL
- 2X2 EV CONDUIT CONCRETE PAD.
- APPROXIMATE LOCATION OF TRANSFORMER.
- BIKE RACK.
- TRASH ENCLOSURE
- CONCRETE FILLED GUARD POST "6 DIA. U.N.O. 42" H.
- TRUNCATED DOME.
- PRE-CAST CONCRETE WHEEL STOP.
- ACCESSIBLE PARKING STALL SIGN.
- ACCESSIBLE ENTRY SIGN.
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- ALL DIMENSIONS ARE TO THE FACE OF CONCRETE WALL, FACE OF CONCRETE CURB OR GRID LINE U.N.O.
- FOR ALL CONCRETE CURBS, GUTTERS AND SWALES.
- THE ENTIRE PROJECT SHALL BE PERMANENTLY MAINTAINED WITH AN AUTOMATIC IRRIGATION SYSTEM.
- FOR POINT OF CONNECTIONS TO OFF-SITE UTILITIES, CONTRACTOR SHALL VERIFY ACTUAL UTILITY LOCATIONS.
- PROVIDE POSITIVE DRAINAGE AWAY FROM BLDG.
- SITE PLANS ARE FOR GUIDANCE AND STARTING LAYOUT POINTS.
- FOR FINISH GRADE ELEVATIONS.
- CONCRETE SIDEWALKS TO BE A MINIMUM OF 4" THICK W/ TOOLED JOINTS AT 6' O.C. EXPANSION/CONSTRUCTION JOINTS SHALL BE A MAXIMUM 12' EA. WAY. EXPANSION JOINTS TO HAVE COMPRESSIVE EXPANSION FILLER MATERIAL OF 1/4". FINISH TO BE A MEDIUM BROOM FINISH U.N.O.
- PAINT CURBS AND PROVIDE SIGNS TO INFORM OF FIRE LANES AS REQUIRED BY FIRE DEPARTMENT.
- CONSTRUCTION DOCUMENTS PERTAINING TO THE LANDSCAPE AND IRRIGATION OF THE ENTIRE PROJECT SITE SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND APPROVED BY PUBLIC FACILITIES DEVELOPMENT PRIOR TO ISSUANCE OF BUILDING PERMITS.
- PRIOR TO FINAL CITY INSPECTION, THE LANDSCAPE ARCHITECT SHALL SUBMIT A CERTIFICATE OF COMPLETION TO PUBLIC FACILITIES DEVELOPMENT.
- ALL LANDSCAPE AND IRRIGATION DESIGNS SHALL MEET CURRENT CITY STANDARDS AS LISTED IN GUIDELINES OR AS OBTAINED FROM PUBLIC FACILITIES DEVELOPMENT.
- LANDSCAPED AREAS SHALL BE DELINEATED WITH A MINIMUM SIX INCHES (6") HIGH CURB.

TABULATION

SITE AREA	
In s.f.	486,624 s.f.
In acres	11.22 ac
BUILDING AREA	
Office - 1st Floor	5,000 s.f.
Office - 2nd Floor	5,000 s.f.
Warehouse	218,413 s.f.
TOTAL	228,413 s.f.
COVERAGE	46.7%
AUTO PARKING REQUIRED	
Office: 1250 s.f.	40 stalls
Warehouse: 1st flr @ 11000 s.f.	10 stalls
Warehouse: above 10k @ 10000 s.f.	104 stalls
TOTAL	154 stalls
AUTO PARKING PROVIDED	
Standard (9' x 20')	123 stalls
Accessible Standard Auto (9' x 20')	4 stalls
Accessible Van (12' x 20')	2 stalls
Standard EV (9' x 20')	26 stalls
Standard Accessible EV Charging (9' x 20')	2 stalls
Accessible Van EV Charging (12' x 20')	1 stalls
EVCS (9' x 20')	7 stalls
TOTAL	165 stalls
TRAILER PARKING PROVIDED	
Standard (10' x 30')	56 stalls
ZONING ORDINANCE FOR CITY	
Zoning Designation - Rialto Airport Specific Plan - I-PID (Planned Industrial Dev.)	
MAXIMUM BUILDING HEIGHT ALLOWED	
Height - 44'	
CLEAR BUILDING HEIGHT	
Height - 36'	
MAXIMUM FLOOR AREA RATIO	
FAR - 3:1	
LANDSCAPE REQUIREMENT	
Percentage - To be verified	
LANDSCAPE PROVIDED	
In s.f.	79,355 s.f.
In percentage	16.24%
SETBACKS	
Building Landscape	
Locust Ave Front - 25'	
West Coast Front - 25'	
Rear - 10'	Residential - 10'

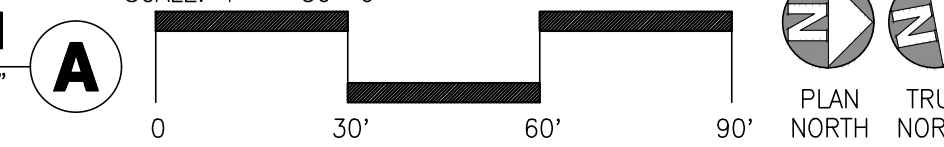
SITE LEGEND

- LANDSCAPED AREA
- CONCRETE PAVING SEE "C" DWGS. FOR THICKNESS
- 26' FIRE WIDE FIRELANE
- EV PARKING WITH CHARGING INFRASTRUCTURE STALL (9' X 20')
- STANDARD PARKING STALL (9' X 20')
- HANDICAP PARKING STALL (9' X 20') + WITH 5' AISLE + VANPOOL (12' X 20')
- PATH OF TRAVEL

OVERALL SITE PLAN

SCALE: 1" = 30'-0"

scale: 1" = 30'-0"



hpa, inc.
 18831 bardeen avenue - ste. #100
 irvine, ca
 92612
 tel: 949-863-1770
 fax: 949-863-0851
 email: hpa@hparchs.com

Owner:

RIALTO SPRINGS LLC

13116 Imperial Highway
 Santa Fe Springs CA 90670
 tel: 562-921-3581

Project:

THE WEST COAST & LOCUST AVENUE WAREHOUSE

SEC West Coast Blvd & N Locust Ave

Consultants:

Civil: ARMSTRONG
 Structural: -
 Mechanical: -
 Plumbing: -
 Electrical: -
 Landscape: HUNTER LANDSCAPE
 Fire Protection: -
 Soils Engineer: -

Title: Overall Site Plan

Project Number: 21376
 Drawn by: SW
 Date: 02/28/23
 Revision:

Sheet:

1-DAB-A1.1

ATTACHMENT 2
SUMMARY OF PROJECT TRIP GENERATION

Land Use	ITE Code	Unit	Trip Generation Rates ¹						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Warehousing	150	KSF	1.710	0.131	0.039	0.170	0.050	0.130	0.180

Land Use	Quantity	Unit	Daily	Trip Generation Estimates					
				AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
<i>Existing Use</i> ²									
Warehousing	4.900	Acre	71	7	7	14	0	1	1
<i>Total Existing PCE Trips</i>			71	7	7	14	0	1	1
<i>Proposed Use</i>									
Warehousing	228.413	KSF	391	30	9	39	11	30	41
Passenger Vehicles	60.00%		235	18	5	23	7	18	25
Trucks	40.00%		156	12	4	16	4	12	16

WAREHOUSING PROJECT TRIPS - PASSENGER CAR EQUIVALENTS (PCE)										
Vehicle Type	Vehicle Mix ³	Daily Vehicles	PCE Factor ³	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Passenger Vehicles	60.00%	235	1.0	235	18	5	23	7	18	25
2-Axle Trucks	0.80%	3	1.5	5	0	0	0	0	0	0
3-Axle Trucks	11.20%	44	2.0	88	7	2	9	2	7	9
4+ Axle Trucks	28.00%	109	3.0	327	25	8	33	9	25	34
Total Truck PCE Trips				420	32	10	42	11	32	43
Total Proposed Project PCE Trips				655	50	15	65	18	50	68
Net Difference (Proposed Minus Existing)				584	43	8	51	18	49	67

¹ Source: Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition

² Average of driveway count data collection from similar existing site on Wednesday, December 15, 2021, and Thursday, December 16, 2021.

³ Source: City of Rialto Traffic Impact Analysis Report Guidelines and Requirements

ATTACHMENT 3

The screenshot displays the SBCTA VMT Screening Tool interface. The top navigation bar includes the SBCTA logo, the title "SBCTA VMT Screening Tool", and the text "Powered by Fehr & Peers" and "User's Guide". A search bar at the top left contains the text "Find address or place". The main map area shows a residential street grid with a blue-shaded parcel highlighted. A configuration panel on the left side of the map contains the following elements:

- A blue header bar with the text "Complete #1 - 4, Then Click 'Run'" and a close button.
- A dropdown menu labeled "Parcels" with a warning icon.
- Instructional text: "#2. Select the VMT Metric. Note each jurisdiction may have adopted a different metric by which they measure VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*"
- A dropdown menu for "OD VMT Per Service Population".
- A dropdown menu for "Baseline Year*" set to "2023".
- A dropdown menu for "Threshold (% reduction from baseline year)*" set to "Below County Baseline (0%)".
- A "Run" button and a "Help" link.

A data popup window titled "(1 of 2)" is overlaid on the map, displaying the following information:

Assessor Parcel Number (APN)	023930140
Traffic Analysis Zone (TAZ)	53741101
TAZ VMT	36.7
Jurisdiction VMT	33.4
% Difference	9.81%
VMT Metric	OD VMT Per Service Population
Threshold	33.4

The popup also includes a "Zoom to" button and a menu icon.

APPENDIX B

TRAFFIC COUNT DATA SHEETS

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG AM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 1

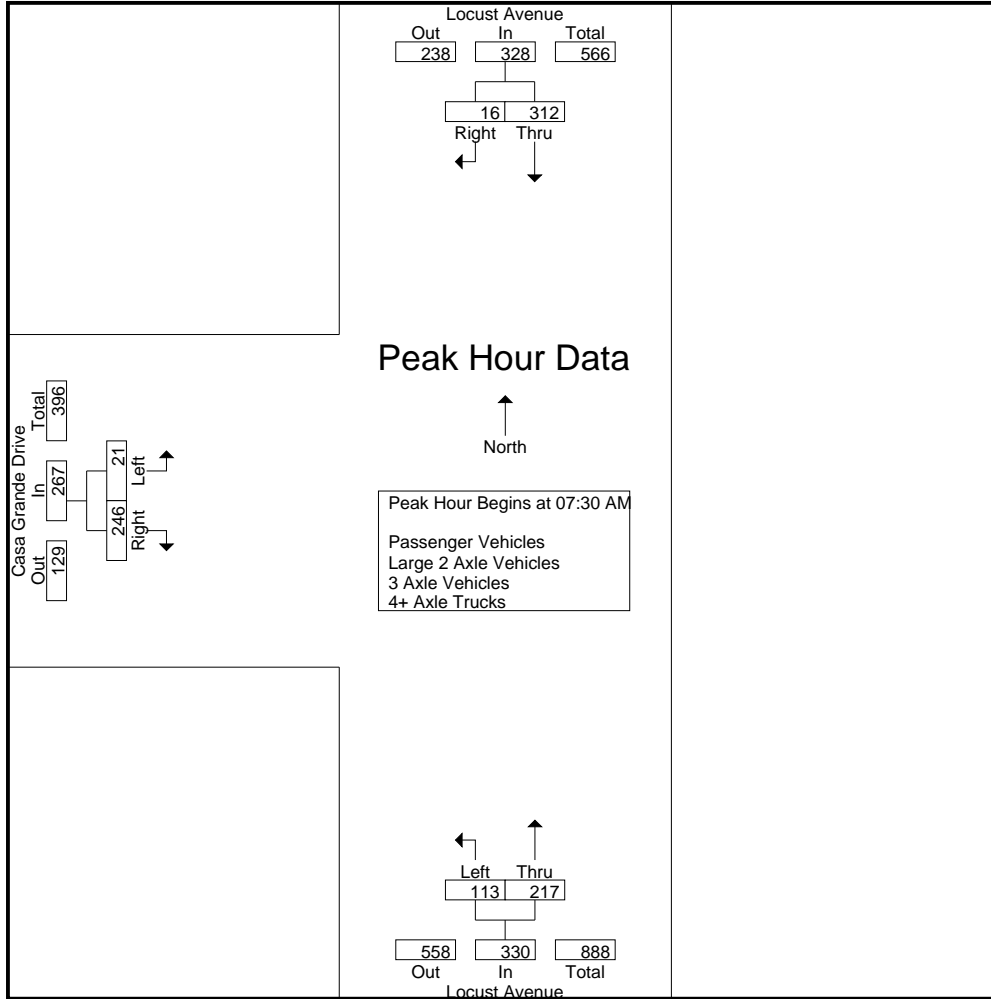
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	42	2	44	9	37	46	5	28	33	123
07:15 AM	47	1	48	18	39	57	4	36	40	145
07:30 AM	77	5	82	24	69	93	5	54	59	234
07:45 AM	117	7	124	36	85	121	4	74	78	323
Total	283	15	298	87	230	317	18	192	210	825
08:00 AM	71	2	73	23	39	62	7	74	81	216
08:15 AM	47	2	49	30	24	54	5	44	49	152
08:30 AM	39	6	45	40	31	71	3	47	50	166
08:45 AM	34	4	38	15	20	35	2	24	26	99
Total	191	14	205	108	114	222	17	189	206	633
Grand Total	474	29	503	195	344	539	35	381	416	1458
Apprch %	94.2	5.8		36.2	63.8		8.4	91.6		
Total %	32.5	2	34.5	13.4	23.6	37	2.4	26.1	28.5	
Passenger Vehicles	374	27	401	190	292	482	35	373	408	1291
% Passenger Vehicles	78.9	93.1	79.7	97.4	84.9	89.4	100	97.9	98.1	88.5
Large 2 Axle Vehicles	22	1	23	5	10	15	0	6	6	44
% Large 2 Axle Vehicles	4.6	3.4	4.6	2.6	2.9	2.8	0	1.6	1.4	3
3 Axle Vehicles	31	1	32	0	11	11	0	0	0	43
% 3 Axle Vehicles	6.5	3.4	6.4	0	3.2	2	0	0	0	2.9
4+ Axle Trucks	47	0	47	0	31	31	0	2	2	80
% 4+ Axle Trucks	9.9	0	9.3	0	9	5.8	0	0.5	0.5	5.5

Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	77	5	82	24	69	93	5	54	59	234
07:45 AM	117	7	124	36	85	121	4	74	78	323
08:00 AM	71	2	73	23	39	62	7	74	81	216
08:15 AM	47	2	49	30	24	54	5	44	49	152
Total Volume	312	16	328	113	217	330	21	246	267	925
% App. Total	95.1	4.9		34.2	65.8		7.9	92.1		
PHF	.667	.571	.661	.785	.638	.682	.750	.831	.824	.716

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG AM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 2



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

	07:30 AM			07:15 AM			07:30 AM		
+0 mins.	77	5	82	18	39	57	5	54	59
+15 mins.	117	7	124	24	69	93	4	74	78
+30 mins.	71	2	73	36	85	121	7	74	81
+45 mins.	47	2	49	23	39	62	5	44	49
Total Volume	312	16	328	101	232	333	21	246	267
% App. Total	95.1	4.9		30.3	69.7		7.9	92.1	
PHF	.667	.571	.661	.701	.682	.688	.750	.831	.824

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG AM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 1

Groups Printed- Passenger Vehicles

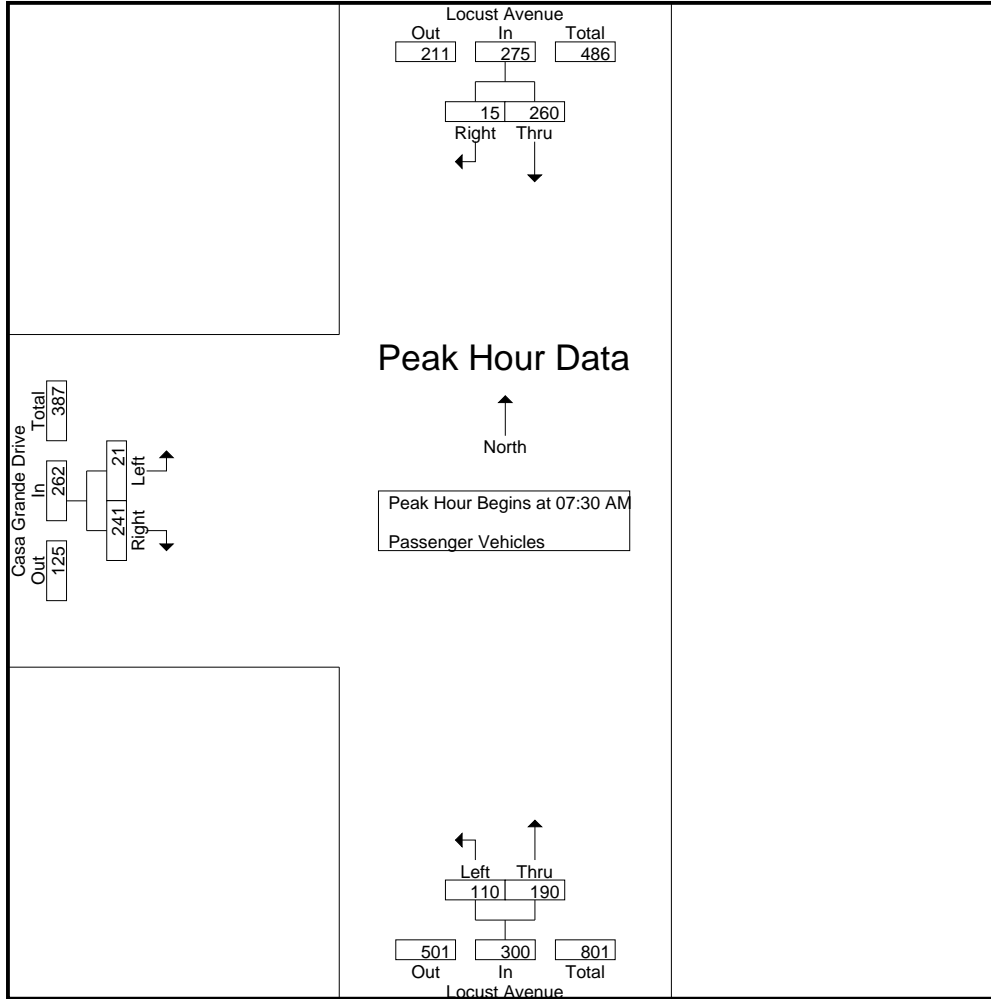
Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	33	2	35	9	32	41	5	27	32	108
07:15 AM	34	1	35	17	32	49	4	35	39	123
07:30 AM	67	5	72	23	64	87	5	54	59	218
07:45 AM	102	7	109	35	74	109	4	71	75	293
Total	236	15	251	84	202	286	18	187	205	742
08:00 AM	56	2	58	23	36	59	7	73	80	197
08:15 AM	35	1	36	29	16	45	5	43	48	129
08:30 AM	25	6	31	39	24	63	3	46	49	143
08:45 AM	22	3	25	15	14	29	2	24	26	80
Total	138	12	150	106	90	196	17	186	203	549
Grand Total	374	27	401	190	292	482	35	373	408	1291
Apprch %	93.3	6.7		39.4	60.6		8.6	91.4		
Total %	29	2.1	31.1	14.7	22.6	37.3	2.7	28.9	31.6	

Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:30 AM	67	5	72	23	64	87	5	54	59	218
07:45 AM	102	7	109	35	74	109	4	71	75	293
08:00 AM	56	2	58	23	36	59	7	73	80	197
08:15 AM	35	1	36	29	16	45	5	43	48	129
Total Volume	260	15	275	110	190	300	21	241	262	837
% App. Total	94.5	5.5		36.7	63.3		8	92		
PHF	.637	.536	.631	.786	.642	.688	.750	.825	.819	.714

Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:30 AM

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG AM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	67	5	72	23	64	87	5	54	59
+15 mins.	102	7	109	35	74	109	4	71	75
+30 mins.	56	2	58	23	36	59	7	73	80
+45 mins.	35	1	36	29	16	45	5	43	48
Total Volume	260	15	275	110	190	300	21	241	262
% App. Total	94.5	5.5		36.7	63.3		8	92	
PHF	.637	.536	.631	.786	.642	.688	.750	.825	.819

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG AM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

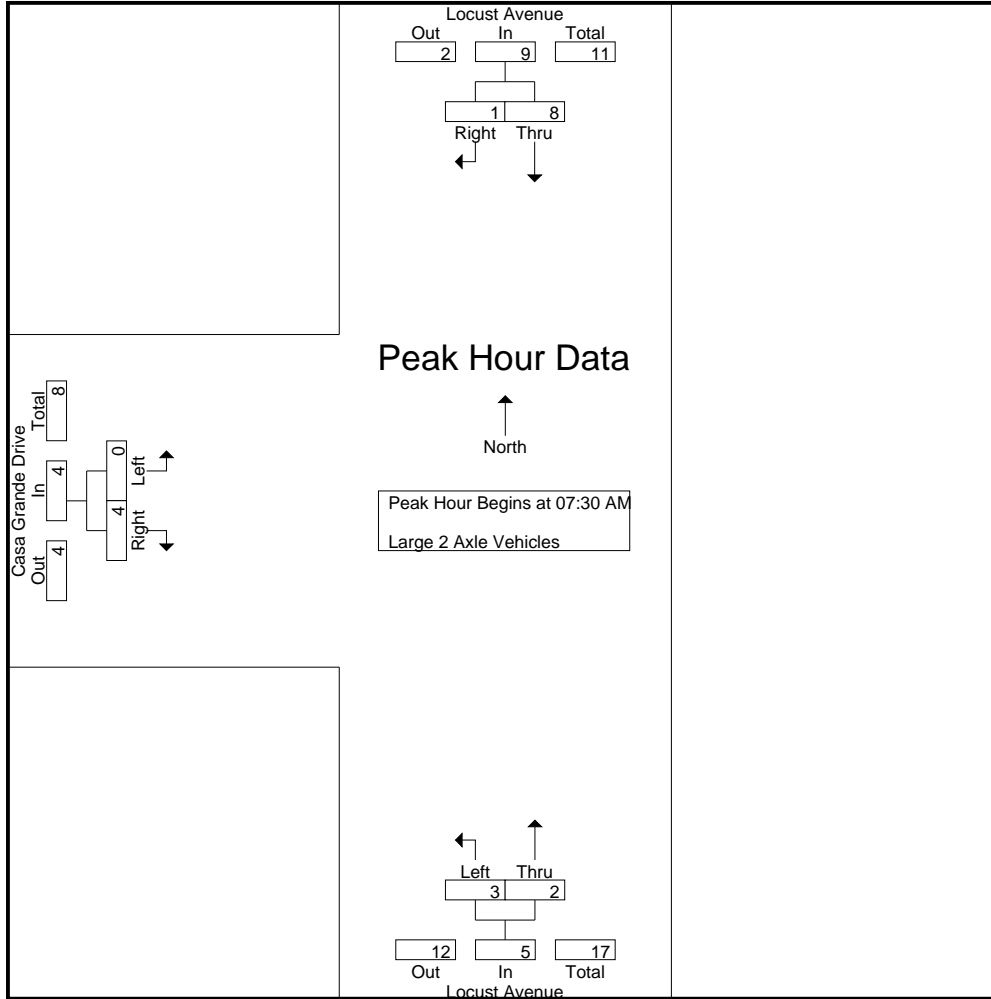
Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	6	0	6	0	3	3	0	1	1	10
07:15 AM	4	0	4	1	4	5	0	0	0	9
07:30 AM	0	0	0	1	1	2	0	0	0	2
07:45 AM	4	0	4	1	0	1	0	3	3	8
Total	14	0	14	3	8	11	0	4	4	29
08:00 AM	2	0	2	0	0	0	0	1	1	3
08:15 AM	2	1	3	1	1	2	0	0	0	5
08:30 AM	2	0	2	1	0	1	0	1	1	4
08:45 AM	2	0	2	0	1	1	0	0	0	3
Total	8	1	9	2	2	4	0	2	2	15
Grand Total	22	1	23	5	10	15	0	6	6	44
Apprch %	95.7	4.3		33.3	66.7		0	100		
Total %	50	2.3	52.3	11.4	22.7	34.1	0	13.6	13.6	

Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:30 AM	0	0	0	1	1	2	0	0	0	2
07:45 AM	4	0	4	1	0	1	0	3	3	8
08:00 AM	2	0	2	0	0	0	0	1	1	3
08:15 AM	2	1	3	1	1	2	0	0	0	5
Total Volume	8	1	9	3	2	5	0	4	4	18
% App. Total	88.9	11.1		60	40		0	100		
PHF	.500	.250	.563	.750	.500	.625	.000	.333	.333	.563

Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:30 AM

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG AM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	0	0	0	1	1	2	0	0	0
+15 mins.	4	0	4	1	0	1	0	3	3
+30 mins.	2	0	2	0	0	0	0	1	1
+45 mins.	2	1	3	1	1	2	0	0	0
Total Volume	8	1	9	3	2	5	0	4	4
% App. Total	88.9	11.1		60	40		0	100	
PHF	.500	.250	.563	.750	.500	.625	.000	.333	.333

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG AM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 1

Groups Printed- 3 Axle Vehicles

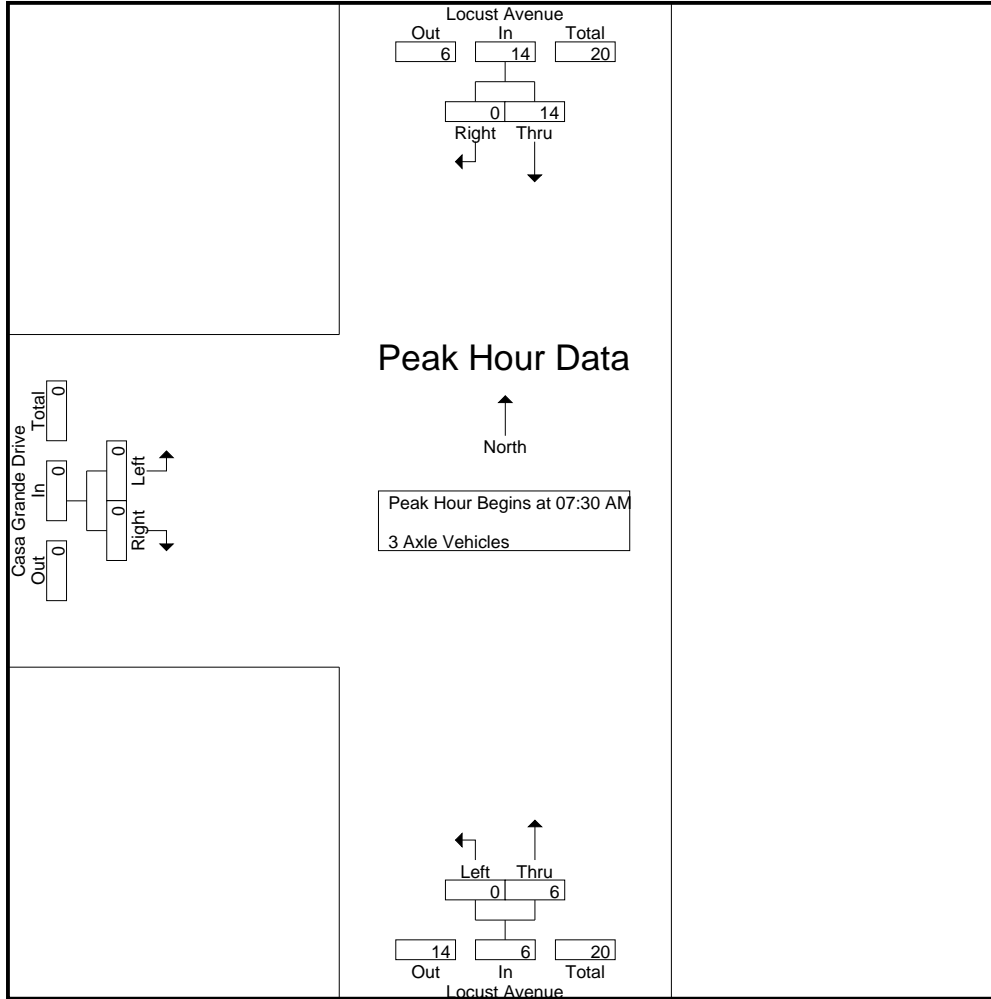
Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	5	0	5	0	1	1	0	0	0	6
07:30 AM	4	0	4	0	0	0	0	0	0	4
07:45 AM	4	0	4	0	3	3	0	0	0	7
Total	13	0	13	0	4	4	0	0	0	17
08:00 AM	3	0	3	0	0	0	0	0	0	3
08:15 AM	3	0	3	0	3	3	0	0	0	6
08:30 AM	5	0	5	0	3	3	0	0	0	8
08:45 AM	7	1	8	0	1	1	0	0	0	9
Total	18	1	19	0	7	7	0	0	0	26
Grand Total	31	1	32	0	11	11	0	0	0	43
Apprch %	96.9	3.1		0	100		0	0		
Total %	72.1	2.3	74.4	0	25.6	25.6	0	0	0	

Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:30 AM	4	0	4	0	0	0	0	0	0	4
07:45 AM	4	0	4	0	3	3	0	0	0	7
08:00 AM	3	0	3	0	0	0	0	0	0	3
08:15 AM	3	0	3	0	3	3	0	0	0	6
Total Volume	14	0	14	0	6	6	0	0	0	20
% App. Total	100	0		0	100		0	0		
PHF	.875	.000	.875	.000	.500	.500	.000	.000	.000	.714

Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:30 AM

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG AM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	4	0	4	0	0	0	0	0	0
+15 mins.	4	0	4	0	3	3	0	0	0
+30 mins.	3	0	3	0	0	0	0	0	0
+45 mins.	3	0	3	0	3	3	0	0	0
Total Volume	14	0	14	0	6	6	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.875	.000	.875	.000	.500	.500	.000	.000	.000

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG AM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 1

Groups Printed- 4+ Axle Trucks

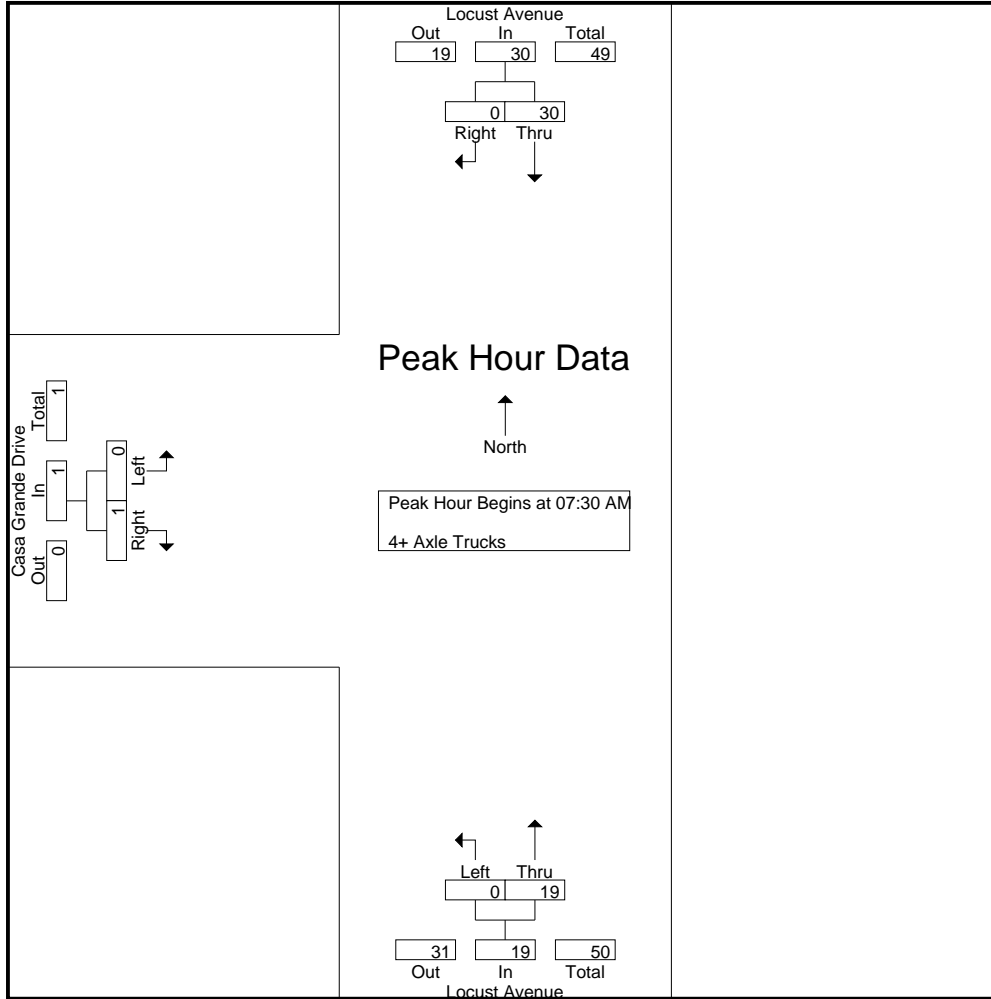
Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	3	0	3	0	2	2	0	0	0	5
07:15 AM	4	0	4	0	2	2	0	1	1	7
07:30 AM	6	0	6	0	4	4	0	0	0	10
07:45 AM	7	0	7	0	8	8	0	0	0	15
Total	20	0	20	0	16	16	0	1	1	37
08:00 AM	10	0	10	0	3	3	0	0	0	13
08:15 AM	7	0	7	0	4	4	0	1	1	12
08:30 AM	7	0	7	0	4	4	0	0	0	11
08:45 AM	3	0	3	0	4	4	0	0	0	7
Total	27	0	27	0	15	15	0	1	1	43
Grand Total	47	0	47	0	31	31	0	2	2	80
Apprch %	100	0		0	100		0	100		
Total %	58.8	0	58.8	0	38.8	38.8	0	2.5	2.5	

Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:30 AM	6	0	6	0	4	4	0	0	0	10
07:45 AM	7	0	7	0	8	8	0	0	0	15
08:00 AM	10	0	10	0	3	3	0	0	0	13
08:15 AM	7	0	7	0	4	4	0	1	1	12
Total Volume	30	0	30	0	19	19	0	1	1	50
% App. Total	100	0		0	100		0	100		
PHF	.750	.000	.750	.000	.594	.594	.000	.250	.250	.833

Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:30 AM

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG AM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	6	0	6	0	4	4	0	0	0
+15 mins.	7	0	7	0	8	8	0	0	0
+30 mins.	10	0	10	0	3	3	0	0	0
+45 mins.	7	0	7	0	4	4	0	1	1
Total Volume	30	0	30	0	19	19	0	1	1
% App. Total	100	0	100	0	100	100	0	100	100
PHF	.750	.000	.750	.000	.594	.594	.000	.250	.250

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG PM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 1

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

Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	31	31	62	55	34	89	9	25	34	185
04:15 PM	55	45	100	83	41	124	21	64	85	309
04:30 PM	27	12	39	27	49	76	56	153	209	324
04:45 PM	33	9	42	40	22	62	6	35	41	145
Total	146	97	243	205	146	351	92	277	369	963
05:00 PM	35	3	38	42	26	68	9	29	38	144
05:15 PM	25	5	30	29	26	55	8	32	40	125
05:30 PM	32	6	38	39	38	77	5	37	42	157
05:45 PM	38	10	48	48	29	77	6	28	34	159
Total	130	24	154	158	119	277	28	126	154	585
Grand Total	276	121	397	363	265	628	120	403	523	1548
Apprch %	69.5	30.5		57.8	42.2		22.9	77.1		
Total %	17.8	7.8	25.6	23.4	17.1	40.6	7.8	26	33.8	
Passenger Vehicles	245	121	366	358	240	598	120	399	519	1483
% Passenger Vehicles	88.8	100	92.2	98.6	90.6	95.2	100	99	99.2	95.8
Large 2 Axle Vehicles	6	0	6	5	2	7	0	2	2	15
% Large 2 Axle Vehicles	2.2	0	1.5	1.4	0.8	1.1	0	0.5	0.4	1
3 Axle Vehicles	5	0	5	0	9	9	0	1	1	15
% 3 Axle Vehicles	1.8	0	1.3	0	3.4	1.4	0	0.2	0.2	1
4+ Axle Trucks	20	0	20	0	14	14	0	1	1	35
% 4+ Axle Trucks	7.2	0	5	0	5.3	2.2	0	0.2	0.2	2.3

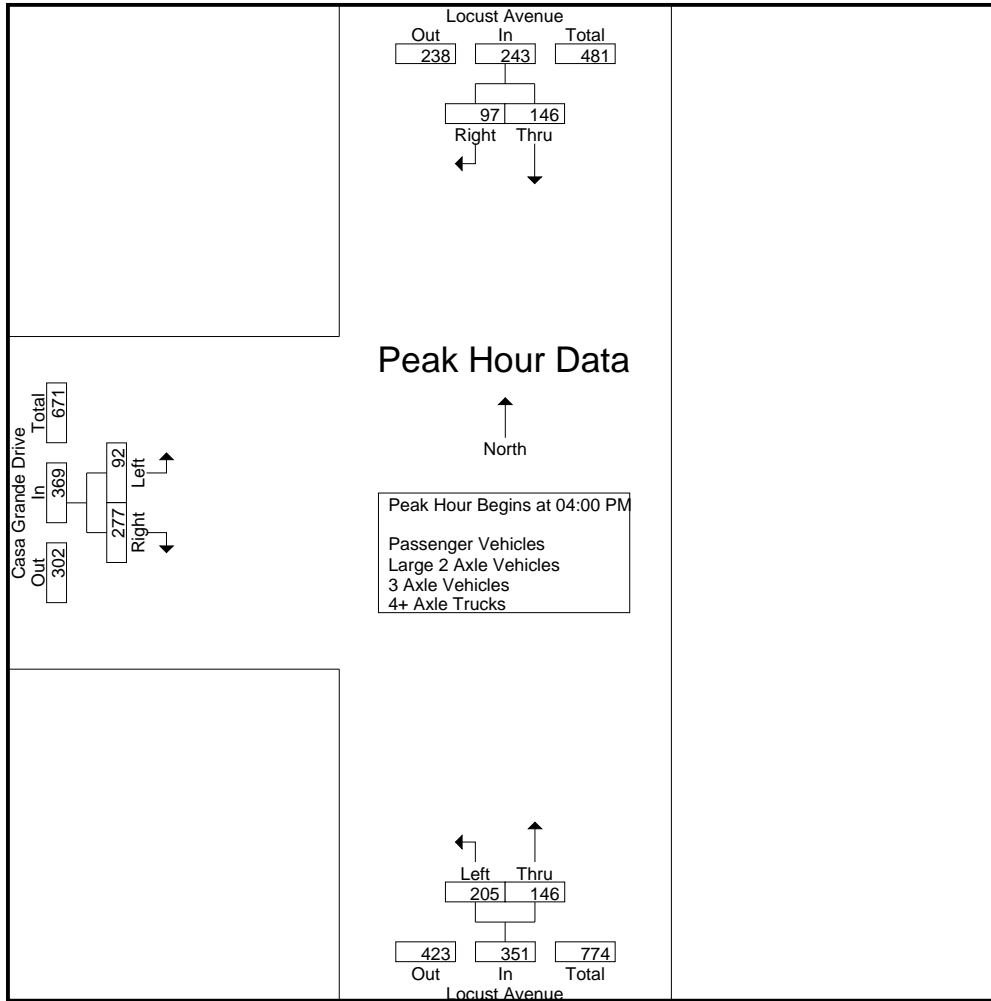
Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	31	31	62	55	34	89	9	25	34	185
04:15 PM	55	45	100	83	41	124	21	64	85	309
04:30 PM	27	12	39	27	49	76	56	153	209	324
04:45 PM	33	9	42	40	22	62	6	35	41	145
Total Volume	146	97	243	205	146	351	92	277	369	963
% App. Total	60.1	39.9		58.4	41.6		24.9	75.1		
PHF	.664	.539	.608	.617	.745	.708	.411	.453	.441	.743

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

Peak Hour for Entire Intersection Begins at 04:00 PM

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG PM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 2



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

	04:00 PM			04:00 PM			04:15 PM		
+0 mins.	31	31	62	55	34	89	21	64	85
+15 mins.	55	45	100	83	41	124	56	153	209
+30 mins.	27	12	39	27	49	76	6	35	41
+45 mins.	33	9	42	40	22	62	9	29	38
Total Volume	146	97	243	205	146	351	92	281	373
% App. Total	60.1	39.9		58.4	41.6		24.7	75.3	
PHF	.664	.539	.608	.617	.745	.708	.411	.459	.446

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG PM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 1

Groups Printed- Passenger Vehicles

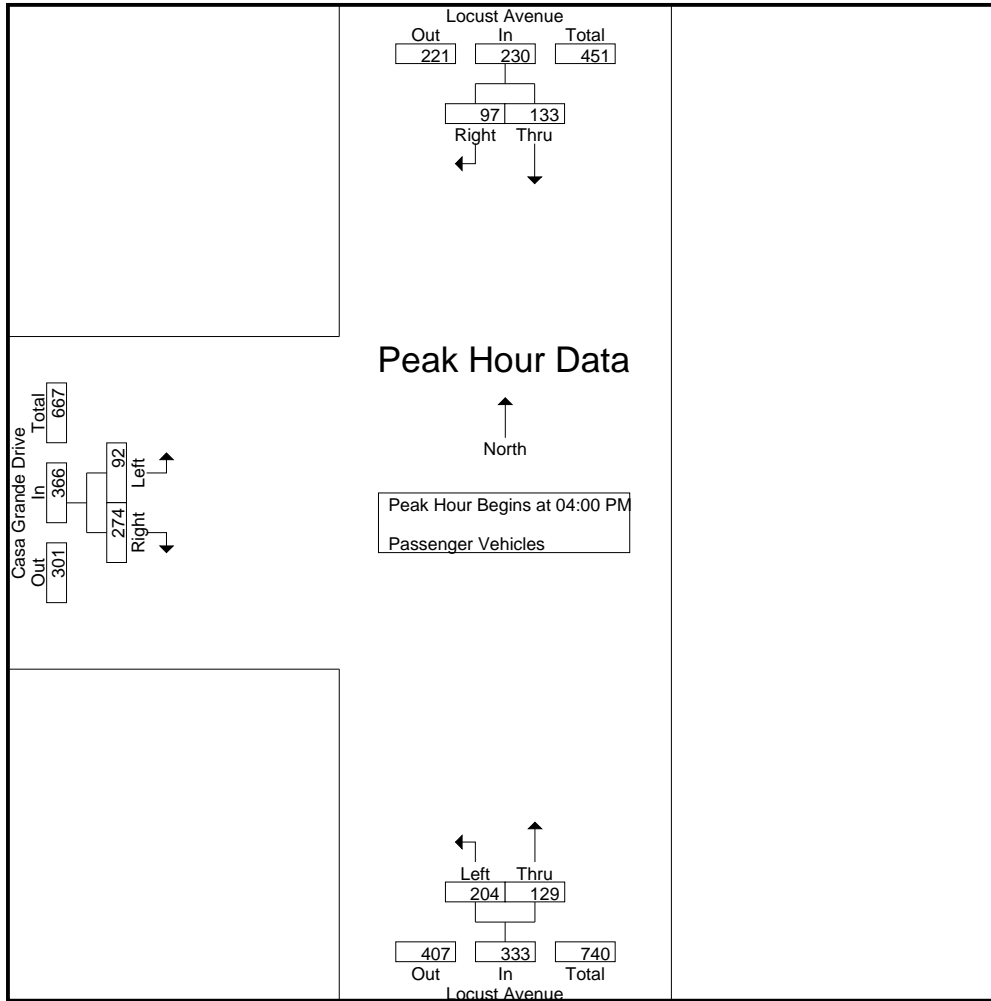
Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	25	31	56	55	25	80	9	24	33	169
04:15 PM	53	45	98	83	37	120	21	64	85	303
04:30 PM	26	12	38	27	46	73	56	151	207	318
04:45 PM	29	9	38	39	21	60	6	35	41	139
Total	133	97	230	204	129	333	92	274	366	929
05:00 PM	29	3	32	40	25	65	9	29	38	135
05:15 PM	21	5	26	29	25	54	8	32	40	120
05:30 PM	30	6	36	39	36	75	5	36	41	152
05:45 PM	32	10	42	46	25	71	6	28	34	147
Total	112	24	136	154	111	265	28	125	153	554
Grand Total	245	121	366	358	240	598	120	399	519	1483
Apprch %	66.9	33.1		59.9	40.1		23.1	76.9		
Total %	16.5	8.2	24.7	24.1	16.2	40.3	8.1	26.9	35	

Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	25	31	56	55	25	80	9	24	33	169
04:15 PM	53	45	98	83	37	120	21	64	85	303
04:30 PM	26	12	38	27	46	73	56	151	207	318
04:45 PM	29	9	38	39	21	60	6	35	41	139
Total Volume	133	97	230	204	129	333	92	274	366	929
% App. Total	57.8	42.2		61.3	38.7		25.1	74.9		
PHF	.627	.539	.587	.614	.701	.694	.411	.454	.442	.730

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

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG PM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	25	31	56	55	25	80	9	24	33
+15 mins.	53	45	98	83	37	120	21	64	85
+30 mins.	26	12	38	27	46	73	56	151	207
+45 mins.	29	9	38	39	21	60	6	35	41
Total Volume	133	97	230	204	129	333	92	274	366
% App. Total	57.8	42.2		61.3	38.7		25.1	74.9	
PHF	.627	.539	.587	.614	.701	.694	.411	.454	.442

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG PM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

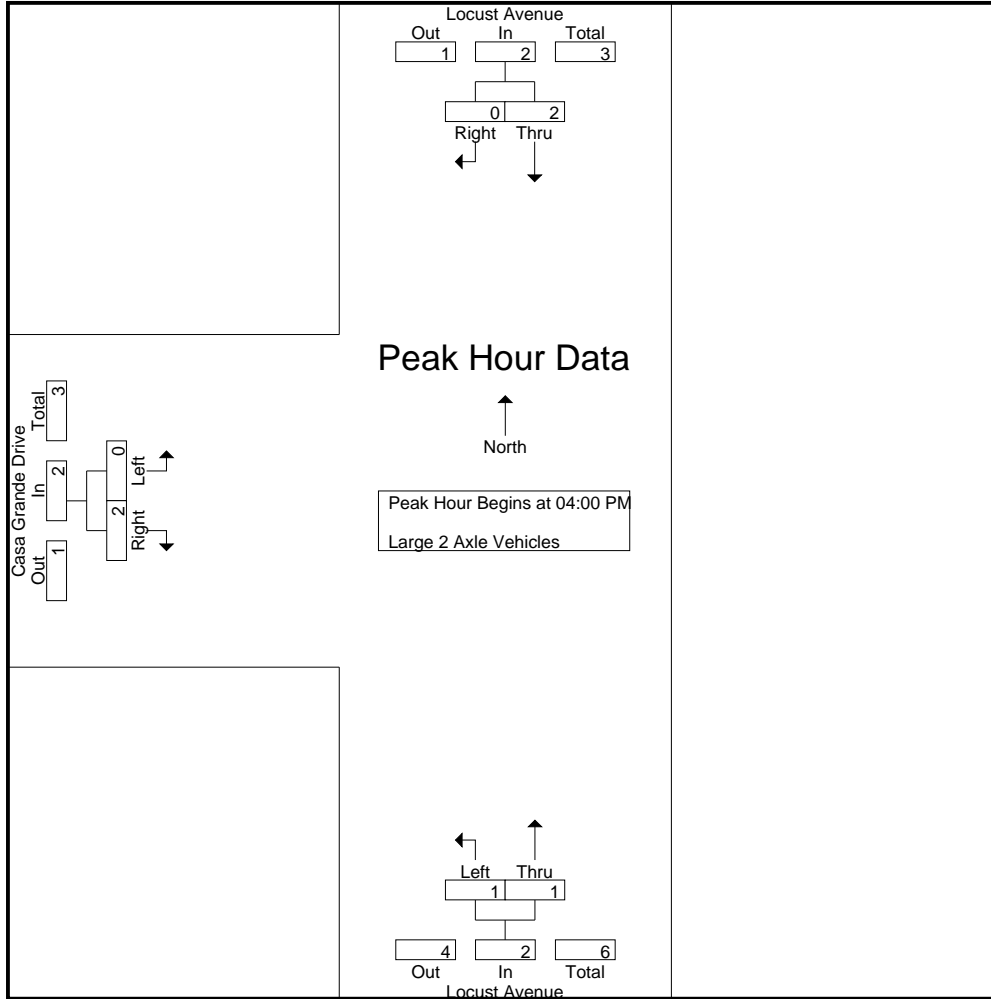
Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	1	0	1	0	1	1	0	1	1	3
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	1	0	1	1	0	1	0	0	0	2
Total	2	0	2	1	1	2	0	2	2	6
05:00 PM	3	0	3	2	1	3	0	0	0	6
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	1	0	1	0	0	0	0	0	0	1
05:45 PM	0	0	0	2	0	2	0	0	0	2
Total	4	0	4	4	1	5	0	0	0	9
Grand Total	6	0	6	5	2	7	0	2	2	15
Apprch %	100	0		71.4	28.6		0	100		
Total %	40	0	40	33.3	13.3	46.7	0	13.3	13.3	

Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	1	0	1	0	1	1	0	1	1	3
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	1	0	1	1	0	1	0	0	0	2
Total Volume	2	0	2	1	1	2	0	2	2	6
% App. Total	100	0		50	50		0	100		
PHF	.500	.000	.500	.250	.250	.500	.000	.500	.500	.500

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

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG PM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 2



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

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

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG PM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 1

Groups Printed- 3 Axle Vehicles

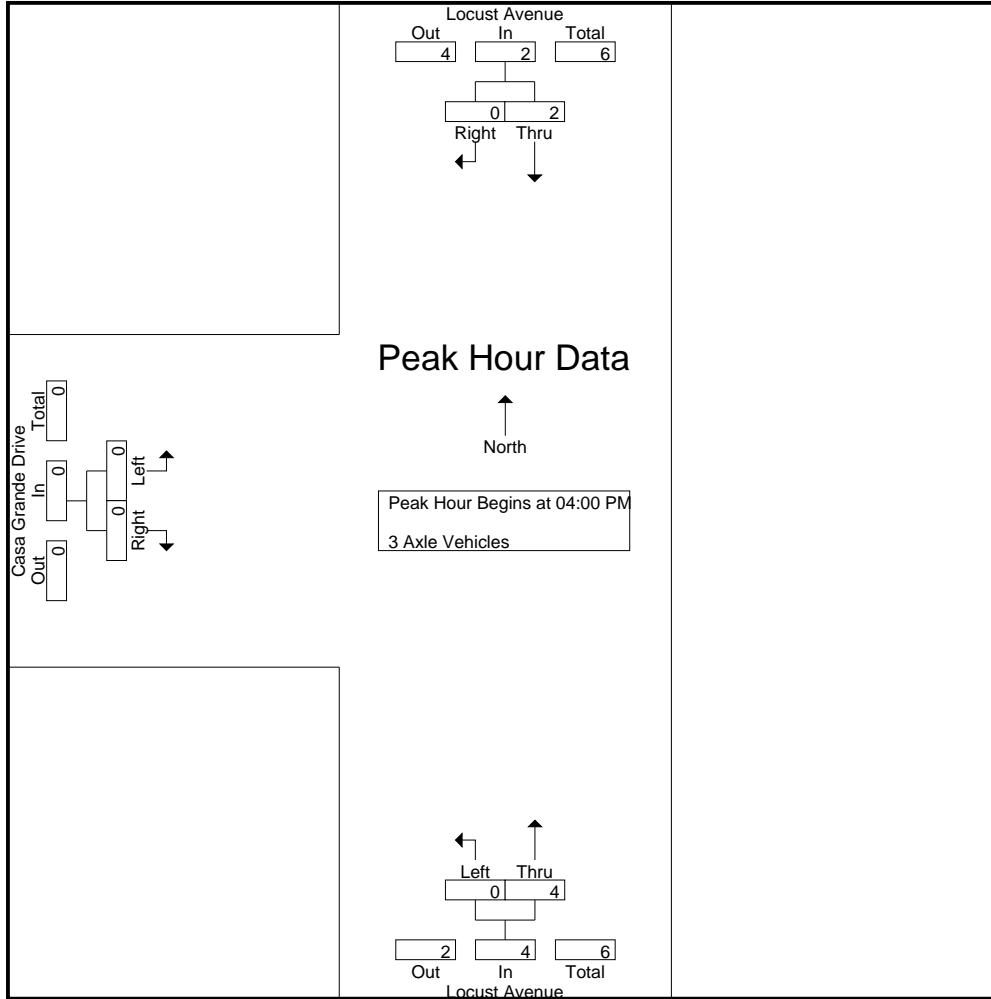
Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	1	0	1	0	2	2	0	0	0	3
04:15 PM	1	0	1	0	1	1	0	0	0	2
04:30 PM	0	0	0	0	1	1	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	2	0	2	0	4	4	0	0	0	6
05:00 PM	1	0	1	0	0	0	0	0	0	1
05:15 PM	1	0	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	2	2	0	1	1	3
05:45 PM	1	0	1	0	3	3	0	0	0	4
Total	3	0	3	0	5	5	0	1	1	9
Grand Total	5	0	5	0	9	9	0	1	1	15
Apprch %	100	0		0	100		0	100		
Total %	33.3	0	33.3	0	60	60	0	6.7	6.7	

Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	1	0	1	0	2	2	0	0	0	3
04:15 PM	1	0	1	0	1	1	0	0	0	2
04:30 PM	0	0	0	0	1	1	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	2	0	2	0	4	4	0	0	0	6
% App. Total	100	0		0	100		0	0		
PHF	.500	.000	.500	.000	.500	.500	.000	.000	.000	.500

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

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG PM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	1	0	1	0	2	2	0	0	0
+15 mins.	1	0	1	0	1	1	0	0	0
+30 mins.	0	0	0	0	1	1	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	2	0	2	0	4	4	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.500	.000	.500	.000	.500	.500	.000	.000	.000

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG PM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 1

Groups Printed- 4+ Axle Trucks

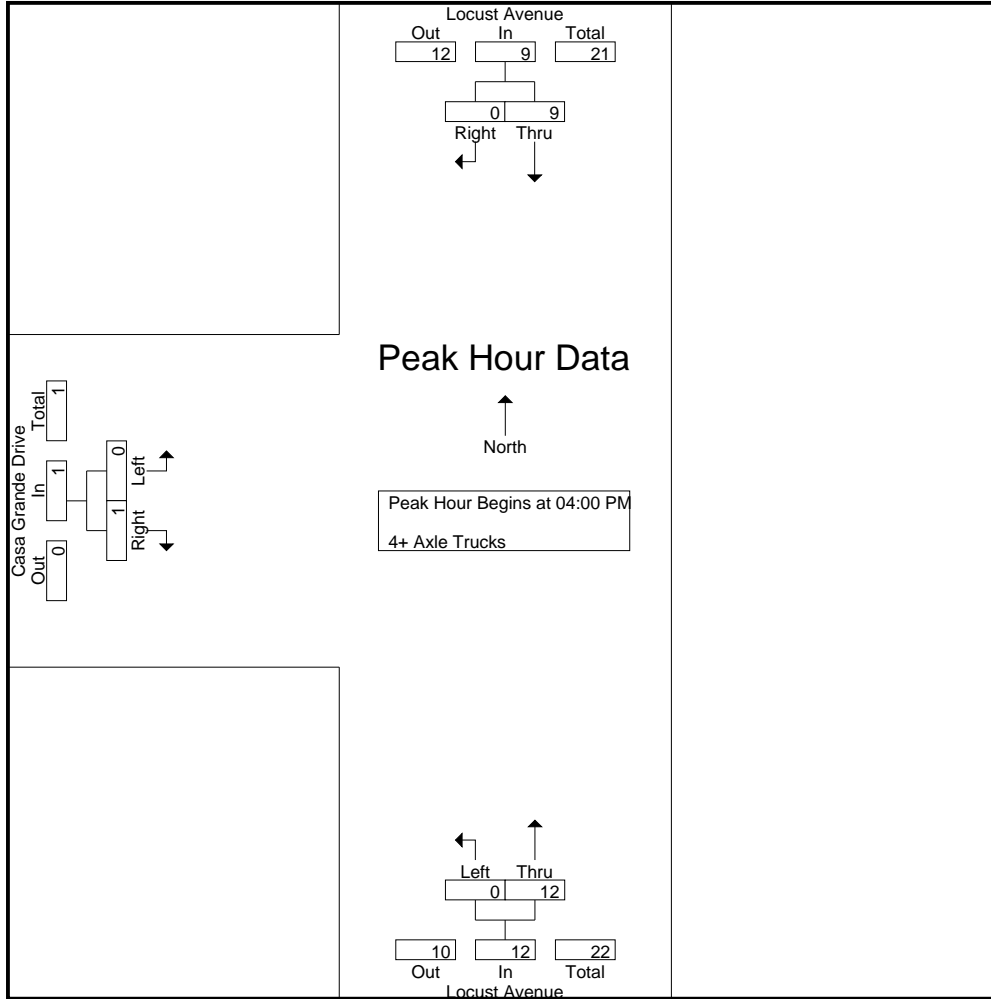
Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	4	0	4	0	6	6	0	0	0	10
04:15 PM	1	0	1	0	3	3	0	0	0	4
04:30 PM	1	0	1	0	2	2	0	1	1	4
04:45 PM	3	0	3	0	1	1	0	0	0	4
Total	9	0	9	0	12	12	0	1	1	22
05:00 PM	2	0	2	0	0	0	0	0	0	2
05:15 PM	3	0	3	0	1	1	0	0	0	4
05:30 PM	1	0	1	0	0	0	0	0	0	1
05:45 PM	5	0	5	0	1	1	0	0	0	6
Total	11	0	11	0	2	2	0	0	0	13
Grand Total	20	0	20	0	14	14	0	1	1	35
Apprch %	100	0		0	100		0	100		
Total %	57.1	0	57.1	0	40	40	0	2.9	2.9	

Start Time	Locust Avenue Southbound			Locust Avenue Northbound			Casa Grande Drive Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	4	0	4	0	6	6	0	0	0	10
04:15 PM	1	0	1	0	3	3	0	0	0	4
04:30 PM	1	0	1	0	2	2	0	1	1	4
04:45 PM	3	0	3	0	1	1	0	0	0	4
Total Volume	9	0	9	0	12	12	0	1	1	22
% App. Total	100	0		0	100		0	100		
PHF	.563	.000	.563	.000	.500	.500	.000	.250	.250	.550

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

City of Rialto
 N/S: Locust Avenue
 E/W: Casa Grande Drive
 Weather: Clear

File Name : RLT_Locust_CG PM
 Site Code : 10823958
 Start Date : 10/12/2023
 Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	4	0	4	0	6	6	0	0	0
+15 mins.	1	0	1	0	3	3	0	0	0
+30 mins.	1	0	1	0	2	2	0	1	1
+45 mins.	3	0	3	0	1	1	0	0	0
Total Volume	9	0	9	0	12	12	0	1	1
% App. Total	100	0		0	100		0	100	
PHF	.563	.000	.563	.000	.500	.500	.000	.250	.250

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa AM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 1

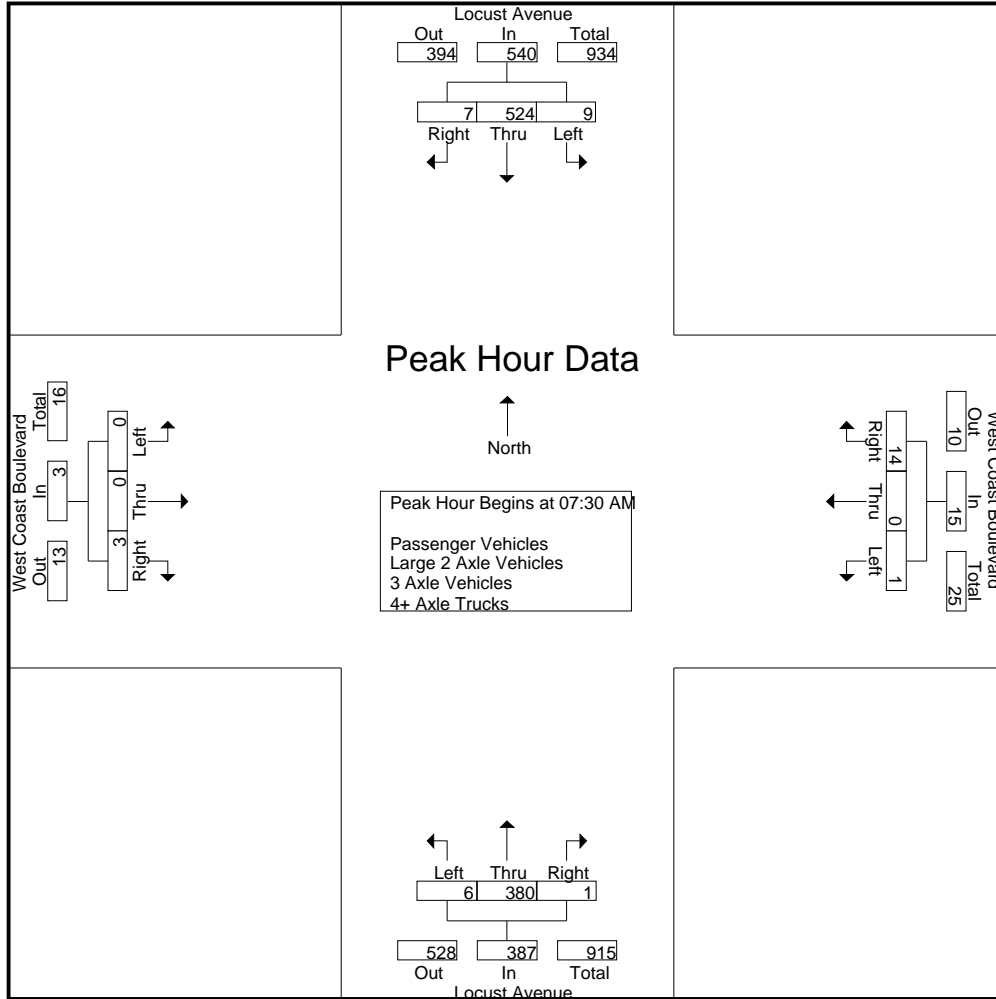
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	78	2	80	0	0	1	1	1	46	0	47	0	0	0	0	128
07:15 AM	0	89	0	89	0	0	1	1	1	58	0	59	0	0	0	0	149
07:30 AM	0	124	0	124	0	0	6	6	0	150	0	150	0	0	0	0	280
07:45 AM	3	173	2	178	1	0	5	6	4	109	0	113	0	0	1	1	298
Total	3	464	4	471	1	0	13	14	6	363	0	369	0	0	1	1	855
08:00 AM	4	125	5	134	0	0	3	3	1	59	0	60	0	0	2	2	199
08:15 AM	2	102	0	104	0	0	0	0	1	62	1	64	0	0	0	0	168
08:30 AM	0	65	1	66	1	0	2	3	1	81	0	82	0	0	0	0	151
08:45 AM	0	47	0	47	0	0	0	0	0	43	0	43	0	0	0	0	90
Total	6	339	6	351	1	0	5	6	3	245	1	249	0	0	2	2	608
Grand Total	9	803	10	822	2	0	18	20	9	608	1	618	0	0	3	3	1463
Apprch %	1.1	97.7	1.2		10	0	90		1.5	98.4	0.2		0	0	100		
Total %	0.6	54.9	0.7	56.2	0.1	0	1.2	1.4	0.6	41.6	0.1	42.2	0	0	0.2	0.2	
Passenger Vehicles	9	683	9	701	2	0	18	20	9	540	1	550	0	0	2	2	1273
% Passenger Vehicles	100	85.1	90	85.3	100	0	100	100	100	88.8	100	89	0	0	66.7	66.7	87
Large 2 Axle Vehicles	0	21	1	22	0	0	0	0	0	16	0	16	0	0	1	1	39
% Large 2 Axle Vehicles	0	2.6	10	2.7	0	0	0	0	0	2.6	0	2.6	0	0	33.3	33.3	2.7
3 Axle Vehicles	0	17	0	17	0	0	0	0	0	16	0	16	0	0	0	0	33
% 3 Axle Vehicles	0	2.1	0	2.1	0	0	0	0	0	2.6	0	2.6	0	0	0	0	2.3
4+ Axle Trucks	0	82	0	82	0	0	0	0	0	36	0	36	0	0	0	0	118
% 4+ Axle Trucks	0	10.2	0	10	0	0	0	0	0	5.9	0	5.8	0	0	0	0	8.1

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	124	0	124	0	0	6	6	0	150	0	150	0	0	0	0	280
07:45 AM	3	173	2	178	1	0	5	6	4	109	0	113	0	0	1	1	298
08:00 AM	4	125	5	134	0	0	3	3	1	59	0	60	0	0	2	2	199
08:15 AM	2	102	0	104	0	0	0	0	1	62	1	64	0	0	0	0	168
Total Volume	9	524	7	540	1	0	14	15	6	380	1	387	0	0	3	3	945
% App. Total	1.7	97	1.3		6.7	0	93.3		1.6	98.2	0.3		0	0	100		
PHF	.563	.757	.350	.758	.250	.000	.583	.625	.375	.633	.250	.645	.000	.000	.375	.375	.793

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa AM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 2



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

	07:30 AM				07:15 AM				07:30 AM				07:15 AM			
+0 mins.	0	124	0	124	0	0	1	1	0	150	0	150	0	0	0	0
+15 mins.	3	173	2	178	0	0	6	6	4	109	0	113	0	0	0	0
+30 mins.	4	125	5	134	1	0	5	6	1	59	0	60	0	0	1	1
+45 mins.	2	102	0	104	0	0	3	3	1	62	1	64	0	0	2	2
Total Volume	9	524	7	540	1	0	15	16	6	380	1	387	0	0	3	3
% App. Total	1.7	97	1.3		6.2	0	93.8		1.6	98.2	0.3		0	0	100	
PHF	.563	.757	.350	.758	.250	.000	.625	.667	.375	.633	.250	.645	.000	.000	.375	.375

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa AM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 1

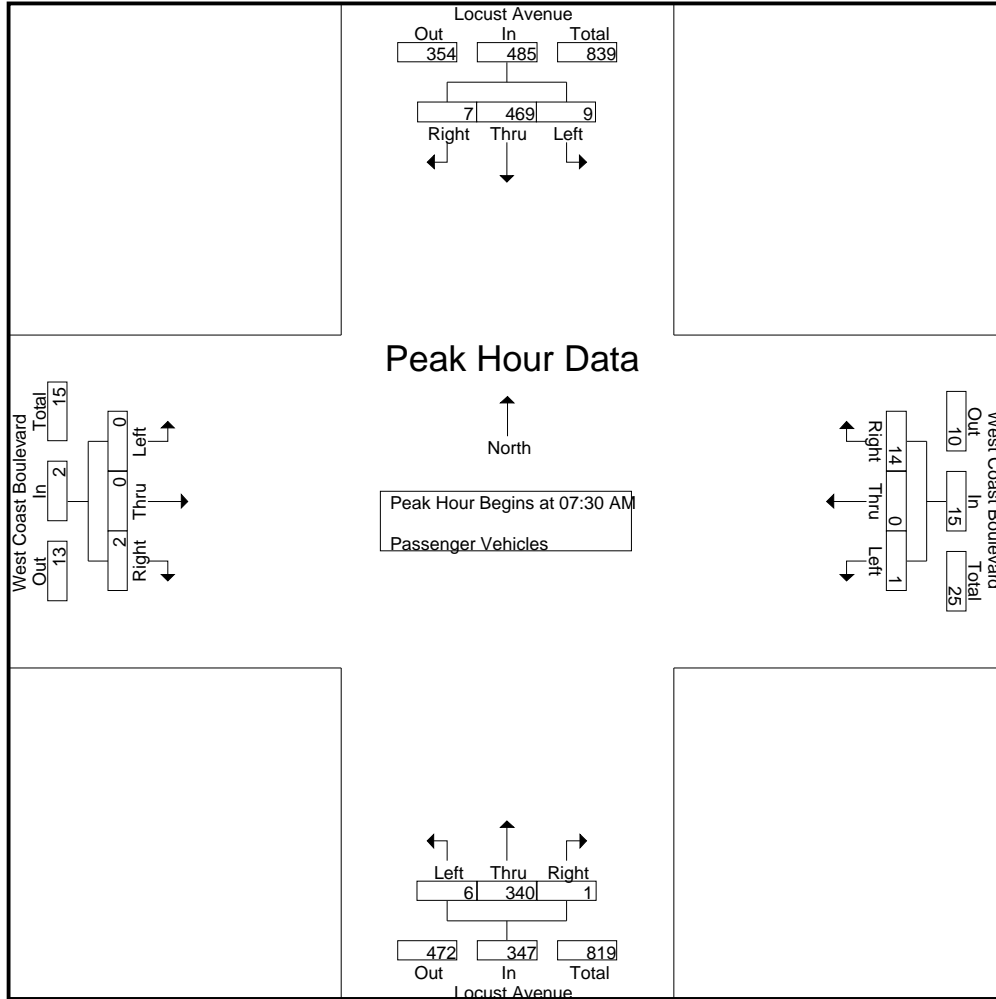
Groups Printed- Passenger Vehicles

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	66	1	67	0	0	1	1	1	37	0	38	0	0	0	0	106
07:15 AM	0	67	0	67	0	0	1	1	1	52	0	53	0	0	0	0	121
07:30 AM	0	110	0	110	0	0	6	6	0	136	0	136	0	0	0	0	252
07:45 AM	3	157	2	162	1	0	5	6	4	100	0	104	0	0	0	0	272
Total	3	400	3	406	1	0	13	14	6	325	0	331	0	0	0	0	751
08:00 AM	4	113	5	122	0	0	3	3	1	47	0	48	0	0	2	2	175
08:15 AM	2	89	0	91	0	0	0	0	1	57	1	59	0	0	0	0	150
08:30 AM	0	47	1	48	1	0	2	3	1	73	0	74	0	0	0	0	125
08:45 AM	0	34	0	34	0	0	0	0	0	38	0	38	0	0	0	0	72
Total	6	283	6	295	1	0	5	6	3	215	1	219	0	0	2	2	522
Grand Total	9	683	9	701	2	0	18	20	9	540	1	550	0	0	2	2	1273
Apprch %	1.3	97.4	1.3		10	0	90		1.6	98.2	0.2		0	0	100		
Total %	0.7	53.7	0.7	55.1	0.2	0	1.4	1.6	0.7	42.4	0.1	43.2	0	0	0.2	0.2	

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	110	0	110	0	0	6	6	0	136	0	136	0	0	0	0	252
07:45 AM	3	157	2	162	1	0	5	6	4	100	0	104	0	0	0	0	272
08:00 AM	4	113	5	122	0	0	3	3	1	47	0	48	0	0	2	2	175
08:15 AM	2	89	0	91	0	0	0	0	1	57	1	59	0	0	0	0	150
Total Volume	9	469	7	485	1	0	14	15	6	340	1	347	0	0	2	2	849
% App. Total	1.9	96.7	1.4		6.7	0	93.3		1.7	98	0.3		0	0	100		
PHF	.563	.747	.350	.748	.250	.000	.583	.625	.375	.625	.250	.638	.000	.000	.250	.250	.780

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa AM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	110	0	110	0	0	6	6	0	136	0	136	0	0	0	0
+15 mins.	3	157	2	162	1	0	5	6	4	100	0	104	0	0	0	0
+30 mins.	4	113	5	122	0	0	3	3	1	47	0	48	0	0	2	2
+45 mins.	2	89	0	91	0	0	0	0	1	57	1	59	0	0	0	0
Total Volume	9	469	7	485	1	0	14	15	6	340	1	347	0	0	2	2
% App. Total	1.9	96.7	1.4		6.7	0	93.3		1.7	98	0.3		0	0	100	
PHF	.563	.747	.350	.748	.250	.000	.583	.625	.375	.625	.250	.638	.000	.000	.250	.250

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa AM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	3	1	4	0	0	0	0	0	3	0	3	0	0	0	0	7
07:15 AM	0	7	0	7	0	0	0	0	0	2	0	2	0	0	0	0	9
07:30 AM	0	2	0	2	0	0	0	0	0	5	0	5	0	0	0	0	7
07:45 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1	3
Total	0	13	1	14	0	0	0	0	0	11	0	11	0	0	1	1	26
08:00 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
08:15 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
08:30 AM	0	4	0	4	0	0	0	0	0	2	0	2	0	0	0	0	6
08:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	0	8	0	8	0	0	0	0	0	5	0	5	0	0	0	0	13
Grand Total	0	21	1	22	0	0	0	0	0	16	0	16	0	0	1	1	39
Apprch %	0	95.5	4.5		0	0	0		0	100	0		0	0	100		
Total %	0	53.8	2.6	56.4	0	0	0	0	0	41	0	41	0	0	2.6	2.6	

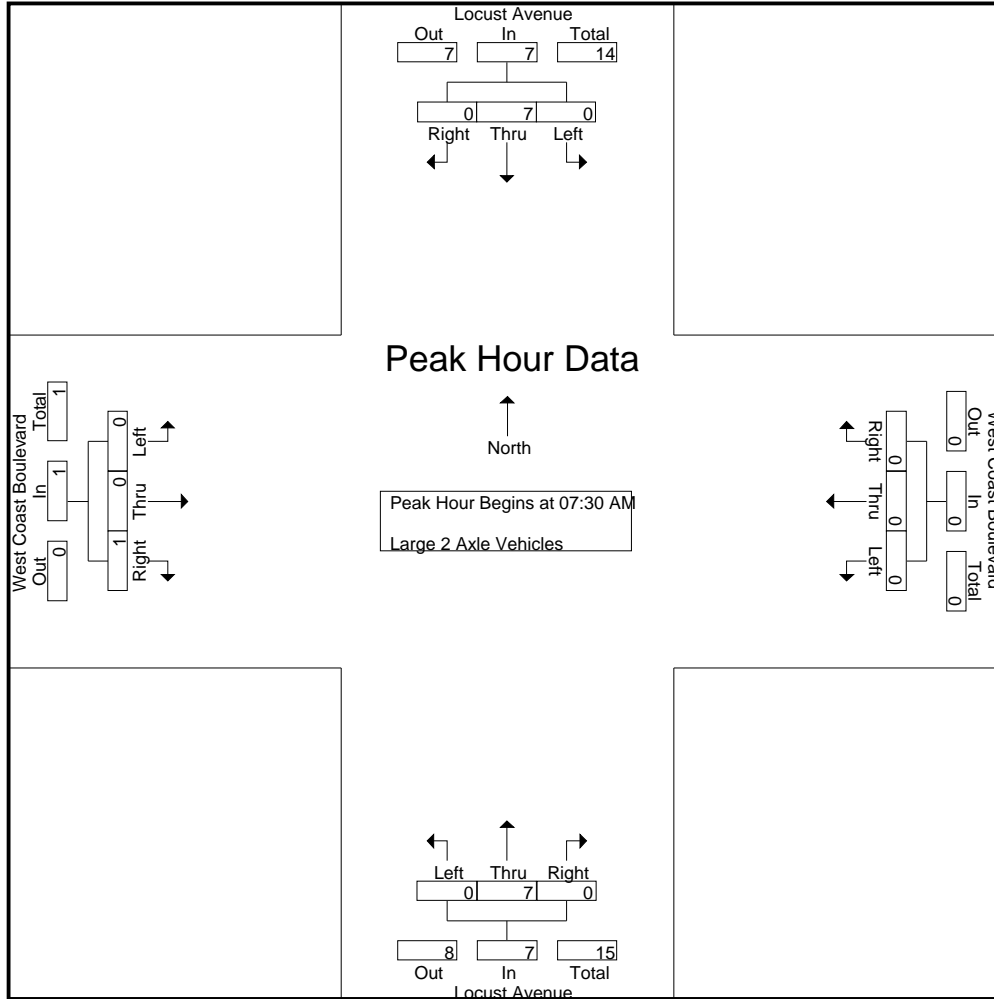
Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30 AM	0	2	0	2	0	0	0	0	0	5	0	5	0	0	0	0	7
07:45 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	0	3
08:00 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
08:15 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total Volume	0	7	0	7	0	0	0	0	0	7	0	7	0	0	1	1	15
% App. Total	0	100	0		0	0	0		0	100	0		0	0	100		
PHF	.000	.583	.000	.583	.000	.000	.000	.000	.000	.350	.000	.350	.000	.000	.250	.250	.536

Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:30 AM

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa AM
 Site Code : 10823730
 Start Date : 8/15/2023
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	2	0	2	0	0	0	0	0	5	0	5	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	1
+30 mins.	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	7	0	7	0	0	0	0	0	7	0	7	0	0	1	1
% App. Total	0	100	0	0	0	0	0	0	0	100	0	0	0	0	100	0
PHF	.000	.583	.000	.583	.000	.000	.000	.000	.000	.350	.000	.350	.000	.000	.250	.250

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa AM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:15 AM	0	6	0	6	0	0	0	0	0	1	0	1	0	0	0	0	7
07:30 AM	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
07:45 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
Total	0	8	0	8	0	0	0	0	0	7	0	7	0	0	0	0	15
08:00 AM	0	4	0	4	0	0	0	0	0	3	0	3	0	0	0	0	7
08:15 AM	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	5
08:30 AM	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0	5
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	9	0	9	0	0	0	0	0	9	0	9	0	0	0	0	18
Grand Total	0	17	0	17	0	0	0	0	0	16	0	16	0	0	0	0	33
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	51.5	0	51.5	0	0	0	0	0	48.5	0	48.5	0	0	0	0	

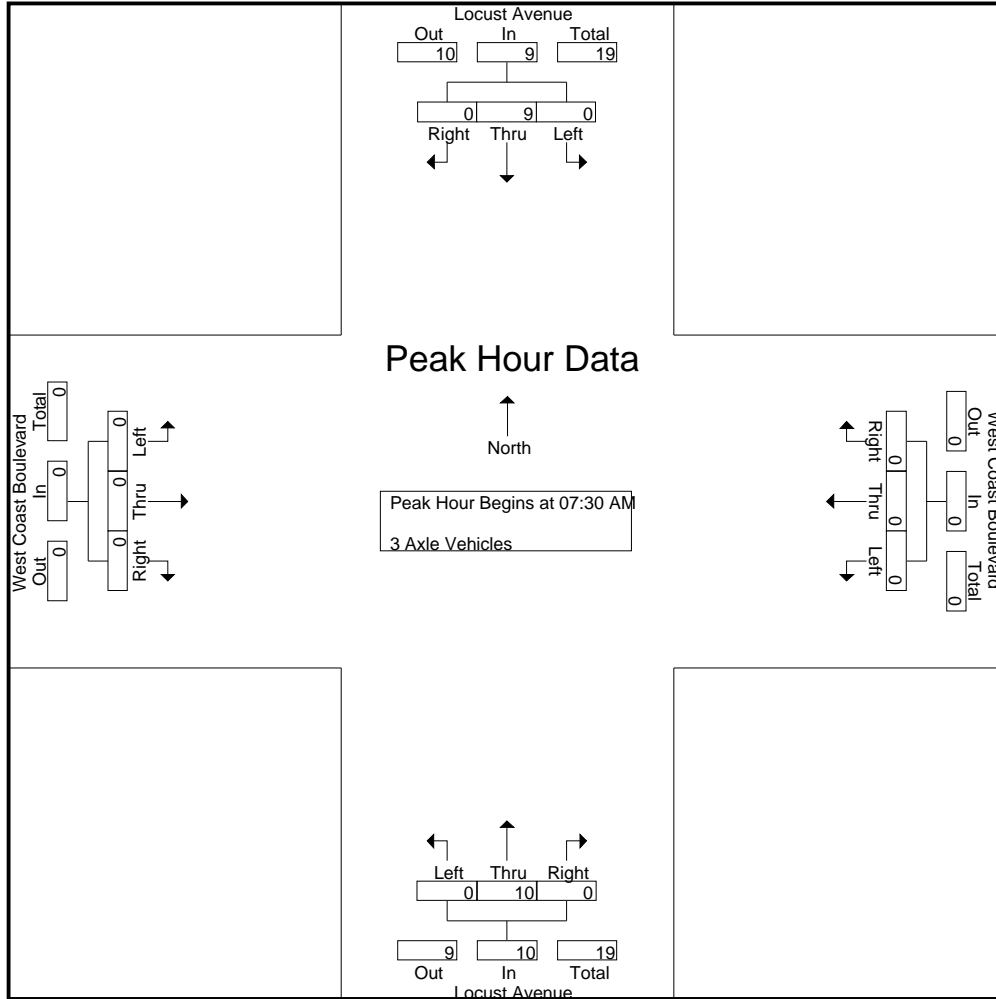
Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30 AM	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
07:45 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
08:00 AM	0	4	0	4	0	0	0	0	0	3	0	3	0	0	0	0	7
08:15 AM	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	5
Total Volume	0	9	0	9	0	0	0	0	0	10	0	10	0	0	0	0	19
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.563	.000	.563	.000	.000	.000	.000	.000	.833	.000	.833	.000	.000	.000	.000	.679

Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:30 AM

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa AM
 Site Code : 10823730
 Start Date : 8/15/2023
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0
+30 mins.	0	4	0	4	0	0	0	0	0	3	0	3	0	0	0	0
+45 mins.	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0
Total Volume	0	9	0	9	0	0	0	0	0	10	0	10	0	0	0	0
% App. Total	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0
PHF	.000	.563	.000	.563	.000	.000	.000	.000	.000	.833	.000	.833	.000	.000	.000	.000

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa AM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 1

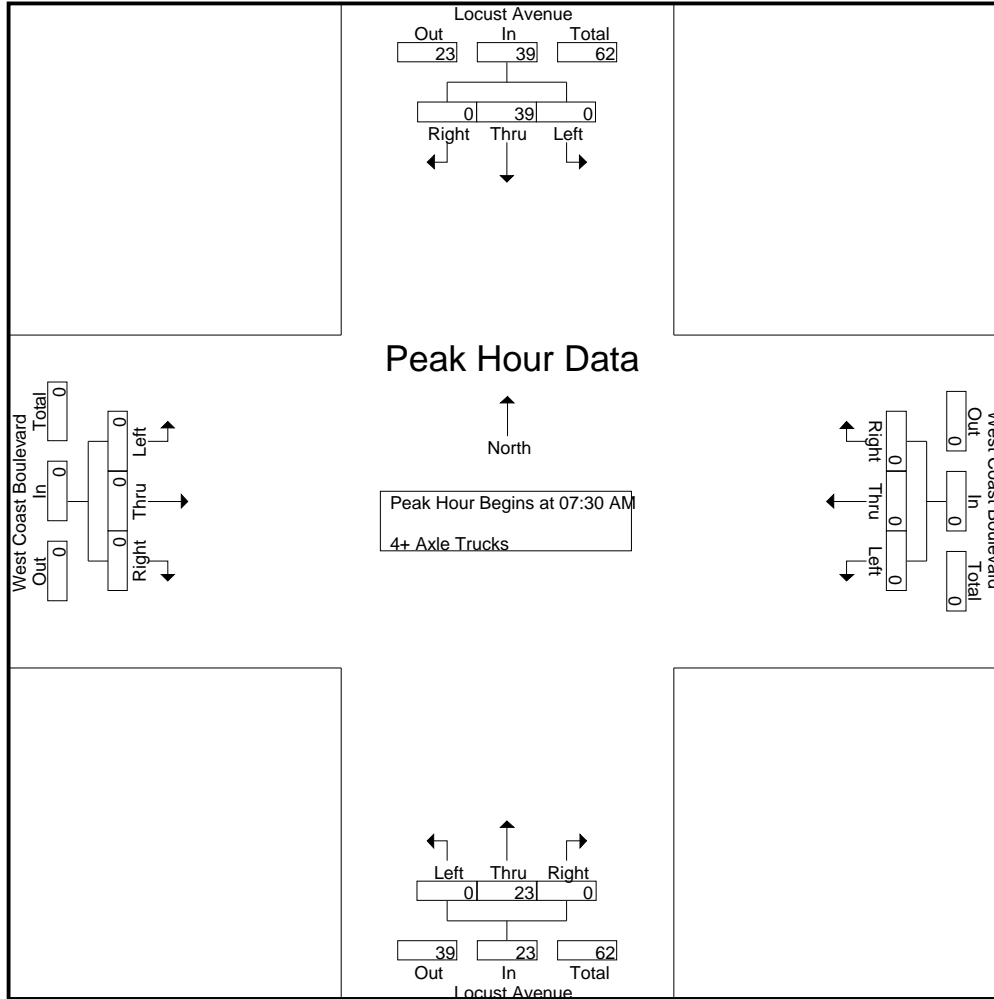
Groups Printed- 4+ Axle Trucks

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	9	0	9	0	0	0	0	0	5	0	5	0	0	0	0	14
07:15 AM	0	9	0	9	0	0	0	0	0	3	0	3	0	0	0	0	12
07:30 AM	0	11	0	11	0	0	0	0	0	6	0	6	0	0	0	0	17
07:45 AM	0	14	0	14	0	0	0	0	0	6	0	6	0	0	0	0	20
Total	0	43	0	43	0	0	0	0	0	20	0	20	0	0	0	0	63
08:00 AM	0	5	0	5	0	0	0	0	0	9	0	9	0	0	0	0	14
08:15 AM	0	9	0	9	0	0	0	0	0	2	0	2	0	0	0	0	11
08:30 AM	0	12	0	12	0	0	0	0	0	3	0	3	0	0	0	0	15
08:45 AM	0	13	0	13	0	0	0	0	0	2	0	2	0	0	0	0	15
Total	0	39	0	39	0	0	0	0	0	16	0	16	0	0	0	0	55
Grand Total	0	82	0	82	0	0	0	0	0	36	0	36	0	0	0	0	118
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	69.5	0	69.5	0	0	0	0	0	30.5	0	30.5	0	0	0	0	

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	11	0	11	0	0	0	0	0	6	0	6	0	0	0	0	17
07:45 AM	0	14	0	14	0	0	0	0	0	6	0	6	0	0	0	0	20
08:00 AM	0	5	0	5	0	0	0	0	0	9	0	9	0	0	0	0	14
08:15 AM	0	9	0	9	0	0	0	0	0	2	0	2	0	0	0	0	11
Total Volume	0	39	0	39	0	0	0	0	0	23	0	23	0	0	0	0	62
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.696	.000	.696	.000	.000	.000	.000	.000	.639	.000	.639	.000	.000	.000	.000	.775

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa AM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	11	0	11	0	0	0	0	0	6	0	6	0	0	0	0
+15 mins.	0	14	0	14	0	0	0	0	0	6	0	6	0	0	0	0
+30 mins.	0	5	0	5	0	0	0	0	0	9	0	9	0	0	0	0
+45 mins.	0	9	0	9	0	0	0	0	0	2	0	2	0	0	0	0
Total Volume	0	39	0	39	0	0	0	0	0	23	0	23	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.696	.000	.696	.000	.000	.000	.000	.000	.639	.000	.639	.000	.000	.000	.000

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa PM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 1

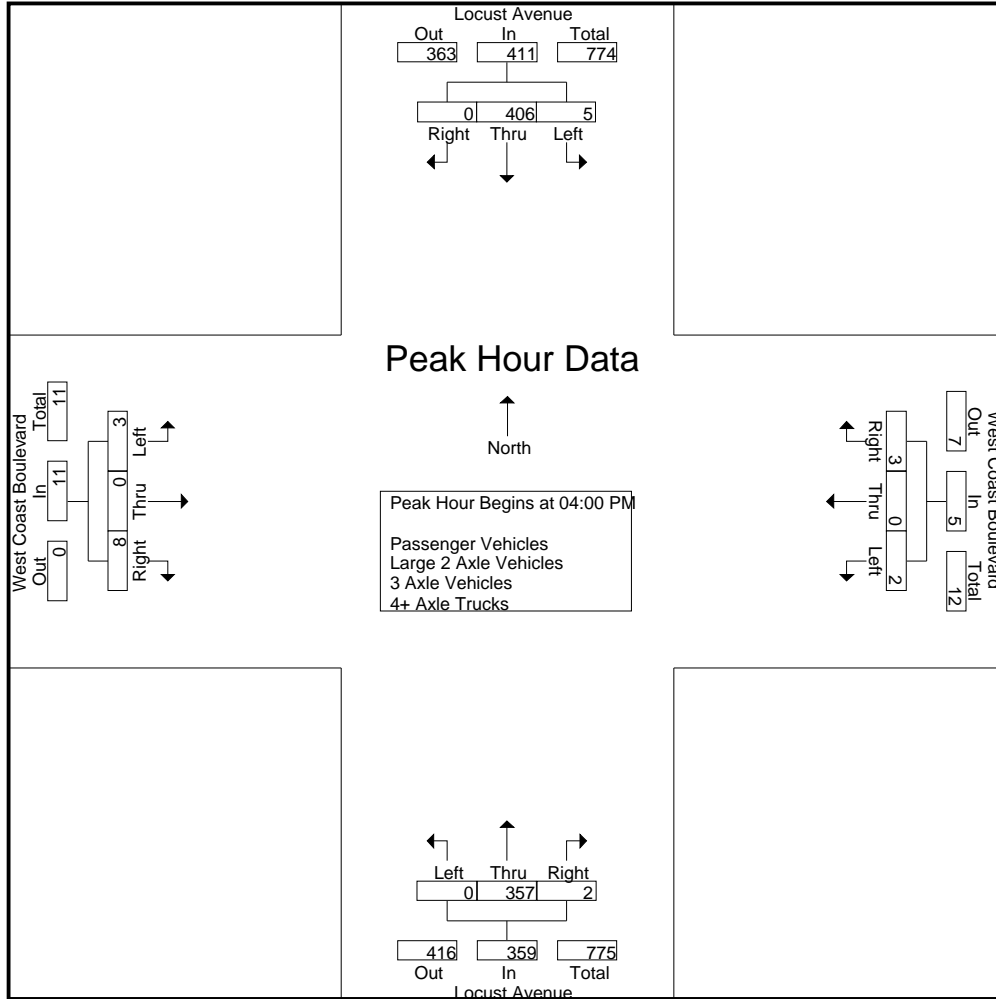
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	4	64	0	68	0	0	1	1	0	104	0	104	0	0	0	0	173
04:15 PM	1	104	0	105	0	0	0	0	0	119	0	119	0	0	0	0	224
04:30 PM	0	173	0	173	2	0	1	3	0	72	0	72	3	0	8	11	259
04:45 PM	0	65	0	65	0	0	1	1	0	62	2	64	0	0	0	0	130
Total	5	406	0	411	2	0	3	5	0	357	2	359	3	0	8	11	786
05:00 PM	1	55	0	56	0	0	1	1	0	54	1	55	0	0	0	0	112
05:15 PM	0	54	0	54	0	0	0	0	0	68	1	69	0	0	0	0	123
05:30 PM	1	65	0	66	0	0	0	0	0	80	0	80	0	0	0	0	146
05:45 PM	3	52	0	55	1	0	2	3	0	72	1	73	0	0	0	0	131
Total	5	226	0	231	1	0	3	4	0	274	3	277	0	0	0	0	512
Grand Total	10	632	0	642	3	0	6	9	0	631	5	636	3	0	8	11	1298
Apprch %	1.6	98.4	0		33.3	0	66.7		0	99.2	0.8		27.3	0	72.7		
Total %	0.8	48.7	0	49.5	0.2	0	0.5	0.7	0	48.6	0.4	49	0.2	0	0.6	0.8	
Passenger Vehicles	10	603	0	613	3	0	6	9	0	603	5	608	3	0	8	11	1241
% Passenger Vehicles	100	95.4	0	95.5	100	0	100	100	0	95.6	100	95.6	100	0	100	100	95.6
Large 2 Axle Vehicles	0	6	0	6	0	0	0	0	0	7	0	7	0	0	0	0	13
% Large 2 Axle Vehicles	0	0.9	0	0.9	0	0	0	0	0	1.1	0	1.1	0	0	0	0	1
3 Axle Vehicles	0	8	0	8	0	0	0	0	0	6	0	6	0	0	0	0	14
% 3 Axle Vehicles	0	1.3	0	1.2	0	0	0	0	0	1	0	0.9	0	0	0	0	1.1
4+ Axle Trucks	0	15	0	15	0	0	0	0	0	15	0	15	0	0	0	0	30
% 4+ Axle Trucks	0	2.4	0	2.3	0	0	0	0	0	2.4	0	2.4	0	0	0	0	2.3

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	4	64	0	68	0	0	1	1	0	104	0	104	0	0	0	0	173
04:15 PM	1	104	0	105	0	0	0	0	0	119	0	119	0	0	0	0	224
04:30 PM	0	173	0	173	2	0	1	3	0	72	0	72	3	0	8	11	259
04:45 PM	0	65	0	65	0	0	1	1	0	62	2	64	0	0	0	0	130
Total Volume	5	406	0	411	2	0	3	5	0	357	2	359	3	0	8	11	786
% App. Total	1.2	98.8	0		40	0	60		0	99.4	0.6		27.3	0	72.7		
PHF	.313	.587	.000	.594	.250	.000	.750	.417	.000	.750	.250	.754	.250	.000	.250	.250	.759

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa PM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	4	64	0	68	0	0	1	1	0	104	0	104	0	0	0	0
+15 mins.	1	104	0	105	0	0	0	0	0	119	0	119	0	0	0	0
+30 mins.	0	173	0	173	2	0	1	3	0	72	0	72	3	0	8	11
+45 mins.	0	65	0	65	0	0	1	1	0	62	2	64	0	0	0	0
Total Volume	5	406	0	411	2	0	3	5	0	357	2	359	3	0	8	11
% App. Total	1.2	98.8	0		40	0	60		0	99.4	0.6		27.3	0	72.7	
PHF	.313	.587	.000	.594	.250	.000	.750	.417	.000	.750	.250	.754	.250	.000	.250	.250

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa PM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 1

Groups Printed- Passenger Vehicles

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	4	62	0	66	0	0	1	1	0	101	0	101	0	0	0	0	168
04:15 PM	1	97	0	98	0	0	0	0	0	116	0	116	0	0	0	0	214
04:30 PM	0	169	0	169	2	0	1	3	0	69	0	69	3	0	8	11	252
04:45 PM	0	61	0	61	0	0	1	1	0	57	2	59	0	0	0	0	121
Total	5	389	0	394	2	0	3	5	0	343	2	345	3	0	8	11	755
05:00 PM	1	53	0	54	0	0	1	1	0	53	1	54	0	0	0	0	109
05:15 PM	0	48	0	48	0	0	0	0	0	65	1	66	0	0	0	0	114
05:30 PM	1	63	0	64	0	0	0	0	0	74	0	74	0	0	0	0	138
05:45 PM	3	50	0	53	1	0	2	3	0	68	1	69	0	0	0	0	125
Total	5	214	0	219	1	0	3	4	0	260	3	263	0	0	0	0	486
Grand Total	10	603	0	613	3	0	6	9	0	603	5	608	3	0	8	11	1241
Apprch %	1.6	98.4	0		33.3	0	66.7		0	99.2	0.8		27.3	0	72.7		
Total %	0.8	48.6	0	49.4	0.2	0	0.5	0.7	0	48.6	0.4	49	0.2	0	0.6	0.9	

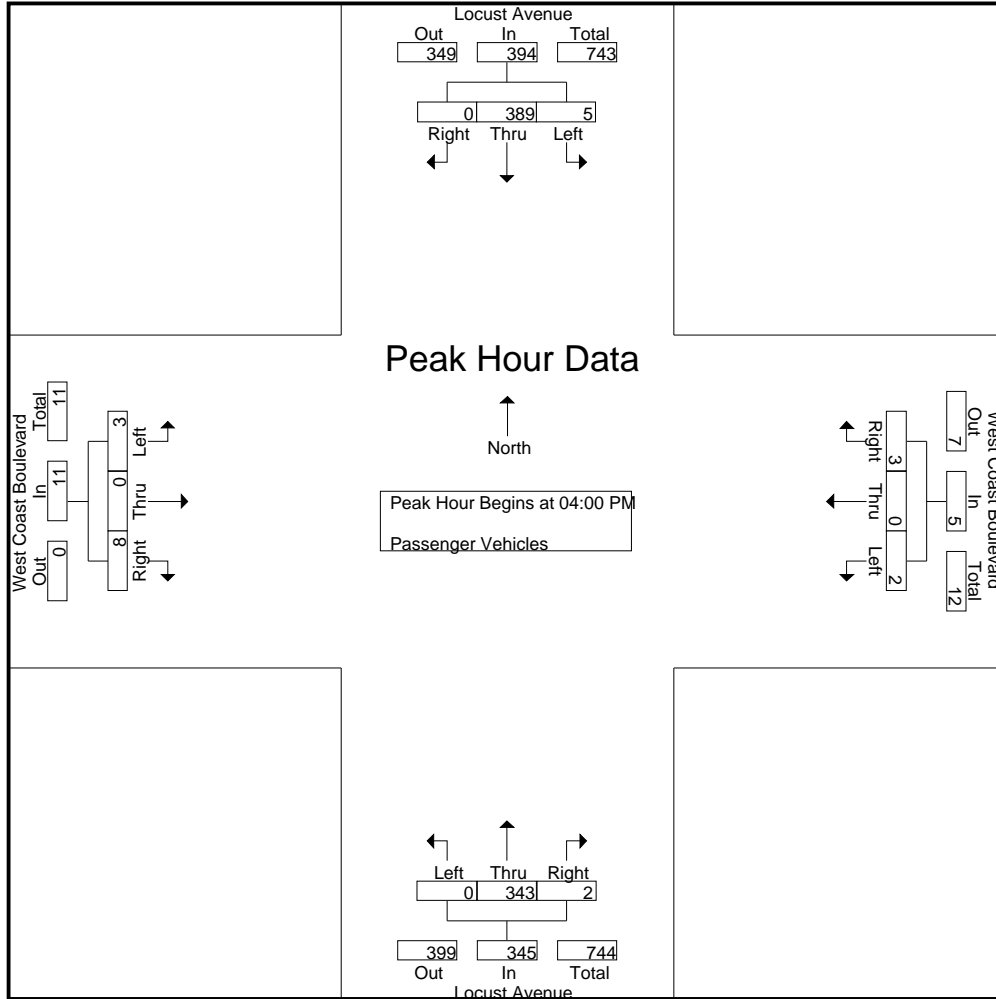
Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	4	62	0	66	0	0	1	1	0	101	0	101	0	0	0	0	168
04:15 PM	1	97	0	98	0	0	0	0	0	116	0	116	0	0	0	0	214
04:30 PM	0	169	0	169	2	0	1	3	0	69	0	69	3	0	8	11	252
04:45 PM	0	61	0	61	0	0	1	1	0	57	2	59	0	0	0	0	121
Total Volume	5	389	0	394	2	0	3	5	0	343	2	345	3	0	8	11	755
% App. Total	1.3	98.7	0		40	0	60		0	99.4	0.6		27.3	0	72.7		
PHF	.313	.575	.000	.583	.250	.000	.750	.417	.000	.739	.250	.744	.250	.000	.250	.250	.749

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

Peak Hour for Entire Intersection Begins at 04:00 PM

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa PM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	4	62	0	66	0	0	1	1	0	101	0	101	0	0	0	0
+15 mins.	1	97	0	98	0	0	0	0	0	116	0	116	0	0	0	0
+30 mins.	0	169	0	169	2	0	1	3	0	69	0	69	3	0	8	11
+45 mins.	0	61	0	61	0	0	1	1	0	57	2	59	0	0	0	0
Total Volume	5	389	0	394	2	0	3	5	0	343	2	345	3	0	8	11
% App. Total	1.3	98.7	0		40	0	60		0	99.4	0.6		27.3	0	72.7	
PHF	.313	.575	.000	.583	.250	.000	.750	.417	.000	.739	.250	.744	.250	.000	.250	.250

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa PM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 1

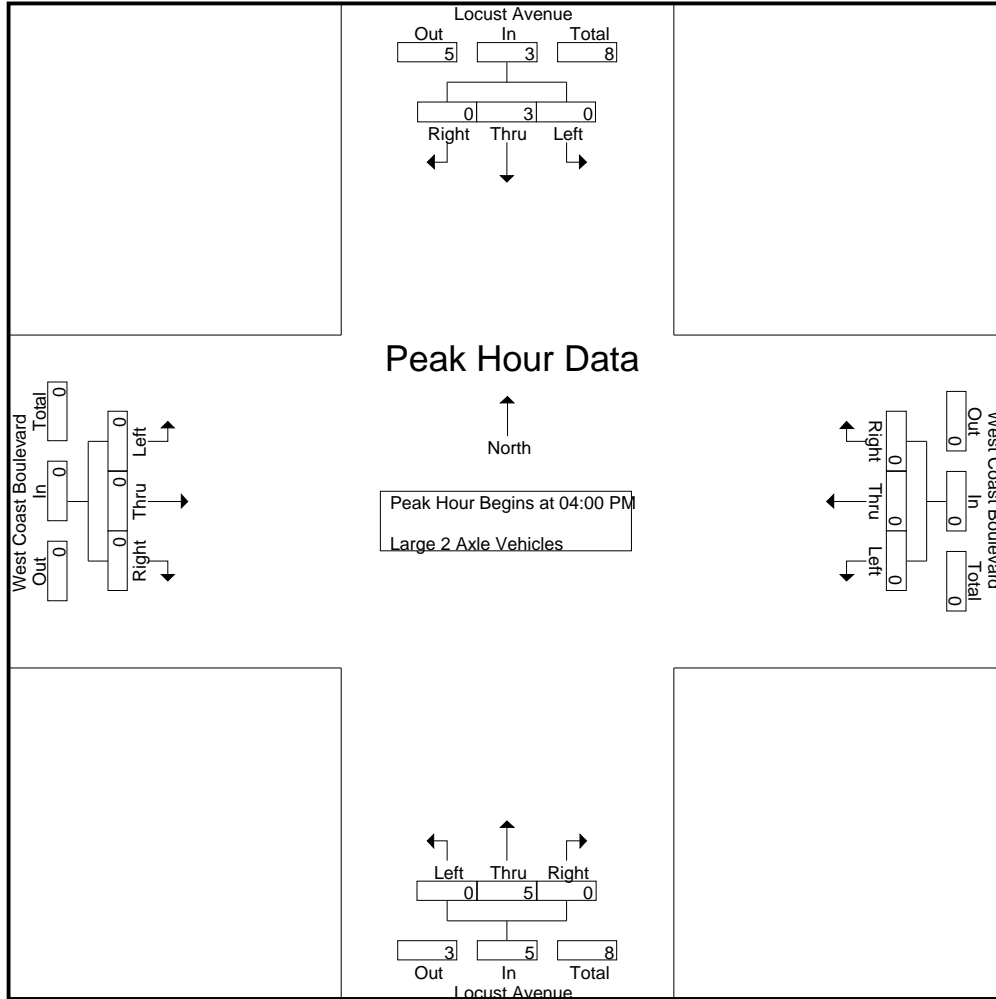
Groups Printed- Large 2 Axle Vehicles

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	0	3	0	3	0	0	0	0	0	5	0	5	0	0	0	0	8
05:00 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	5
Grand Total	0	6	0	6	0	0	0	0	0	7	0	7	0	0	0	0	13
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	46.2	0	46.2	0	0	0	0	0	53.8	0	53.8	0	0	0	0	

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total Volume	0	3	0	3	0	0	0	0	0	5	0	5	0	0	0	0	8
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.375	.000	.375	.000	.000	.000	.000	.000	.625	.000	.625	.000	.000	.000	.000	.500

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa PM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0
Total Volume	0	3	0	3	0	0	0	0	0	5	0	5	0	0	0	0
% App. Total	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0
PHF	.000	.375	.000	.375	.000	.000	.000	.000	.000	.625	.000	.625	.000	.000	.000	.000

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa PM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total		
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15 PM	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
04:30 PM	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
04:45 PM	0	2	0	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
Total	0	4	0	4	0	0	0	0	0	0	3	0	3	0	0	0	0	0	7
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	2	0	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
05:30 PM	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
05:45 PM	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Total	0	4	0	4	0	0	0	0	0	0	3	0	3	0	0	0	0	0	7
Grand Total	0	8	0	8	0	0	0	0	0	0	6	0	6	0	0	0	0	0	14
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		0		
Total %	0	57.1	0	57.1	0	0	0	0	0	42.9	0	42.9	0	0	0	0	0	0	

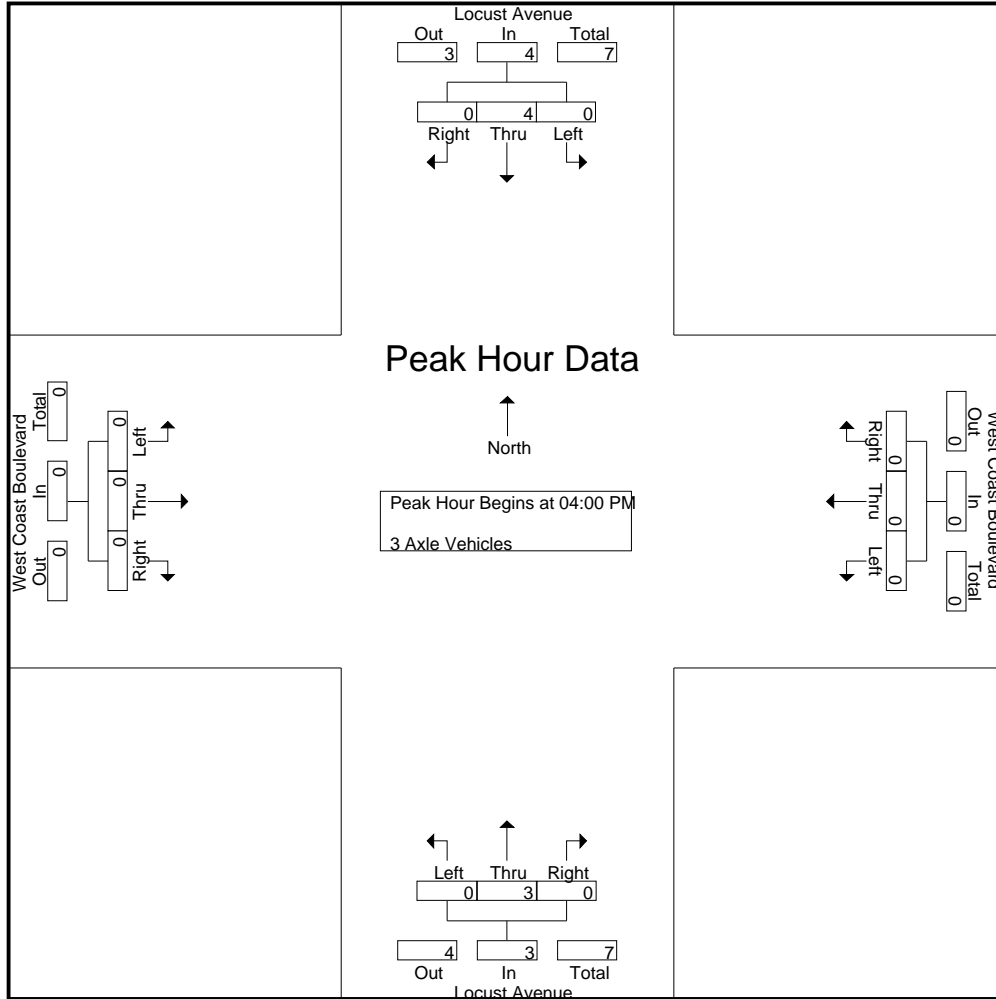
Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total		
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
04:30 PM	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
04:45 PM	0	2	0	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
Total Volume	0	4	0	4	0	0	0	0	0	0	3	0	3	0	0	0	0	0	7
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.583

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

Peak Hour for Entire Intersection Begins at 04:00 PM

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa PM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	4	0	4	0	0	0	0	0	3	0	3	0	0	0	0
% App. Total	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa PM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 1

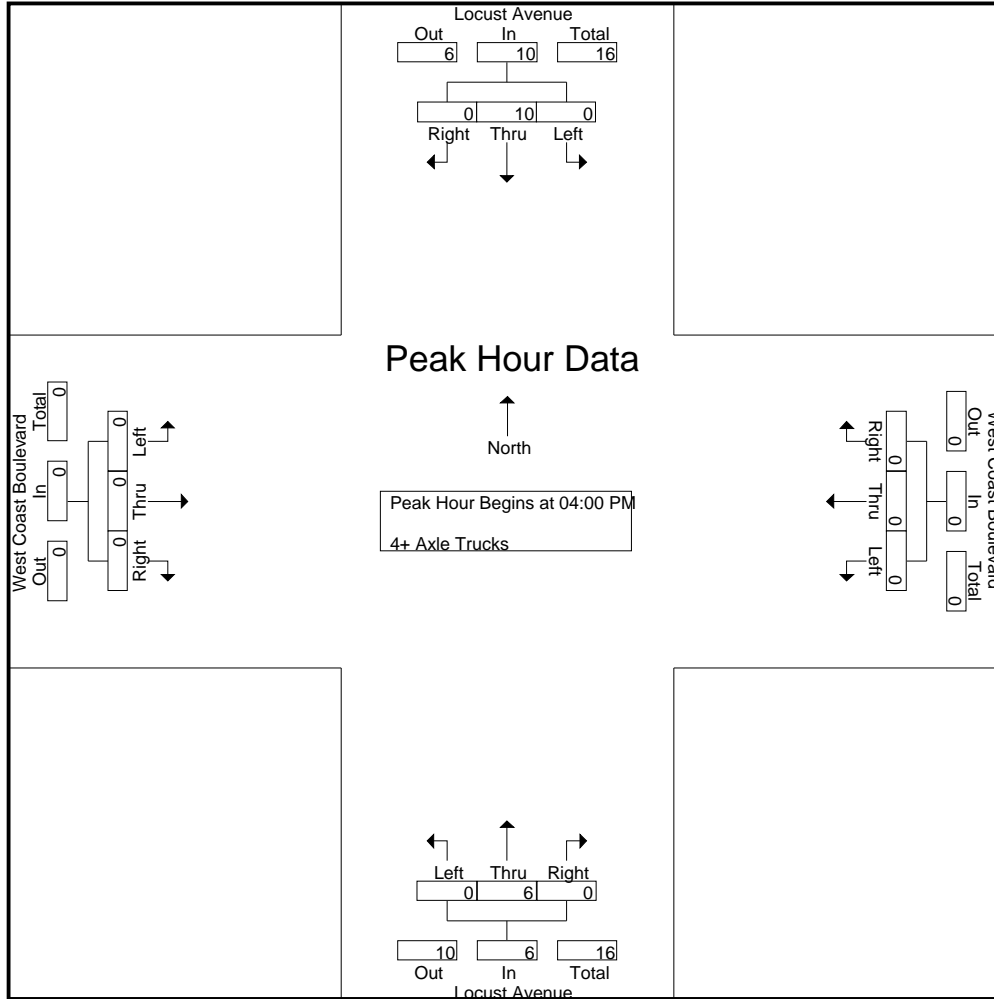
Groups Printed- 4+ Axle Trucks

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
04:15 PM	0	5	0	5	0	0	0	0	0	2	0	2	0	0	0	0	7
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
Total	0	10	0	10	0	0	0	0	0	6	0	6	0	0	0	0	16
05:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:15 PM	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0	5
05:30 PM	0	1	0	1	0	0	0	0	0	5	0	5	0	0	0	0	6
05:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	0	5	0	5	0	0	0	0	0	9	0	9	0	0	0	0	14
Grand Total	0	15	0	15	0	0	0	0	0	15	0	15	0	0	0	0	30
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	50	0	50	0	0	0	0	0	50	0	50	0	0	0	0	

Start Time	Locust Avenue Southbound				West Coast Boulevard Westbound				Locust Avenue Northbound				West Coast Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
04:15 PM	0	5	0	5	0	0	0	0	0	2	0	2	0	0	0	0	7
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
Total Volume	0	10	0	10	0	0	0	0	0	6	0	6	0	0	0	0	16
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.571

City of Rialto
 N/S: Locust Avenue
 E/W: West Coast Boulevard
 Weather: Clear

File Name : 01_RLT_Loc_W Coa PM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0
+15 mins.	0	5	0	5	0	0	0	0	0	2	0	2	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0
Total Volume	0	10	0	10	0	0	0	0	0	6	0	6	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas AM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 1

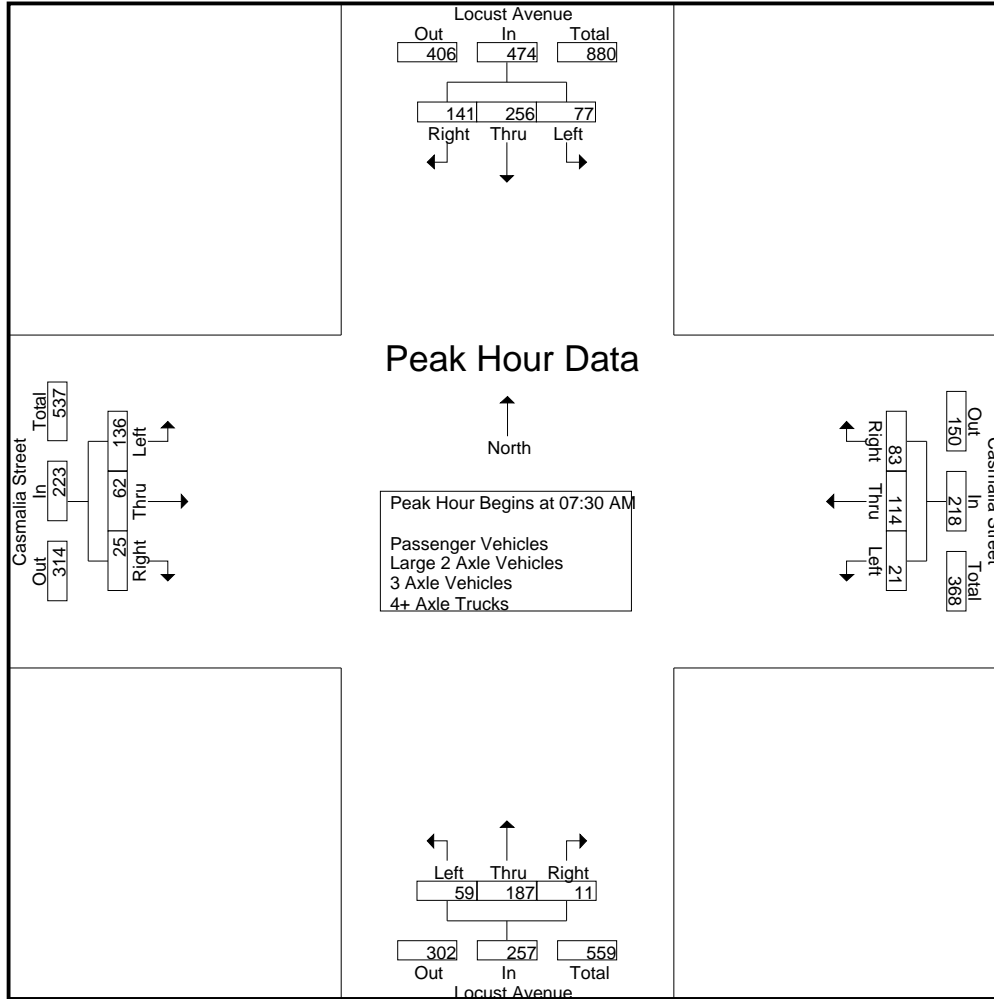
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	13	44	37	94	5	21	21	47	13	37	4	54	19	8	7	34	229
07:15 AM	12	47	48	107	4	22	16	42	15	41	2	58	31	6	6	43	250
07:30 AM	15	57	33	105	3	30	25	58	12	69	6	87	29	18	4	51	301
07:45 AM	24	87	35	146	6	28	30	64	15	52	2	69	38	13	7	58	337
Total	64	235	153	452	18	101	92	211	55	199	14	268	117	45	24	186	1117
08:00 AM	27	74	30	131	10	28	10	48	23	29	1	53	29	13	5	47	279
08:15 AM	11	38	43	92	2	28	18	48	9	37	2	48	40	18	9	67	255
08:30 AM	13	65	59	137	4	22	14	40	7	22	0	29	34	16	15	65	271
08:45 AM	8	39	19	66	2	20	6	28	9	30	0	39	29	18	8	55	188
Total	59	216	151	426	18	98	48	164	48	118	3	169	132	65	37	234	993
Grand Total	123	451	304	878	36	199	140	375	103	317	17	437	249	110	61	420	2110
Apprch %	14	51.4	34.6		9.6	53.1	37.3		23.6	72.5	3.9		59.3	26.2	14.5		
Total %	5.8	21.4	14.4	41.6	1.7	9.4	6.6	17.8	4.9	15	0.8	20.7	11.8	5.2	2.9	19.9	
Passenger Vehicles	95	386	252	733	20	190	120	330	79	286	16	381	184	105	47	336	1780
% Passenger Vehicles	77.2	85.6	82.9	83.5	55.6	95.5	85.7	88	76.7	90.2	94.1	87.2	73.9	95.5	77	80	84.4
Large 2 Axle Vehicles	5	14	4	23	0	5	7	12	3	11	0	14	6	3	2	11	60
% Large 2 Axle Vehicles	4.1	3.1	1.3	2.6	0	2.5	5	3.2	2.9	3.5	0	3.2	2.4	2.7	3.3	2.6	2.8
3 Axle Vehicles	1	12	6	19	13	1	6	20	6	10	1	17	9	2	9	20	76
% 3 Axle Vehicles	0.8	2.7	2	2.2	36.1	0.5	4.3	5.3	5.8	3.2	5.9	3.9	3.6	1.8	14.8	4.8	3.6
4+ Axle Trucks	22	39	42	103	3	3	7	13	15	10	0	25	50	0	3	53	194
% 4+ Axle Trucks	17.9	8.6	13.8	11.7	8.3	1.5	5	3.5	14.6	3.2	0	5.7	20.1	0	4.9	12.6	9.2

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	15	57	33	105	3	30	25	58	12	69	6	87	29	18	4	51	301
07:45 AM	24	87	35	146	6	28	30	64	15	52	2	69	38	13	7	58	337
08:00 AM	27	74	30	131	10	28	10	48	23	29	1	53	29	13	5	47	279
08:15 AM	11	38	43	92	2	28	18	48	9	37	2	48	40	18	9	67	255
Total Volume	77	256	141	474	21	114	83	218	59	187	11	257	136	62	25	223	1172
% App. Total	16.2	54	29.7		9.6	52.3	38.1		23	72.8	4.3		61	27.8	11.2		
PHF	.713	.736	.820	.812	.525	.950	.692	.852	.641	.678	.458	.739	.850	.861	.694	.832	.869

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

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

	07:45 AM				07:30 AM				07:00 AM				07:45 AM			
+0 mins.	24	87	35	146	3	30	25	58	13	37	4	54	38	13	7	58
+15 mins.	27	74	30	131	6	28	30	64	15	41	2	58	29	13	5	47
+30 mins.	11	38	43	92	10	28	10	48	12	69	6	87	40	18	9	67
+45 mins.	13	65	59	137	2	28	18	48	15	52	2	69	34	16	15	65
Total Volume	75	264	167	506	21	114	83	218	55	199	14	268	141	60	36	237
% App. Total	14.8	52.2	33		9.6	52.3	38.1		20.5	74.3	5.2		59.5	25.3	15.2	
PHF	.694	.759	.708	.866	.525	.950	.692	.852	.917	.721	.583	.770	.881	.833	.600	.884

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas AM
 Site Code : 10823730
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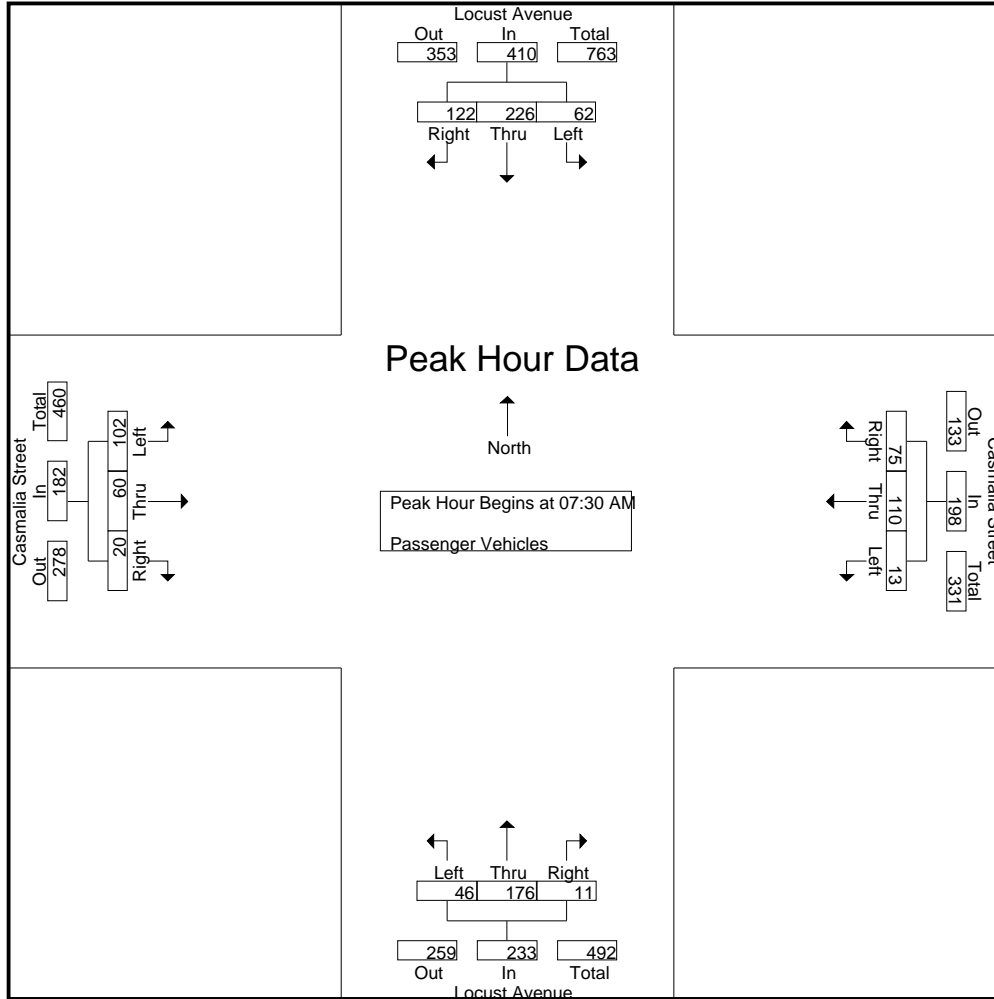
Groups Printed- Passenger Vehicles

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	9	42	31	82	3	20	19	42	10	33	3	46	14	7	4	25	195
07:15 AM	10	36	33	79	1	21	14	36	12	35	2	49	27	6	5	38	202
07:30 AM	13	50	32	95	2	28	23	53	11	64	6	81	25	18	4	47	276
07:45 AM	18	81	30	129	4	27	28	59	12	52	2	66	28	12	6	46	300
Total	50	209	126	385	10	96	84	190	45	184	13	242	94	43	19	156	973
08:00 AM	22	64	24	110	6	27	9	42	17	25	1	43	18	13	3	34	229
08:15 AM	9	31	36	76	1	28	15	44	6	35	2	43	31	17	7	55	218
08:30 AM	10	53	50	113	2	22	9	33	6	19	0	25	27	16	13	56	227
08:45 AM	4	29	16	49	1	17	3	21	5	23	0	28	14	16	5	35	133
Total	45	177	126	348	10	94	36	140	34	102	3	139	90	62	28	180	807
Grand Total	95	386	252	733	20	190	120	330	79	286	16	381	184	105	47	336	1780
Apprch %	13	52.7	34.4		6.1	57.6	36.4		20.7	75.1	4.2		54.8	31.2	14		
Total %	5.3	21.7	14.2	41.2	1.1	10.7	6.7	18.5	4.4	16.1	0.9	21.4	10.3	5.9	2.6	18.9	

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	13	50	32	95	2	28	23	53	11	64	6	81	25	18	4	47	276
07:45 AM	18	81	30	129	4	27	28	59	12	52	2	66	28	12	6	46	300
08:00 AM	22	64	24	110	6	27	9	42	17	25	1	43	18	13	3	34	229
08:15 AM	9	31	36	76	1	28	15	44	6	35	2	43	31	17	7	55	218
Total Volume	62	226	122	410	13	110	75	198	46	176	11	233	102	60	20	182	1023
% App. Total	15.1	55.1	29.8		6.6	55.6	37.9		19.7	75.5	4.7		56	33	11		
PHF	.705	.698	.847	.795	.542	.982	.670	.839	.676	.688	.458	.719	.823	.833	.714	.827	.853

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	13	50	32	95	2	28	23	53	11	64	6	81	25	18	4	47
+15 mins.	18	81	30	129	4	27	28	59	12	52	2	66	28	12	6	46
+30 mins.	22	64	24	110	6	27	9	42	17	25	1	43	18	13	3	34
+45 mins.	9	31	36	76	1	28	15	44	6	35	2	43	31	17	7	55
Total Volume	62	226	122	410	13	110	75	198	46	176	11	233	102	60	20	182
% App. Total	15.1	55.1	29.8		6.6	55.6	37.9		19.7	75.5	4.7		56	33	11	
PHF	.705	.698	.847	.795	.542	.982	.670	.839	.676	.688	.458	.719	.823	.833	.714	.827

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas AM
 Site Code : 10823730
 Start Date : 8/15/2023
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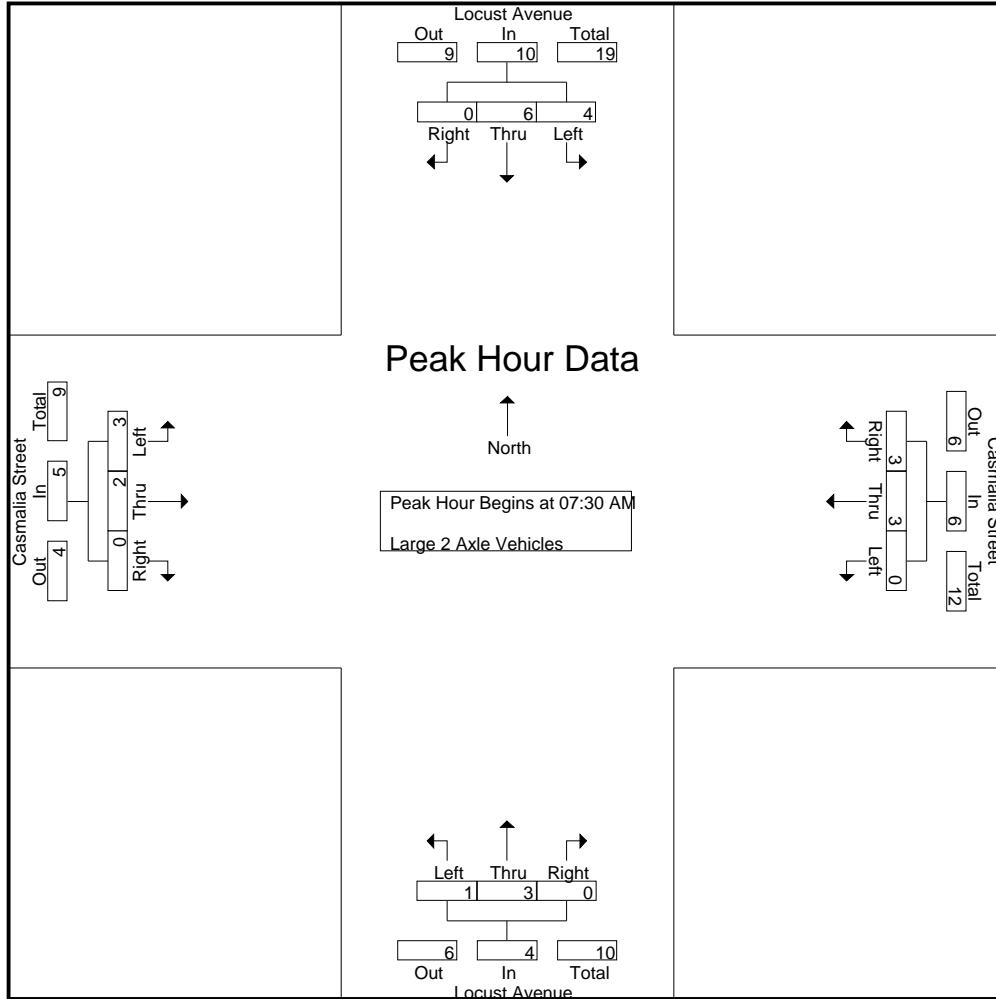
Groups Printed- Large 2 Axle Vehicles

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	1	1	0	3	0	3	0	0	0	0	4
07:15 AM	0	3	1	4	0	0	1	1	1	2	0	3	0	0	0	0	8
07:30 AM	0	1	0	1	0	2	1	3	0	1	0	1	0	0	0	0	5
07:45 AM	1	1	0	2	0	1	0	1	1	0	0	1	1	1	0	2	6
Total	1	5	1	7	0	3	3	6	2	6	0	8	1	1	0	2	23
08:00 AM	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
08:15 AM	0	1	0	1	0	0	2	2	0	2	0	2	2	1	0	3	8
08:30 AM	0	4	2	6	0	0	2	2	0	1	0	1	1	0	0	1	10
08:45 AM	1	1	1	3	0	2	0	2	1	2	0	3	2	1	2	5	13
Total	4	9	3	16	0	2	4	6	1	5	0	6	5	2	2	9	37
Grand Total	5	14	4	23	0	5	7	12	3	11	0	14	6	3	2	11	60
Apprch %	21.7	60.9	17.4		0	41.7	58.3		21.4	78.6	0		54.5	27.3	18.2		
Total %	8.3	23.3	6.7	38.3	0	8.3	11.7	20	5	18.3	0	23.3	10	5	3.3	18.3	

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	1	0	1	0	2	1	3	0	1	0	1	0	0	0	0	5
07:45 AM	1	1	0	2	0	1	0	1	1	0	0	1	1	1	0	2	6
08:00 AM	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
08:15 AM	0	1	0	1	0	0	2	2	0	2	0	2	2	1	0	3	8
Total Volume	4	6	0	10	0	3	3	6	1	3	0	4	3	2	0	5	25
% App. Total	40	60	0		0	50	50		25	75	0		60	40	0		
PHF	.333	.500	.000	.417	.000	.375	.375	.500	.250	.375	.000	.500	.375	.500	.000	.417	.781

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas AM
 Site Code : 10823730
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	1	0	1	0	2	1	3	0	1	0	1	0	0	0	0
+15 mins.	1	1	0	2	0	1	0	1	1	0	0	1	1	1	0	2
+30 mins.	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	2	2	0	2	0	2	2	1	0	3
Total Volume	4	6	0	10	0	3	3	6	1	3	0	4	3	2	0	5
% App. Total	40	60	0		0	50	50		25	75	0		60	40	0	
PHF	.333	.500	.000	.417	.000	.375	.375	.500	.250	.375	.000	.500	.375	.500	.000	.417

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas AM
 Site Code : 10823730
 Start Date : 8/15/2023
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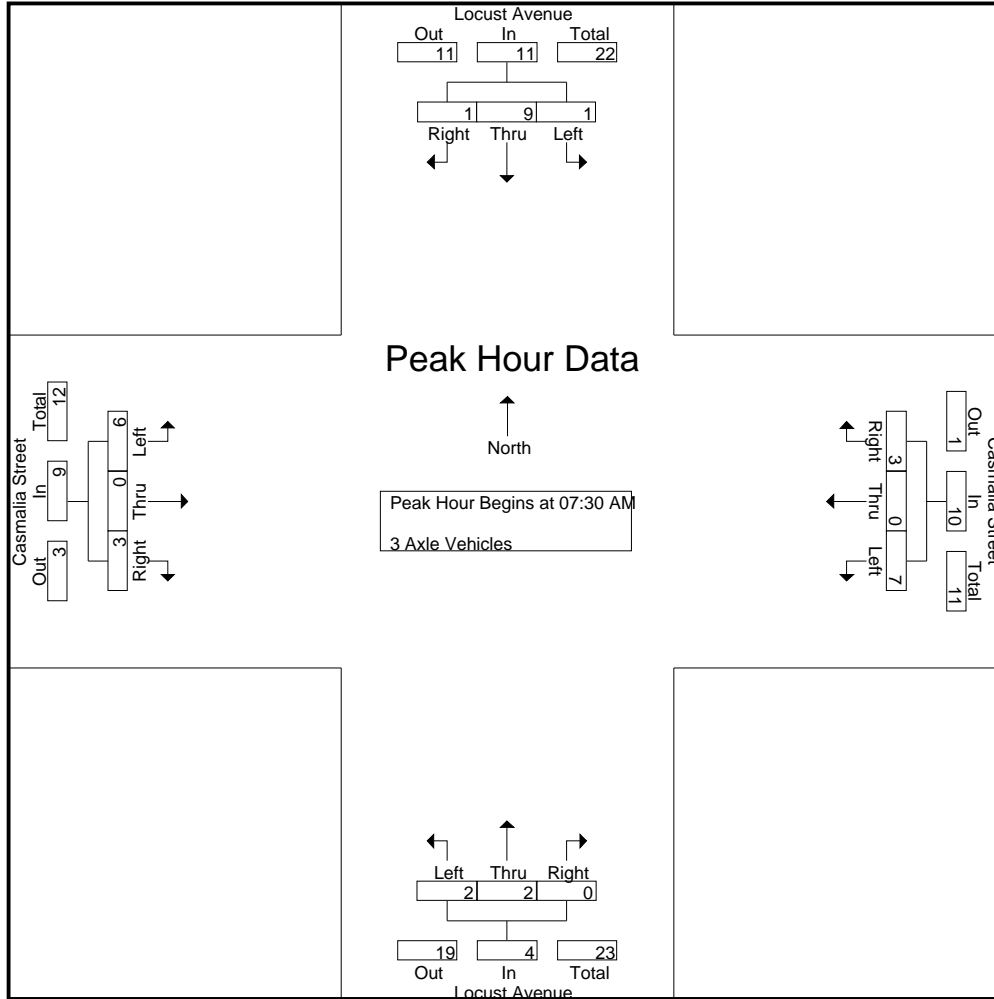
Groups Printed- 3 Axle Vehicles

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	2	0	0	2	1	1	1	3	0	1	3	4	9
07:15 AM	0	1	2	3	2	0	0	2	1	1	0	2	0	0	1	1	8
07:30 AM	0	3	0	3	1	0	0	1	1	1	0	2	1	0	0	1	7
07:45 AM	0	1	0	1	2	0	1	3	0	0	0	0	2	0	1	3	7
Total	0	5	2	7	7	0	1	8	3	3	1	7	3	1	5	9	31
08:00 AM	0	3	1	4	3	0	1	4	0	1	0	1	0	0	1	1	10
08:15 AM	1	2	0	3	1	0	1	2	1	0	0	1	3	0	1	4	10
08:30 AM	0	1	3	4	1	0	2	3	0	2	0	2	2	0	1	3	12
08:45 AM	0	1	0	1	1	1	1	3	2	4	0	6	1	1	1	3	13
Total	1	7	4	12	6	1	5	12	3	7	0	10	6	1	4	11	45
Grand Total	1	12	6	19	13	1	6	20	6	10	1	17	9	2	9	20	76
Apprch %	5.3	63.2	31.6		65	5	30		35.3	58.8	5.9		45	10	45		
Total %	1.3	15.8	7.9	25	17.1	1.3	7.9	26.3	7.9	13.2	1.3	22.4	11.8	2.6	11.8	26.3	

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	3	0	3	1	0	0	1	1	1	0	2	1	0	0	1	7
07:45 AM	0	1	0	1	2	0	1	3	0	0	0	0	2	0	1	3	7
08:00 AM	0	3	1	4	3	0	1	4	0	1	0	1	0	0	1	1	10
08:15 AM	1	2	0	3	1	0	1	2	1	0	0	1	3	0	1	4	10
Total Volume	1	9	1	11	7	0	3	10	2	2	0	4	6	0	3	9	34
% App. Total	9.1	81.8	9.1		70	0	30		50	50	0		66.7	0	33.3		
PHF	.250	.750	.250	.688	.583	.000	.750	.625	.500	.500	.000	.500	.500	.000	.750	.563	.850

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas AM
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	3	0	3	1	0	0	1	1	1	0	2	1	0	0	1
+15 mins.	0	1	0	1	2	0	1	3	0	0	0	0	2	0	1	3
+30 mins.	0	3	1	4	3	0	1	4	0	1	0	1	0	0	1	1
+45 mins.	1	2	0	3	1	0	1	2	1	0	0	1	3	0	1	4
Total Volume	1	9	1	11	7	0	3	10	2	2	0	4	6	0	3	9
% App. Total	9.1	81.8	9.1		70	0	30		50	50	0		66.7	0	33.3	
PHF	.250	.750	.250	.688	.583	.000	.750	.625	.500	.500	.000	.500	.500	.000	.750	.563

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas AM
 Site Code : 10823730
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Groups Printed- 4+ Axle Trucks

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	4	2	6	12	0	1	1	2	2	0	0	2	5	0	0	5	21
07:15 AM	2	7	12	21	1	1	1	3	1	3	0	4	4	0	0	4	32
07:30 AM	2	3	1	6	0	0	1	1	0	3	0	3	3	0	0	3	13
07:45 AM	5	4	5	14	0	0	1	1	2	0	0	2	7	0	0	7	24
Total	13	16	24	53	1	2	4	7	5	6	0	11	19	0	0	19	90
08:00 AM	2	4	5	11	1	1	0	2	6	3	0	9	11	0	1	12	34
08:15 AM	1	4	7	12	0	0	0	0	2	0	0	2	4	0	1	5	19
08:30 AM	3	7	4	14	1	0	1	2	1	0	0	1	4	0	1	5	22
08:45 AM	3	8	2	13	0	0	2	2	1	1	0	2	12	0	0	12	29
Total	9	23	18	50	2	1	3	6	10	4	0	14	31	0	3	34	104
Grand Total	22	39	42	103	3	3	7	13	15	10	0	25	50	0	3	53	194
Apprch %	21.4	37.9	40.8		23.1	23.1	53.8		60	40	0		94.3	0	5.7		
Total %	11.3	20.1	21.6	53.1	1.5	1.5	3.6	6.7	7.7	5.2	0	12.9	25.8	0	1.5	27.3	

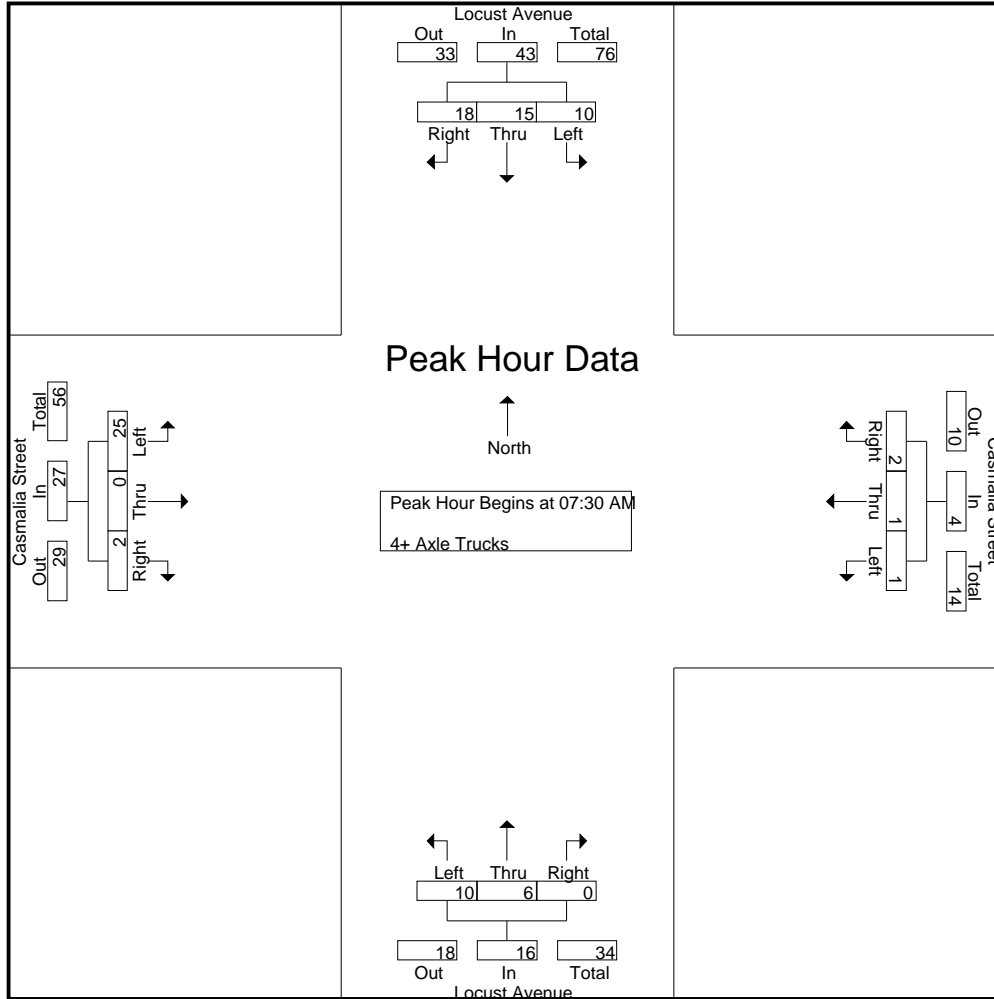
Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30 AM	2	3	1	6	0	0	1	1	0	3	0	3	3	0	0	3	13
07:45 AM	5	4	5	14	0	0	1	1	2	0	0	2	7	0	0	7	24
08:00 AM	2	4	5	11	1	1	0	2	6	3	0	9	11	0	1	12	34
08:15 AM	1	4	7	12	0	0	0	0	2	0	0	2	4	0	1	5	19
Total Volume	10	15	18	43	1	1	2	4	10	6	0	16	25	0	2	27	90
% App. Total	23.3	34.9	41.9		25	25	50		62.5	37.5	0		92.6	0	7.4		
PHF	.500	.938	.643	.768	.250	.250	.500	.500	.417	.500	.000	.444	.568	.000	.500	.563	.662

Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:30 AM

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas AM
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	2	3	1	6	0	0	1	1	0	3	0	3	3	0	0	3
+15 mins.	5	4	5	14	0	0	1	1	2	0	0	2	7	0	0	7
+30 mins.	2	4	5	11	1	1	0	2	6	3	0	9	11	0	1	12
+45 mins.	1	4	7	12	0	0	0	0	2	0	0	2	4	0	1	5
Total Volume	10	15	18	43	1	1	2	4	10	6	0	16	25	0	2	27
% App. Total	23.3	34.9	41.9		25	25	50		62.5	37.5	0		92.6	0	7.4	
PHF	.500	.938	.643	.768	.250	.250	.500	.500	.417	.500	.000	.444	.568	.000	.500	.563

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas PM
 Site Code : 10823730
 Start Date : 8/15/2023
 Page No : 1

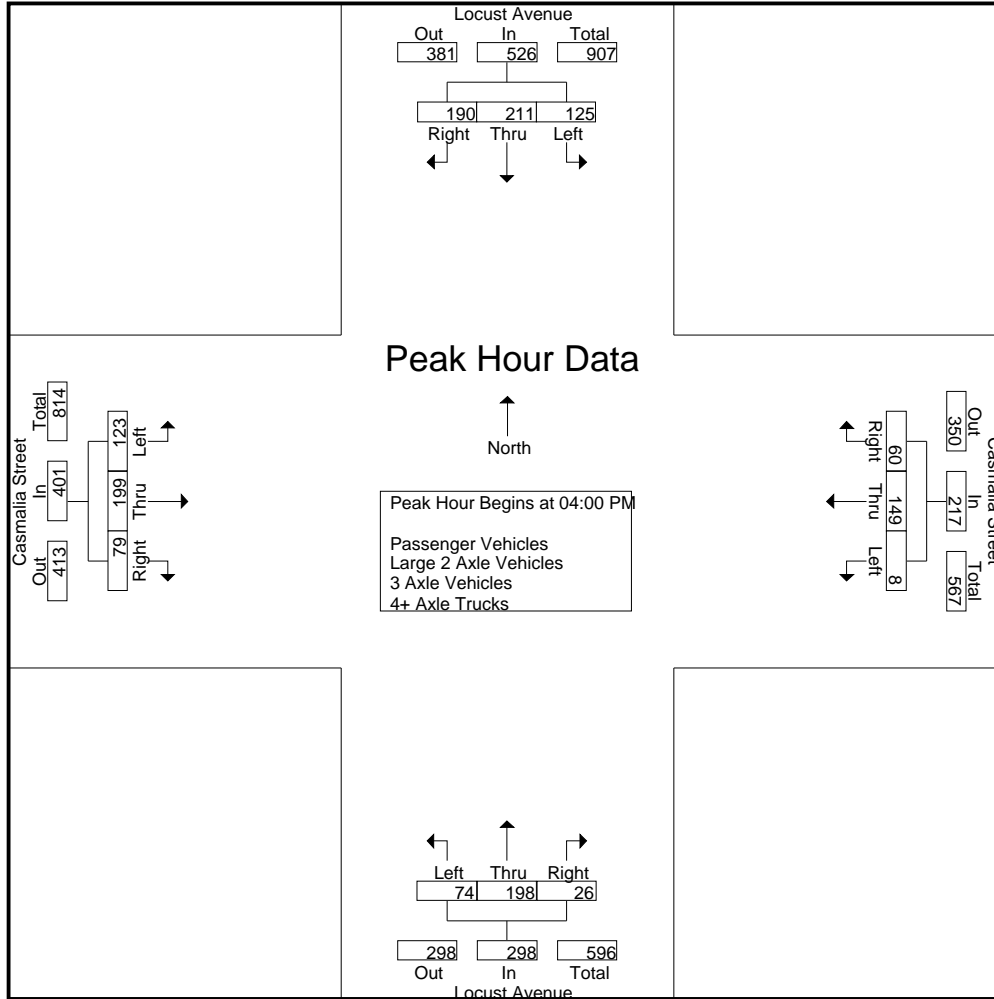
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	27	34	34	95	1	39	26	66	18	54	5	77	36	41	20	97	335
04:15 PM	27	43	30	100	3	31	15	49	18	59	1	78	28	58	26	112	339
04:30 PM	49	86	85	220	1	41	8	50	20	48	9	77	29	47	14	90	437
04:45 PM	22	48	41	111	3	38	11	52	18	37	11	66	30	53	19	102	331
Total	125	211	190	526	8	149	60	217	74	198	26	298	123	199	79	401	1442
05:00 PM	16	44	31	91	2	33	7	42	9	48	5	62	27	46	23	96	291
05:15 PM	14	39	41	94	2	27	12	41	19	44	2	65	31	42	14	87	287
05:30 PM	8	49	28	85	1	38	10	49	12	41	2	55	29	57	14	100	289
05:45 PM	13	46	28	87	7	34	11	52	15	44	3	62	27	50	15	92	293
Total	51	178	128	357	12	132	40	184	55	177	12	244	114	195	66	375	1160
Grand Total	176	389	318	883	20	281	100	401	129	375	38	542	237	394	145	776	2602
Apprch %	19.9	44.1	36		5	70.1	24.9		23.8	69.2	7		30.5	50.8	18.7		
Total %	6.8	15	12.2	33.9	0.8	10.8	3.8	15.4	5	14.4	1.5	20.8	9.1	15.1	5.6	29.8	
Passenger Vehicles	171	368	310	849	17	275	92	384	115	358	31	504	230	382	132	744	2481
% Passenger Vehicles	97.2	94.6	97.5	96.1	85	97.9	92	95.8	89.1	95.5	81.6	93	97	97	91	95.9	
Large 2 Axle Vehicles	1	6	2	9	0	3	3	6	2	0	1	3	0	2	3	5	23
% Large 2 Axle Vehicles	0.6	1.5	0.6	1	0	1.1	3	1.5	1.6	0	2.6	0.6	0	0.5	2.1	0.6	0.9
3 Axle Vehicles	1	7	3	11	1	2	3	6	1	2	1	4	2	8	3	13	34
% 3 Axle Vehicles	0.6	1.8	0.9	1.2	5	0.7	3	1.5	0.8	0.5	2.6	0.7	0.8	2	2.1	1.7	1.3
4+ Axle Trucks	3	8	3	14	2	1	2	5	11	15	5	31	5	2	7	14	64
% 4+ Axle Trucks	1.7	2.1	0.9	1.6	10	0.4	2	1.2	8.5	4	13.2	5.7	2.1	0.5	4.8	1.8	2.5

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	27	34	34	95	1	39	26	66	18	54	5	77	36	41	20	97	335
04:15 PM	27	43	30	100	3	31	15	49	18	59	1	78	28	58	26	112	339
04:30 PM	49	86	85	220	1	41	8	50	20	48	9	77	29	47	14	90	437
04:45 PM	22	48	41	111	3	38	11	52	18	37	11	66	30	53	19	102	331
Total Volume	125	211	190	526	8	149	60	217	74	198	26	298	123	199	79	401	1442
% App. Total	23.8	40.1	36.1		3.7	68.7	27.6		24.8	66.4	8.7		30.7	49.6	19.7		
PHF	.638	.613	.559	.598	.667	.909	.577	.822	.925	.839	.591	.955	.854	.858	.760	.895	.825

City of Rialto
 N/S: Locust Avenue
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	27	34	34	95	1	39	26	66	18	54	5	77	36	41	20	97
+15 mins.	27	43	30	100	3	31	15	49	18	59	1	78	28	58	26	112
+30 mins.	49	86	85	220	1	41	8	50	20	48	9	77	29	47	14	90
+45 mins.	22	48	41	111	3	38	11	52	18	37	11	66	30	53	19	102
Total Volume	125	211	190	526	8	149	60	217	74	198	26	298	123	199	79	401
% App. Total	23.8	40.1	36.1		3.7	68.7	27.6		24.8	66.4	8.7		30.7	49.6	19.7	
PHF	.638	.613	.559	.598	.667	.909	.577	.822	.925	.839	.591	.955	.854	.858	.760	.895

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas PM
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Groups Printed- Passenger Vehicles

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	27	33	33	93	1	38	26	65	16	52	4	72	36	40	19	95	325
04:15 PM	25	41	30	96	2	30	14	46	15	57	1	73	28	55	22	105	320
04:30 PM	49	84	84	217	1	41	5	47	18	47	7	72	29	44	14	87	423
04:45 PM	22	44	41	107	3	37	10	50	16	36	9	61	29	51	18	98	316
Total	123	202	188	513	7	146	55	208	65	192	21	278	122	190	73	385	1384
05:00 PM	16	39	30	85	1	33	7	41	9	47	5	61	26	46	19	91	278
05:15 PM	14	35	38	87	2	26	10	38	18	41	1	60	28	39	12	79	264
05:30 PM	7	48	27	82	1	37	10	48	10	36	2	48	28	57	13	98	276
05:45 PM	11	44	27	82	6	33	10	49	13	42	2	57	26	50	15	91	279
Total	48	166	122	336	10	129	37	176	50	166	10	226	108	192	59	359	1097
Grand Total	171	368	310	849	17	275	92	384	115	358	31	504	230	382	132	744	2481
Apprch %	20.1	43.3	36.5		4.4	71.6	24		22.8	71	6.2		30.9	51.3	17.7		
Total %	6.9	14.8	12.5	34.2	0.7	11.1	3.7	15.5	4.6	14.4	1.2	20.3	9.3	15.4	5.3	30	

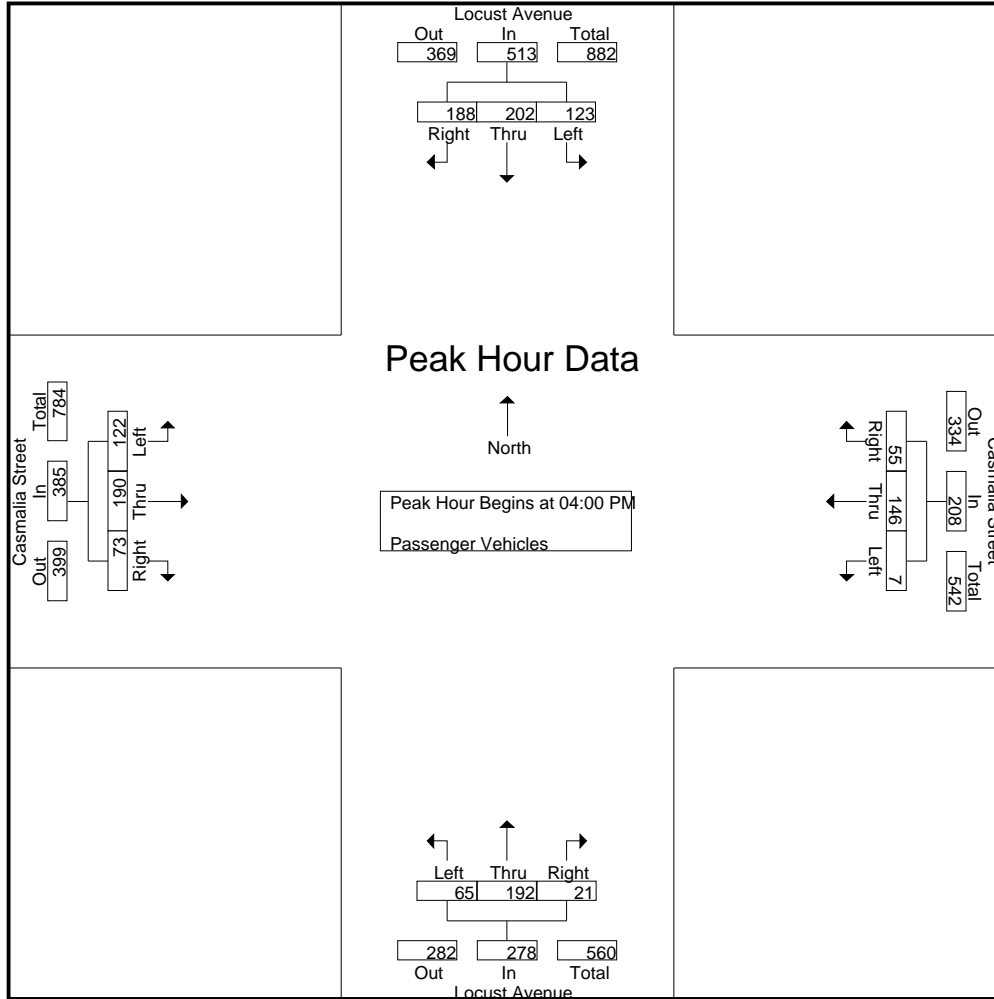
Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	27	33	33	93	1	38	26	65	16	52	4	72	36	40	19	95	325
04:15 PM	25	41	30	96	2	30	14	46	15	57	1	73	28	55	22	105	320
04:30 PM	49	84	84	217	1	41	5	47	18	47	7	72	29	44	14	87	423
04:45 PM	22	44	41	107	3	37	10	50	16	36	9	61	29	51	18	98	316
Total Volume	123	202	188	513	7	146	55	208	65	192	21	278	122	190	73	385	1384
% App. Total	24	39.4	36.6		3.4	70.2	26.4		23.4	69.1	7.6		31.7	49.4	19		
PHF	.628	.601	.560	.591	.583	.890	.529	.800	.903	.842	.583	.952	.847	.864	.830	.917	.818

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

Peak Hour for Entire Intersection Begins at 04:00 PM

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	27	33	33	93	1	38	26	65	16	52	4	72	36	40	19	95
+15 mins.	25	41	30	96	2	30	14	46	15	57	1	73	28	55	22	105
+30 mins.	49	84	84	217	1	41	5	47	18	47	7	72	29	44	14	87
+45 mins.	22	44	41	107	3	37	10	50	16	36	9	61	29	51	18	98
Total Volume	123	202	188	513	7	146	55	208	65	192	21	278	122	190	73	385
% App. Total	24	39.4	36.6		3.4	70.2	26.4		23.4	69.1	7.6		31.7	49.4	19	
PHF	.628	.601	.560	.591	.583	.890	.529	.800	.903	.842	.583	.952	.847	.864	.830	.917

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas PM
 Site Code : 10823730
 Start Date : 8/15/2023
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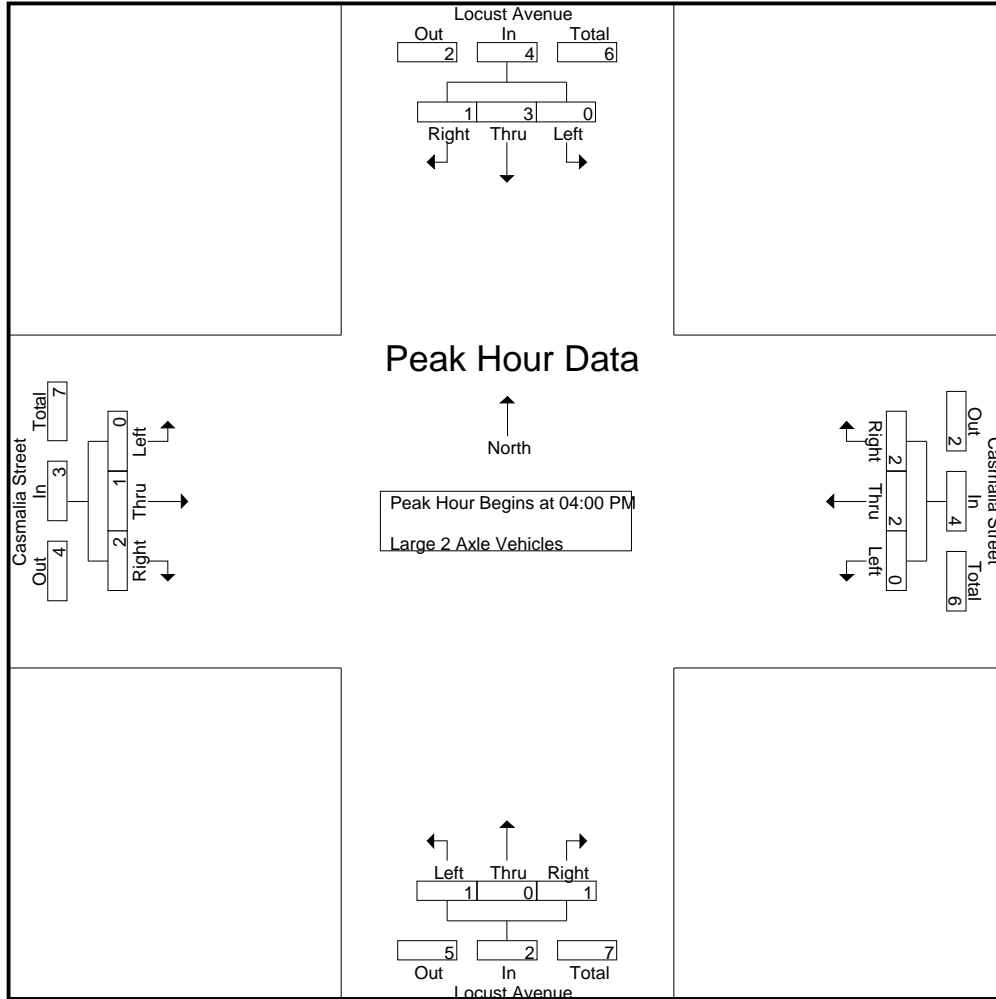
Groups Printed- Large 2 Axle Vehicles

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
04:00 PM	0	1	1	2	0	1	0	1	0	0	0	0	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
04:30 PM	0	1	0	1	0	0	2	2	1	0	1	2	0	0	0	0	0	5
04:45 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	1	1	2	2	4
Total	0	3	1	4	0	2	2	4	1	0	1	2	0	1	2	3	3	13
05:00 PM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	1	1	1	4
05:15 PM	0	0	1	1	0	0	1	1	0	0	0	0	0	1	0	1	1	3
05:30 PM	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	2
05:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	3	1	5	0	1	1	2	1	0	0	1	0	1	1	2	2	10
Grand Total	1	6	2	9	0	3	3	6	2	0	1	3	0	2	3	5	5	23
Apprch %	11.1	66.7	22.2		0	50	50		66.7	0	33.3		0	40	60			
Total %	4.3	26.1	8.7	39.1	0	13	13	26.1	8.7	0	4.3	13	0	8.7	13	21.7		

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:00 PM																		
04:00 PM	0	1	1	2	0	1	0	1	0	0	0	0	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
04:30 PM	0	1	0	1	0	0	2	2	1	0	1	2	0	0	0	0	0	5
04:45 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	1	1	2	2	4
Total Volume	0	3	1	4	0	2	2	4	1	0	1	2	0	1	2	3	3	13
% App. Total	0	75	25		0	50	50		50	0	50		0	33.3	66.7			
PHF	.000	.750	.250	.500	.000	.500	.250	.500	.250	.000	.250	.250	.000	.250	.500	.375	.650	

City of Rialto
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 E/W: Casmalia Street
 Weather: Clear

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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	1	1	2	0	1	0	1	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
+30 mins.	0	1	0	1	0	0	2	2	1	0	1	2	0	0	0	0
+45 mins.	0	1	0	1	0	1	0	1	0	0	0	0	0	1	1	2
Total Volume	0	3	1	4	0	2	2	4	1	0	1	2	0	1	2	3
% App. Total	0	75	25		0	50	50		50	0	50		0	33.3	66.7	
PHF	.000	.750	.250	.500	.000	.500	.250	.500	.250	.000	.250	.250	.000	.250	.500	.375

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas PM
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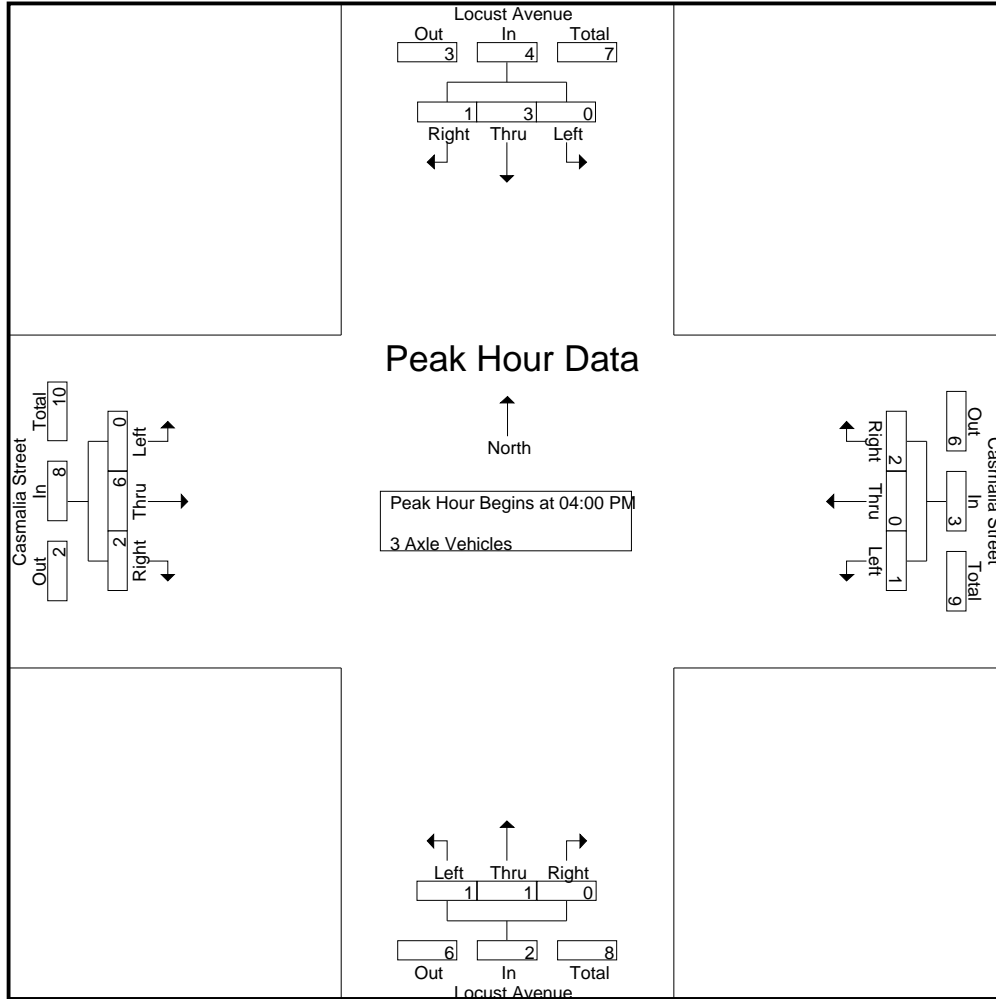
Groups Printed- 3 Axle Vehicles

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total		
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total			
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	1	2
04:15 PM	0	1	0	1	1	0	0	1	1	0	0	1	0	3	2	5	8	8	
04:30 PM	0	0	1	1	0	0	1	1	0	0	0	0	0	2	0	2	4	4	
04:45 PM	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	3	3	
Total	0	3	1	4	1	0	2	3	1	1	0	2	0	6	2	8	17	17	
05:00 PM	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2	
05:15 PM	0	2	1	3	0	1	1	2	0	1	1	2	1	2	1	4	11	11	
05:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
05:45 PM	0	1	0	1	0	1	0	1	0	0	0	0	1	0	0	1	3	3	
Total	1	4	2	7	0	2	1	3	0	1	1	2	2	2	1	5	17	17	
Grand Total	1	7	3	11	1	2	3	6	1	2	1	4	2	8	3	13	34	34	
Apprch %	9.1	63.6	27.3		16.7	33.3	50		25	50	25		15.4	61.5	23.1				
Total %	2.9	20.6	8.8	32.4	2.9	5.9	8.8	17.6	2.9	5.9	2.9	11.8	5.9	23.5	8.8	38.2			

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
04:15 PM	0	1	0	1	1	0	0	1	1	0	0	1	0	3	2	5	8
04:30 PM	0	0	1	1	0	0	1	1	0	0	0	0	0	2	0	2	4
04:45 PM	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	3
Total Volume	0	3	1	4	1	0	2	3	1	1	0	2	0	6	2	8	17
% App. Total	0	75	25		33.3	0	66.7		50	50	0		0	75	25		
PHF	.000	.375	.250	.500	.250	.000	.500	.750	.250	.250	.000	.500	.000	.500	.250	.400	.531

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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM							
+0 mins.	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	0	1	0
+15 mins.	0	1	0	1	1	0	0	1	1	1	0	0	1	0	3	2	5	0	3	2
+30 mins.	0	0	1	1	0	0	1	1	0	0	0	0	0	0	2	0	2	0	2	0
+45 mins.	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	3	1	4	1	0	2	3	1	1	0	2	0	6	2	8	8	0	6	2
% App. Total	0	75	25		33.3	0	66.7		50	50	0		0	75	25			0	75	25
PHF	.000	.375	.250	.500	.250	.000	.500	.750	.250	.250	.000	.500	.000	.500	.250	.400				

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

File Name : 02_RLT_Loc_Cas PM
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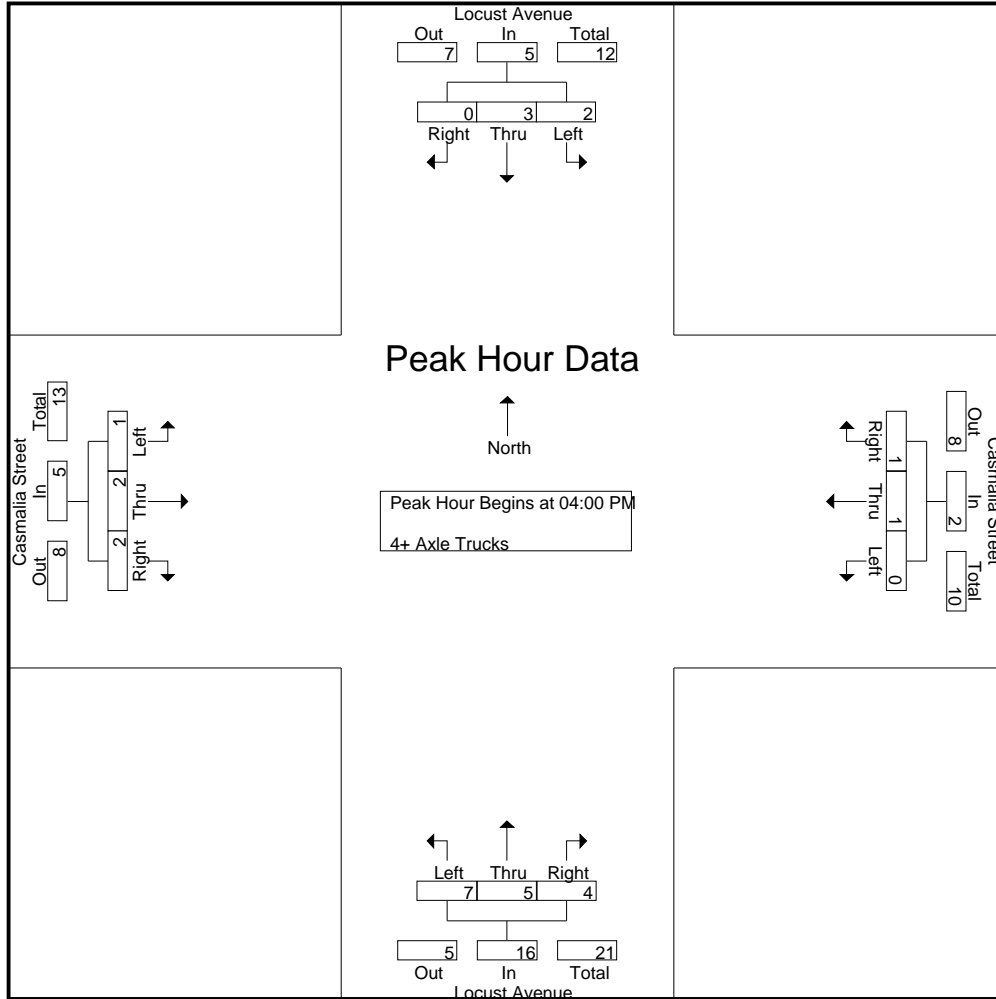
Groups Printed- 4+ Axle Trucks

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	2	1	1	4	0	0	1	1	5
04:15 PM	2	1	0	3	0	1	1	2	2	2	0	4	0	0	1	1	10
04:30 PM	0	1	0	1	0	0	0	0	1	1	1	3	0	1	0	1	5
04:45 PM	0	1	0	1	0	0	0	0	2	1	2	5	1	1	0	2	8
Total	2	3	0	5	0	1	1	2	7	5	4	16	1	2	2	5	28
05:00 PM	0	1	0	1	1	0	0	1	0	1	0	1	1	0	3	4	7
05:15 PM	0	2	1	3	0	0	0	0	1	2	0	3	2	0	1	3	9
05:30 PM	0	1	1	2	0	0	0	0	1	5	0	6	1	0	1	2	10
05:45 PM	1	1	1	3	1	0	1	2	2	2	1	5	0	0	0	0	10
Total	1	5	3	9	2	0	1	3	4	10	1	15	4	0	5	9	36
Grand Total	3	8	3	14	2	1	2	5	11	15	5	31	5	2	7	14	64
Apprch %	21.4	57.1	21.4		40	20	40		35.5	48.4	16.1		35.7	14.3	50		
Total %	4.7	12.5	4.7	21.9	3.1	1.6	3.1	7.8	17.2	23.4	7.8	48.4	7.8	3.1	10.9	21.9	

Start Time	Locust Avenue Southbound				Casmalia Street Westbound				Locust Avenue Northbound				Casmalia Street Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	2	1	1	4	0	0	1	1	5
04:15 PM	2	1	0	3	0	1	1	2	2	2	0	4	0	0	1	1	10
04:30 PM	0	1	0	1	0	0	0	0	1	1	1	3	0	1	0	1	5
04:45 PM	0	1	0	1	0	0	0	0	2	1	2	5	1	1	0	2	8
Total Volume	2	3	0	5	0	1	1	2	7	5	4	16	1	2	2	5	28
% App. Total	40	60	0		0	50	50		43.8	31.2	25		20	40	40		
PHF	.250	.750	.000	.417	.000	.250	.250	.250	.875	.625	.500	.800	.250	.500	.500	.625	.700

City of Rialto
 N/S: Locust Avenue
 E/W: Casmalia Street
 Weather: Clear

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 Start Date : 8/15/2023
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Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	2	1	1	4	0	0	1	1
+15 mins.	2	1	0	3	0	1	1	2	2	2	0	4	0	0	1	1
+30 mins.	0	1	0	1	0	0	0	0	1	1	1	3	0	1	0	1
+45 mins.	0	1	0	1	0	0	0	0	2	1	2	5	1	1	0	2
Total Volume	2	3	0	5	0	1	1	2	7	5	4	16	1	2	2	5
% App. Total	40	60	0		0	50	50		43.8	31.2	25		20	40	40	
PHF	.250	.750	.000	.417	.000	.250	.250	.250	.875	.625	.500	.800	.250	.500	.500	.625

APPENDIX C

PCE WORKSHEETS

Existing Peak Hour Volumes - Classification Counts

1 Locust Avenue at Casa Grande Drive

	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	110	3	0	0	3	2.7%	5	1.7	115	204	1	0	0	1	0.5%	2	2.0	206
NT	190	2	6	19	27	12.4%	72	2.7	262	129	1	4	12	17	11.6%	46	2.7	175
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	260	8	14	30	52	16.7%	130	2.5	390	133	2	2	9	13	8.9%	34	2.6	167
SR	15	1	0	0	1	6.3%	2	2.0	17	97	0	0	0	0	0.0%	0	0.0	97
EL	21	0	0	0	0	0.0%	0	0.0	21	92	0	0	0	0	0.0%	0	0.0	92
ET	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ER	241	4	0	1	5	2.0%	9	1.8	250	274	2	0	1	3	1.1%	6	2.0	280
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
									1,055									1,017
North Leg Volumes																		
Approach	275	9	14	30	53		132		407	230	2	2	9	13		34		264
Depart	211	2	6	19	27		72		283	221	1	4	12	17		46		267
Total	486	11	20	49	80	14.1%	204	2.6	690	451	3	6	21	30	6.2%	80	2.7	531
South Leg Volumes																		
Approach	300	5	6	19	30		77		377	333	2	4	12	18		48		381
Depart	501	12	14	31	57		139		640	407	4	2	10	16		40		447
Total	801	17	20	50	87	9.8%	216	2.5	1,017	740	6	6	22	34	4.4%	88	2.6	828
East Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
West Leg Volumes																		
Approach	262	4	0	1	5		9		271	366	2	0	1	3		6		372
Depart	125	4	0	0	4		7		132	301	1	0	0	1		2		303
Total	387	8	0	1	9	2.3%	16	1.8	403	667	3	0	1	4	0.6%	8	2.0	675
All Legs																		
Approach	837	18	20	50	88		218		1,055	929	6	6	22	34		88		1,017
Depart	837	18	20	50	88		218		1,055	929	6	6	22	34		88		1,017
Total	1,674	36	40	100	176	9.5%	436	2.5	2,110	1,858	12	12	44	68	3.5%	176	2.6	2,034

Existing Peak Hour Volumes - Classification Counts

2 Locust Avenue at West Coast Boulevard

	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	6	0	0	0	0	0.0%	0	0.0	6	0	0	0	0	0.0%	0	0.0	0	
NT	340	7	10	23	40	10.5%	100	2.5	440	343	5	3	6	14	3.9%	32	2.3	375
NR	1	0	0	0	0	0.0%	0	0.0	1	2	0	0	0	0	0.0%	0	0.0	2
SL	9	0	0	0	0	0.0%	0	0.0	9	5	0	0	0	0	0.0%	0	0.0	5
ST	469	7	9	39	55	10.5%	146	2.7	615	389	3	4	10	17	4.2%	43	2.5	432
SR	7	0	0	0	0	0.0%	0	0.0	7	0	0	0	0	0	0.0%	0	0.0	0
EL	0	0	0	0	0	0.0%	0	0.0	0	3	0	0	0	0	0.0%	0	0.0	3
ET	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ER	2	1	0	0	1	33.3%	2	2.0	4	8	0	0	0	0	0.0%	0	0.0	8
WL	1	0	0	0	0	0.0%	0	0.0	1	2	0	0	0	0	0.0%	0	0.0	2
WT	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WR	14	0	0	0	0	0.0%	0	0.0	14	3	0	0	0	0	0.0%	0	0.0	3
									1,097									830
North Leg Volumes																		
Approach	485	7	9	39	55		146		631	394	3	4	10	17		43		437
Depart	354	7	10	23	40		100		454	349	5	3	6	14		32		381
Total	839	14	19	62	95	10.2%	246	2.6	1,085	743	8	7	16	31	4.0%	75	2.4	818
South Leg Volumes																		
Approach	347	7	10	23	40		100		447	345	5	3	6	14		32		377
Depart	472	8	9	39	56		148		620	399	3	4	10	17		43		442
Total	819	15	19	62	96	10.5%	248	2.6	1,067	744	8	7	16	31	4.0%	75	2.4	819
East Leg Volumes																		
Approach	15	0	0	0	0		0		15	5	0	0	0	0		0		5
Depart	10	0	0	0	0		0		10	7	0	0	0	0		0		7
Total	25	0	0	0	0	0.0%	0	0.0	25	12	0	0	0	0	0.0%	0	0.0	12
West Leg Volumes																		
Approach	2	1	0	0	1		2		4	11	0	0	0	0		0		11
Depart	13	0	0	0	0		0		13	0	0	0	0	0		0		0
Total	15	1	0	0	1	6.3%	2	2.0	17	11	0	0	0	0	0.0%	0	0.0	11
All Legs																		
Approach	849	15	19	62	96		248		1,097	755	8	7	16	31		75		830
Depart	849	15	19	62	96		248		1,097	755	8	7	16	31		75		830
Total	1,698	30	38	124	192	10.2%	496	2.6	2,194	1,510	16	14	32	62	3.9%	150	2.4	1,660

Existing Peak Hour Volumes - Classification Counts

3 Locust Avenue at Casmalia Street

	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	46	1	2	10	13	22.0%	36	2.8	82	65	1	1	7	9	12.2%	25	2.8	90
NT	176	3	2	6	11	5.9%	27	2.5	203	192	0	1	5	6	3.0%	17	2.8	209
NR	11	0	0	0	0	0.0%	0	0.0	11	21	1	0	4	5	19.2%	14	2.8	35
SL	62	4	1	10	15	19.5%	38	2.5	100	123	0	0	2	2	1.6%	6	3.0	129
ST	226	6	9	15	30	11.7%	72	2.4	298	202	3	3	3	9	4.3%	20	2.2	222
SR	122	0	1	18	19	13.5%	56	2.9	178	188	1	1	0	2	1.1%	4	2.0	192
EL	102	3	6	25	34	25.0%	92	2.7	194	122	0	0	1	1	0.8%	3	3.0	125
ET	60	2	0	0	2	3.2%	3	1.5	63	190	1	6	2	9	4.5%	20	2.2	210
ER	20	0	3	2	5	20.0%	12	2.4	32	73	2	2	2	6	7.6%	13	2.2	86
WL	13	0	7	1	8	38.1%	17	2.1	30	7	0	1	0	1	12.5%	2	2.0	9
WT	110	3	0	1	4	3.5%	8	2.0	118	146	2	0	1	3	2.0%	6	2.0	152
WR	75	3	3	2	8	9.6%	17	2.1	92	55	2	2	1	5	8.3%	10	2.0	65
									1,401									1,524
North Leg Volumes																		
Approach	410	10	11	43	64		166		576	513	4	4	5	13		30		543
Depart	353	9	11	33	53		136		489	369	2	3	7	12		30		399
Total	763	19	22	76	117	13.3%	302	2.6	1,065	882	6	7	12	25	2.8%	60	2.4	942
South Leg Volumes																		
Approach	233	4	4	16	24		63		296	278	2	2	16	20		56		334
Depart	259	6	19	18	43		101		360	282	5	6	5	16		35		317
Total	492	10	23	34	67	12.0%	164	2.4	656	560	7	8	21	36	6.0%	91	2.5	651
East Leg Volumes																		
Approach	198	6	10	4	20		42		240	208	4	3	2	9		18		226
Depart	133	6	1	10	17		41		174	334	2	6	8	16		40		374
Total	331	12	11	14	37	10.1%	83	2.2	414	542	6	9	10	25	4.4%	58	2.3	600
West Leg Volumes																		
Approach	182	5	9	27	41		107		289	385	3	8	5	16		36		421
Depart	278	4	3	29	36		100		378	399	4	2	8	14		35		434
Total	460	9	12	56	77	14.3%	207	2.7	667	784	7	10	13	30	3.7%	71	2.4	855
All Legs																		
Approach	1,023	25	34	90	149		378		1,401	1,384	13	17	28	58		140		1,524
Depart	1,023	25	34	90	149		378		1,401	1,384	13	17	28	58		140		1,524
Total	2,046	50	68	180	298	12.7%	756	2.5	2,802	2,768	26	34	56	116	4.0%	280	2.4	3,048

Int	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
1	115	262	0	0	390	17	21	0	250	0	0	0
2	6	440	1	9	615	7	0	0	4	1	0	14
3	82	203	11	100	298	178	194	63	32	30	118	92

Locust Avenue at Casa Grande Drive
 Locust Avenue at West Coast Boulevard
 Locust Avenue at Casmalia Street

Int	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
1	206	175	0	0	167	97	92	0	280	0	0	0
2	0	375	2	5	432	0	3	0	8	2	0	3
3	90	209	35	129	222	192	125	210	86	9	152	65

Locust Avenue at Casa Grande Drive
 Locust Avenue at West Coast Boulevard
 Locust Avenue at Casmalia Street

APPENDIX D

INTERSECTION ANALYSIS
WORKSHEETS

APPENDIX D-1

INTERSECTION ANALYSIS
WORKSHEETS –
EXISTING CONDITIONS

West Coast and Locust Warehouse

Vistro File: K:\...\West Coast and Locust
Warehouse_AM.vistro

Scenario 1 EX AM

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

10/25/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Locust Avenue at Casa Grande Drive	Two-way stop	HCM 7th Edition	EB Left	0.187	33.4	D
2	Locust Avenue at West Coast Boulevard	Two-way stop	HCM 7th Edition	WB Left	0.008	35.8	E
3	Locust Avenue at Casmalia Street	Signalized	HCM 7th Edition	NB Left	0.427	27.5	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: Locust Avenue at Casa Grande Drive

Control Type:	Two-way stop	Delay (sec / veh):	33.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.187

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach						
Lane Configuration	↶		↷		↶↷	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	115	262	390	17	21	250
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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	115	262	390	17	21	250
Peak Hour Factor	0.7160	0.7160	0.7160	0.7160	0.7160	0.7160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	91	136	6	7	87
Total Analysis Volume [veh/h]	161	366	545	24	29	349
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.16	0.00	0.01	0.00	0.19	0.65
d_M, Delay for Movement [s/veh]	8.75	0.00	0.00	0.00	33.44	23.58
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.29	0.29	0.00	0.00	0.66	4.71
95th-Percentile Queue Length [ft/ln]	7.36	7.36	0.00	0.00	16.53	117.68
d_A, Approach Delay [s/veh]	2.67		0.00		24.34	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	7.20					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 2: Locust Avenue at West Coast Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	35.8
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
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	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
Base Volume Input [veh/h]	6	440	1	9	615	7	0	0	4	1	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	440	1	9	615	7	0	0	4	1	0	14
Peak Hour Factor	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	139	0	3	194	2	0	0	1	0	0	4
Total Analysis Volume [veh/h]	8	555	1	11	776	9	0	0	5	1	0	18
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.03
d_M, Delay for Movement [s/veh]	9.28	0.00	0.00	8.53	0.00	0.00	36.60	30.47	14.15	35.85	30.84	12.08
Movement LOS	A	A	A	A	A	A	E	D	B	E	D	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.02	0.02	0.02	0.04	0.04	0.04	0.13	0.13	0.13
95th-Percentile Queue Length [ft/ln]	0.33	0.33	0.33	0.46	0.46	0.46	0.95	0.95	0.95	3.29	3.29	3.29
d_A, Approach Delay [s/veh]	0.13			0.12			14.15			13.33		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.36											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 3: Locust Avenue at Casmalia Street

Control Type:	Signalized	Delay (sec / veh):	27.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.427

Intersection Setup

Name	Locust Avenue			Locust Avenue			Eastbound			Casmalia Street		
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	1	1	0	1	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Avenue			Locust Avenue						Casmalia Street		
Base Volume Input [veh/h]	82	203	11	100	298	178	194	63	32	30	118	92
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	82	203	11	100	298	178	194	63	32	30	118	92
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	58	3	29	86	51	56	18	9	9	34	26
Total Analysis Volume [veh/h]	94	234	13	115	343	205	223	72	37	35	136	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	10	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	29	29	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	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	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	26	0	12	26	26	29	33	33	19	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	5	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	17	0	14	14	0	14	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	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No	No	No	No	
Maximum Recall	No	No		No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No		No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	43	43	7	44	62	14	21	31	3	10	10
g / C, Green / Cycle	0.07	0.48	0.48	0.08	0.49	0.69	0.15	0.23	0.34	0.03	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.05	0.07	0.07	0.06	0.18	0.13	0.12	0.04	0.02	0.02	0.07	0.07
s, saturation flow rate [veh/h]	1810	1900	1865	1810	1900	1615	1810	1900	1615	1810	1900	1637
c, Capacity [veh/h]	121	910	894	145	936	1111	274	436	550	61	212	183
d1, Uniform Delay [s]	41.33	13.06	13.07	40.67	14.15	5.01	36.96	27.76	20.01	42.87	38.03	38.23
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.19	0.31	0.32	9.42	1.11	0.37	5.81	0.18	0.05	8.44	2.62	3.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.14	0.14	0.79	0.37	0.18	0.81	0.17	0.07	0.58	0.59	0.64
d, Delay for Lane Group [s/veh]	51.52	13.37	13.39	50.09	15.26	5.38	42.77	27.94	20.06	51.31	40.65	41.89
Lane Group LOS	D	B	B	D	B	A	D	C	C	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.37	1.42	1.41	2.85	4.39	1.26	5.11	1.25	0.52	0.90	2.75	2.61
50th-Percentile Queue Length [ft/ln]	59.24	35.58	35.26	71.23	109.65	31.58	127.65	31.18	13.07	22.54	68.85	65.23
95th-Percentile Queue Length [veh/ln]	4.27	2.56	2.54	5.13	7.82	2.27	8.81	2.24	0.94	1.62	4.96	4.70
95th-Percentile Queue Length [ft/ln]	106.63	64.05	63.47	128.21	195.52	56.85	220.30	56.12	23.52	40.58	123.94	117.41

Movement, Approach, & Intersection Results

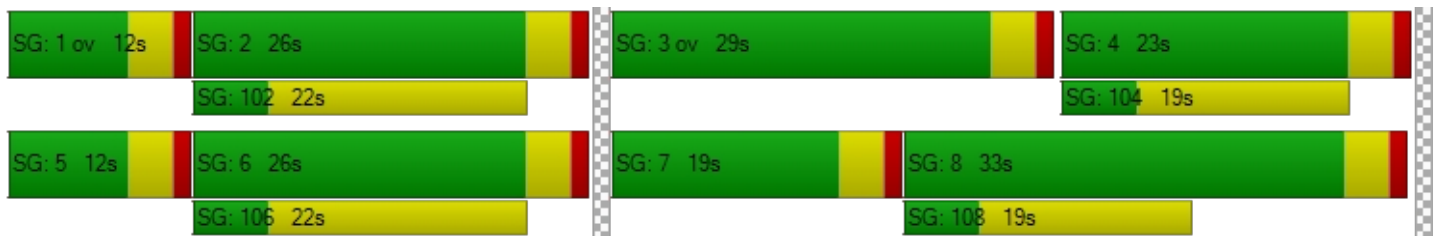
d_M, Delay for Movement [s/veh]	51.52	13.38	13.39	50.09	15.26	5.38	42.77	27.94	20.06	51.31	40.75	41.89
Movement LOS	D	B	B	D	B	A	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	23.89			18.24			37.03			42.52		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	27.47											
Intersection LOS	C											
Intersection V/C	0.427											

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 Intersectio	2.317	2.540	2.579	2.249
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	644	422
d_b, Bicycle Delay [s]	25.69	25.69	20.67	28.01
I_b,int, Bicycle LOS Score for Intersection	1.841	2.654	2.107	1.788
Bicycle LOS	A	B	B	A

Sequence

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



West Coast and Locust Warehouse

Vistro File: K:\...\West Coast and Locust
Warehouse_PM.vistro

Scenario 1 EX PM

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

10/25/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Locust Avenue at Casa Grande Drive	Two-way stop	HCM 7th Edition	EB Left	0.691	60.7	F
2	Locust Avenue at West Coast Boulevard	Two-way stop	HCM 7th Edition	WB Left	0.016	24.2	C
3	Locust Avenue at Casmalia Street	Signalized	HCM 7th Edition	SB Left	0.361	29.1	C

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

Intersection Level Of Service Report
Intersection 1: Locust Avenue at Casa Grande Drive

Control Type:	Two-way stop	Delay (sec / veh):	60.7
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.691

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach	←		→		↔	
Lane Configuration	←		→		↔	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	206	175	167	97	92	280
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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	206	175	167	97	92	280
Peak Hour Factor	0.7430	0.7430	0.7430	0.7430	0.7430	0.7430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	59	56	33	31	94
Total Analysis Volume [veh/h]	277	236	225	131	124	377
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.23	0.00	0.00	0.00	0.69	0.50
d_M, Delay for Movement [s/veh]	8.33	0.00	0.00	0.00	60.74	14.47
Movement LOS	A	A	A	A	F	B
95th-Percentile Queue Length [veh/ln]	0.54	0.54	0.00	0.00	4.18	2.83
95th-Percentile Queue Length [ft/ln]	13.60	13.60	0.00	0.00	104.56	70.84
d_A, Approach Delay [s/veh]	4.50		0.00		25.92	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	11.16					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 2: Locust Avenue at West Coast Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	24.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
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	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
Base Volume Input [veh/h]	0	375	2	5	432	0	3	0	8	2	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	375	2	5	432	0	3	0	8	2	0	3
Peak Hour Factor	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	124	1	2	142	0	1	0	3	1	0	1
Total Analysis Volume [veh/h]	0	494	3	7	569	0	4	0	11	3	0	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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





Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.02	0.02	0.00	0.01
d_M, Delay for Movement [s/veh]	8.55	0.00	0.00	8.35	0.00	0.00	23.98	21.96	12.28	24.19	21.77	11.50
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.01	0.01	0.13	0.13	0.13	0.07	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.29	0.29	0.29	3.24	3.24	3.24	1.74	1.74	1.74
d_A, Approach Delay [s/veh]	0.00			0.10			15.40			16.94		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	0.37											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 3: Locust Avenue at Casmalia Street

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.361

Intersection Setup

Name	Locust Avenue			Locust Avenue			Eastbound			Casmalia Street		
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	1	1	0	1	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Avenue			Locust Avenue						Casmalia Street		
Base Volume Input [veh/h]	90	209	35	129	222	192	125	210	86	9	152	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	209	35	129	222	192	125	210	86	9	152	65
Peak Hour Factor	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	63	11	39	67	58	38	64	26	3	46	20
Total Analysis Volume [veh/h]	109	253	42	156	269	233	152	255	104	11	184	79
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	10	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	29	29	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	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	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	26	0	12	26	26	29	33	33	19	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	5	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	17	0	14	14	0	14	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	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No	No	No	No	
Maximum Recall	No	No		No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No		No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	46	46	8	47	61	10	19	30	1	10	10
g / C, Green / Cycle	0.08	0.51	0.51	0.09	0.52	0.68	0.11	0.21	0.33	0.01	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.06	0.08	0.08	0.09	0.14	0.14	0.08	0.13	0.06	0.01	0.07	0.07
s, saturation flow rate [veh/h]	1810	1900	1808	1810	1900	1615	1810	1900	1615	1810	1900	1714
c, Capacity [veh/h]	138	969	922	161	992	1096	202	397	533	26	212	191
d1, Uniform Delay [s]	40.84	11.74	11.75	40.88	11.97	5.44	38.76	32.53	21.60	43.97	38.22	38.37
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]	9.45	0.34	0.36	26.41	0.67	0.44	5.55	1.74	0.18	10.19	3.13	4.00
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	0.15	0.16	0.97	0.27	0.21	0.75	0.64	0.20	0.42	0.64	0.67
d, Delay for Lane Group [s/veh]	50.29	12.08	12.12	67.28	12.64	5.88	44.31	34.27	21.77	54.16	41.35	42.38
Lane Group LOS	D	B	B	E	B	A	D	C	C	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.71	1.61	1.57	4.58	3.02	1.54	3.52	5.17	1.57	0.32	2.99	2.89
50th-Percentile Queue Length [ft/ln]	67.67	40.34	39.20	114.40	75.46	38.40	87.99	129.22	39.21	7.89	74.78	72.25
95th-Percentile Queue Length [veh/ln]	4.87	2.90	2.82	8.08	5.43	2.76	6.34	8.90	2.82	0.57	5.38	5.20
95th-Percentile Queue Length [ft/ln]	121.81	72.61	70.56	202.10	135.83	69.11	158.38	222.43	70.58	14.20	134.61	130.05

Movement, Approach, & Intersection Results

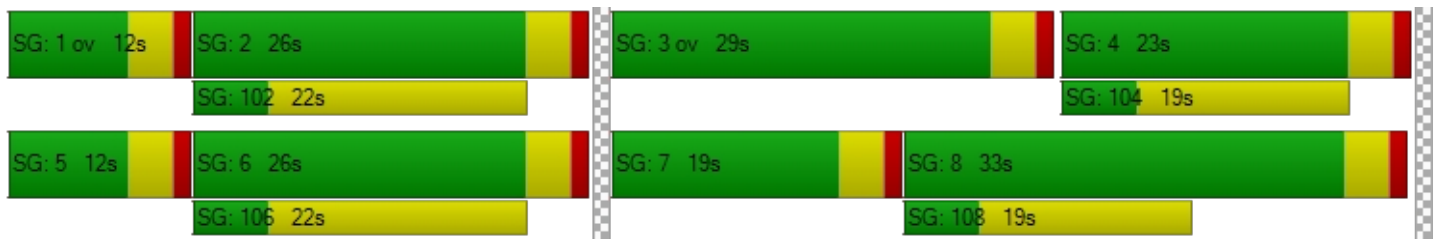
d_M, Delay for Movement [s/veh]	50.29	12.09	12.12	67.28	12.64	5.88	44.31	34.27	21.77	54.16	41.62	42.38
Movement LOS	D	B	B	E	B	A	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	22.40			23.20			34.71			42.34		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	29.05											
Intersection LOS	C											
Intersection V/C	0.361											

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 Intersectio	2.325	2.524	2.623	2.310
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	644	422
d_b, Bicycle Delay [s]	25.69	25.69	20.67	28.01
I_b,int, Bicycle LOS Score for Intersection	1.893	2.645	2.403	1.786
Bicycle LOS	A	B	B	A

Sequence

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



APPENDIX D-2

INTERSECTION ANALYSIS
WORKSHEETS –
OPENING YEAR 2025 CONDITIONS

West Coast and Locust Warehouse

Vistro File: K:\...\West Coast and Locust
Warehouse_AM.vistro

Scenario 2 OY 25 AM

Report File: K:\...\12 - OY 25 AM.pdf

10/25/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Locust Avenue at Casa Grande Drive	Two-way stop	HCM 7th Edition	EB Left	0.218	37.3	E
2	Locust Avenue at West Coast Boulevard	Two-way stop	HCM 7th Edition	WB Left	0.009	38.7	E
3	Locust Avenue at Casmalia Street	Signalized	HCM 7th Edition	WB Left	0.444	27.7	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: Locust Avenue at Casa Grande Drive

Control Type:	Two-way stop	Delay (sec / veh):	37.3
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.218

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach						
Lane Configuration	↶		↷		↶↷	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	115	262	390	17	21	250
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	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	272	406	18	22	260
Peak Hour Factor	0.7160	0.7160	0.7160	0.7160	0.7160	0.7160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	95	142	6	8	91
Total Analysis Volume [veh/h]	168	380	567	25	31	363
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.17	0.00	0.01	0.00	0.22	0.70
d_M, Delay for Movement [s/veh]	8.83	0.00	0.00	0.00	37.28	26.59
Movement LOS	A	A	A	A	E	D
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.00	0.00	0.79	5.47
95th-Percentile Queue Length [ft/ln]	7.71	7.71	0.00	0.00	19.81	136.75
d_A, Approach Delay [s/veh]	2.71		0.00		27.43	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	8.01					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 2: Locust Avenue at West Coast Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	38.7
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
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	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
Base Volume Input [veh/h]	6	440	1	9	615	7	0	0	4	1	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	458	1	9	640	7	0	0	4	1	0	15
Peak Hour Factor	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	144	0	3	202	2	0	0	1	0	0	5
Total Analysis Volume [veh/h]	8	578	1	11	807	9	0	0	5	1	0	19
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.04
d_M, Delay for Movement [s/veh]	9.40	0.00	0.00	8.60	0.00	0.00	39.63	32.50	14.54	38.71	32.92	12.33
Movement LOS	A	A	A	A	A	A	E	D	B	E	D	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.02	0.02	0.02	0.04	0.04	0.04	0.14	0.14	0.14
95th-Percentile Queue Length [ft/ln]	0.33	0.33	0.33	0.46	0.46	0.46	0.99	0.99	0.99	3.59	3.59	3.59
d_A, Approach Delay [s/veh]	0.13			0.11			14.54			13.65		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.36											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 3: Locust Avenue at Casmalia Street

Control Type:	Signalized	Delay (sec / veh):	27.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.444

Intersection Setup

Name	Locust Avenue			Locust Avenue			Eastbound			Casmalia Street		
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	1	1	0	1	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Avenue			Locust Avenue						Casmalia Street		
Base Volume Input [veh/h]	82	203	11	100	298	178	194	63	32	30	118	92
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
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]	85	211	11	104	310	185	202	66	33	31	123	96
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	61	3	30	89	53	58	19	9	9	35	28
Total Analysis Volume [veh/h]	98	243	13	120	357	213	232	76	38	36	142	110
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	10	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	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	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	26	0	12	26	26	29	33	33	19	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	5	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	17	0	14	14	0	14	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	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No	No	No	No	
Maximum Recall	No	No		No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No		No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	42	42	7	44	62	14	21	31	3	10	10
g / C, Green / Cycle	0.07	0.47	0.47	0.08	0.49	0.69	0.16	0.23	0.35	0.03	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.05	0.07	0.07	0.07	0.19	0.13	0.13	0.04	0.02	0.02	0.07	0.07
s, saturation flow rate [veh/h]	1810	1900	1866	1810	1900	1615	1810	1900	1615	1810	1900	1638
c, Capacity [veh/h]	126	895	879	150	921	1107	283	445	562	62	212	183
d1, Uniform Delay [s]	41.20	13.51	13.52	40.52	14.72	5.13	36.72	27.49	19.59	42.84	38.14	38.35
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]	9.98	0.34	0.35	9.29	1.23	0.39	5.80	0.18	0.05	8.52	2.90	4.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.14	0.14	0.80	0.39	0.19	0.82	0.17	0.07	0.58	0.62	0.66
d, Delay for Lane Group [s/veh]	51.18	13.85	13.87	49.82	15.95	5.51	42.52	27.67	19.64	51.36	41.04	42.40
Lane Group LOS	D	B	B	D	B	A	D	C	B	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.46	1.51	1.50	2.96	4.71	1.34	5.30	1.31	0.53	0.93	2.89	2.73
50th-Percentile Queue Length [ft/ln]	61.50	37.74	37.40	74.09	117.63	33.43	132.54	32.74	13.25	23.18	72.22	68.36
95th-Percentile Queue Length [veh/ln]	4.43	2.72	2.69	5.33	8.26	2.41	9.08	2.36	0.95	1.67	5.20	4.92
95th-Percentile Queue Length [ft/ln]	110.70	67.93	67.31	133.36	206.56	60.18	226.94	58.93	23.85	41.72	130.00	123.06

Movement, Approach, & Intersection Results

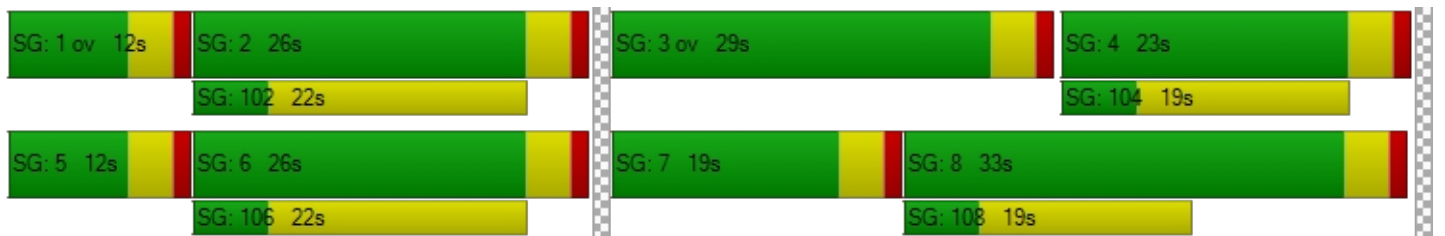
d_M, Delay for Movement [s/veh]	51.18	13.86	13.87	49.82	15.95	5.51	42.52	27.67	19.64	51.36	41.14	42.40
Movement LOS	D	B	B	D	B	A	D	C	B	D	D	D
d_A, Approach Delay [s/veh]	24.19			18.62			36.74			42.90		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	27.70											
Intersection LOS	C											
Intersection V/C	0.444											

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 Intersectio	2.324	2.550	2.584	2.254
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	644	422
d_b, Bicycle Delay [s]	25.69	25.69	20.67	28.01
I_b,int, Bicycle LOS Score for Intersection	1.852	2.698	2.131	1.797
Bicycle LOS	A	B	B	A

Sequence

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



West Coast and Locust Warehouse

Vistro File: K:\...\West Coast and Locust
Warehouse_PM.vistro

Scenario 2 OY 25 PM

Report File: K:\...\12 - OY 25 PM.pdf

10/25/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Locust Avenue at Casa Grande Drive	Two-way stop	HCM 7th Edition	EB Left	0.778	77.3	F
2	Locust Avenue at West Coast Boulevard	Two-way stop	HCM 7th Edition	WB Left	0.017	25.6	D
3	Locust Avenue at Casmalia Street	Signalized	HCM 7th Edition	SB Left	0.376	29.9	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: Locust Avenue at Casa Grande Drive

Control Type:	Two-way stop	Delay (sec / veh):	77.3
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.778

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach						
Lane Configuration	↶		↷		↶↷	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	206	175	167	97	92	280
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	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	214	182	174	101	96	291
Peak Hour Factor	0.7430	0.7430	0.7430	0.7430	0.7430	0.7430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	61	59	34	32	98
Total Analysis Volume [veh/h]	288	245	234	136	129	392
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.24	0.00	0.00	0.00	0.78	0.53
d_M, Delay for Movement [s/veh]	8.38	0.00	0.00	0.00	77.28	15.14
Movement LOS	A	A	A	A	F	C
95th-Percentile Queue Length [veh/ln]	0.57	0.57	0.00	0.00	5.03	3.13
95th-Percentile Queue Length [ft/ln]	14.24	14.24	0.00	0.00	125.67	78.31
d_A, Approach Delay [s/veh]	4.53		0.00		30.53	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	12.86					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 2: Locust Avenue at West Coast Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	25.6
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
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	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
Base Volume Input [veh/h]	0	375	2	5	432	0	3	0	8	2	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	390	2	5	449	0	3	0	8	2	0	3
Peak Hour Factor	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	128	1	2	148	0	1	0	3	1	0	1
Total Analysis Volume [veh/h]	0	514	3	7	592	0	4	0	11	3	0	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.02	0.00	0.02	0.02	0.00	0.01
d_M, Delay for Movement [s/veh]	8.62	0.00	0.00	8.41	0.00	0.00	25.34	23.01	12.54	25.57	22.80	11.69
Movement LOS	A	A	A	A	A	A	D	C	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.01	0.01	0.14	0.14	0.14	0.07	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.29	0.29	0.29	3.41	3.41	3.41	1.84	1.84	1.84
d_A, Approach Delay [s/veh]	0.00			0.10			15.95			17.64		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	0.37											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 3: Locust Avenue at Casmalia Street

Control Type:	Signalized	Delay (sec / veh):	29.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.376

Intersection Setup

Name	Locust Avenue			Locust Avenue			Eastbound			Casmalia Street		
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	1	1	0	1	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Avenue			Locust Avenue						Casmalia Street		
Base Volume Input [veh/h]	90	209	35	129	222	192	125	210	86	9	152	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
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]	94	217	36	134	231	200	130	218	89	9	158	68
Peak Hour Factor	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	66	11	41	70	61	39	66	27	3	48	21
Total Analysis Volume [veh/h]	114	263	44	162	280	242	158	264	108	11	192	82
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	10	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	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	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	26	0	12	26	26	29	33	33	19	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	5	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	17	0	14	14	0	14	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	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No	No	No	No	
Maximum Recall	No	No		No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No		No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	46	46	8	46	61	10	19	30	1	10	10
g / C, Green / Cycle	0.08	0.51	0.51	0.09	0.52	0.68	0.12	0.21	0.34	0.01	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.06	0.08	0.08	0.09	0.15	0.15	0.09	0.14	0.07	0.01	0.07	0.08
s, saturation flow rate [veh/h]	1810	1900	1807	1810	1900	1615	1810	1900	1615	1810	1900	1714
c, Capacity [veh/h]	144	961	914	161	979	1091	209	404	544	26	212	192
d1, Uniform Delay [s]	40.69	11.96	11.98	41.00	12.40	5.58	38.57	32.39	21.21	43.97	38.34	38.50
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.34	0.36	0.39	34.76	0.73	0.47	5.48	1.79	0.18	10.19	3.51	4.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.16	0.16	1.01	0.29	0.22	0.76	0.65	0.20	0.42	0.66	0.70
d, Delay for Lane Group [s/veh]	50.03	12.33	12.37	75.76	13.13	6.05	44.05	34.18	21.39	54.16	41.85	43.00
Lane Group LOS	D	B	B	F	B	A	D	C	C	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.82	1.70	1.65	5.06	3.23	1.63	3.65	5.35	1.61	0.32	3.14	3.04
50th-Percentile Queue Length [ft/ln]	70.56	42.60	41.34	126.62	80.63	40.72	91.21	133.80	40.31	7.89	78.56	75.89
95th-Percentile Queue Length [veh/ln]	5.08	3.07	2.98	8.78	5.81	2.93	6.57	9.15	2.90	0.57	5.66	5.46
95th-Percentile Queue Length [ft/ln]	127.01	76.67	74.42	219.44	145.13	73.30	164.18	228.66	72.56	14.20	141.41	136.61

Movement, Approach, & Intersection Results

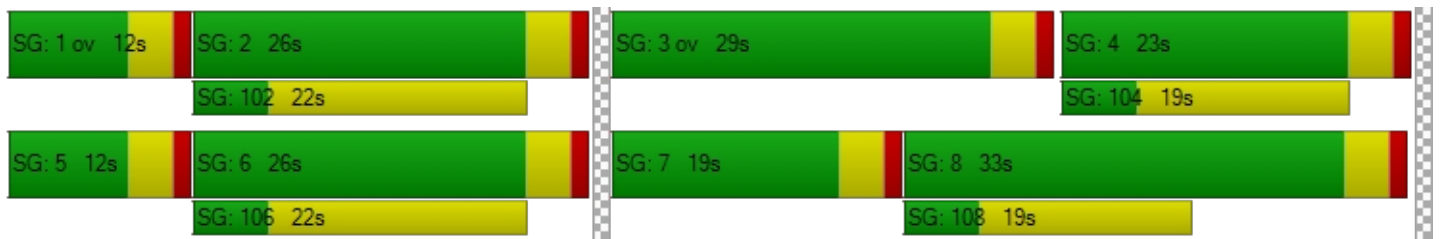
d_M, Delay for Movement [s/veh]	50.03	12.34	12.37	75.76	13.13	6.05	44.05	34.18	21.39	54.16	42.16	43.00
Movement LOS	D	B	B	F	B	A	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	22.55			25.46			34.52			42.86		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	29.90											
Intersection LOS	C											
Intersection V/C	0.376											

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 Intersectio	2.332	2.533	2.630	2.317
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	644	422
d_b, Bicycle Delay [s]	25.69	25.69	20.67	28.01
I_b,int, Bicycle LOS Score for Intersection	1.907	2.688	2.434	1.795
Bicycle LOS	A	B	B	A

Sequence

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



APPENDIX D-3

INTERSECTION ANALYSIS
WORKSHEETS –
OPENING YEAR 2025 PLUS PROJECT
CONDITIONS

West Coast and Locust Warehouse

Vistro File: K:\...West Coast and Locust Warehouse_AM.vistro

Scenario 3 OY 25 WP AM

Report File: K:\...13 - OY 25 WP AM.pdf

10/25/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Locust Avenue at Casa Grande Drive	Two-way stop	HCM 7th Edition	EB Left	0.228	39.1	E
2	Locust Avenue at West Coast Boulevard	Two-way stop	HCM 7th Edition	WB Left	0.030	41.5	E
3	Locust Avenue at Casmalia Street	Signalized	HCM 7th Edition	WB Left	0.471	28.1	C
101	Locust Avenue at North Project Driveway	Two-way stop	HCM 7th Edition	WB Left	0.020	23.1	C
102	Locust Avenue at South Project Driveway	Two-way stop	HCM 7th Edition	WB Left	0.059	23.8	C
103	West Coast Boulevard at Project Driveway	Two-way stop	HCM 7th Edition	NB Left	0.002	8.7	A

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

Intersection Level Of Service Report
Intersection 1: Locust Avenue at Casa Grande Drive

Control Type:	Two-way stop	Delay (sec / veh):	39.1
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.228

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach						
Lane Configuration	↶		↷		↶↷	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	115	262	390	17	21	250
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	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	16	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	276	422	18	22	260
Peak Hour Factor	0.7160	0.7160	0.7160	0.7160	0.7160	0.7160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	96	147	6	8	91
Total Analysis Volume [veh/h]	168	385	589	25	31	363
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.17	0.00	0.01	0.00	0.23	0.72
d_M, Delay for Movement [s/veh]	8.90	0.00	0.00	0.00	39.13	28.47
Movement LOS	A	A	A	A	E	D
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.00	0.00	0.83	5.82
95th-Percentile Queue Length [ft/ln]	7.71	7.71	0.00	0.00	20.83	145.43
d_A, Approach Delay [s/veh]	2.70		0.00		29.31	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	8.36					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 2: Locust Avenue at West Coast Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	41.5
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.030

Intersection Setup

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
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	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
Base Volume Input [veh/h]	6	440	1	9	615	7	0	0	4	1	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	3	6	10	0	0	0	0	1	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	461	4	15	650	7	0	0	4	2	0	16
Peak Hour Factor	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	145	1	5	205	2	0	0	1	1	0	5
Total Analysis Volume [veh/h]	8	581	5	19	820	9	0	0	5	3	0	20
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.02	0.01	0.00	0.00	0.00	0.01	0.03	0.00	0.04
d_M, Delay for Movement [s/veh]	9.45	0.00	0.00	8.63	0.00	0.00	42.26	34.37	14.71	41.53	35.11	12.77
Movement LOS	A	A	A	A	A	A	E	D	B	E	E	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.03	0.03	0.03	0.04	0.04	0.04	0.22	0.22	0.22
95th-Percentile Queue Length [ft/ln]	0.34	0.34	0.34	0.80	0.80	0.80	1.01	1.01	1.01	5.49	5.49	5.49
d_A, Approach Delay [s/veh]	0.13			0.19			14.71			16.52		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.47											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 3: Locust Avenue at Casmalia Street

Control Type:	Signalized	Delay (sec / veh):	28.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.471

Intersection Setup

Name	Locust Avenue			Locust Avenue			Eastbound			Casmalia Street		
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	1	1	0	1	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Avenue			Locust Avenue						Casmalia Street		
Base Volume Input [veh/h]	82	203	11	100	298	178	194	63	32	30	118	92
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	13	0	1	4	11	35	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	224	11	105	314	196	237	66	33	31	123	100
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	64	3	30	90	56	68	19	9	9	35	29
Total Analysis Volume [veh/h]	98	258	13	121	361	226	273	76	38	36	142	115
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	10	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	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	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	26	0	12	26	26	29	33	33	19	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	5	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	17	0	14	14	0	14	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	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No	No	No	No	
Maximum Recall	No	No		No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No		No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	40	40	8	42	62	16	23	33	3	10	10
g / C, Green / Cycle	0.07	0.45	0.45	0.08	0.46	0.69	0.18	0.26	0.37	0.03	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.05	0.07	0.07	0.07	0.19	0.14	0.15	0.04	0.02	0.02	0.07	0.08
s, saturation flow rate [veh/h]	1810	1900	1868	1810	1900	1615	1810	1900	1615	1810	1900	1631
c, Capacity [veh/h]	126	851	836	151	878	1107	324	488	599	62	212	182
d1, Uniform Delay [s]	41.20	14.79	14.79	40.49	16.08	5.17	35.71	25.89	18.25	42.84	38.19	38.41
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]	9.98	0.40	0.41	9.27	1.43	0.42	5.91	0.15	0.04	8.52	3.06	4.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.16	0.16	0.80	0.41	0.20	0.84	0.16	0.06	0.58	0.63	0.68
d, Delay for Lane Group [s/veh]	51.18	15.19	15.21	49.77	17.51	5.59	41.62	26.04	18.29	51.36	41.26	42.74
Lane Group LOS	D	B	B	D	B	A	D	C	B	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.46	1.70	1.68	2.99	5.05	1.43	6.20	1.26	0.51	0.93	2.96	2.80
50th-Percentile Queue Length [ft/ln]	61.50	42.40	42.02	74.66	126.27	35.83	155.09	31.56	12.68	23.18	74.02	69.96
95th-Percentile Queue Length [veh/ln]	4.43	3.05	3.03	5.38	8.74	2.58	10.29	2.27	0.91	1.67	5.33	5.04
95th-Percentile Queue Length [ft/ln]	110.70	76.32	75.64	134.40	218.41	64.49	257.21	56.81	22.83	41.72	133.23	125.92

Movement, Approach, & Intersection Results

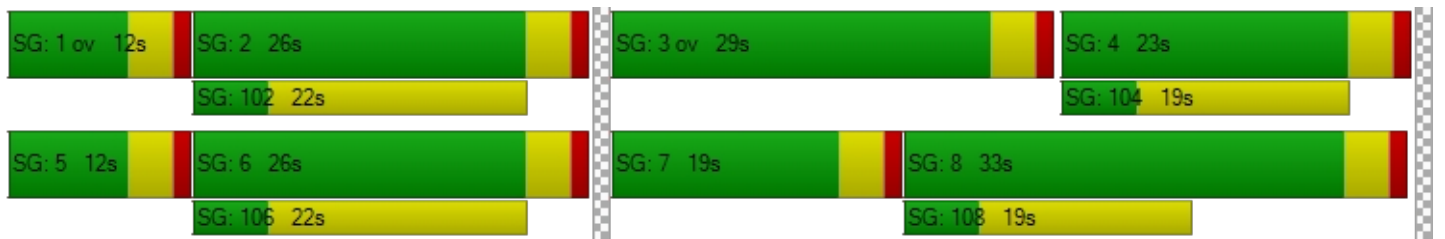
d_M, Delay for Movement [s/veh]	51.18	15.20	15.21	49.77	17.51	5.59	41.62	26.04	18.29	51.36	41.34	42.74
Movement LOS	D	B	B	D	B	A	D	C	B	D	D	D
d_A, Approach Delay [s/veh]	24.75			19.22			36.27			43.12		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	28.12											
Intersection LOS	C											
Intersection V/C	0.471											

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 Intersectio	2.329	2.565	2.593	2.255
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	644	422
d_b, Bicycle Delay [s]	25.69	25.69	20.67	28.01
I_b,int, Bicycle LOS Score for Intersection	1.864	2.728	2.198	1.801
Bicycle LOS	A	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 101: Locust Avenue at North Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	23.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Locust Avenue		Locust Avenue		Westbound	
Approach	Northbound		Southbound			
Lane Configuration	↷		↶		↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in 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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Locust Avenue		Locust Avenue		Westbound	
Base Volume Input [veh/h]	441	0	0	620	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	15	10	1	4	3
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]	462	15	10	646	4	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	122	4	3	170	1	1
Total Analysis Volume [veh/h]	486	16	11	680	4	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.01	0.02	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.40	0.00	23.13	11.59
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.08	0.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.46	0.46	1.92	1.92
d_A, Approach Delay [s/veh]	0.00		0.13		18.19	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.18					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 102: Locust Avenue at South Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	23.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.059

Intersection Setup

Name	Locust Avenue		Locust Avenue		Westbound	
Approach	Northbound		Southbound			
Lane Configuration	↩		↩		↩	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in 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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Locust Avenue		Locust Avenue		Westbound	
Base Volume Input [veh/h]	441	0	0	620	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	34	0	5	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	477	34	0	650	11	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	126	9	0	171	3	0
Total Analysis Volume [veh/h]	502	36	0	684	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.06	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.49	0.00	23.81	12.58
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.19	0.19
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	4.67	4.67
d_A, Approach Delay [s/veh]	0.00		0.00		23.81	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.23					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 103: West Coast Boulevard at Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	West Coast Boulevard		West Coast Boulevard		West Coast Boulevard	
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	West Coast Boulevard		West Coast Boulevard		West Coast Boulevard	
Base Volume Input [veh/h]	0	0	10	0	0	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	9	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	0	10	9	0	16
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	3	2	0	4
Total Analysis Volume [veh/h]	2	0	11	9	0	17
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	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.68	8.39	0.00	0.00	7.26	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.15	0.15	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.68		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.44					
Intersection LOS	A					

West Coast and Locust Warehouse

Vistro File: K:\...West Coast and Locust Warehouse_PM.vistro

Scenario 3 OY 25 WP PM

Report File: K:\...13 - OY 25 WP PM.pdf

10/25/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Locust Avenue at Casa Grande Drive	Two-way stop	HCM 7th Edition	EB Left	0.807	84.4	F
2	Locust Avenue at West Coast Boulevard	Two-way stop	HCM 7th Edition	WB Left	0.040	26.6	D
3	Locust Avenue at Casmalia Street	Signalized	HCM 7th Edition	SB Left	0.387	30.3	C
101	Locust Avenue at North Project Driveway	Two-way stop	HCM 7th Edition	WB Left	0.036	17.2	C
102	Locust Avenue at South Project Driveway	Two-way stop	HCM 7th Edition	WB Left	0.086	18.1	C
103	West Coast Boulevard at Project Driveway	Two-way stop	HCM 7th Edition	NB Left	0.009	8.6	A

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

Intersection Level Of Service Report
Intersection 1: Locust Avenue at Casa Grande Drive

Control Type:	Two-way stop	Delay (sec / veh):	84.4
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.807

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach						
Lane Configuration	↰		↱		↰↱	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	206	175	167	97	92	280
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	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	4	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	214	194	178	101	96	291
Peak Hour Factor	0.7430	0.7430	0.7430	0.7430	0.7430	0.7430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	65	60	34	32	98
Total Analysis Volume [veh/h]	288	261	240	136	129	392
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.24	0.00	0.00	0.00	0.81	0.53
d_M, Delay for Movement [s/veh]	8.40	0.00	0.00	0.00	84.41	15.30
Movement LOS	A	A	A	A	F	C
95th-Percentile Queue Length [veh/ln]	0.57	0.57	0.00	0.00	5.29	3.18
95th-Percentile Queue Length [ft/ln]	14.24	14.24	0.00	0.00	132.23	79.44
d_A, Approach Delay [s/veh]	4.40		0.00		32.42	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	13.35					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 2: Locust Avenue at West Coast Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	26.6
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.040

Intersection Setup

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
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	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
Base Volume Input [veh/h]	0	375	2	5	432	0	3	0	8	2	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	1	2	2	0	0	0	0	3	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	396	3	7	451	0	3	0	8	5	0	9
Peak Hour Factor	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	130	1	2	149	0	1	0	3	2	0	3
Total Analysis Volume [veh/h]	0	522	4	9	594	0	4	0	11	7	0	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.02	0.00	0.02	0.04	0.00	0.02
d_M, Delay for Movement [s/veh]	8.63	0.00	0.00	8.44	0.00	0.00	26.31	23.45	12.58	26.57	23.67	12.24
Movement LOS	A	A	A	A	A	A	D	C	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.02	0.02	0.02	0.14	0.14	0.14	0.20	0.20	0.20
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.38	0.38	0.38	3.50	3.50	3.50	4.93	4.93	4.93
d_A, Approach Delay [s/veh]	0.00			0.13			16.24			17.52		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	0.56											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 3: Locust Avenue at Casmalia Street

Control Type:	Signalized	Delay (sec / veh):	30.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.387

Intersection Setup

Name	Locust Avenue			Locust Avenue			Eastbound			Casmalia Street		
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	1	1	0	1	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Avenue			Locust Avenue						Casmalia Street		
Base Volume Input [veh/h]	90	209	35	129	222	192	125	210	86	9	152	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	4	9	25	8	0	0	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	94	220	36	138	240	225	138	218	89	9	158	69
Peak Hour Factor	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	67	11	42	73	68	42	66	27	3	48	21
Total Analysis Volume [veh/h]	114	267	44	167	291	273	167	264	108	11	192	84
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	10	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	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	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	26	0	12	26	26	29	33	33	19	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	5	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	17	0	14	14	0	14	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	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No	No	No	No	
Maximum Recall	No	No		No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No		No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	45	45	8	46	61	11	20	31	1	10	10
g / C, Green / Cycle	0.08	0.50	0.50	0.09	0.51	0.68	0.12	0.22	0.34	0.01	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.06	0.08	0.08	0.09	0.15	0.17	0.09	0.14	0.07	0.01	0.07	0.08
s, saturation flow rate [veh/h]	1810	1900	1808	1810	1900	1615	1810	1900	1615	1810	1900	1711
c, Capacity [veh/h]	144	950	904	161	967	1091	220	416	554	26	212	191
d1, Uniform Delay [s]	40.69	12.28	12.30	41.00	12.80	5.71	38.24	31.88	20.82	43.97	38.36	38.53
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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]	9.34	0.38	0.40	43.30	0.80	0.55	5.28	1.61	0.17	10.19	3.59	4.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.17	0.17	1.04	0.30	0.25	0.76	0.63	0.19	0.42	0.67	0.70
d, Delay for Lane Group [s/veh]	50.03	12.66	12.70	84.30	13.60	6.26	43.52	33.49	20.99	54.16	41.95	43.16
Lane Group LOS	D	B	B	F	B	A	D	C	C	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.82	1.76	1.70	5.45	3.43	1.88	3.83	5.29	1.59	0.32	3.17	3.06
50th-Percentile Queue Length [ft/ln]	70.56	43.90	42.62	136.17	85.84	47.06	95.84	132.24	39.85	7.89	79.31	76.57
95th-Percentile Queue Length [veh/ln]	5.08	3.16	3.07	9.40	6.18	3.39	6.90	9.06	2.87	0.57	5.71	5.51
95th-Percentile Queue Length [ft/ln]	127.01	79.03	76.71	234.90	154.51	84.71	172.52	226.53	71.73	14.20	142.75	137.82

Movement, Approach, & Intersection Results

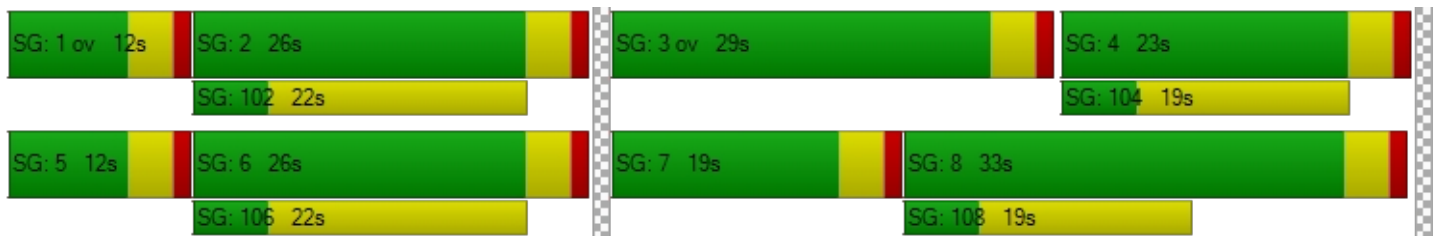
d_M, Delay for Movement [s/veh]	50.03	12.68	12.70	84.30	13.60	6.26	43.52	33.49	20.99	54.16	42.27	43.16
Movement LOS	D	B	B	F	B	A	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	22.70			27.01			34.09			42.98		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	30.33											
Intersection LOS	C											
Intersection V/C	0.387											

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 Intersectio	2.336	2.545	2.636	2.318
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	644	422
d_b, Bicycle Delay [s]	25.69	25.69	20.67	28.01
I_b,int, Bicycle LOS Score for Intersection	1.910	2.766	2.449	1.796
Bicycle LOS	A	C	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 101: Locust Avenue at North Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	17.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.036

Intersection Setup

Name	Locust Avenue		Locust Avenue		Westbound	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↩		↩		↩	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in 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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Locust Avenue		Locust Avenue		Westbound	
Base Volume Input [veh/h]	377	0	0	442	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	3	2	3	10	6
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]	393	3	2	463	10	6
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]	103	1	1	122	3	2
Total Analysis Volume [veh/h]	414	3	2	487	11	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.04	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.15	0.00	17.24	11.11
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.14	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.08	0.08	3.56	3.56
d_A, Approach Delay [s/veh]	0.00		0.03		15.07	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.30					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 102: Locust Avenue at South Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	18.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.086

Intersection Setup

Name	Locust Avenue		Locust Avenue			
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in 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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Locust Avenue		Locust Avenue			
Base Volume Input [veh/h]	377	0	0	442	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	8	0	13	25	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	396	8	0	473	25	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	104	2	0	124	7	0
Total Analysis Volume [veh/h]	417	8	0	498	26	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.09	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.17	0.00	18.08	11.82
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.28	0.28
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	7.03	7.03
d_A, Approach Delay [s/veh]	0.00		0.00		18.08	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.50					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 103: West Coast Boulevard at Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	West Coast Boulevard		West Coast Boulevard		West Coast Boulevard	
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	West Coast Boulevard		West Coast Boulevard		West Coast Boulevard	
Base Volume Input [veh/h]	0	0	7	0	0	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	7	3	0	5
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	2	1	0	1
Total Analysis Volume [veh/h]	9	0	7	3	0	5
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	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.61	8.39	0.00	0.00	7.24	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.68	0.68	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.61		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.23					
Intersection LOS	A					

APPENDIX D-4

INTERSECTION ANALYSIS
WORKSHEETS –
OPENING YEAR 2025 CUMULATIVE
CONDITIONS

West Coast and Locust Warehouse

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10/25/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Locust Avenue at Casa Grande Drive	Two-way stop	HCM 7th Edition	EB Left	0.275	48.5	E
2	Locust Avenue at West Coast Boulevard	Two-way stop	HCM 7th Edition	WB Left	0.011	46.5	E
3	Locust Avenue at Casmalia Street	Signalized	HCM 7th Edition	WB Left	0.502	29.1	C

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

Intersection Level Of Service Report
Intersection 1: Locust Avenue at Casa Grande Drive

Control Type:	Two-way stop	Delay (sec / veh):	48.5
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.275

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach						
Lane Configuration	↶		↷		↶↷	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	115	262	390	17	21	250
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	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	44	57	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	316	463	18	22	260
Peak Hour Factor	0.7160	0.7160	0.7160	0.7160	0.7160	0.7160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	110	162	6	8	91
Total Analysis Volume [veh/h]	168	441	647	25	31	363
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.18	0.00	0.01	0.00	0.27	0.78
d_M, Delay for Movement [s/veh]	9.08	0.00	0.00	0.00	48.55	34.79
Movement LOS	A	A	A	A	E	D
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.00	0.00	1.03	6.86
95th-Percentile Queue Length [ft/ln]	7.71	7.71	0.00	0.00	25.79	171.50
d_A, Approach Delay [s/veh]	2.51		0.00		35.87	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	9.35					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 2: Locust Avenue at West Coast Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	46.5
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
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	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
Base Volume Input [veh/h]	6	440	1	9	615	7	0	0	4	1	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	44	0	0	57	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	502	1	9	697	7	0	0	4	1	0	15
Peak Hour Factor	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	158	0	3	220	2	0	0	1	0	0	5
Total Analysis Volume [veh/h]	8	633	1	11	879	9	0	0	5	1	0	19
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.04
d_M, Delay for Movement [s/veh]	9.68	0.00	0.00	8.77	0.00	0.00	47.74	37.98	15.51	46.54	38.50	12.94
Movement LOS	A	A	A	A	A	A	E	E	C	E	E	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.02	0.02	0.02	0.04	0.04	0.04	0.16	0.16	0.16
95th-Percentile Queue Length [ft/ln]	0.33	0.33	0.33	0.46	0.46	0.46	1.09	1.09	1.09	4.00	4.00	4.00
d_A, Approach Delay [s/veh]	0.12			0.11			15.51			14.62		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.35											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 3: Locust Avenue at Casmalia Street

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.502

Intersection Setup

Name	Locust Avenue			Locust Avenue			Eastbound			Casmalia Street		
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	1	1	0	1	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Avenue			Locust Avenue						Casmalia Street		
Base Volume Input [veh/h]	82	203	11	100	298	178	194	63	32	30	118	92
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	33	6	18	15	12	30	30	30	36	14	23	8
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]	118	217	29	119	322	215	232	96	69	45	146	104
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	62	8	34	93	62	67	28	20	13	42	30
Total Analysis Volume [veh/h]	136	250	33	137	371	247	267	110	79	52	168	120
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	10	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	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	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	13	26	0	13	26	26	28	31	31	20	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	5	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	17	0	14	14	0	14	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	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No	No	No	No	
Maximum Recall	No	No		No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No		No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	40	40	8	40	60	16	22	35	4	10	10
g / C, Green / Cycle	0.09	0.44	0.44	0.09	0.44	0.66	0.18	0.25	0.38	0.04	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.08	0.08	0.08	0.08	0.20	0.15	0.15	0.06	0.05	0.03	0.08	0.08
s, saturation flow rate [veh/h]	1810	1900	1824	1810	1900	1615	1810	1900	1615	1810	1900	1647
c, Capacity [veh/h]	168	836	802	169	837	1068	319	468	620	77	214	185
d1, Uniform Delay [s]	40.03	15.27	15.29	40.01	17.51	6.10	35.82	27.14	17.97	42.47	38.48	38.68
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]	8.82	0.45	0.47	8.87	1.70	0.51	5.81	0.26	0.09	9.84	4.15	5.79
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	0.81	0.17	0.17	0.81	0.44	0.23	0.84	0.24	0.13	0.68	0.70	0.74
d, Delay for Lane Group [s/veh]	48.85	15.72	15.76	48.88	19.22	6.61	41.63	27.39	18.06	52.31	42.62	44.47
Lane Group LOS	D	B	B	D	B	A	D	C	B	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.32	1.82	1.78	3.35	5.50	1.77	6.06	1.90	1.06	1.34	3.40	3.21
50th-Percentile Queue Length [ft/ln]	83.07	45.62	44.52	83.71	137.58	44.35	151.60	47.41	26.40	33.47	84.89	80.15
95th-Percentile Queue Length [veh/ln]	5.98	3.28	3.21	6.03	9.35	3.19	10.10	3.41	1.90	2.41	6.11	5.77
95th-Percentile Queue Length [ft/ln]	149.53	82.11	80.14	150.68	233.76	79.84	252.56	85.34	47.52	60.25	152.79	144.27

Movement, Approach, & Intersection Results

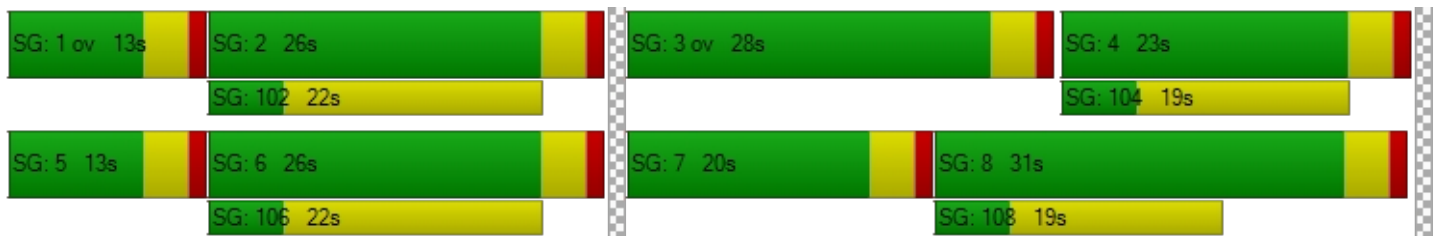
d_M, Delay for Movement [s/veh]	48.85	15.73	15.76	48.88	19.22	6.61	41.63	27.39	18.06	52.31	42.82	44.47
Movement LOS	D	B	B	D	B	A	D	C	B	D	D	D
d_A, Approach Delay [s/veh]	26.48			20.47			34.11			44.85		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	29.12											
Intersection LOS	C											
Intersection V/C	0.502											

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 Intersectio	2.357	2.573	2.618	2.284
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	600	422
d_b, Bicycle Delay [s]	25.69	25.69	22.05	28.01
I_b,int, Bicycle LOS Score for Intersection	1.905	2.805	2.312	1.840
Bicycle LOS	A	C	B	A

Sequence

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



West Coast and Locust Warehouse

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Warehouse_PM.vistro

Scenario 4 OY 25 CUM PM

Report File: K:\...\4 - OY 25 CUM PM.pdf

10/25/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Locust Avenue at Casa Grande Drive	Two-way stop	HCM 7th Edition	EB Left	1.003	146.1	F
2	Locust Avenue at West Coast Boulevard	Two-way stop	HCM 7th Edition	WB Left	0.021	31.0	D
3	Locust Avenue at Casmalia Street	Signalized	HCM 7th Edition	SB Left	0.443	31.1	C

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

Intersection Level Of Service Report
Intersection 1: Locust Avenue at Casa Grande Drive

Control Type:	Two-way stop	Delay (sec / veh):	146.1
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.003

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach						
Lane Configuration	↶		↷		↶↷	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	206	175	167	97	92	280
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	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	65	47	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	214	247	221	101	96	291
Peak Hour Factor	0.7430	0.7430	0.7430	0.7430	0.7430	0.7430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	83	74	34	32	98
Total Analysis Volume [veh/h]	288	332	297	136	129	392
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.25	0.00	0.00	0.00	1.00	0.57
d_M, Delay for Movement [s/veh]	8.55	0.00	0.00	0.00	146.06	17.06
Movement LOS	A	A	A	A	F	C
95th-Percentile Queue Length [veh/ln]	0.57	0.57	0.00	0.00	6.98	3.65
95th-Percentile Queue Length [ft/ln]	14.24	14.24	0.00	0.00	174.48	91.36
d_A, Approach Delay [s/veh]	3.97		0.00		49.00	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	17.78					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 2: Locust Avenue at West Coast Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	31.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
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	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
Base Volume Input [veh/h]	0	375	2	5	432	0	3	0	8	2	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	65	0	0	47	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	455	2	5	496	0	3	0	8	2	0	3
Peak Hour Factor	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	150	1	2	163	0	1	0	3	1	0	1
Total Analysis Volume [veh/h]	0	599	3	7	653	0	4	0	11	3	0	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.03	0.00	0.02	0.02	0.00	0.01
d_M, Delay for Movement [s/veh]	8.82	0.00	0.00	8.66	0.00	0.00	30.72	27.10	13.31	31.05	26.85	12.59
Movement LOS	A	A	A	A	A	A	D	D	B	D	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.01	0.01	0.16	0.16	0.16	0.09	0.09	0.09
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.29	0.29	0.29	4.03	4.03	4.03	2.25	2.25	2.25
d_A, Approach Delay [s/veh]	0.00			0.09			17.95			20.50		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	0.37											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 3: Locust Avenue at Casmalia Street

Control Type:	Signalized	Delay (sec / veh):	31.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name	Locust Avenue			Locust Avenue			Eastbound			Casmalia Street		
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	1	1	0	1	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Avenue			Locust Avenue						Casmalia Street		
Base Volume Input [veh/h]	90	209	35	129	222	192	125	210	86	9	152	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	34	12	18	12	7	28	28	26	32	29	39	25
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]	128	229	54	146	238	228	158	244	121	38	197	93
Peak Hour Factor	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	69	16	44	72	69	48	74	37	12	60	28
Total Analysis Volume [veh/h]	155	278	65	177	288	276	192	296	147	46	239	113
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	10	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	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	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	13	26	0	13	26	26	28	31	31	20	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	5	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	17	0	14	14	0	14	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	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No	No	No	No	
Maximum Recall	No	No		No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No		No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	41	41	9	41	58	12	20	33	4	11	11
g / C, Green / Cycle	0.10	0.46	0.46	0.10	0.46	0.64	0.14	0.22	0.37	0.04	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.09	0.10	0.15	0.17	0.11	0.16	0.09	0.03	0.10	0.10
s, saturation flow rate [veh/h]	1810	1900	1778	1810	1900	1615	1810	1900	1615	1810	1900	1700
c, Capacity [veh/h]	181	870	814	181	870	1031	247	426	595	73	243	218
d1, Uniform Delay [s]	39.86	14.57	14.60	40.40	15.59	7.09	37.55	32.08	19.73	42.54	37.85	38.01
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.97	0.52	0.57	26.23	1.02	0.64	5.26	2.05	0.21	8.77	4.61	5.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.20	0.21	0.98	0.33	0.27	0.78	0.69	0.25	0.63	0.75	0.78
d, Delay for Lane Group [s/veh]	50.84	15.10	15.17	66.64	16.61	7.72	42.81	34.13	19.95	51.31	42.47	43.95
Lane Group LOS	D	B	B	E	B	A	D	C	B	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.88	2.19	2.09	5.17	3.86	2.23	4.38	6.03	2.12	1.17	4.13	3.92
50th-Percentile Queue Length [ft/ln]	96.92	54.75	52.32	129.18	96.51	55.67	109.54	150.75	53.02	29.37	103.30	98.05
95th-Percentile Queue Length [veh/ln]	6.98	3.94	3.77	8.89	6.95	4.01	7.81	10.06	3.82	2.11	7.44	7.06
95th-Percentile Queue Length [ft/ln]	174.45	98.54	94.18	222.37	173.72	100.20	195.36	251.43	95.44	52.87	185.94	176.50

Movement, Approach, & Intersection Results

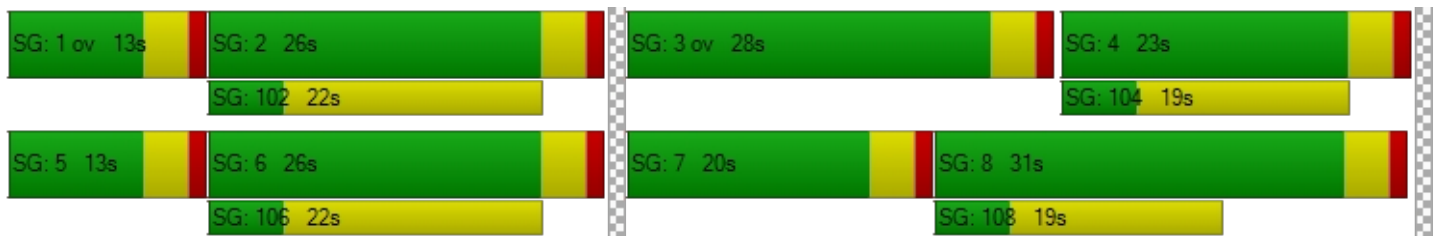
d_M, Delay for Movement [s/veh]	50.84	15.12	15.17	66.64	16.61	7.72	42.81	34.13	19.95	51.31	42.82	43.95
Movement LOS	D	B	B	E	B	A	D	C	B	D	D	D
d_A, Approach Delay [s/veh]	26.24			25.25			33.47			44.12		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	31.07											
Intersection LOS	C											
Intersection V/C	0.443											

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 Intersectio	2.371	2.560	2.666	2.361
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	600	422
d_b, Bicycle Delay [s]	25.69	25.69	22.05	28.01
I_b,int, Bicycle LOS Score for Intersection	1.970	2.782	2.607	1.888
Bicycle LOS	A	C	B	A

Sequence

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



APPENDIX D-5

INTERSECTION ANALYSIS
WORKSHEETS –
OPENING YEAR 2025 CUMULATIVE PLUS
PROJECT CONDITIONS

West Coast and Locust Warehouse

Vistro File: K:\...West Coast and Locust
Warehouse_AM.vistro

Scenario 5 OY 25 CUM WP AM

Report File: K:\...15 - OY 25 CUM WP AM.pdf

10/25/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Locust Avenue at Casa Grande Drive	Two-way stop	HCM 7th Edition	EB Left	0.288	51.4	F
2	Locust Avenue at West Coast Boulevard	Two-way stop	HCM 7th Edition	WB Left	0.037	50.3	F
3	Locust Avenue at Casmalia Street	Signalized	HCM 7th Edition	WB Left	0.527	29.5	C
101	Locust Avenue at North Project Driveway	Two-way stop	HCM 7th Edition	WB Left	0.023	26.1	D
102	Locust Avenue at South Project Driveway	Two-way stop	HCM 7th Edition	WB Left	0.068	27.0	D
103	West Coast Boulevard at Project Driveway	Two-way stop	HCM 7th Edition	NB Left	0.002	8.7	A

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

Intersection Level Of Service Report
Intersection 1: Locust Avenue at Casa Grande Drive

Control Type:	Two-way stop	Delay (sec / veh):	51.4
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.288

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach	←		→		↔	
Lane Configuration	←		→		↔	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	115	262	390	17	21	250
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	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	44	57	0	0	0
Site-Generated Trips [veh/h]	0	4	16	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	320	479	18	22	260
Peak Hour Factor	0.7160	0.7160	0.7160	0.7160	0.7160	0.7160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	112	167	6	8	91
Total Analysis Volume [veh/h]	168	447	669	25	31	363
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.18	0.00	0.01	0.00	0.29	0.80
d_M, Delay for Movement [s/veh]	9.16	0.00	0.00	0.00	51.39	37.84
Movement LOS	A	A	A	A	F	E
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.00	0.00	1.09	7.31
95th-Percentile Queue Length [ft/ln]	7.71	7.71	0.00	0.00	27.21	182.66
d_A, Approach Delay [s/veh]	2.50		0.00		38.90	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	9.90					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 2: Locust Avenue at West Coast Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	50.3
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.037

Intersection Setup

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
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	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
Base Volume Input [veh/h]	6	440	1	9	615	7	0	0	4	1	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	44	0	0	57	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	3	6	10	0	0	0	0	1	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	505	4	15	707	7	0	0	4	2	0	16
Peak Hour Factor	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	159	1	5	223	2	0	0	1	1	0	5
Total Analysis Volume [veh/h]	8	637	5	19	892	9	0	0	5	3	0	20
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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





Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.02	0.01	0.00	0.00	0.00	0.01	0.04	0.00	0.04
d_M, Delay for Movement [s/veh]	9.73	0.00	0.00	8.80	0.00	0.00	51.19	40.37	15.69	50.28	41.36	13.56
Movement LOS	A	A	A	A	A	A	F	E	C	F	E	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.03	0.03	0.03	0.04	0.04	0.04	0.25	0.25	0.25
95th-Percentile Queue Length [ft/ln]	0.34	0.34	0.34	0.80	0.80	0.80	1.11	1.11	1.11	6.35	6.35	6.35
d_A, Approach Delay [s/veh]	0.12			0.18			15.69			18.35		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	0.47											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Locust Avenue at Casmalia Street

Control Type:	Signalized	Delay (sec / veh):	29.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.527

Intersection Setup

Name	Locust Avenue			Locust Avenue			Eastbound			Casmalia Street		
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	1	1	0	1	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Avenue			Locust Avenue						Casmalia Street		
Base Volume Input [veh/h]	82	203	11	100	298	178	194	63	32	30	118	92
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	33	6	18	15	12	30	30	30	36	14	23	8
Site-Generated Trips [veh/h]	0	13	0	1	4	11	35	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	118	230	29	120	326	226	267	96	69	45	146	108
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	66	8	35	94	65	77	28	20	13	42	31
Total Analysis Volume [veh/h]	136	265	33	138	375	260	307	110	79	52	168	124
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	10	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	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	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	13	26	0	13	26	26	28	31	31	20	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	5	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	17	0	14	14	0	14	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	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No	No	No	No	
Maximum Recall	No	No		No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No		No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	38	38	8	38	60	18	24	36	4	10	10
g / C, Green / Cycle	0.09	0.42	0.42	0.09	0.42	0.66	0.20	0.27	0.41	0.04	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.08	0.08	0.08	0.08	0.20	0.16	0.17	0.06	0.05	0.03	0.08	0.09
s, saturation flow rate [veh/h]	1810	1900	1828	1810	1900	1615	1810	1900	1615	1810	1900	1643
c, Capacity [veh/h]	168	794	764	170	796	1068	357	508	654	77	214	185
d1, Uniform Delay [s]	40.03	16.56	16.58	39.98	18.92	6.16	34.90	25.62	16.75	42.47	38.52	38.73
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]	8.82	0.53	0.56	8.86	2.00	0.54	6.05	0.21	0.08	9.84	4.35	6.13
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	0.81	0.19	0.19	0.81	0.47	0.24	0.86	0.22	0.12	0.68	0.71	0.75
d, Delay for Lane Group [s/veh]	48.85	17.09	17.14	48.84	20.92	6.71	40.95	25.83	16.83	52.31	42.87	44.85
Lane Group LOS	D	B	B	D	C	A	D	C	B	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.32	2.03	1.98	3.37	5.87	1.89	6.95	1.83	1.01	1.34	3.46	3.26
50th-Percentile Queue Length [ft/ln]	83.07	50.69	49.50	84.29	146.72	47.19	173.84	45.76	25.26	33.47	86.46	81.57
95th-Percentile Queue Length [veh/ln]	5.98	3.65	3.56	6.07	9.84	3.40	11.28	3.29	1.82	2.41	6.22	5.87
95th-Percentile Queue Length [ft/ln]	149.53	91.23	89.10	151.73	246.05	84.94	281.96	82.37	45.47	60.25	155.62	146.82

Movement, Approach, & Intersection Results

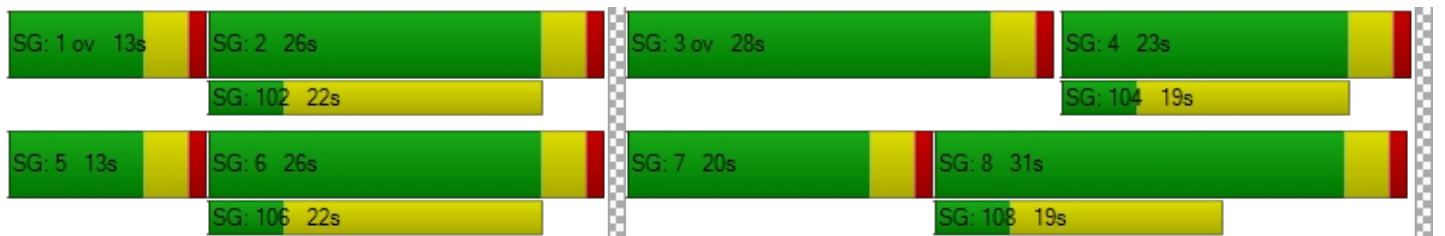
d_M, Delay for Movement [s/veh]	48.85	17.11	17.14	48.84	20.92	6.71	40.95	25.83	16.83	52.31	43.05	44.85
Movement LOS	D	B	B	D	C	A	D	C	B	D	D	D
d_A, Approach Delay [s/veh]	27.06			21.12			33.76			45.10		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	29.47											
Intersection LOS	C											
Intersection V/C	0.527											

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 Intersectio	2.362	2.588	2.627	2.285
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	600	422
d_b, Bicycle Delay [s]	25.69	25.69	22.05	28.01
I_b,int, Bicycle LOS Score for Intersection	1.918	2.835	2.378	1.843
Bicycle LOS	A	C	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 101: Locust Avenue at North Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	26.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.023

Intersection Setup

Name	Locust Avenue		Locust Avenue		Westbound	
Approach	Northbound		Southbound			
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in 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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Locust Avenue		Locust Avenue		Westbound	
Base Volume Input [veh/h]	441	0	0	620	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	44	0	0	57	0	0
Site-Generated Trips [veh/h]	3	15	10	1	4	3
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]	506	15	10	703	4	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	133	4	3	185	1	1
Total Analysis Volume [veh/h]	533	16	11	740	4	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.02	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.54	0.00	26.13	12.08
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.09	0.09
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.46	0.46	2.20	2.20
d_A, Approach Delay [s/veh]	0.00		0.13		20.11	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.18					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 102: Locust Avenue at South Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	27.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.068

Intersection Setup

Name	Locust Avenue		Locust Avenue		Westbound	
Approach	Northbound		Southbound			
Lane Configuration	↩		↩		↩	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in 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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Locust Avenue		Locust Avenue		Westbound	
Base Volume Input [veh/h]	441	0	0	620	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	44	0	0	57	0	0
Site-Generated Trips [veh/h]	18	34	0	5	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	521	34	0	707	11	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	137	9	0	186	3	0
Total Analysis Volume [veh/h]	548	36	0	744	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.07	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.63	0.00	27.02	13.38
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.22	0.22
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	5.45	5.45
d_A, Approach Delay [s/veh]	0.00		0.00		27.02	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.24					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 103: West Coast Boulevard at Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	West Coast Boulevard		West Coast Boulevard		West Coast Boulevard	
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	West Coast Boulevard		West Coast Boulevard		West Coast Boulevard	
Base Volume Input [veh/h]	0	0	10	0	0	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	9	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	0	10	9	0	16
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	3	2	0	4
Total Analysis Volume [veh/h]	2	0	11	9	0	17
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	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.68	8.39	0.00	0.00	7.26	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.15	0.15	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.68		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.44					
Intersection LOS	A					

West Coast and Locust Warehouse

Vistro File: K:\...\West Coast and Locust
Warehouse_PM.vistro

Scenario 5 OY 25 CUM WP PM

Report File: K:\...\15 - OY 25 CUM WP PM.pdf

10/25/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Locust Avenue at Casa Grande Drive	Two-way stop	HCM 7th Edition	EB Left	1.043	161.2	F
2	Locust Avenue at West Coast Boulevard	Two-way stop	HCM 7th Edition	WB Left	0.051	32.5	D
3	Locust Avenue at Casmalia Street	Signalized	HCM 7th Edition	SB Left	0.456	31.3	C
101	Locust Avenue at North Project Driveway	Two-way stop	HCM 7th Edition	WB Left	0.042	19.5	C
102	Locust Avenue at South Project Driveway	Two-way stop	HCM 7th Edition	WB Left	0.101	20.6	C
103	West Coast Boulevard at Project Driveway	Two-way stop	HCM 7th Edition	NB Left	0.009	8.6	A

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

Intersection Level Of Service Report
Intersection 1: Locust Avenue at Casa Grande Drive

Control Type:	Two-way stop	Delay (sec / veh):	161.2
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.043

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach						
Lane Configuration	↰		↳		↰↱	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	206	175	167	97	92	280
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	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	65	47	0	0	0
Site-Generated Trips [veh/h]	0	12	4	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	214	259	225	101	96	291
Peak Hour Factor	0.7430	0.7430	0.7430	0.7430	0.7430	0.7430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	87	76	34	32	98
Total Analysis Volume [veh/h]	288	349	303	136	129	392
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.25	0.00	0.00	0.00	1.04	0.58
d_M, Delay for Movement [s/veh]	8.56	0.00	0.00	0.00	161.25	17.28
Movement LOS	A	A	A	A	F	C
95th-Percentile Queue Length [veh/ln]	0.57	0.57	0.00	0.00	7.30	3.71
95th-Percentile Queue Length [ft/ln]	14.24	14.24	0.00	0.00	182.48	92.75
d_A, Approach Delay [s/veh]	3.87		0.00		52.92	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	18.81					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 2: Locust Avenue at West Coast Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	32.5
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.051

Intersection Setup

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
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	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Locust Avenue						West Coast Boulevard			West Coast Boulevard		
Base Volume Input [veh/h]	0	375	2	5	432	0	3	0	8	2	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	65	0	0	47	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	1	2	2	0	0	0	0	3	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	461	3	7	498	0	3	0	8	5	0	9
Peak Hour Factor	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590	0.7590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	152	1	2	164	0	1	0	3	2	0	3
Total Analysis Volume [veh/h]	0	607	4	9	656	0	4	0	11	7	0	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.03	0.00	0.02	0.05	0.00	0.02
d_M, Delay for Movement [s/veh]	8.83	0.00	0.00	8.69	0.00	0.00	32.07	27.70	13.38	32.48	28.09	13.37
Movement LOS	A	A	A	A	A	A	D	D	B	D	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.02	0.02	0.02	0.17	0.17	0.17	0.24	0.24	0.24
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.38	0.38	0.38	4.16	4.16	4.16	6.05	6.05	6.05
d_A, Approach Delay [s/veh]	0.00			0.12			18.36			20.41		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	0.57											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 3: Locust Avenue at Casmalia Street

Control Type:	Signalized	Delay (sec / veh):	31.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name	Locust Avenue			Locust Avenue			Eastbound			Casmalia Street		
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	1	1	0	1	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Locust Avenue			Locust Avenue						Casmalia Street		
Base Volume Input [veh/h]	90	209	35	129	222	192	125	210	86	9	152	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	34	12	18	12	7	28	28	26	32	29	39	25
Site-Generated Trips [veh/h]	0	3	0	4	9	25	8	0	0	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	232	54	150	247	253	166	244	121	38	197	94
Peak Hour Factor	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	70	16	45	75	77	50	74	37	12	60	28
Total Analysis Volume [veh/h]	155	281	65	182	299	307	201	296	147	46	239	114
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	10	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	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	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	13	26	0	13	26	26	28	31	31	20	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	5	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	17	0	14	14	0	14	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	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No	No	No	No	
Maximum Recall	No	No		No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No		No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	41	41	9	41	57	13	21	34	4	12	12
g / C, Green / Cycle	0.10	0.45	0.45	0.10	0.45	0.64	0.14	0.23	0.38	0.04	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.09	0.10	0.16	0.19	0.11	0.16	0.09	0.03	0.10	0.10
s, saturation flow rate [veh/h]	1810	1900	1779	1810	1900	1615	1810	1900	1615	1810	1900	1699
c, Capacity [veh/h]	181	858	804	181	858	1031	257	438	605	73	244	218
d1, Uniform Delay [s]	39.86	14.92	14.95	40.50	16.06	7.27	37.25	31.57	19.35	42.54	37.84	37.99
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]	10.97	0.55	0.59	32.52	1.12	0.74	5.12	1.83	0.21	8.77	4.62	5.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.21	0.21	1.01	0.35	0.30	0.78	0.68	0.24	0.63	0.75	0.78
d, Delay for Lane Group [s/veh]	50.84	15.47	15.54	73.02	17.17	8.01	42.37	33.40	19.55	51.31	42.46	43.95
Lane Group LOS	D	B	B	F	B	A	D	C	B	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.88	2.24	2.14	5.58	4.10	2.54	4.57	5.96	2.09	1.17	4.14	3.93
50th-Percentile Queue Length [ft/ln]	96.92	56.09	53.61	139.46	102.48	63.56	114.15	148.89	52.37	29.37	103.62	98.31
95th-Percentile Queue Length [veh/ln]	6.98	4.04	3.86	9.47	7.38	4.58	8.07	9.96	3.77	2.11	7.46	7.08
95th-Percentile Queue Length [ft/ln]	174.45	100.96	96.51	236.81	184.46	114.40	201.76	248.95	94.27	52.87	186.51	176.96

Movement, Approach, & Intersection Results

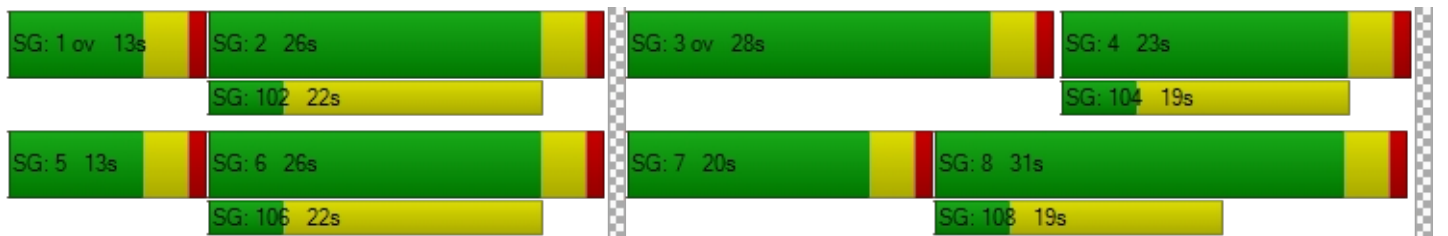
d_M, Delay for Movement [s/veh]	50.84	15.50	15.54	73.02	17.17	8.01	42.37	33.40	19.55	51.31	42.81	43.95
Movement LOS	D	B	B	F	B	A	D	C	B	D	D	D
d_A, Approach Delay [s/veh]	26.43			26.50			33.04			44.11		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	31.31											
Intersection LOS	C											
Intersection V/C	0.456											

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 Intersectio	2.375	2.571	2.673	2.362
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	600	422
d_b, Bicycle Delay [s]	25.69	25.69	22.05	28.01
I_b,int, Bicycle LOS Score for Intersection	1.973	2.860	2.622	1.889
Bicycle LOS	A	C	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 101: Locust Avenue at North Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	19.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.042

Intersection Setup

Name	Locust Avenue		Locust Avenue		Westbound	
Approach	Northbound		Southbound			
Lane Configuration	↩		↩		↩	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in 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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Locust Avenue		Locust Avenue		Westbound	
Base Volume Input [veh/h]	377	0	0	442	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	65	0	0	47	0	0
Site-Generated Trips [veh/h]	1	3	2	3	10	6
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]	458	3	2	510	10	6
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]	121	1	1	134	3	2
Total Analysis Volume [veh/h]	482	3	2	537	11	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.04	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.34	0.00	19.47	11.79
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.17	0.17
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.08	0.08	4.15	4.15
d_A, Approach Delay [s/veh]	0.00		0.03		16.76	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.29					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 102: Locust Avenue at South Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	20.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.101

Intersection Setup

Name	Locust Avenue		Locust Avenue		Westbound	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↬		↵		↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in 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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Locust Avenue		Locust Avenue		Westbound	
Base Volume Input [veh/h]	377	0	0	442	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	65	0	0	47	0	0
Site-Generated Trips [veh/h]	4	8	0	13	25	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	461	8	0	520	25	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	121	2	0	137	7	0
Total Analysis Volume [veh/h]	485	8	0	547	26	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.10	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.36	0.00	20.61	12.79
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.33	0.33
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	8.36	8.36
d_A, Approach Delay [s/veh]	0.00		0.00		20.61	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.50					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 103: West Coast Boulevard at Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	West Coast Boulevard		West Coast Boulevard		West Coast Boulevard	
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	West Coast Boulevard		West Coast Boulevard		West Coast Boulevard	
Base Volume Input [veh/h]	0	0	7	0	0	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	7	3	0	5
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	2	1	0	1
Total Analysis Volume [veh/h]	9	0	7	3	0	5
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	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.61	8.39	0.00	0.00	7.24	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.68	0.68	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.61		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.23					
Intersection LOS	A					

APPENDIX D-6

INTERSECTION ANALYSIS
WORKSHEETS –
OPENING YEAR 2025 CUMULATIVE PLUS
PROJECT CONDITIONS WITH TRAFFIC
SIGNAL AT LOCUST AND CASA GRANDE

Option 1: Traffic Signal

Number	1					
Intersection	Locust Avenue at Casa Grande Drive					
Control Type	Signalized					
Analysis Method	HCM 7th Edition					
Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Base Volume Input [veh/h]	115	262	390	17	21	250
Total Analysis Volume [veh/h]	168	447	669	25	31	363

Intersection Settings

Cycle Length [s]	90					
Active Pattern	Pattern 1					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Semi-actuated					
Lost time [s]	0.00					
Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	10	10	0	5	0
Maximum Green [s]	0	59	59	0	23	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	63	63	0	27	0
Walk [s]	0	5	5	0	5	0
Pedestrian Clearance [s]	0	10	10	0	7	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.66	0.66	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.70	0.41	0.02	0.25
so, Base Saturation Flow per Lane [pc/h/lane]	1900	1900	1900	1900
Arrival type	3	3	3	
s, saturation flow rate [veh/h]	884	1699	1629	1454
c, Capacity [veh/h]	630	1114	416	371
X, volume / capacity	0.98	0.62	0.07	0.98
d, Delay for Lane Group [s/veh]	52.47	11.65	25.50	70.78

Lane Group LOS	D	B	C	E
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	18.01	7.53	0.51	11.48
50th-Percentile Queue Length [ft/ln]	450.33	188.31	12.64	287.07
95th-Percentile Queue Length [veh/ln]	24.97	12.03	0.91	17.04
95th-Percentile Queue Length [ft/ln]	624.34	300.83	22.76	426.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.47	52.47	11.65	11.65	25.50	70.78
Movement LOS	D	D	B	B	C	E
Critical Movement	No	No	No	No	No	Yes
d_A, Approach Delay [s/veh]	52.47		11.65		67.22	
Approach LOS	D		B		E	
d_I, Intersection Delay [s/veh]	39.25					
Intersection LOS	D					
Intersection V/C	0.946					

Option 1: Traffic Signal

Number	1					
Intersection	Locust Avenue at Casa Grande Drive					
Control Type	Signalized					
Analysis Method	HCM 7th Edition					
Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Base Volume Input [veh/h]	206	175	167	97	92	280
Total Analysis Volume [veh/h]	288	349	303	136	129	392

Intersection Settings

Cycle Length [s]	90					
Active Pattern	Pattern 1					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Semi-actuated					
Lost time [s]	0.00					
Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	10	10	0	5	0
Maximum Green [s]	0	123	123	0	69	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	61	61	0	29	0
Walk [s]	0	5	5	0	5	0
Pedestrian Clearance [s]	0	10	10	0	7	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.63	0.63	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.68	0.27	0.08	0.27
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900
Arrival type	3	3	3	
s, saturation flow rate [veh/h]	932	1621	1629	1454
c, Capacity [veh/h]	649	1027	452	404
X, volume / capacity	0.98	0.43	0.29	0.97
d, Delay for Lane Group [s/veh]	55.18	9.60	25.83	47.13

Lane Group LOS	E	A	C	D
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	18.94	4.15	2.17	9.82
50th-Percentile Queue Length [ft/ln]	473.42	103.84	54.21	245.60
95th-Percentile Queue Length [veh/ln]	26.07	7.48	3.90	14.96
95th-Percentile Queue Length [ft/ln]	651.84	186.91	97.58	374.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.18	55.18	9.60	9.60	25.83	47.13
Movement LOS	E	E	A	A	C	D
Critical Movement	No	Yes	No	No	No	No
d_A, Approach Delay [s/veh]	55.18		9.60		41.85	
Approach LOS	E		A		D	
d_I, Intersection Delay [s/veh]	38.30					
Intersection LOS	D					
Intersection V/C	0.953					

APPENDIX E

CUMULATIVE PROJECTS INFORMATION

TOTAL CUMULATIVE PROJECTS TRAFFIC

AM Peak Hour		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Locust Avenue at Casa Grande Drive	0	44	0	0	57	0	0	0	0	0	0	0
2	Locust Avenue at West Coast Boulevard	0	44	0	0	57	0	0	0	0	0	0	0
3	Locust Avenue at Casmalia Street	33	6	18	15	12	30	30	15	36	14	8	8

PM Peak Hour		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Locust Avenue at Casa Grande Drive	0	65	0	0	47	0	0	0	0	0	0	0
2	Locust Avenue at West Coast Boulevard	0	65	0	0	47	0	0	0	0	0	0	0
3	Locust Avenue at Casmalia Street	34	12	18	12	7	28	28	12	32	29	25	25

APPENDIX F

TRAFFIC SIGNAL WARRANT ANALYSIS
WORKSHEETS

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Locust Avenue NB SB # OF APPROACH LANES:

MINOR STREET: Casa Grande Drive EB WB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: EX
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			350	140		525	70		280	112		420	56			
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	784	271	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	645	372	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														
	1,429	643	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

10/25/23
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Locust Avenue NB SB # OF APPROACH LANES:

MINOR STREET: Casa Grande Drive EB WB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: OY 2025
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			350	140		525	70		280	112		420	56			
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	816	282	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	671	387	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														
	1,487	669	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

10/25/23
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Locust Avenue NB SB # OF APPROACH LANES:

MINOR STREET: Casa Grande Drive EB WB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: OY 2025 WP
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			350	140		525	70		280	112		420	56			
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	836	282	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	687	387	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														
	1,523	669	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

10/25/23
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Locust Avenue NB SB # OF APPROACH LANES:

MINOR STREET: Casa Grande Drive EB WB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: OY 2025 CUM
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			350	140		525	70		280	112		420	56			
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	917	282	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	783	387	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														
	1,700	669	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

10/25/23
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Locust Avenue NB SB # OF APPROACH LANES:

MINOR STREET: Casa Grande Drive EB WB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: OY 2025 CUM WP
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			350	140		525	70		280	112		420	56			
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	937	282	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	799	387	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														
	1,736	669	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

10/25/23
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2000 MUTCD)

MAJOR STREET: Locust Avenue NB SB # OF APPROACH LANES:

MINOR STREET: West Coast Boulevard EB WB # OF APPROACH LANES:

CITY, STATE: Rialto, CA

COMMENTS: OY 2025 CUM WP
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			350	105		525	53		280	84		420	42			
06:00 AM TO 07:00 AM	0	0														
07:00 AM TO 08:00 AM	0	0														
08:00 AM TO 09:00 AM	0	0														
09:00 AM TO 10:00 AM	1,244	18	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	969	14	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														
	2,213	32	2	0	0	2	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

10/25/23
Kimley-Horn and Associates