



**Riverside Avenue Industrial
Building Transportation Impact
Analysis – DRAFT**

City of Rialto

June 20, 2023

Prepared for:

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RIVERSIDE AVENUE INDUSTRIAL BUILDING TRANSPORTATION IMPACT ANALYSIS – DRAFT

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Executive Summary

The proposed Riverside Avenue Industrial Building (Project) is located at 11190 S. Riverside Avenue on the west side of Riverside Avenue south of Santa Ana Avenue. The Project consists of a 219,500 square-foot warehouse building in the southern part of the City of Rialto. The Project is anticipated to be developed in 2024 in one phase. Access to the Project site would be provided by two driveways on Riverside Avenue. The existing and proposed zoning designation is General Industrial Zone.

The total trip generation for the site is 38 AM peak hour trips, 40 PM peak hour trips, and 375 daily trips based on the Institute of Transportation Engineers (ITE) Warehousing trip rates. However, due to the expected operation of the proposed land use, a portion of the driveway trips would be large trucks; therefore, the City has identified passenger car equivalent (PCE) factors to be applied to truck trips to account for the larger impact of trucks on traffic flow. Consequently, the Project would generate 63 AM peak hour PCE trips, 65 PM peak hour PCE trips, and 629 daily PCE trips for use in the roadway level of service (LOS) analysis.

Six study intersections were included in the roadway LOS analysis, and potential Project effects were evaluated under Existing plus Ambient Growth conditions representing the opening year of the Project. Under Existing plus Ambient Growth conditions, the study intersections would operate at acceptable LOS C or better, and the Project would have no adverse effects based on the City's level of service standards.

Six cumulative development projects were identified in the study area. Under Existing plus Ambient plus Project plus Cumulative conditions, the study intersections would operate at acceptable LOS D or better during the peak hours.

The study intersections would operate at acceptable levels of service under opening year conditions and no off-site operational improvements are required.

Senate Bill 743 (SB 743) has established Vehicle Miles Traveled (VMT) as the metric for identifying California Environmental Quality Act (CEQA) transportation impacts. The City of Rialto has not adopted conditions for conducting CEQA VMT analysis; therefore, the methodology adopted by the County of San Bernardino were followed for this analysis. San Bernardino County Transportation Authority (SBCTA) uses an online tool to evaluate whether proposed development projects would generate VMT impacts. The baseline for the City is 16.0 VMT, and the Project VMT would need to be at or below 15 percent below the baseline. Therefore, the Project VMT would need to be below the threshold of 13.6 VMT per employee to result in a finding of no significant impact. The SBCTA online VMT Screening tool specifies that the average VMT per employee for the Project site is 19.7. The Project VMT is not below the VMT threshold; therefore, a finding of no significant impact cannot be made.



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Use of feasible transportation demand management (TDM) measures to reduce trip lengths or the number of trips generated, such as teleworking, subsidized bus passes, or providing bike lockers and showers on-site, or fair share payment toward a regional program if available could be deemed acceptable mitigation measures.

There are no concerns with on-site circulation. Driveways, aisles, and parking spaces have been provided in accordance with applicable agency standards and are of sufficient size and configuration to provide good on-site circulation and access to parking. The north driveway on Riverside Avenue provides a 45-foot width and the south driveway provides a 40-foot width. Required sight lines will be maintained at project driveways.



1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has performed a traffic impact analysis for the proposed Riverside Avenue Industrial Building (Project). The Project consists of a 219,500 square-foot warehouse building located on the west side of Riverside Avenue at 11190 Riverside Avenue in the City of Rialto. This report summarizes the analysis of the Project consistent with the Traffic Impact Analysis (TIA) guidelines contained in the City's *Traffic Impact Analysis Report Guidelines and Requirements* (December 2013). The purpose and objective of this TIA is to evaluate potential operational impacts at local intersections and, if necessary, to identify potential off-site improvements to enhance operations consistent with the City's General Plan. The TIA contains information to be included in the environmental documents being prepared for the Project.

1.1 PROJECT DESCRIPTION

The Project site is located on the west side of Riverside Avenue approximately 600 feet north of Jurupa Avenue. **Figure 1-1** illustrates the Project location and shows the study intersections. The Project is located within the Agua Mansa Industrial Corridor Specific Plan area. The Project would not change the current General Plan Land Use of Industrial nor the current zoning designation of General Industrial Zone. The City Case Number is 2022-0060, and the EIR Number is 2022-0055. The Project site is not within another agency Sphere of Influence but is within one mile of the City of Colton boundary.

The Project consists of a 219,500 square-foot industrial warehouse building situated on approximately 10 acres. The land use would be a standard warehouse category. The Project would provide two driveways on Riverside Avenue. Truck traffic would access the site from both driveways. The site plan is illustrated in **Figure 1-2**.

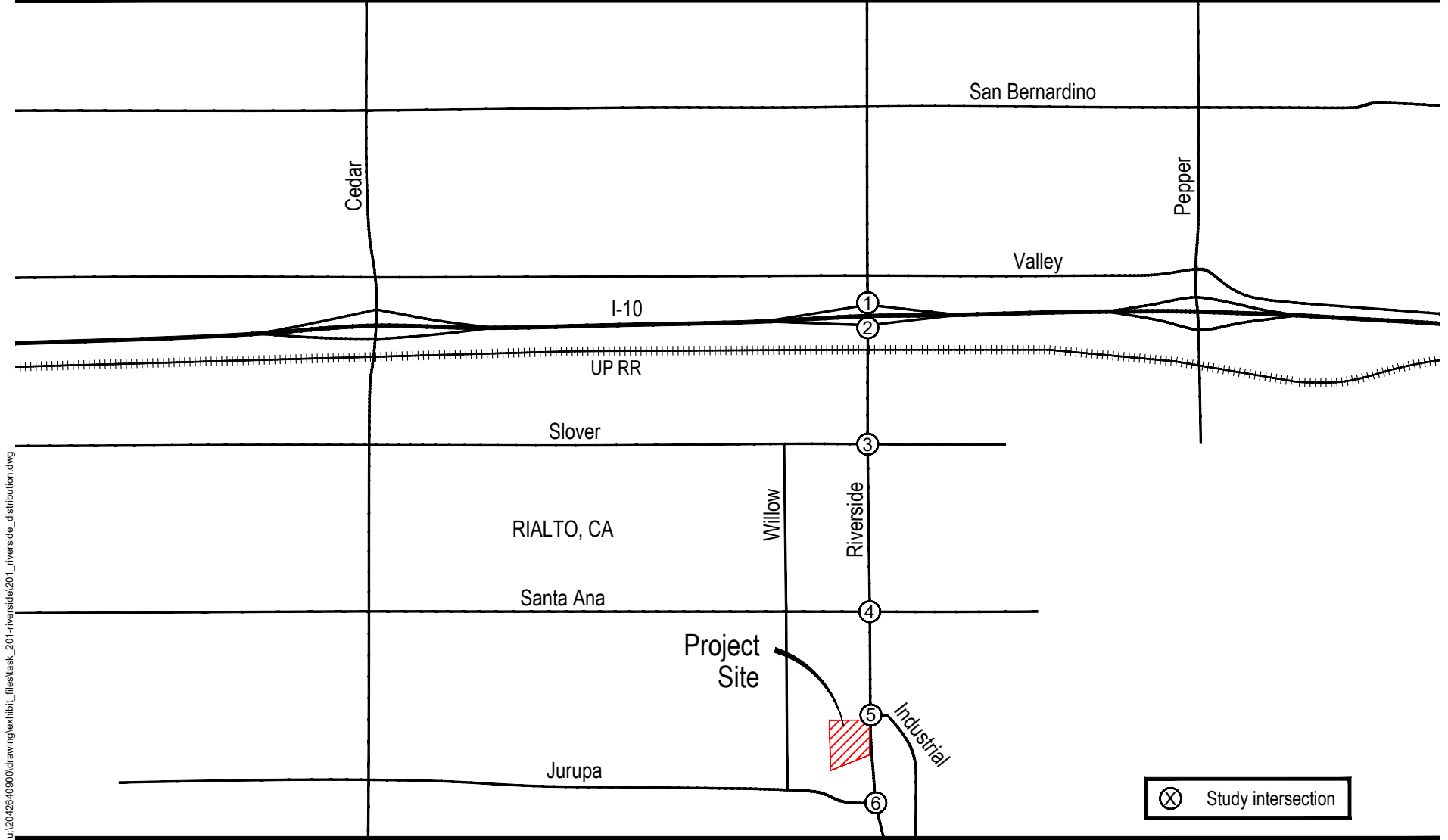
The previous land use on the site was a large vehicle paint and repair business. The Project site is bounded by industrial development and vacant parcels. Interstate 10 (I-10) is located approximately 1.25 miles north of the site.

The Project would be developed in one phase and is anticipated to open in 2024. This analysis includes the following scenarios:

1. Existing Conditions
2. Existing Plus Ambient Growth
3. Existing Plus Ambient Growth Plus Project
4. Cumulative Conditions (Existing Plus Ambient Growth Plus Project Plus Cumulative Projects)



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Figure 1-1
Project Location and Study Area

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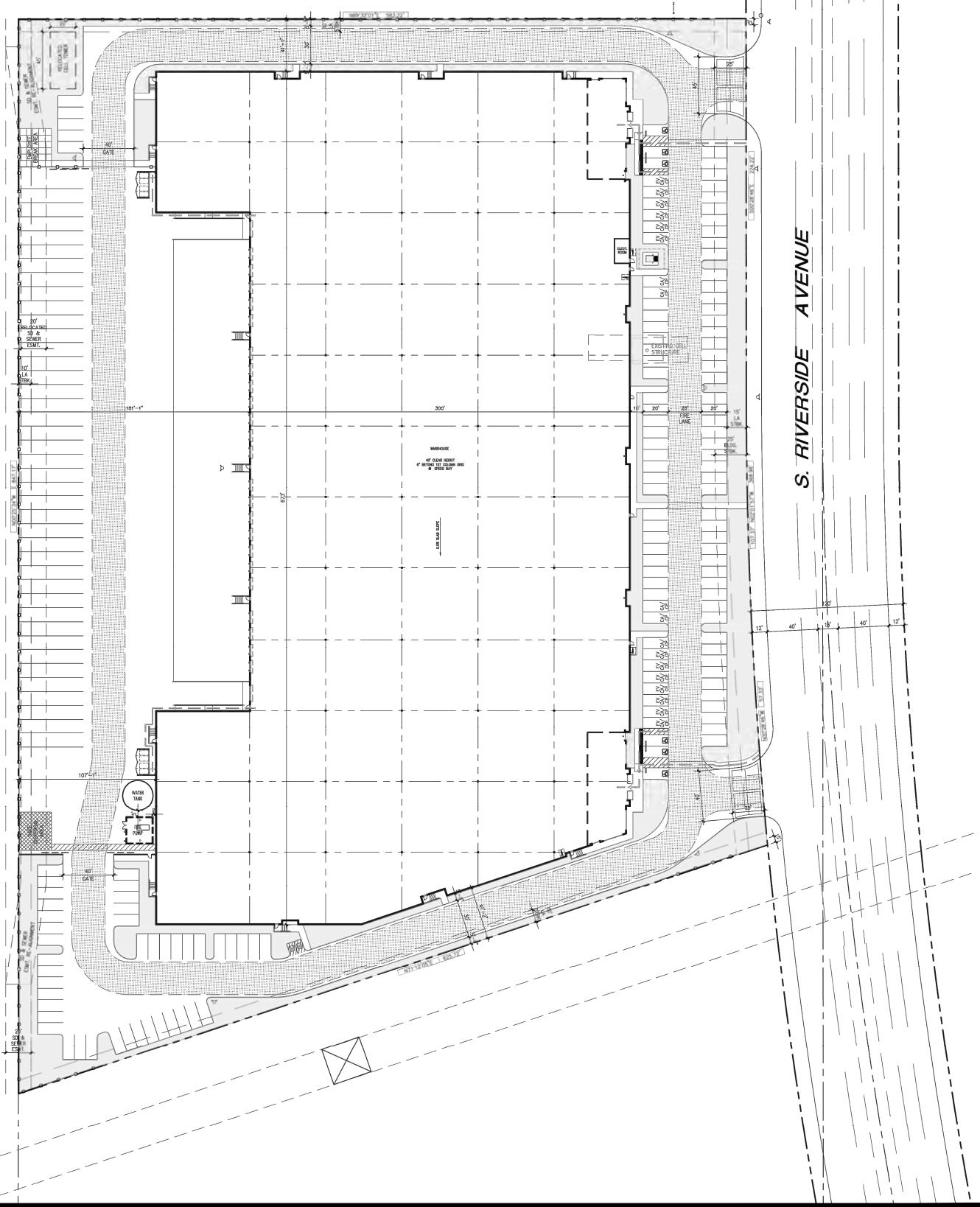


Figure 1-2
Proposed Site Plan

2.0 AREA CONDITIONS

This Chapter identifies existing transportation conditions in the general study area. Existing traffic volumes are presented, and existing levels of service are summarized.

2.1 STUDY AREA

Based on the proposed warehouse land use and location, the majority of trips are expected to be oriented toward the I-10 Freeway. Project traffic is anticipated to travel primarily on Riverside Avenue to I-10. Therefore, the study area was defined to include intersections generally between the Project site and the I-10 interchange at Riverside Avenue. The study intersections include:

	<u>Traffic Control</u>	<u>Jurisdiction</u>
1. Riverside Avenue and I-10 WB Ramps	Signal	Rialto/Caltrans
2. Riverside Avenue and I-10 EB Ramps	Signal	Rialto/Caltrans
3. Riverside Avenue and Slover Avenue	Signal	Rialto
4. Riverside Avenue and Santa Ana Avenue	Signal	Rialto
5. Riverside Avenue and Industrial Drive	Side Street Stop	Rialto
6. Riverside Avenue and Jurupa Avenue	Signal	Rialto

2.2 EXISTING TRAFFIC CONTROLS

Figure 2-1 shows the existing lane geometrics and traffic controls at the study intersections.

2.3 EXISTING VOLUMES

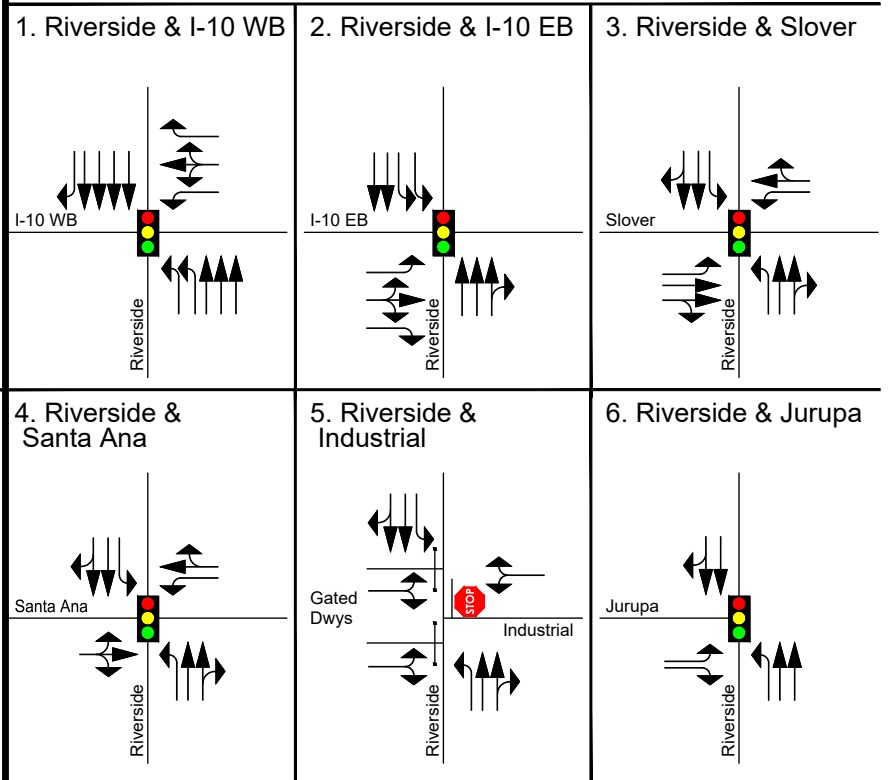
Peak hour intersection turning movement counts at the study intersections and 24-hour mid-block counts on Riverside Avenue were collected in November 2022. Count data is included in **Appendix A**.

Figure 2-2 illustrates the existing traffic volumes in the study area.

2.4 EXISTING DELAY AND LEVEL OF SERVICE

Intersection and roadway analyses have been prepared consistent with the methodologies prescribed in the City’s TIA guidelines. Methodology outlined in the Highway Capacity Manual, Sixth Edition (HCM 6) produces estimates of average vehicle delay as a function of intersection capacity and the volumes of traffic passing through the intersections, and is the methodology specified in the City’s guidelines. From this a corresponding level of service (LOS) is defined. Traffic LOS is designated “A” through “F” with LOS A representing free flow conditions and LOS F representing severe traffic congestion. **Table 2-1** summarizes the ranges of vehicle delay that correspond to LOS A through LOS F for intersections.

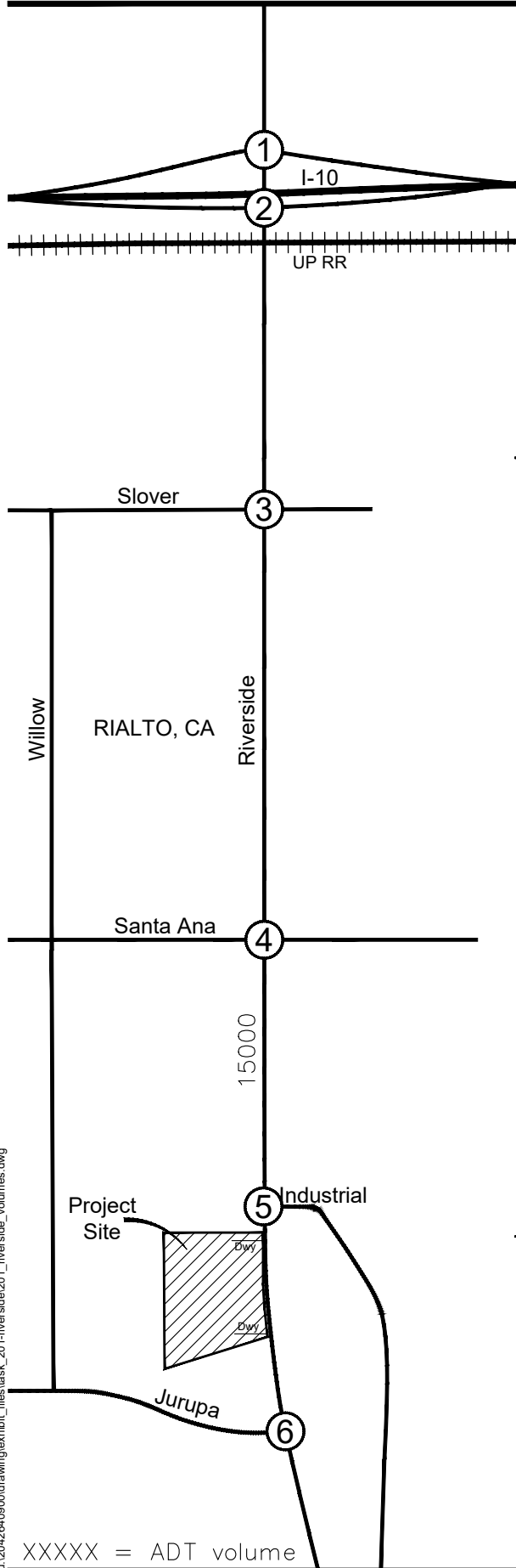




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Figure 2-1
 Study Intersections Lane Geometrics and Traffic Controls



AM Peak Hour

<p>1. Riverside & I-10 WB</p> <p>I-10 WB: 616 (left), 896 (right), 354 (up), 363 (down), 1 (right)</p> <p>Riverside: 132 (left), 680 (right)</p>	<p>2. Riverside & I-10 EB</p> <p>I-10 EB: 785 (left), 473 (right), 313 (up), 175 (down)</p> <p>Riverside: 511 (left), 333 (right)</p>	<p>3. Riverside & Slover</p> <p>Slover: 405 (left), 495 (right), 20 (up), 13 (down), 42 (right)</p> <p>Riverside: 287 (left), 57 (right), 30 (up), 44 (down), 484 (right), 11 (left)</p>
<p>4. Riverside & Santa Ana</p> <p>Santa Ana: 33 (left), 408 (right), 16 (up), 43 (down), 17 (right), 20 (left)</p> <p>Riverside: 80 (left), 12 (right), 25 (up), 23 (down), 480 (right), 20 (left)</p>	<p>5. Riverside & Industrial</p> <p>Industrial: 397 (left), 35 (right), 26 (up), 15 (down)</p> <p>Riverside: 475 (left), 30 (right)</p>	<p>6. Riverside & Jurupa</p> <p>Jurupa: 30 (left), 363 (right), 24 (up), 47 (down)</p> <p>Riverside: 43 (left), 465 (right)</p>

PM Peak Hour

<p>1. Riverside & I-10 WB</p> <p>I-10 WB: 422 (left), 782 (right), 465 (up), 263 (down), 2 (right)</p> <p>Riverside: 200 (left), 1282 (right)</p>	<p>2. Riverside & I-10 EB</p> <p>I-10 EB: 617 (left), 423 (right), 558 (up), 116 (down)</p> <p>Riverside: 927 (left), 469 (right)</p>	<p>3. Riverside & Slover</p> <p>Slover: 298 (left), 404 (right), 16 (up), 135 (down), 12 (right), 11 (left)</p> <p>Riverside: 294 (left), 191 (right), 49 (up), 53 (down), 869 (right), 5 (left)</p>
<p>4. Riverside & Santa Ana</p> <p>Santa Ana: 48 (left), 402 (right), 20 (up), 54 (down), 19 (right), 25 (left)</p> <p>Riverside: 112 (left), 10 (right), 25 (up), 38 (down), 738 (right), 19 (left)</p>	<p>5. Riverside & Industrial</p> <p>Industrial: 396 (left), 35 (right), 70 (up), 28 (down)</p> <p>Riverside: 670 (left), 9 (right)</p>	<p>6. Riverside & Jurupa</p> <p>Jurupa: 41 (left), 383 (right), 39 (up), 83 (down)</p> <p>Riverside: 46 (left), 640 (right)</p>

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XXXXX = ADT volume

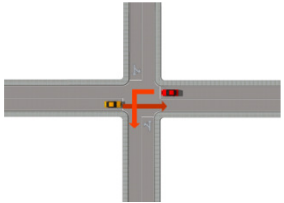
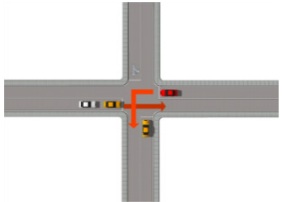
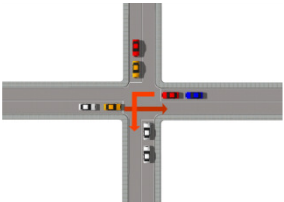
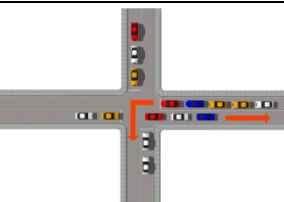
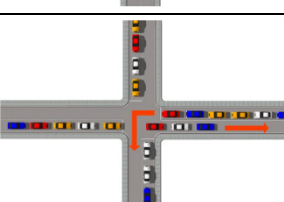
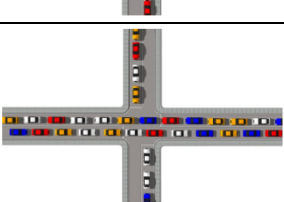


Figure 2-2
 Existing Peak Hour Volumes

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Area Conditions
June 2023

Table 2-1 Level of Service Descriptions for Signalized and Unsignalized Intersections

LOS	Traffic Flow Description		Signal Control Delay (sec/veh)	Stop Control Delay (sec/veh)
A		Minimal or no vehicle delay	≤ 10	≤ 10
B		Slight delay to vehicles	> 10 – 20	> 10 – 15
C		Moderate vehicle delays, traffic flow remains stable	> 20 – 35	> 15 – 25
D		More extensive delays at intersections	> 35 – 55	> 25 – 35
E		Long queues create lengthy delays	> 55 – 80	> 35 – 50
F		Severe delays and congestion	> 80	> 50

Source: HCM 6 Motorized Vehicle Mode
Delay = average seconds of delay per vehicle



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Area Conditions
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For the study intersections, the peak hour is the accepted time period used for impact evaluation. Synchro software based on HCM 6 methodology was used to analyze intersection delay and LOS. At the signalized study intersection, the reported delay is the average for the entire intersection. At the stop-controlled study intersection, the reported delay is based on the delay experienced by the side street traffic controlled by a stop sign since the through movements on the main street do not experience delay.

Table 2-2 summarizes the delay and LOS for the study intersections during the AM and PM peak hours based on the existing volumes and existing lane configurations (actual delay calculations are included in **Appendix B**). As this table shows, the existing LOS at the study intersections is at an acceptable LOS C or better during the AM and PM peak hours.

Table 2-2 Existing Intersection Delay and Level of Service Summary

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. Riverside & I-10 WB	Signal	11.7 sec	B	12.5 sec	B
2. Riverside & I-10 EB	Signal	15.9 sec	B	26.8 sec	C
3. Riverside & Slover	Signal	20.8 sec	C	19.1 sec	B
4. Riverside & Santa Ana	Signal	9.3 sec	A	12.3 sec	B
5. Riverside & Industrial	SSS	12.2 sec	B	14.0 sec	B
6. Riverside & Jurupa	Signal	5.6 sec	A	6.2 sec	A
SSS = side street stop (delay value is for highest stop-controlled movement) LOS = Level of service sec = seconds of delay					

The delay analysis parameters specified by the City of Rialto are summarized in **Table 2-3**.

The adjacent industrial property on the north side of the Project has two gated driveways on Riverside Avenue, and the southern driveway is within 50 feet of the Project’s northern driveway. The driveways at this adjacent property were counted to determine the Project’s potential impact on their operation. However, the AM and PM peak hour counts did not observe any traffic entering or exiting the gated driveways; therefore, the driveway operations during the peak hours are not included in the intersection operation analysis. Count data at the driveways is included in Appendix B.

Roadway link analysis has also been performed for Riverside Avenue by comparing the average daily traffic (ADT) volume to the Roadway Capacity Table (Exhibit D) in the City’s TIA guidelines. Roadway volume/capacity (V/C) ratios higher than 1.0 are to be corrected by the opening date of the Project. The daily volume on Riverside Avenue in the vicinity of the Project site is 15,000. Riverside Avenue is designated as Modified Arterial I south of Slover Avenue. The LOS E capacity of a Modified Arterial I is 33,000 ADT. The existing V/C ratio (15,000 ADT/33,000 ADT) for Riverside Avenue is 0.45. The roadway is operating at LOS C or better under existing conditions, and no correction measures are required.



Area Conditions
June 2023

Table 2-3 Intersection Performance Criteria

<p>Delay Methodology</p> <p>Calculation Methodology Level of service based on “average vehicle delay” calculated as follows:</p> <ul style="list-style-type: none">- Synchro/HCM delay-based intersection methodology for traffic signals- HCM 6 delay-based intersection methodology for stop sign control <p>Performance Standard Minimum LOS standards defined as follows:</p> <ul style="list-style-type: none">- Signalized Intersections: LOS D- Unsignalized Intersections: Average delay not to exceed 120 seconds for any vehicular movement
<p>Level of Service Standards</p> <p>The City of Rialto 2010 General Plan identifies LOS D or better at signalized intersections during the morning and evening peak hours, with the exception of Riverside Avenue south of the Metrolink tracks which can operate at LOS E, and require new development to mitigate traffic impacts that degrade the LOS below that level.</p> <p>Operational improvements would be required at signalized study intersections if the Project would result in either of the following conditions:</p> <ul style="list-style-type: none">A. Cause the intersection LOS to degrade from an acceptable LOS D or better to an unacceptable LOS E or FB. Addition of project traffic causes the peak hour delay to increase as follows:<ul style="list-style-type: none">o LOS A/B by 10.0 secondso LOS C by 8.0 secondso LOS D by 5.0 secondso LOS E by 2.0 secondso LOS F by 1.0 second <p>Operational improvements would be required at unsignalized study intersections if the Project would increase the average delay above 120 seconds for any vehicular movement.</p>



Area Conditions
June 2023

2.5 GENERAL PLAN CIRCULATION ELEMENT

Figure 2-3 illustrates the General Plan Circulation Element in the study area. Riverside Avenue is a Modified Major Arterial II (120-foot ROW) north of Slover Avenue and a Modified Arterial I (104-foot ROW) south of Slover Avenue in the Project vicinity. Slover Avenue is designated a Major Arterial (120-foot ROW). Santa Ana Avenue and Jurupa Avenue are designated Secondary Arterial (88-foot ROW). I-10 interchanges are located north of the site at Riverside Avenue.

Slover Avenue, Santa Ana Avenue, and Riverside Avenue are designated truck routes on the City's Truck Routes map (see Truck Routing Plan in Appendix D).

2.6 TRANSIT AND ACTIVE TRANSPORTATION

No local bus routes serve the study area. The study area is covered by the Omnitrans OmniRide reservation-based on-demand shared transit service.

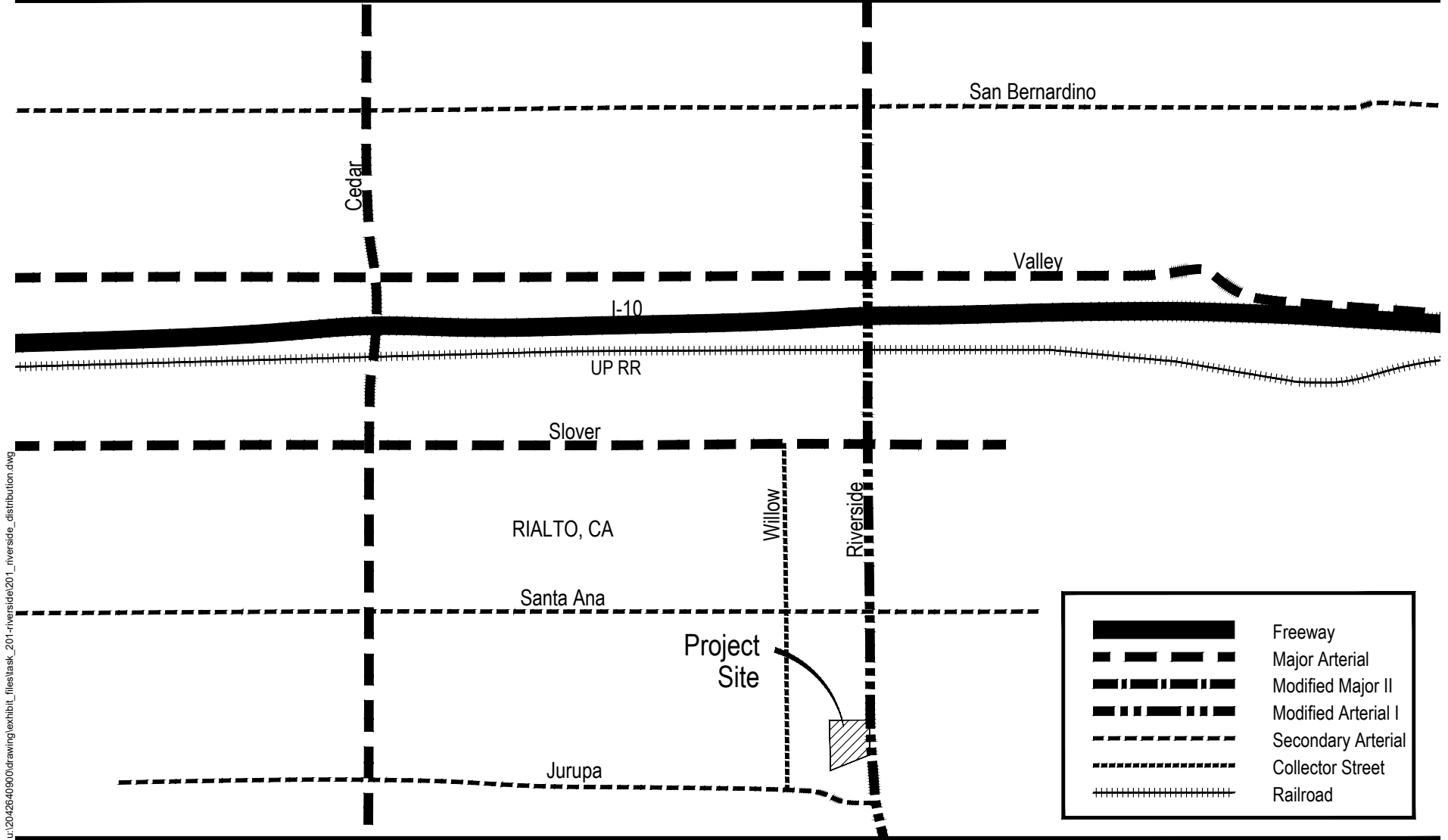
Currently, there are no bicycle facilities on Riverside Avenue or Santa Ana Avenue; however, Class II bike lanes are designated along Riverside Avenue and Santa Ana Avenue in the vicinity on the General Plan Bicycle Routes map.

Sidewalks are not provided along the majority of Riverside Avenue in the Project vicinity. One segment of sidewalk exists on the east side of the street beginning approximately 380 feet south of Cameron Way and continuing north and another on the west side north of Santa Ana Avenue. The Project will provide a sidewalk along the Project frontage on the west side of Riverside Avenue.

On-street parking is not allowed on Riverside Avenue in vicinity of the site. The posted speed limit on Riverside Avenue is 50 mph north of Santa Ana Avenue and 55 mph south of Santa Ana Avenue.



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	Freeway
	Major Arterial
	Modified Major II
	Modified Arterial I
	Secondary Arterial
	Collector Street
	Railroad

Figure 2-3
 General Plan Street Classifications

3.0 PROJECTED FUTURE TRAFFIC

This chapter summarizes the trip generation characteristics of the proposed Project and presents the distribution and assignment of Project trips to the study area street system.

3.1 PROJECT TRAFFIC

3.1.1 Project Trip Generation

As discussed in Chapter 1.0, the Project consists of a 219,500 square-foot warehouse building. The trip rates applied to the Project were obtained from the Warehousing category (Category 150) found in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. Trip rates per total vehicles are provided, and the City's estimate of 40 percent trucks was applied to the total trip generation per the City's TIA guidelines. The Project would generate 375 daily total driveway trips, of which 38 would be generated during the AM peak hour and 40 during the PM peak hour.

The City's TIA guidelines also provide estimates for the truck mix for warehousing uses. Of the truck trips, approximately 70 percent are estimated to be 4-axle trucks, 28 percent are estimated to be 3-axle trucks, and 2 percent are estimated to be 2-axle trucks. Passenger car equivalent (PCE) conversion rates were applied to the truck estimates in accordance with the San Bernardino CMP.

Due to the nature of the proposed land use, no pass-by trip allowance was applied to the Project trips generation estimates. Furthermore, no credit for existing uses on-site was applied to the trip generation estimates to provide a conservative evaluation.

Table 3-1 summarizes the peak hour and daily trip rates and the resulting trip generation for the proposed Project. As this table shows, the Project would generate 63 AM peak hour PCE trips, 65 PM peak hour PCE trips, and 629 daily PCE trips.

3.1.2 Trip Distribution and Assignment

The passenger vehicle and truck trips have different distribution characteristics. The majority of truck trips are expected to travel on I-10 with 45 percent oriented toward the west and 45 percent toward the east on I-10. Approximately 5 percent of the truck trips are expected to travel on Riverside Avenue south of Jurupa Avenue, and approximately 5 percent are expected to travel toward the west on Santa Ana Avenue. Passenger vehicles are expected to distribute to City streets as well as on I-10 with approximately half of passenger vehicle trips on the freeway. **Figure 3-1** illustrates the passenger vehicle and truck trip distribution.



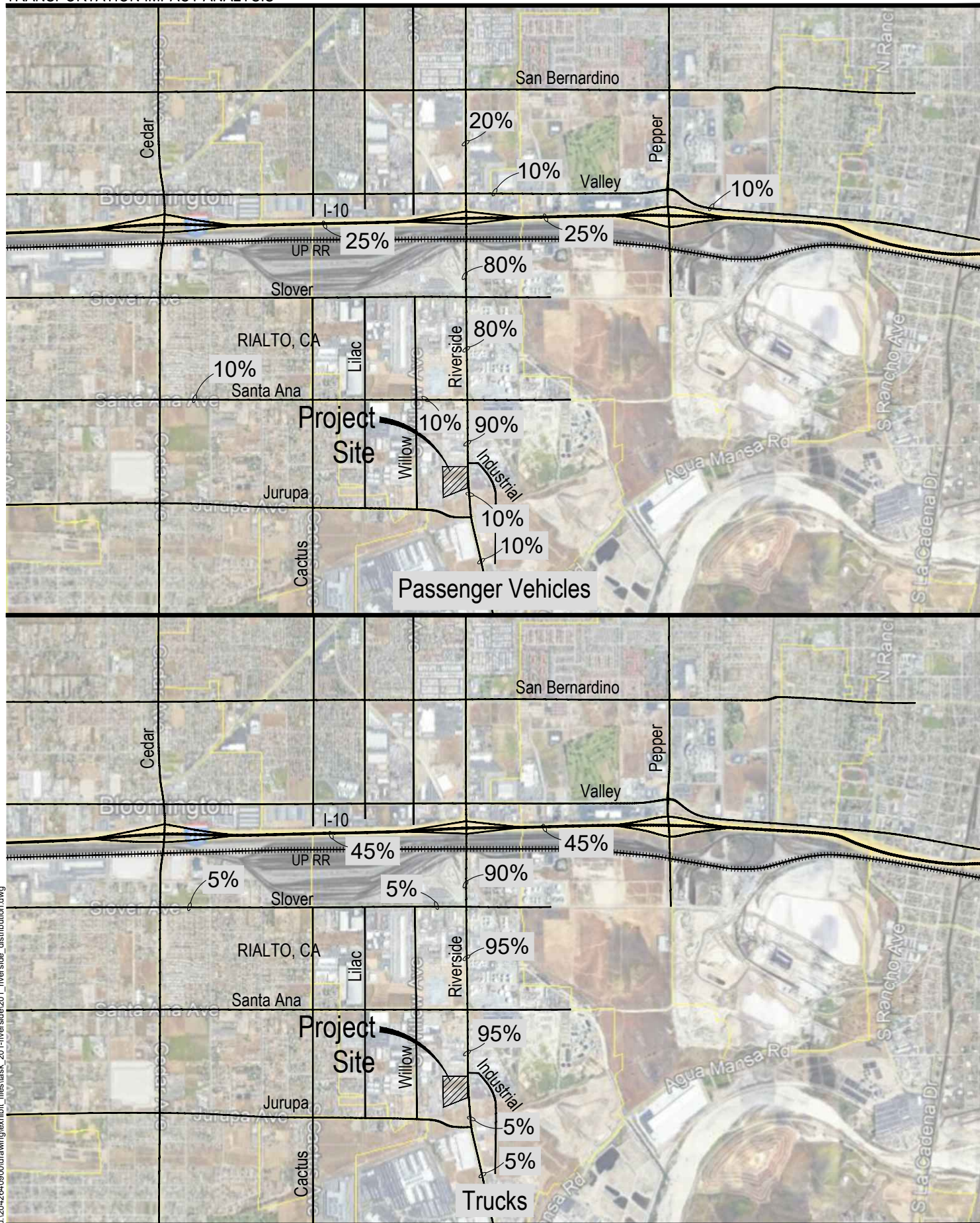
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Projected Future Traffic
June 2023

Table 3-1 Project Trip Generation Summary

Land Use	Amount	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Warehouse								
Total Driveway Trips	219.5 TSF	29	9	38	11	29	40	375
<i>Passenger Vehicle Trips</i> ²		17	5	22	7	17	24	225
<i>Truck Trips</i> ³		12	4	15	4	12	16	150
Passenger Car Equivalent (PCE) Estimates								
Trucks								
4-axle (3.0 PCE)		24	9	33	9	24	33	315
3-axle (2.0 PCE)		6	2	8	2	6	8	84
2-axle (1.5 PCE)		0	0	0	0	0	0	5
Passenger Vehicles		17	5	22	7	17	24	225
Total Truck PCE + Passenger Vehicle Trips		47	16	63	18	47	65	629
Trip Rates								
Warehousing ¹	TSF							
Total Vehicles		0.13	0.04	0.17	0.05	0.13	0.18	1.71
Source:								
¹ Warehousing – ITE Trip Generation, 11th Edition Category 150								
² Passenger vehicles = 60% of total driveway trips								
³ Trucks = 40% of total driveway trips: 70% 4-axle, 28% 3-axle, 2% 2-axle								
ADT = Average daily traffic TSF = Thousand square feet PCE = Passenger car equivalents								





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Figure 3-1
 Project Trip Distribution

Projected Future Traffic
June 2023

The Project peak hour passenger vehicle and truck PCE trips were assigned to the study intersections based on the distribution patterns presented above. **Figure 3-2** illustrates the total peak hour PCE trips at the study intersections. Separate passenger vehicle and truck PCE trip estimates are provided in **Appendix C**.

3.2 EXISTING PLUS BACKGROUND GROWTH PLUS PROJECT

3.2.1 Ambient Growth

The opening year for the Project is anticipated to be 2024. To obtain 2024 background volumes, an ambient growth rate of one percent per year, approved by City staff, was added to the 2022 peak hour intersection volumes for a total increase of two percent to produce Existing plus Ambient Growth background volumes. The peak hour Existing plus Ambient Growth volumes are illustrated in **Figure 3-3**.

Table 3-2 summarizes the Existing plus Ambient Growth peak hour intersection delay and LOS for the study intersections assuming existing intersection traffic control and lane geometrics. As this table shows, the study intersections would continue to operate at acceptable LOS C or better during the AM and PM peak hours. Delay calculations are included in **Appendix B**.

Table 3-2 Existing Plus Ambient Growth Intersection Delay and LOS Summary

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. Riverside & I-10 WB	Signal	12.0 sec	B	12.7 sec	B
2. Riverside & I-10 EB	Signal	16.3 sec	B	28.5 sec	C
3. Riverside & Slover	Signal	21.4 sec	C	19.5 sec	B
4. Riverside & Santa Ana	Signal	9.4 sec	A	12.4 sec	B
5. Riverside & Industrial	SSS	12.2 sec	B	14.2 sec	B
6. Riverside & Jurupa	Signal	5.6 sec	A	6.2 sec	A
LOS = Level of service SSS = side street stop (delay value is for highest stop-controlled movement) sec = seconds of delay					

3.2.2 Existing Plus Ambient Growth Plus Project

The Project peak hour PCE trips presented above were added to the Existing plus Ambient Growth peak hour volumes to produce Existing plus Ambient plus Project volumes under opening year (2024) conditions. The AM and PM peak hour Existing plus Ambient plus Project volumes are illustrated in **Figure 3-4**.





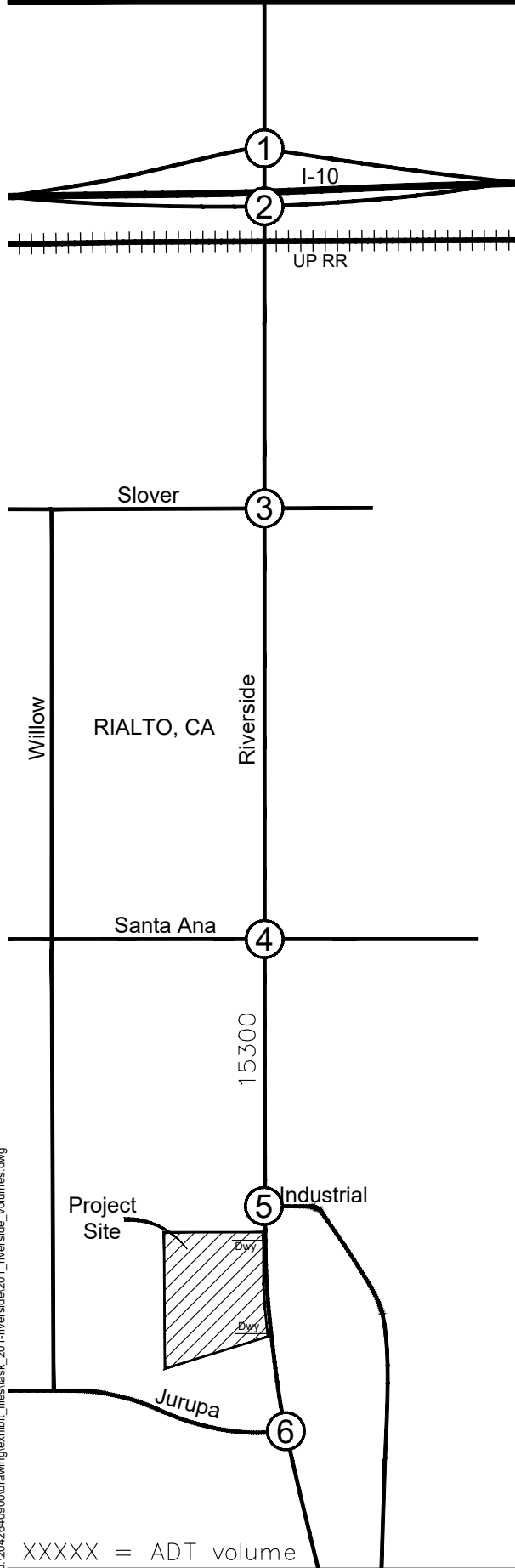
AM Peak Hour

<p>1. Riverside & I-10 WB</p>	<p>2. Riverside & I-10 EB</p>	<p>3. Riverside & Slover</p>
<p>4. Riverside & Santa Ana</p>	<p>5. Riverside & Industrial</p>	<p>6. Riverside & Jurupa</p>

PM Peak Hour

<p>1. Riverside & I-10 WB</p>	<p>2. Riverside & I-10 EB</p>	<p>3. Riverside & Slover</p>
<p>4. Riverside & Santa Ana</p>	<p>5. Riverside & Industrial</p>	<p>6. Riverside & Jurupa</p>

Figure 3-2
Total Project PCE Peak Hour Trips



AM Peak Hour

<p>1. Riverside & I-10 WB</p> <p>I-10 WB: 628, 914, 361, 1, 370 Riverside: 135, 694</p>	<p>2. Riverside & I-10 EB</p> <p>I-10 EB: 801, 482, 319, 178 Riverside: 521, 340</p>	<p>3. Riverside & Slover</p> <p>Slover: 413, 505, 20, 4, 13 Riverside: 293, 558, 51, 45, 494, 11</p>
<p>4. Riverside & Santa Ana</p> <p>Santa Ana: 34, 416, 16, 44, 17, 20 Riverside: 82, 12, 25, 23, 490, 20</p>	<p>5. Riverside & Industrial</p> <p>Riverside: 405, 36, 27, 15, 484, 31, Industrial</p>	<p>6. Riverside & Jurupa</p> <p>Jurupa: 31, 370, 24, 48 Riverside: 44, 474</p>

PM Peak Hour

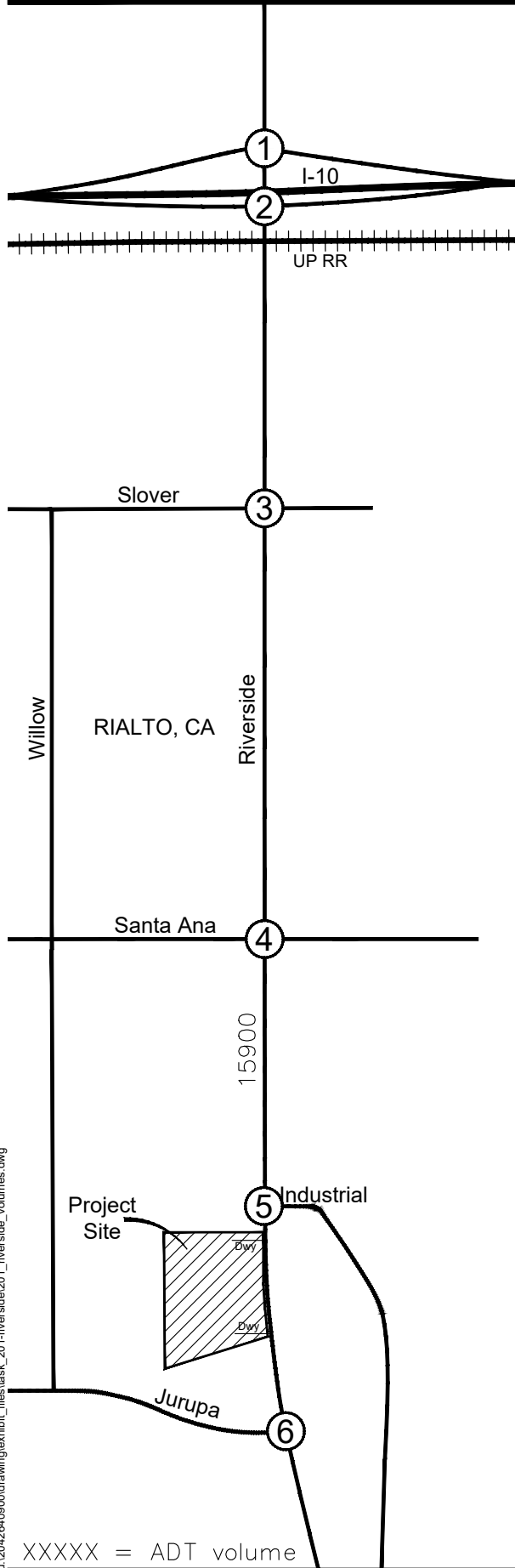
<p>1. Riverside & I-10 WB</p> <p>I-10 WB: 430, 798, 474, 2, 268 Riverside: 204, 1308</p>	<p>2. Riverside & I-10 EB</p> <p>I-10 EB: 629, 431, 569, 118 Riverside: 946, 478</p>	<p>3. Riverside & Slover</p> <p>Slover: 304, 412, 16, 138, 12, 11 Riverside: 300, 195, 50, 54, 886, 5</p>
<p>4. Riverside & Santa Ana</p> <p>Santa Ana: 49, 410, 20, 55, 19, 25 Riverside: 114, 10, 25, 39, 753, 19</p>	<p>5. Riverside & Industrial</p> <p>Riverside: 404, 36, 71, 29, 683, 9, Industrial</p>	<p>6. Riverside & Jurupa</p> <p>Jurupa: 42, 391, 40, 85 Riverside: 47, 653</p>

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XXXXX = ADT volume



Figure 3-3
 Existing Plus Ambient Growth Peak Hour Volumes



AM Peak Hour

<p>1. Riverside & I-10 WB</p> <p>I-10 WB: 628 (left), 919 (right), 361 (up), 1 (down), 387 (right) Riverside: 141 (left), 695 (right)</p>	<p>2. Riverside & I-10 EB</p> <p>I-10 EB: 823 (left), 482 (right), 319 (up), 195 (down) Riverside: 528 (left), 345 (right)</p>	<p>3. Riverside & Slover</p> <p>Slover: 413 (left), 544 (right), 20 (up), 43 (down), 13 (right) Riverside: 293 (left), 550 (right), 46 (left), 506 (right), 11 (right)</p>
<p>4. Riverside & Santa Ana</p> <p>Santa Ana: 34 (left), 457 (right), 16 (up), 44 (down), 17 (right), 20 (right) Riverside: 82 (left), 12 (down), 27 (down), 24 (left), 503 (right), 20 (right)</p>	<p>5. Riverside & Industrial</p> <p>Riverside: 448 (left), 36 (right), 27 (up), 15 (down) Industrial: 498 (left), 31 (right)</p>	<p>6. Riverside & Jurupa</p> <p>Jurupa: 31 (left), 372 (right) Riverside: 24 (left), 48 (right), 44 (left), 478 (right)</p>

PM Peak Hour

<p>1. Riverside & I-10 WB</p> <p>I-10 WB: 430 (left), 800 (right), 474 (up), 2 (down), 273 (right) Riverside: 221 (left), 1313 (right)</p>	<p>2. Riverside & I-10 EB</p> <p>I-10 EB: 636 (left), 431 (right), 569 (up), 125 (down) Riverside: 968 (left), 495 (right)</p>	<p>3. Riverside & Slover</p> <p>Slover: 304 (left), 426 (right), 16 (up), 138 (down), 12 (right), 11 (right) Riverside: 300 (left), 195 (right), 51 (down), 56 (left), 925 (right), 5 (right)</p>
<p>4. Riverside & Santa Ana</p> <p>Santa Ana: 49 (left), 425 (right), 20 (up), 55 (down), 19 (right), 25 (right) Riverside: 114 (left), 10 (down), 26 (down), 41 (left), 794 (right), 19 (right)</p>	<p>5. Riverside & Industrial</p> <p>Riverside: 419 (left), 36 (right), 71 (up), 29 (down) Industrial: 726 (left), 9 (right)</p>	<p>6. Riverside & Jurupa</p> <p>Jurupa: 42 (left), 395 (right) Riverside: 40 (left), 85 (right), 47 (left), 655 (right)</p>

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XXXXX = ADT volume



Figure 3-4
 Existing Plus Ambient Plus Project (PCE) Peak Hour Volumes

RIVERSIDE AVENUE INDUSTRIAL BUILDING TRANSPORTATION IMPACT ANALYSIS – DRAFT

Projected Future Traffic
June 2023

Table 3-3 summarizes the Existing plus Ambient plus Project peak hour intersection delay and LOS for the study intersections assuming existing intersection traffic control and lane geometrics. As this table shows, the study intersections would continue to operate at acceptable LOS C or better during the AM and PM peak hours. Delay calculations are included in **Appendix B**.

Table 3-3 Existing Plus Ambient Plus Project Intersection Delay and LOS Summary

Intersection	Traffic Control	AM Peak Hour			PM Peak Hour		
		Delay	LOS	Project Increase	Delay	LOS	Project Increase
1. Riverside & I-10 WB	Signal	12.4 sec	B	0.4 sec	12.9 sec	B	0.2 sec
2. Riverside & I-10 EB	Signal	16.4 sec	B	0.1 sec	29.8 sec	C	1.3 sec
3. Riverside & Slover	Signal	22.3 sec	C	0.9 sec	19.9 sec	B	0.4 sec
4. Riverside & Santa Ana	Signal	9.4 sec	A	0.0 sec	13.0 sec	B	0.6 sec
5. Riverside & Industrial	SSS	12.4 sec	B	0.2 sec	14.7 sec	B	0.5 sec
6. Riverside & Jurupa	Signal	5.6 sec	A	0.0 sec	6.3 sec	A	0.1 sec

LOS = Level of service
SSS = side street stop (delay value is for highest stop-controlled movement)
sec = seconds of delay

The Project increases the delay at the intersections by less than the level of service threshold standards identified in Table 2-1.

Project Driveway Operation

The Project would provide two driveways on Riverside Avenue. Outbound traffic from the driveways would be controlled by stop signs. Delay and level of service for the Project driveways on Riverside Avenue have been determined based on HCM 6 methodology for unsignalized intersections. Since through traffic on Riverside Avenue would not stop, the reported delay is based on the delay experienced by the driveway traffic controlled by the stop sign.

Table 3-4 summarizes the delay and LOS for the Project driveways on Riverside Avenue. As this table shows, the driveways would operate at LOS B during the AM and PM peak hours under Existing Plus Ambient Plus Project conditions.



Projected Future Traffic
June 2023

Table 3-4 Project Driveway Delay and LOS Summary – Existing Plus Ambient Plus Project Conditions

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
7. Riverside & North Driveway	SSS	13.3 sec	B	14.4 sec	B
8. Riverside & South Driveway	SSS	11.9 sec	B	13.0 sec	B

LOS = Level of service
SSS = side street stop (delay value is for driveway stop-controlled movement)
sec = seconds of delay

3.3 CUMULATIVE CONDITIONS

3.3.1 Locations and Description of Other Projects

Six additional approved or proposed development projects within the study area were identified by the City for inclusion in the Cumulative scenario (Existing plus Ambient plus Project plus Cumulative).

Table 3-5 summarizes the cumulative projects, and **Figure 3-5** illustrates the location of the cumulative projects.

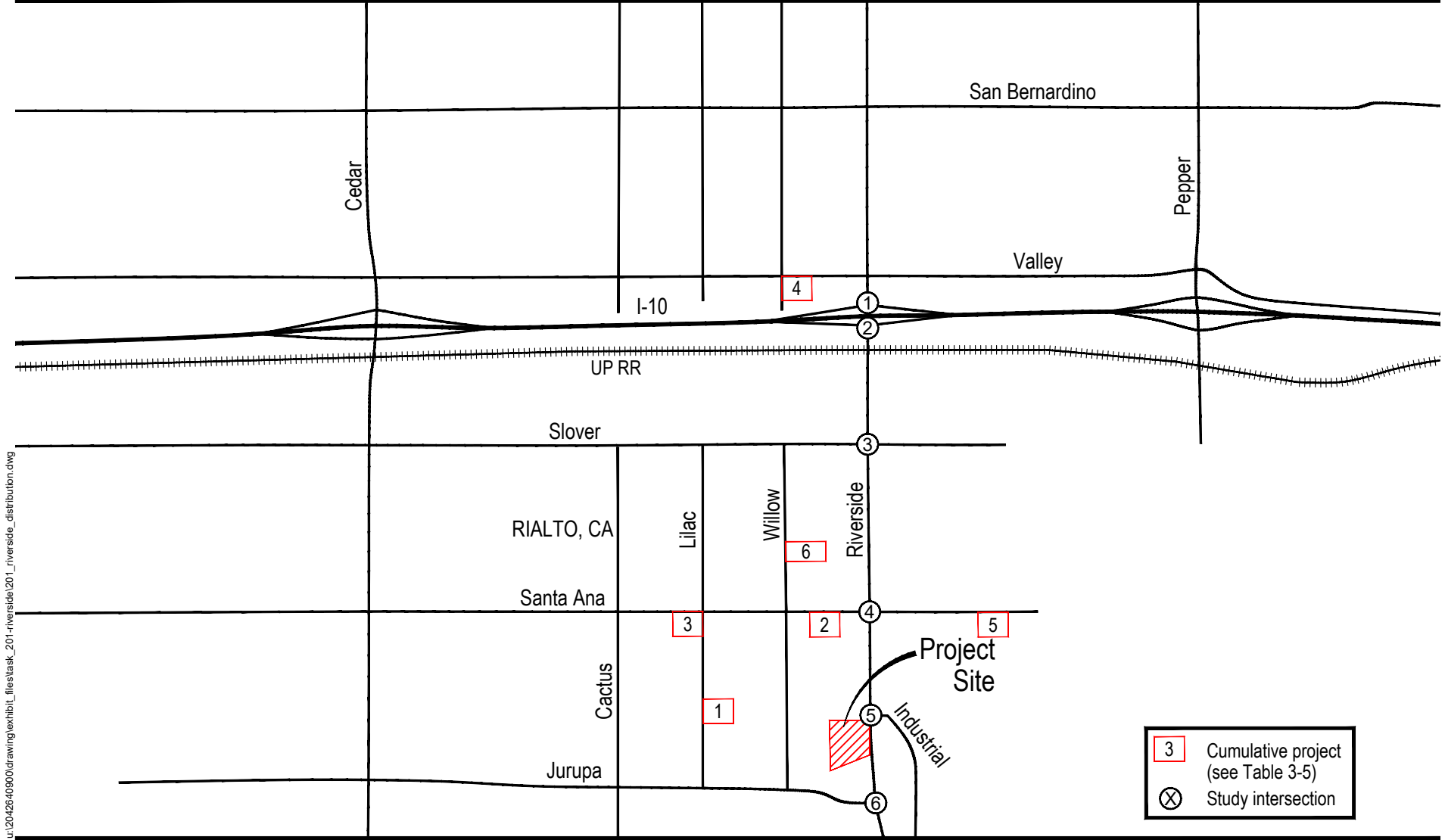
Table 3-5 Cumulative Project Summary

Project Description	Size	Land Use	PCE Trips		
			ADT	AM Peak Hour	PM Peak Hour
1. Lilac Commerce Center	82.958 TSF	Warehouse	504	42	44
2. SC Fuels Rialto	48.103 TSF	Warehouse, Office, Truck Service	1,862	329	371
3. Santa Ana and Lilac Warehouse	301.0 TSF	Warehouse	874	86	91
4. Alice and Willow Avenue Warehouse	138.35 TSF	Warehouse	398	41	42
5. Truck Terminal	191.14 TSF	Warehouse, Maintenance	485	69	71
6. 2321 S. Willow Avenue Industrial Bldg	97.5 TSF	Warehouse	281	29	30

ADT = Average daily traffic
TSF = Thousand square feet
PCE = Passenger car equivalents



RIVERSIDE AVENUE INDUSTRIAL BUILDING, RIALTO, CA
 TRANSPORTATION IMPACT ANALYSIS

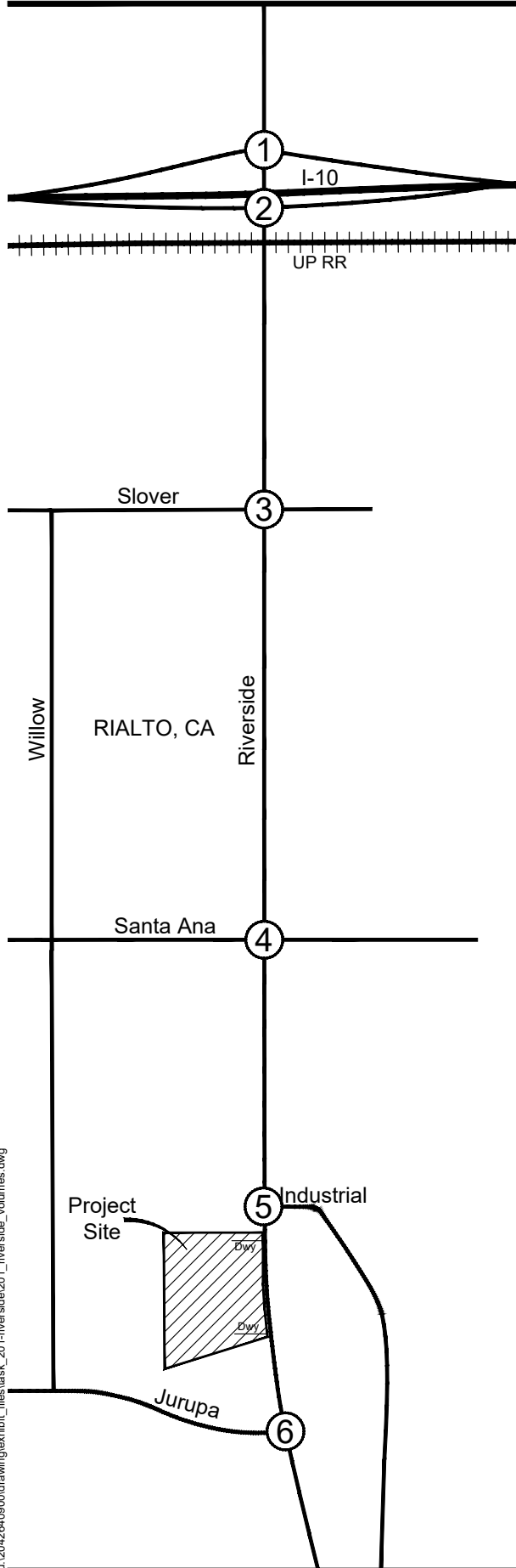


3	Cumulative project (see Table 3-5)
⊗	Study intersection

Figure 3-5
 Cumulative Project Location

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AM Peak Hour

<p>1. Riverside & I-10 WB</p>	<p>2. Riverside & I-10 EB</p>	<p>3. Riverside & Slover</p>
<p>4. Riverside & Santa Ana</p>	<p>5. Riverside & Industrial</p>	<p>6. Riverside & Jurupa</p>

PM Peak Hour

<p>1. Riverside & I-10 WB</p>	<p>2. Riverside & I-10 EB</p>	<p>3. Riverside & Slover</p>
<p>4. Riverside & Santa Ana</p>	<p>5. Riverside & Industrial</p>	<p>6. Riverside & Jurupa</p>

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Figure 3-6

Existing Plus Ambient Plus Project Plus Cumulative Peak Hour Volumes

RIVERSIDE AVENUE INDUSTRIAL BUILDING TRANSPORTATION IMPACT ANALYSIS – DRAFT

Projected Future Traffic
June 2023

The PCE peak hour trips from these cumulative projects were added to the Existing plus Ambient plus Project peak hour volumes at the study intersections. **Figure 3-6** illustrates the Cumulative conditions peak hour volumes at the study intersections. The peak hour trips generated by the cumulative projects that were added to the background volumes to produce the Existing plus Ambient plus Project plus Cumulative at the study intersections are illustrated in Appendix C.

Table 3-6 summarizes the Existing plus Ambient plus Project plus Cumulative peak hour intersection delay and LOS for the study intersections assuming existing intersection traffic control and lane geometrics. As this table shows, the study intersections would operate at acceptable LOS D or better during the AM and PM peak hours. Delay calculations are included in **Appendix B**.

Table 3-6 Existing Plus Ambient Plus Project Plus Cumulative Intersection Delay and LOS Summary

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. Riverside & I-10 WB	Signal	14.9 sec	B	14.2 sec	B
2. Riverside & I-10 EB	Signal	18.2 sec	B	52.6 sec	D
3. Riverside & Slover	Signal	46.7 sec	D	26.6 sec	C
4. Riverside & Santa Ana	Signal	20.5 sec	C	27.2 sec	C
5. Riverside & Industrial	SSS	12.6 sec	B	14.9 sec	B
6. Riverside & Jurupa	Signal	5.5 sec	A	6.3 sec	A
LOS = Level of service SSS = side street stop (delay value is for highest stop-controlled movement) sec = seconds of delay					

Project Driveway Operation

Table 3-7 summarizes the delay and LOS for the Project driveways on Riverside Avenue under Cumulative conditions. As this table shows, the driveways would operate at LOS B during the AM and PM peak hours under Existing Plus Ambient Plus Project Plus Cumulative conditions.



Projected Future Traffic
June 2023

Table 3-7 Project Driveway Delay and LOS Summary – Existing Plus Ambient Plus Project Plus Cumulative Conditions

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
7. Riverside & North Project Driveway	SSS	13.4 sec	B	14.6 sec	B
8. Riverside & South Project Driveway	SSS	12.0 sec	B	13.2 sec	B
LOS = Level of service SSS = side street stop (delay value is for driveway stop-controlled movement) sec = seconds of delay					

3.4 TRUCK ROUTING PLAN

The proposed warehouse project would generate approximately 40 percent of its trips as large truck traffic. Riverside Avenue is designated as a truck route, and Project trucks would travel on Riverside Avenue north to Santa Ana Avenue and I-10 and south of Jurupa Avenue. Slover Avenue and Santa Ana Avenue to the north of the Project site are also designated truck routes. A truck routing plan was prepared for the Project and is included in **Appendix D**.

3.5 I-10 OFF-RAMP QUEUE ANALYSIS

A freeway ramp analysis was performed at the I-10 interchange at Riverside Avenue to determine if peak hour off-ramp traffic would back up and potentially affect mainline freeway traffic. The delay analysis from the Synchro software provides the 95th percentile queue lengths.

Table 3-8 Freeway Ramp Queuing Analysis Summary

Off-Ramp	95th Percentile Queue					
	Existing + Ambient		Existing + Ambient + Project		Existing + Ambient + Project + Cumulative	
	AM	PM	AM	PM	AM	PM
1. Riverside & I-10 WB off-ramp	201 ft	171 ft	205 ft	172 ft	233 ft	209 ft
2. Riverside & I-10 EB off-ramp	164 ft	274 ft	168 ft	274 ft	198 ft	284 ft

The westbound off-ramp is approximately 1,185 feet long and widens to three lanes approximately 360 feet from the intersection. The eastbound off-ramp is approximately 1,200 feet and widens to three lanes approximately 325 feet from the intersection. As this table shows, the off-ramp queues are not expected to exceed the available storage during the AM or PM peak hour under opening year and cumulative conditions.



Vehicle Miles Traveled
June 2023

4.0 VEHICLE MILES TRAVELED

Senate Bill 743 (SB 743) has established Vehicle Miles Traveled (VMT) as the metric for identifying California Environmental Quality Act (CEQA) transportation impacts. The City of Rialto has not adopted conditions for conducting CEQA VMT analysis; therefore, the methodology adopted by the County of San Bernardino were followed for this analysis.

San Bernardino County Transportation Authority (SBCTA) uses an online tool to evaluate whether proposed development projects would generate VMT impacts. The SBCTA online VMT tool specifies that the average VMT per employee for the Project site is 19.7 (**Appendix E**). The City baseline for the area is 16.0 VMT, and the Project VMT would need to be at or below 15 percent below the baseline. Therefore, the Project VMT would need to be below the threshold of 13.6 VMT per employee to result in a finding of no significant impact.

Use of feasible transportation demand management (TDM) measures to reduce trip lengths or the number of trips generated, such as teleworking, subsidized bus passes, or providing bike lockers and showers on-site, or fair share payment toward a regional program if available could be deemed acceptable mitigation measures.



5.0 OFF-SITE OPERATIONAL IMPROVEMENTS

The intersection delay and LOS evaluation shows that the Project would have no adverse effects on the study intersections which would continue to operate at acceptable LOS during the AM and PM peak hours, and no off-site intersection operation improvements are required.



6.0 ON-SITE CIRCULATION

There are no concerns with on-site circulation. Driveways, aisles, and parking spaces have been provided in accordance with applicable agency standards and are of sufficient size and configuration to provide good on-site circulation and access to parking. The north driveway on Riverside Avenue provides a 45-foot width and the south driveway provides a 40-foot width (see Figure 1-2).

Required sight lines at the two Project driveways are based on a driver's ability to perceive a 7 1/2 second gap in oncoming traffic at 55-mph speeds and will be maintained at Project driveways (**Appendix F**).



7.0 FINDINGS AND RECOMMENDATIONS

The proposed Riverside Avenue Industrial Building (Project) is located on the west side of Riverside Avenue south of Santa Ana Avenue. The Project consists of a 219,500 square-foot warehouse building in the southern part of the City of Rialto. The Project is anticipated to be developed in 2024 in one phase. Access to the Project site would be provided by two driveways on Riverside Avenue. The existing and proposed zoning designation is General Industrial Zone.

The total driveway trip generation for the site is 38 AM peak hour trips, 40 PM peak hour trips, and 375 daily trips based on the Institute of Transportation Engineers (ITE) Warehousing trip rates. However, due to the expected operation of the proposed land use, a portion of the driveway trips would be large trucks; therefore, the City has identified passenger car equivalent (PCE) factors to be applied to truck trips to account for the larger impact of trucks on traffic flow. Consequently, the Project would generate 63 AM peak hour PCE trips, 65 PM peak hour PCE trips, and 629 daily PCE trips for use in the roadway level of service (LOS) analysis.

Six study intersections were included in the roadway LOS analysis, and potential Project effects were evaluated under Existing plus Ambient Growth conditions representing the opening year of the Project. Under Existing plus Ambient Growth conditions, the study intersections would operate at acceptable LOS C or better, and the Project would have no adverse effects based on the City's level of service standards.

Six cumulative development projects were identified in the study area. Under Existing plus Ambient plus Project plus Cumulative conditions, the study intersections would operate at acceptable LOS D or better during the peak hours.

The study intersections would operate at acceptable levels of service under opening year conditions and no off-site operational improvements are required.

The SBCTA online tool was used to evaluate whether the proposed Project would generate VMT impacts. The Project VMT would need to be below the City threshold of 13.6 VMT per employee to result in a finding of no significant impact. The SBCTA online VMT Screening tool specifies that the average for the Project site is 19.7 VMT per employee. The Project VMT is not below the VMT threshold; therefore, a finding of no significant impact cannot be made.

Use of feasible transportation demand management (TDM) measures to reduce trip lengths or the number of trips generated, such as teleworking, subsidized bus passes, or providing bike lockers and showers on-site, or fair share payment toward a regional program if available could be deemed acceptable mitigation measures.



Appendix A TRAFFIC COUNT DATA



24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thursday, November 17, 2022
JOB #: SC3620

CITY: Rialto
LOCATION: CLASS3 Riverside north of Industrial

AM TIME	NORTHBOUND													TOTAL	PM Time	NORTHBOUND													TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13			1	2	3	4	5	6	7	8	9	10	11	12	13	
0:00	0	0	0	0	0	0	0	0	6	0	0	0	0	6	12:00	0	64	24	1	9	6	0	0	21	0	2	0	0	127
0:15	0	0	2	0	0	0	0	0	9	0	0	0	0	11	12:15	1	54	17	1	5	7	0	0	16	0	2	0	103	
0:30	0	3	2	0	1	0	0	0	6	0	0	0	0	12	12:30	0	53	27	0	7	11	0	1	20	0	1	0	120	
0:45	0	3	1	0	0	1	0	0	3	0	0	0	0	8	12:45	0	51	19	0	5	11	0	0	10	0	3	0	99	
1:00	0	11	1	0	0	1	0	0	7	0	0	0	0	20	13:00	1	57	26	1	11	6	0	2	15	0	1	1	121	
1:15	0	17	0	0	1	1	0	0	6	0	0	0	0	25	13:15	1	56	12	6	5	12	0	1	17	0	2	0	112	
1:30	0	28	1	0	1	2	0	0	5	0	1	0	0	38	13:30	0	74	18	0	11	8	0	0	22	0	0	0	133	
1:45	0	20	2	0	1	3	0	0	5	0	0	0	0	31	13:45	1	79	37	0	9	5	0	1	13	0	0	0	145	
2:00	0	9	1	0	0	2	0	0	14	0	0	0	0	26	14:00	0	70	20	0	14	5	0	0	21	0	1	0	131	
2:15	0	8	0	0	0	3	0	0	8	0	0	0	0	19	14:15	1	78	30	0	11	8	0	0	19	0	0	0	147	
2:30	0	11	1	0	0	1	0	0	10	0	0	0	0	23	14:30	1	88	35	0	15	11	1	1	15	0	1	0	168	
2:45	0	16	0	0	0	6	0	0	9	0	0	0	0	31	14:45	0	123	33	2	11	10	0	0	14	0	0	0	193	
3:00	0	7	0	0	0	8	0	0	13	0	1	0	0	29	15:00	0	72	26	0	15	10	0	0	15	0	1	0	139	
3:15	0	10	1	0	0	7	0	0	11	0	0	0	0	29	15:15	1	80	30	0	6	4	0	0	16	0	0	0	137	
3:30	0	17	1	0	1	6	0	0	16	0	0	0	0	41	15:30	0	91	18	1	6	6	0	1	15	0	0	0	138	
3:45	0	20	0	0	2	3	0	0	16	0	0	0	0	41	15:45	1	102	34	0	5	12	1	0	17	0	1	0	173	
4:00	0	20	0	0	2	3	0	0	10	0	0	0	0	35	16:00	0	120	30	0	7	9	0	0	15	1	0	0	182	
4:15	0	10	1	0	3	15	0	0	9	0	1	0	0	39	16:15	0	119	42	0	7	9	1	2	12	0	0	0	192	
4:30	0	15	0	0	2	3	0	0	11	0	0	0	0	31	16:30	0	119	29	1	6	4	0	2	9	1	1	0	172	
4:45	0	27	6	0	2	4	0	0	12	0	1	0	0	52	16:45	1	122	35	0	5	10	0	0	14	0	0	0	187	
5:00	0	33	4	0	2	7	0	0	12	0	0	0	0	58	17:00	1	119	32	0	3	7	0	2	8	0	0	0	172	
5:15	0	30	11	0	6	14	0	0	16	0	0	0	0	77	17:15	0	132	27	0	1	5	0	0	5	0	0	0	170	
5:30	0	60	8	0	3	12	0	0	15	0	1	0	0	99	17:30	0	182	17	0	7	1	0	0	5	0	0	0	212	
5:45	0	44	12	0	2	16	0	0	20	0	1	0	0	95	17:45	0	119	18	0	5	4	0	1	12	0	0	0	159	
6:00	0	38	17	0	9	11	0	1	11	0	3	0	0	90	18:00	0	83	16	0	4	3	0	0	9	0	0	0	115	
6:15	0	42	25	2	6	10	0	0	17	0	2	0	0	104	18:15	0	108	19	0	3	1	0	0	8	0	0	0	139	
6:30	0	45	11	3	8	11	0	0	12	0	0	0	0	90	18:30	0	100	13	0	5	3	0	1	9	0	0	0	131	
6:45	0	32	9	1	3	6	0	1	10	0	1	0	0	63	18:45	0	72	8	0	3	1	0	0	12	0	0	0	96	
7:00	0	63	18	0	11	6	0	0	13	0	1	0	0	112	19:00	0	63	9	0	5	3	0	0	18	0	0	0	98	
7:15	0	64	15	1	7	6	0	0	21	0	2	0	0	116	19:15	0	49	11	0	3	4	0	0	12	0	0	0	79	
7:30	0	73	19	0	10	17	0	0	11	0	1	0	0	131	19:30	0	45	10	0	1	3	0	0	8	0	0	0	67	
7:45	0	66	19	0	6	8	0	1	19	0	0	0	0	119	19:45	0	66	4	0	0	0	0	0	5	0	0	0	75	
8:00	1	69	22	1	12	8	1	0	23	0	1	0	0	138	20:00	0	55	1	0	2	5	0	0	8	0	0	0	71	
8:15	0	51	18	0	6	11	1	0	21	0	4	0	0	112	20:15	1	4	2	0	0	0	0	0	3	0	1	0	11	
8:30	1	54	18	0	10	9	0	1	16	0	1	0	0	110	20:30	0	1	0	0	1	0	0	0	1	0	0	0	3	
8:45	0	52	16	0	5	7	0	0	16	0	3	0	0	99	20:45	0	1	0	0	1	0	0	0	6	0	0	0	8	
9:00	0	57	22	0	6	11	0	0	11	0	1	0	0	108	21:00	0	1	0	0	0	0	0	0	3	0	0	0	4	
9:15	0	46	13	1	8	7	0	0	28	0	1	1	0	105	21:15	0	2	1	0	0	0	0	0	4	0	0	0	7	
9:30	0	43	10	0	8	6	0	1	11	0	8	0	0	87	21:30	0	0	0	0	0	0	0	0	8	0	0	0	8	
9:45	0	55	15	1	7	4	0	1	16	0	3	0	0	102	21:45	0	1	0	0	0	1	0	0	4	0	0	0	6	
10:00	0	47	25	0	4	8	0	2	17	0	2	1	0	106	22:00	0	0	2	0	0	1	0	0	4	0	0	0	7	
10:15	0	44	18	0	6	7	0	0	24	0	4	0	0	103	22:15	0	2	0	0	2	1	0	0	3	0	0	0	8	
10:30	1	49	18	0	7	10	1	2	28	0	4	0	0	120	22:30	0	1	0	0	0	0	0	0	4	0	0	0	5	
10:45	0	50	14	0	7	5	0	0	21	0	2	0	0	99	22:45	0	0	0	0	0	2	0	0	1	0	0	0	3	
11:00	0	37	18	0	8	13	1	1	22	1	1	0	0	102	23:00	0	4	2	0	0	0	0	0	4	0	0	0	10	
11:15	0	48	22	0	6	11	0	1	22	0	4	0	0	114	23:15	0	2	1	0	0	0	0	0	4	0	0	0	7	
11:30	0	59	23	1	6	10	0	1	21	0	2	0	0	123	23:30	0	3	0	0	0	1	0	0	6	0	0	0	10	
11:45	0	48	23	0	9	5	0	0	28	0	3	0	0	116	23:45	0	1	0	0	0	2	0	0	6	0	0	0	9	
TOTAL	3	1,651	483	11	204	325	4	13	688	1	60	2	0	3,445	TOTAL	11	2,888	735	13	216	212	3	15	496	2	17	1	0	4,609

AM PEAK HOUR 7:15 AM
AM PEAK VOLUME 504

PM PEAK HOUR 4:45 PM
PM PEAK VOLUME 741

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	14	4,539	1,218	24	420	537	7	28	###	3	77	3	0	8,054
% OF TOTAL	0.2%	56.4%	15.1%	0.3%	5.2%	6.7%	0.1%	0.3%	14.7%	0.0%	1.0%	0.0%	0.0%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	21	8,381	2,345	43	780	983	16	66	###	7	164	8	0	14,974
% OF TOTAL	0.3%	104.1%	29.1%	0.5%	9.7%	12.2%	0.2%	0.8%	26.8%	0.1%	2.0%	0.1%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thursday, November 17, 2022
JOB #: SC3620

CITY: Rialto
LOCATION: CLASS3 Riverside north of Industrial

AM TIME	SOUTHBOUND													TOTAL	PM Time	SOUTHBOUND													TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13			1	2	3	4	5	6	7	8	9	10	11	12	13	
0:00	0	0	0	0	0	0	0	0	2	0	0	0	0	2	12:00	0	47	15	0	7	2	1	0	11	0	3	0	0	86
0:15	0	0	1	0	0	1	0	0	4	0	0	0	0	6	12:15	0	43	25	0	9	13	0	0	12	0	0	0	102	
0:30	0	1	0	0	0	1	0	0	1	0	0	0	0	3	12:30	1	50	15	0	5	5	0	0	14	0	1	0	91	
0:45	0	13	1	0	1	2	0	0	4	0	1	0	0	22	12:45	0	62	21	0	9	9	0	1	16	0	3	0	121	
1:00	0	9	2	0	1	4	0	0	4	0	1	0	0	21	13:00	0	55	21	0	8	10	0	0	14	0	5	0	113	
1:15	0	10	0	0	0	3	0	0	6	0	0	0	0	19	13:15	0	67	26	0	13	14	0	0	21	0	1	0	142	
1:30	0	17	1	0	0	6	0	0	9	0	0	0	0	33	13:30	0	55	19	0	7	14	0	0	20	0	0	0	115	
1:45	0	9	1	0	0	5	0	0	3	0	0	0	0	18	13:45	1	39	17	1	4	11	0	1	13	0	2	0	89	
2:00	0	9	1	0	0	4	0	1	7	0	0	0	0	22	14:00	0	53	30	1	13	10	0	0	16	0	1	0	124	
2:15	0	6	3	0	0	3	0	0	11	0	0	0	0	23	14:15	0	85	25	0	5	7	0	1	19	0	1	0	143	
2:30	0	20	1	0	0	2	0	0	9	0	0	0	0	32	14:30	0	65	22	0	5	5	0	1	16	0	0	0	114	
2:45	0	21	1	0	1	3	0	0	9	0	0	0	0	35	14:45	0	60	21	0	7	7	0	0	10	0	0	1	106	
3:00	0	16	2	0	1	3	0	0	12	0	0	0	0	34	15:00	0	56	30	0	6	8	0	1	14	0	1	0	116	
3:15	0	18	2	0	1	1	0	0	5	0	0	0	0	27	15:15	0	60	18	3	5	7	0	3	22	0	1	0	119	
3:30	0	22	2	0	1	3	0	0	7	0	0	0	0	35	15:30	1	63	22	0	8	8	0	1	14	0	0	0	117	
3:45	0	22	5	0	1	5	0	0	11	0	2	0	0	46	15:45	0	74	18	0	5	9	0	1	9	0	0	0	116	
4:00	0	28	5	0	1	6	0	1	12	0	3	0	0	56	16:00	0	63	30	3	4	6	0	0	7	0	0	0	113	
4:15	0	30	5	0	1	3	0	1	10	0	0	0	0	50	16:15	0	58	25	1	2	4	0	1	12	0	1	0	104	
4:30	0	52	6	0	4	5	0	0	13	0	0	0	0	80	16:30	1	66	14	0	2	11	0	0	13	0	0	0	107	
4:45	0	46	4	0	1	4	0	1	11	0	1	0	0	68	16:45	0	65	20	0	5	4	0	0	12	0	0	0	106	
5:00	0	36	7	0	3	5	0	1	10	0	2	0	0	64	17:00	0	66	24	0	2	8	0	0	7	0	0	0	107	
5:15	0	55	10	0	8	6	0	0	7	0	0	0	0	86	17:15	0	61	10	0	2	1	0	2	9	0	0	0	85	
5:30	0	99	13	0	6	4	0	0	17	0	0	0	0	139	17:30	0	69	10	0	3	2	0	0	11	0	0	0	95	
5:45	0	91	16	0	6	0	0	0	10	0	2	0	0	125	17:45	0	81	19	0	2	2	0	0	7	0	0	0	111	
6:00	0	63	17	0	5	3	1	0	7	0	2	0	0	98	18:00	0	74	21	0	7	6	0	1	6	0	0	0	115	
6:15	0	56	19	0	12	5	2	1	11	0	1	1	0	108	18:15	0	59	12	0	2	2	0	0	11	0	0	0	86	
6:30	0	86	30	0	7	5	1	1	13	0	6	0	0	149	18:30	0	73	17	0	6	6	0	0	9	0	0	0	111	
6:45	0	58	12	0	7	5	1	0	10	0	0	0	0	93	18:45	0	78	13	0	2	4	0	0	4	0	0	0	101	
7:00	1	44	14	0	7	7	0	0	17	0	4	0	0	94	19:00	0	75	20	0	4	3	0	0	7	0	0	0	109	
7:15	0	65	17	1	5	7	0	0	13	0	2	0	0	110	19:15	0	72	10	0	2	2	0	1	14	0	0	0	101	
7:30	1	71	12	0	4	5	0	1	17	0	3	0	0	114	19:30	0	47	8	0	4	5	0	1	6	0	0	0	71	
7:45	0	59	15	0	4	4	0	1	15	1	2	0	0	101	19:45	0	24	6	0	4	2	0	0	6	0	0	0	42	
8:00	0	55	17	1	8	7	0	0	17	0	3	0	0	108	20:00	0	1	0	0	0	0	0	0	0	0	0	0	1	
8:15	0	43	18	2	7	9	0	0	22	1	4	1	0	107	20:15	0	3	1	0	0	0	0	0	1	0	0	0	5	
8:30	0	40	15	0	6	2	1	0	21	1	2	0	0	88	20:30	0	0	1	0	0	0	0	0	0	0	0	0	1	
8:45	0	38	17	3	8	5	0	2	14	1	1	0	0	89	20:45	0	0	1	0	2	0	0	0	0	0	0	0	3	
9:00	0	39	13	1	2	1	0	2	21	0	0	0	0	79	21:00	0	0	0	0	0	1	0	0	0	0	0	0	1	
9:15	0	60	10	0	9	5	0	0	17	0	5	0	0	106	21:15	0	0	0	0	2	0	0	0	1	0	0	0	3	
9:30	0	59	23	0	4	9	0	0	14	0	2	0	0	111	21:30	0	1	0	0	0	0	0	0	1	0	0	0	2	
9:45	0	66	26	0	7	11	0	1	23	0	0	0	0	134	21:45	0	0	0	0	2	0	0	0	0	0	0	0	2	
10:00	0	62	21	0	2	9	0	2	18	0	2	1	0	117	22:00	0	0	1	0	0	0	0	0	0	0	0	0	1	
10:15	0	51	13	0	9	12	0	0	21	0	2	1	0	109	22:15	0	0	0	0	0	0	0	1	0	0	0	0	1	
10:30	0	32	26	0	5	3	1	1	23	0	0	0	0	91	22:30	0	0	1	0	0	2	0	0	0	0	0	0	3	
10:45	1	30	9	1	2	5	0	2	17	0	1	0	0	68	22:45	0	1	2	0	0	1	0	0	1	0	0	0	5	
11:00	0	33	14	0	6	8	1	1	18	0	3	0	0	84	23:00	0	0	0	0	1	0	0	0	1	0	0	0	2	
11:15	0	39	23	1	6	10	0	0	11	0	2	0	0	92	23:15	0	0	1	0	2	2	0	0	0	0	1	0	6	
11:30	0	36	19	0	5	7	0	1	17	0	5	0	0	90	23:30	0	1	0	0	0	1	0	0	1	0	0	0	3	
11:45	0	55	26	0	7	9	0	0	17	0	2	0	0	116	23:45	0	0	0	0	1	0	0	0	0	0	0	0	1	
TOTAL	3	1,870	515	10	181	232	8	21	588	4	66	4	0	3,502	TOTAL	4	1,972	612	9	179	214	1	17	388	0	21	1	0	3,418

AM PEAK HOUR 5:45 AM
AM PEAK VOLUME 480

PM PEAK HOUR 12:45 PM
PM PEAK VOLUME 491

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	7	3,842	1,127	19	360	446	9	38	976	4	87	5	0	6,920
% OF TOTAL	0.1%	55.5%	16.3%	0.3%	5.2%	6.4%	0.1%	0.5%	14.1%	0.1%	1.3%	0.1%	0.0%	100.0%

Class **1** **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13**

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Thu, Nov 17, 22

LOCATION: Rialto
NORTH & SOUTH: Riverside
EAST & WEST: I-10 WB Ramps

PROJECT #: SC3620
LOCATION #: 7
CONTROL: SIGNAL

<p>NOTES:</p> <p style="text-align: center; color: blue;">Queue SB AM; NB/SB PM</p>	AM PM MD OTHER OTHER	◀ W E ▶	▲ N S ▼
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Add U-Turns to Left Turns

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Riverside			Riverside			I-10 WB Ramps			I-10 WB Ramps			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	

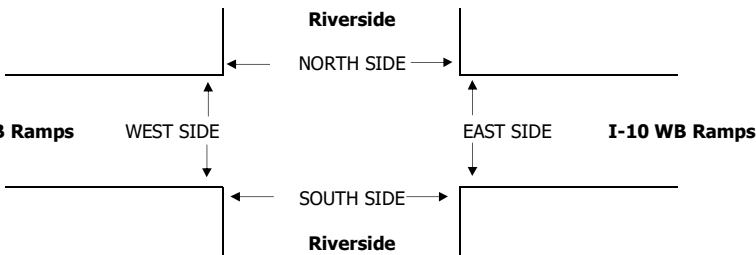
U-TURNS				
NB	SB	EB	WB	TTL

AM	7:00 AM	25	148	0	0	173	114	0	0	0	89	0	84	633	
	7:15 AM	32	134	0	0	190	167	0	0	0	96	0	106	725	
	7:30 AM	27	183	0	0	253	168	0	0	0	71	0	104	806	
	7:45 AM	39	191	0	0	231	145	0	0	0	112	0	73	791	
	8:00 AM	34	172	0	0	222	136	0	0	0	84	1	71	720	
	8:15 AM	40	135	0	0	171	106	0	0	0	114	1	66	633	
	8:30 AM	27	175	0	0	201	117	0	0	0	120	1	79	720	
	8:45 AM	40	157	0	0	157	94	0	0	0	101	0	71	620	
	VOLUMES		264	1,295	0	0	1,598	1,047	0	0	0	787	3	654	5,648
	APPROACH %		17%	83%	0%	0%	60%	40%	0%	0%	0%	55%	0%	45%	
APP/DEPART		1,559	/	1,949	2,645	/	2,385	0	/	0	1,444	/	1,314	0	
BEGIN PEAK HR		7:15 AM													
VOLUMES		132	680	0	0	896	616	0	0	0	363	1	354	3,042	
APPROACH %		16%	84%	0%	0%	59%	41%	0%	0%	0%	51%	0%	49%		
PEAK HR FACTOR		0.883													
APP/DEPART		812	/	1,034	1,512	/	1,259	0	/	0	718	/	749	0	

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

PM	4:00 PM	38	261	0	0	208	119	0	0	0	52	1	133	812	
	4:15 PM	65	297	0	0	173	98	0	0	0	72	0	136	841	
	4:30 PM	42	350	0	0	228	103	0	0	0	60	2	104	889	
	4:45 PM	51	308	0	0	189	102	0	0	0	70	0	116	836	
	5:00 PM	42	327	0	0	192	119	0	0	0	61	0	109	850	
	5:15 PM	50	315	0	0	155	104	0	0	0	60	0	125	809	
	5:30 PM	42	350	0	0	182	97	0	0	0	43	0	116	830	
	5:45 PM	47	311	0	0	177	81	0	0	0	70	1	121	808	
	VOLUMES		377	2,519	0	0	1,504	823	0	0	0	488	4	960	6,675
	APPROACH %		13%	87%	0%	0%	65%	35%	0%	0%	0%	34%	0%	66%	
APP/DEPART		2,896	/	3,479	2,327	/	1,992	0	/	0	1,452	/	1,204	0	
BEGIN PEAK HR		4:15 PM													
VOLUMES		200	1,282	0	0	782	422	0	0	0	263	2	465	3,416	
APPROACH %		13%	87%	0%	0%	65%	35%	0%	0%	0%	36%	0%	64%		
PEAK HR FACTOR		0.945													
APP/DEPART		1,482	/	1,747	1,204	/	1,045	0	/	0	730	/	624	0	

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0



AM	7:00 AM	0	0	1	1	2
	7:15 AM	0	0	0	0	0
	7:30 AM	0	0	1	0	1
	7:45 AM	0	0	0	1	1
	8:00 AM	0	0	1	0	1
	8:15 AM	0	0	2	0	2
	8:30 AM	0	0	0	0	0
	8:45 AM	0	0	0	0	0
	TOTAL		0	0	5	2
AM BEGIN PEAK HR		7:15 AM				
PM	4:00 PM	0	0	0	0	0
	4:15 PM	0	0	0	0	0
	4:30 PM	0	0	0	1	1
	4:45 PM	0	0	0	0	0
	5:00 PM	0	0	0	0	0
	5:15 PM	0	0	2	1	3
	5:30 PM	0	0	0	1	1
	5:45 PM	0	0	0	0	0
	TOTAL		0	0	2	3
PM BEGIN PEAK HR		4:15 PM				

PEDESTRIAN + BIKE CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL

PEDESTRIAN CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL

BICYCLE CROSSINGS				
NS	SS	ES	WS	TOTAL

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Thu, Nov 17, 22

LOCATION: Rialto
NORTH & SOUTH: Riverside
EAST & WEST: I-10 EB Ramps

PROJECT #: SC3620
LOCATION #: 8
CONTROL: SIGNAL

NOTES: Queue NB PM

AM
PM
MD
OTHER
OTHER

▲ N
◀ W ▶ E
▼ S

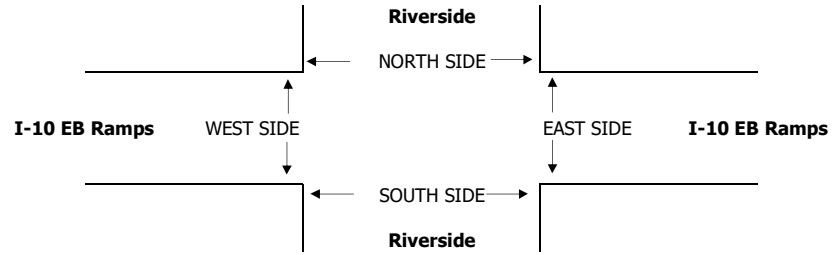
Add U-Turns to Left Turns

LANES:	NORTHBOUND <small>Riverside</small>			SOUTHBOUND <small>Riverside</small>			EASTBOUND <small>I-10 EB Ramps</small>			WESTBOUND <small>I-10 EB Ramps</small>			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	

U-TURNS				
NB	SB	EB	WB	TTL

AM	7:00 AM	0	111	65	85	177	0	62	0	40	0	0	0	540	0	0	0	0	0
	7:15 AM	0	99	52	136	150	0	67	1	42	0	0	0	547	0	0	0	0	0
	7:30 AM	0	149	88	125	199	0	61	0	44	0	0	0	666	0	0	0	0	0
	7:45 AM	0	142	84	126	217	0	88	2	41	0	0	0	700	0	0	0	0	0
	8:00 AM	0	129	84	107	199	0	77	0	44	0	0	0	640	0	0	0	0	0
	8:15 AM	0	91	77	115	170	0	87	0	46	0	0	0	586	0	0	0	0	0
	8:30 AM	0	119	78	85	231	0	83	0	39	0	0	0	635	0	0	0	0	0
	8:45 AM	0	97	70	118	140	0	100	1	39	0	0	0	565	0	0	0	0	0
	VOLUMES	0	937	598	897	1,483	0	625	4	335	0	0	0	4,879	0	0	0	0	0
	APPROACH %	0%	61%	39%	38%	62%	0%	65%	0%	35%	0%	0%	0%		0%	0%	0%	0%	0%
APP/DEPART	1,535	/	1,562	2,380	/	1,818	964	/	1,499	0	/	0	0						
PM	BEGIN PEAK HR	7:30 AM																	
	VOLUMES	0	511	333	473	785	0	313	2	175	0	0	0	2,592	0	0	0	0	0
	APPROACH %	0%	61%	39%	38%	62%	0%	64%	0%	36%	0%	0%	0%		0%	0%	0%	0%	0%
	PEAK HR FACTOR	0.890			0.917			0.921			0.000				0.926				
	APP/DEPART	844	/	824	1,258	/	960	490	/	808	0	/	0	0					
	BEGIN PEAK HR	4:15 PM																	
	VOLUMES	0	150	112	102	158	0	149	0	24	0	0	0	695	0	0	0	0	0
APPROACH %	0%	68%	32%	40%	60%	0%	83%	0%	17%	0%	0%	0%		0%	0%	0%	0%	0%	
APP/DEPART	2,621	/	2,899	1,987	/	1,408	1,336	/	1,637	0	/	0	0						
VOLUMES	0	1,789	832	803	1,184	0	1,110	2	224	0	0	0	5,944	0	0	0	0	0	
APPROACH %	0%	68%	32%	40%	60%	0%	83%	0%	17%	0%	0%	0%		0%	0%	0%	0%	0%	
APP/DEPART	2,621	/	2,899	1,987	/	1,408	1,336	/	1,637	0	/	0	0						
VOLUMES	0	927	469	423	617	0	558	0	116	0	0	0	3,110	0	0	0	0	0	
APPROACH %	0%	66%	34%	41%	59%	0%	83%	0%	17%	0%	0%	0%		0%	0%	0%	0%	0%	
PEAK HR FACTOR	0.946			0.903			0.926			0.000				0.927					
APP/DEPART	1,396	/	1,485	1,040	/	733	674	/	892	0	/	0	0						

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0



AM	7:00 AM	0	0	2	1	3
	7:15 AM	0	0	0	0	0
	7:30 AM	0	0	1	0	1
	7:45 AM	0	0	0	0	0
	8:00 AM	0	0	0	0	0
	8:15 AM	0	0	2	0	2
	8:30 AM	0	0	0	0	0
	8:45 AM	0	0	0	0	0
TOTAL	0	0	5	1	6	
AM BEGIN PEAK HR	7:30 AM					
PM	4:00 PM	0	0	2	0	2
	4:15 PM	0	0	0	0	0
	4:30 PM	0	0	0	1	1
	4:45 PM	0	0	0	0	0
	5:00 PM	0	0	0	0	0
	5:15 PM	0	0	2	0	2
	5:30 PM	0	0	0	0	0
	5:45 PM	0	0	0	0	0
TOTAL	0	0	4	1	5	
PM BEGIN PEAK HR	4:15 PM					

PEDESTRIAN + BIKE CROSSINGS					
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	
0	0	2	1	3	
0	0	0	0	0	
0	0	1	0	1	
0	0	0	0	0	
0	0	0	0	0	
0	0	2	0	2	
0	0	0	0	0	
0	0	0	0	0	
0	0	5	1	6	
7:30 AM					
0	0	2	0	2	
0	0	0	0	0	
0	0	0	1	1	
0	0	0	0	0	
0	0	0	0	0	
0	0	2	0	2	
0	0	0	0	0	
0	0	0	0	0	
0	0	4	1	5	
4:15 PM					

PEDESTRIAN CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	0	2	0	2
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	2	0	2
0	0	0	0	0
0	0	0	0	0
0	0	5	0	5
0	0	3	0	3
0	0	1	0	1
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	2	0	2
0	0	0	0	0
0	0	0	0	0
0	0	3	1	4
0	0	0	1	1

BICYCLE CROSSINGS				
NS	SS	ES	WS	TOTAL
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1

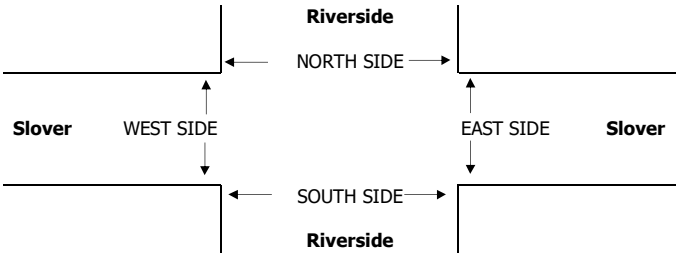
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Nov 17, 22	LOCATION: NORTH & SOUTH: Rialto EAST & WEST: Riverside Slover	PROJECT #: SC3620 LOCATION #: 9 CONTROL: SIGNAL
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NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W S ▼	E ▶	<input checked="" type="checkbox"/> Add U-Turns to Left Turns
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		NB	SB	EB	WB	TTL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0						
AM																		
7:00 AM	12	101	0	1	120	79	52	8	6	4	1	4	388	0	0	0	0	0
7:15 AM	6	101	2	5	135	68	52	5	6	12	2	5	399	1	0	0	0	1
7:30 AM	7	129	3	3	128	96	81	21	4	4	2	17	495	1	0	0	0	1
7:45 AM	11	127	2	8	138	122	77	20	5	4	3	12	529	0	0	0	0	0
8:00 AM	12	125	3	3	116	94	71	12	15	3	2	7	463	1	0	0	0	1
8:15 AM	8	103	3	5	113	93	58	4	6	2	2	6	403	1	0	0	0	1
8:30 AM	9	106	3	4	108	149	60	8	8	5	1	8	469	0	1	0	0	1
8:45 AM	6	109	4	4	103	103	64	5	8	3	0	6	415	2	0	0	0	2
VOLUMES	71	901	20	33	961	804	515	83	58	37	13	65	3,561	6	1	0	0	7
APPROACH %	7%	91%	2%	2%	53%	45%	79%	13%	9%	32%	11%	57%						
APP/DEPART	992	/	1,482	1,798	/	1,062	656	/	135	115	/	882	0					
BEGIN PEAK HR	7:30 AM																	
VOLUMES	38	484	11	19	495	405	287	57	30	13	9	42	1,890					
APPROACH %	7%	91%	2%	2%	54%	44%	77%	15%	8%	20%	14%	66%						
PEAK HR FACTOR	0.952																	
APP/DEPART	533	/	813	919	/	541	374	/	87	64	/	449	0					
PM																		
4:00 PM	8	223	3	2	106	67	68	48	9	3	1	32	570	1	0	0	0	1
4:15 PM	10	212	1	3	92	80	68	52	13	2	3	28	564	0	0	0	0	0
4:30 PM	17	217	0	6	105	69	72	52	16	3	6	44	607	2	0	0	0	2
4:45 PM	11	217	1	4	101	82	86	39	11	3	2	31	588	0	0	0	0	0
5:00 PM	7	200	0	5	85	73	78	19	16	3	5	16	507	1	0	0	0	1
5:15 PM	7	223	0	3	98	61	92	14	6	2	0	5	511	1	1	0	0	2
5:30 PM	8	224	2	4	81	62	85	17	11	2	1	11	508	1	0	0	0	1
5:45 PM	7	175	1	0	112	77	65	4	10	3	4	3	461	1	0	0	0	1
VOLUMES	75	1,691	8	27	780	571	614	245	92	21	22	170	4,316	7	1	0	0	8
APPROACH %	4%	95%	0%	2%	57%	41%	65%	26%	10%	10%	10%	80%						
APP/DEPART	1,774	/	2,476	1,378	/	900	951	/	279	213	/	661	0					
BEGIN PEAK HR	4:00 PM																	
VOLUMES	46	869	5	15	404	298	294	191	49	11	12	135	2,329					
APPROACH %	5%	94%	1%	2%	56%	42%	55%	36%	9%	7%	8%	85%						
PEAK HR FACTOR	0.983																	
APP/DEPART	920	/	1,298	717	/	467	534	/	211	158	/	353	0					



AM	7:00 AM	0	1	0	0	1
	7:15 AM	0	0	0	0	0
	7:30 AM	0	0	0	0	0
	7:45 AM	0	0	0	0	0
	8:00 AM	0	1	1	1	3
	8:15 AM	1	1	1	0	3
	8:30 AM	0	0	0	0	0
	8:45 AM	0	0	0	0	0
	TOTAL	1	3	2	1	7
7:30 AM						
PM	4:00 PM	0	0	0	0	0
	4:15 PM	0	0	1	1	2
	4:30 PM	0	0	0	0	0
	4:45 PM	0	0	0	0	0
	5:00 PM	0	0	0	0	0
	5:15 PM	0	1	0	0	1
	5:30 PM	0	0	0	0	0
	5:45 PM	0	1	0	0	1
	TOTAL	0	2	1	1	4
4:00 PM						

PEDESTRIAN + BIKE CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	1	1	3
1	1	1	0	3
0	0	0	0	0
0	0	0	0	0
1	3	2	1	7
7:30 AM				
0	0	0	0	0
0	0	1	1	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	2	1	1	4
4:00 PM				

PEDESTRIAN CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	1	1	3
1	1	1	0	3
0	0	0	0	0
0	0	0	0	0
1	3	2	1	7
7:30 AM				
0	0	0	0	0
0	0	1	1	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	1	1	1	3
0	0	1	1	2

BICYCLE CROSSINGS				
NS	SS	ES	WS	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Nov 17, 22

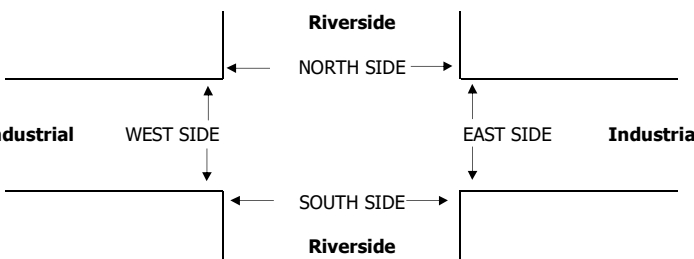
LOCATION: NORTH & SOUTH: EAST & WEST: Rialto Riverside Industrial

PROJECT #: SC3620 LOCATION #: 12 CONTROL: STOP W

NOTES: Queue SB PM. Diagram showing traffic directions: N, S, W, E, AM, PM, MD, OTHER.

Add U-Turns to Left Turns

Main traffic volume table with columns for Northbound, Southbound, Eastbound, Westbound, and U-Turns. Includes AM and PM peak hour data.



Summary table for AM and PM peak hours, including BEGIN PEAK HR.

PEDESTRIAN + BIKE CROSSINGS table with columns for N, S, E, W sides and TOTAL.

PEDESTRIAN CROSSINGS table with columns for N, S, E, W sides and TOTAL.

BICYCLE CROSSINGS table with columns for NS, SS, ES, WS sides and TOTAL.

Appendix B DELAY AND LOS CALCULATIONS (SYNCHRO)



Existing Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	363	1	354	132	680	0	0	896	616
Future Volume (vph)	0	0	0	363	1	354	132	680	0	0	896	616
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		325	110		0	0		210
Storage Lanes	0		0	1		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1559	1414	1395	2736	4052	0	0	5106	1262
Flt Permitted				0.950	0.977		0.950					
Satd. Flow (perm)	0	0	0	1559	1414	1395	2736	4052	0	0	5106	1262
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					89	231						655
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1564			1388			330			3040	
Travel Time (s)		19.4			17.2			4.5			41.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)				31%		36%						
Lane Group Flow (vph)	0	0	0	266	257	241	140	723	0	0	953	655
Turn Type				Prot	NA	Perm	Prot	NA			NA	Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Total Split (s)				19.0	19.0	19.0	11.5	41.0			29.5	29.5
Total Lost Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	4.5
Act Effct Green (s)				14.5	14.5	14.5	7.0	36.5			27.3	27.3
Actuated g/C Ratio				0.24	0.24	0.24	0.12	0.61			0.46	0.46
v/c Ratio				0.71	0.63	0.47	0.44	0.29			0.41	0.70
Control Delay				33.5	21.1	7.1	32.8	1.9			12.4	6.2
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				33.5	21.1	7.1	32.8	1.9			12.4	6.2
LOS				C	C	A	C	A			B	A
Approach Delay					21.0			6.9			9.9	
Approach LOS					C			A			A	
Queue Length 50th (ft)				92	57	3	21	10			68	0
Queue Length 95th (ft)				#195	#137	53	m40	11			93	63
Internal Link Dist (ft)		1484			1308			250			2960	
Turn Bay Length (ft)				325		325	110					210
Base Capacity (vph)				376	409	512	319	2464			2323	930
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.71	0.63	0.47	0.44	0.29			0.41	0.70

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 11.7

Intersection LOS: B

Intersection Capacity Utilization 68.9%

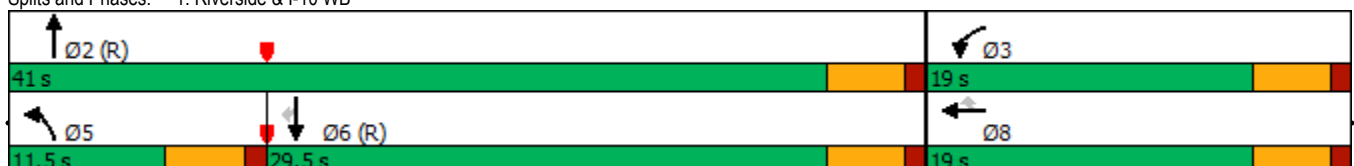
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Riverside & I-10 WB

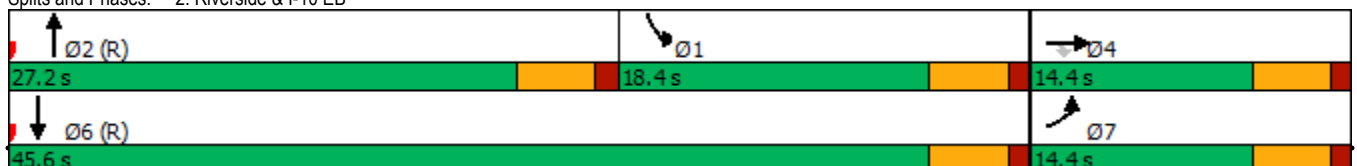


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	313	2	175	0	0	0	0	511	333	473	785	0
Future Volume (vph)	313	2	175	0	0	0	0	511	333	473	785	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325		325	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1559	1477	1395	0	0	0	0	3813	0	2736	2820	0
Flt Permitted	0.950	0.959								0.950		
Satd. Flow (perm)	1559	1477	1395	0	0	0	0	3813	0	2736	2820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11	164					317				
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1551			1364			1911			330	
Travel Time (s)		19.2			16.9			26.1			4.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)	46%		13%									
Lane Group Flow (vph)	182	181	164	0	0	0	0	907	0	509	844	0
Turn Type	Prot	NA	Perm					NA		Prot	NA	
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Total Split (s)	14.4	14.4	14.4					27.2		18.4	45.6	
Total Lost Time (s)	4.5	4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)	9.9	9.9	9.9					22.7		13.9	41.1	
Actuated g/C Ratio	0.16	0.16	0.16					0.38		0.23	0.68	
v/c Ratio	0.71	0.72	0.45					0.55		0.80	0.44	
Control Delay	41.6	41.3	8.9					10.7		30.6	2.7	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.2	
Total Delay	41.6	41.3	8.9					10.7		30.6	3.0	
LOS	D	D	A					B		C	A	
Approach Delay		31.3						10.7			13.3	
Approach LOS		C						B			B	
Queue Length 50th (ft)	66	64	0					55		86	10	
Queue Length 95th (ft)	#155	#160	46					89		#160	30	
Internal Link Dist (ft)		1471			1284			1831			250	
Turn Bay Length (ft)	325		325									
Base Capacity (vph)	257	252	367					1639		633	1931	
Starvation Cap Reductn	0	0	0					0		0	412	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.71	0.72	0.45					0.55		0.80	0.56	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 1 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 15.9
 Intersection LOS: B
 Intersection Capacity Utilization 68.9%
 ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Riverside & I-10 EB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	287	57	30	13	9	42	44	484	11	20	495	405
Future Volume (vph)	287	57	30	13	9	42	44	484	11	20	495	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	130		0	185		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1641	3111	0	1641	2875	0	1410	2812	0	1410	2629	0
Flt Permitted	0.718			0.690			0.950			0.950		
Satd. Flow (perm)	1240	3111	0	1192	2875	0	1410	2812	0	1410	2629	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			47			3				281
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1345			702			2629				1911
Travel Time (s)		20.4			10.6			35.9				26.1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	322	98	0	15	57	0	49	556	0	22	1011	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	36.5	36.5		36.5	36.5		11.6	37.0		11.5	36.9	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effct Green (s)	22.9	22.9		22.9	22.9		7.3	36.0		7.2	33.8	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.10	0.50		0.10	0.47	
v/c Ratio	0.82	0.10		0.04	0.06		0.35	0.40		0.16	0.73	
Control Delay	40.7	12.5		17.5	7.2		42.3	15.2		38.1	17.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.7	12.5		17.5	7.2		42.3	15.2		38.1	17.7	
LOS	D	B		B	A		D	B		D	B	
Approach Delay		34.2			9.4			17.4			18.2	
Approach LOS		C			A			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	72.2
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.82
Intersection Signal Delay:	20.8
Intersection Capacity Utilization:	66.3%
Analysis Period (min):	15
Intersection LOS:	C
ICU Level of Service:	C

Splits and Phases: 3: Riverside & Slover

Ø1	Ø2	Ø4
11.5 s	37 s	36.5 s
Ø5	Ø6	Ø8
11.6 s	36.9 s	36.5 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	12	25	20	17	43	23	480	20	16	408	33
Future Volume (vph)	80	12	25	20	17	43	23	480	20	16	408	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	125		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1622	0	1641	1541	0	1410	2803	0	1410	2789	0
Flt Permitted		0.758		0.741			0.950			0.950		
Satd. Flow (perm)	0	1271	0	1280	1541	0	1410	2803	0	1410	2789	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			44			5				11
Link Speed (mph)		40			40			55				50
Link Distance (ft)		1365			327			1640				2629
Travel Time (s)		23.3			5.6			20.3				35.9
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	120	0	20	61	0	23	510	0	16	450	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	37.0	37.0		37.0	37.0		12.0	36.0		12.0	36.0	
Total Lost Time (s)		4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effct Green (s)		10.1		10.1	10.1		7.2	37.3		7.2	37.3	
Actuated g/C Ratio		0.18		0.18	0.18		0.13	0.68		0.13	0.68	
v/c Ratio		0.48		0.09	0.19		0.12	0.27		0.09	0.24	
Control Delay		24.7		19.7	11.0		25.2	6.6		24.7	6.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		24.7		19.7	11.0		25.2	6.6		24.7	6.3	
LOS		C		B	B		C	A		C	A	
Approach Delay		24.7			13.1			7.4			7.0	
Approach LOS		C			B			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	55
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.48
Intersection Signal Delay:	9.3
Intersection LOS:	A
Intersection Capacity Utilization:	39.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 4: Riverside & Santa Ana















Intersection

Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↕↕		↔	↕↕
Traffic Vol, veh/h	15	26	475	30	35	397
Future Vol, veh/h	15	26	475	30	35	397
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	10	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	28	28	28	28
Mvmt Flow	16	28	516	33	38	432

Major/Minor	Minor1	Major1		Major2	
Conflicting Flow All	825	275	0	0	549
Stage 1	533	-	-	-	-
Stage 2	292	-	-	-	-
Critical Hdwy	7	7.1	-	-	4.66
Critical Hdwy Stg 1	6	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-
Follow-up Hdwy	3.6	3.4	-	-	2.48
Pot Cap-1 Maneuver	295	699	-	-	857
Stage 1	531	-	-	-	-
Stage 2	709	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	282	699	-	-	857
Mov Cap-2 Maneuver	397	-	-	-	-
Stage 1	531	-	-	-	-
Stage 2	678	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0.8
HCM LOS	B		

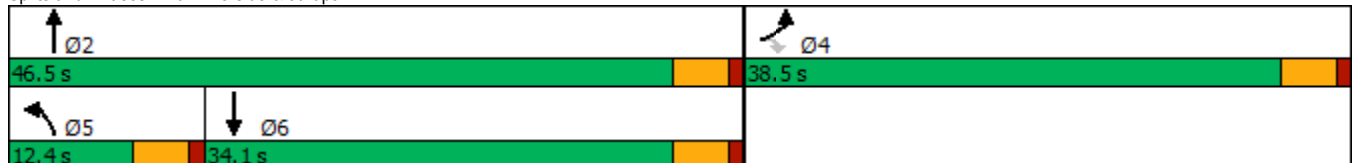
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	547	857	-
HCM Lane V/C Ratio	-	-	0.081	0.044	-
HCM Control Delay (s)	-	-	12.2	9.4	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	47	43	465	363	30
Future Volume (vph)	24	47	43	465	363	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	550			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1641	1468	1410	2820	2789	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1641	1468	1410	2820	2789	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		49			11	
Link Speed (mph)	40			55	55	
Link Distance (ft)	1442			2002	649	
Travel Time (s)	24.6			24.8	8.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	10%	10%	28%	28%	28%	28%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	49	45	484	409	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Total Split (s)	38.5	38.5	12.4	46.5	34.1	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Act Effct Green (s)	7.2	7.2	7.4	47.6	42.7	
Actuated g/C Ratio	0.13	0.13	0.13	0.83	0.75	
v/c Ratio	0.12	0.22	0.25	0.21	0.20	
Control Delay	24.2	10.9	26.2	2.3	5.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	24.2	10.9	26.2	2.3	5.4	
LOS	C	B	C	A	A	
Approach Delay	15.3			4.3	5.4	
Approach LOS	B			A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	57.1
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.25
Intersection Signal Delay:	5.6
Intersection LOS:	A
Intersection Capacity Utilization:	33.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 6: Riverside & Jurupa



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	263	2	465	200	1282	0	0	782	422
Future Volume (vph)	0	0	0	263	2	465	200	1282	0	0	782	422
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		325	110		0	0		210
Storage Lanes	0		0	1		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1559	1356	1395	2736	4052	0	0	5106	1262
Flt Permitted				0.950	0.995		0.950					
Satd. Flow (perm)	0	0	0	1559	1356	1395	2736	4052	0	0	5106	1262
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					53	101						440
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1564			1388			330			3040	
Travel Time (s)		19.4			17.2			4.5			41.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)				10%		47%						
Lane Group Flow (vph)	0	0	0	247	256	257	208	1335	0	0	815	440
Turn Type				Prot	NA	Perm	Prot	NA			NA	Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Total Split (s)				22.0	22.0	22.0	14.0	43.0			29.0	29.0
Total Lost Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	4.5
Act Effct Green (s)				17.5	17.5	17.5	8.9	38.5			25.1	25.1
Actuated g/C Ratio				0.27	0.27	0.27	0.14	0.59			0.39	0.39
v/c Ratio				0.59	0.64	0.57	0.56	0.56			0.41	0.58
Control Delay				27.4	24.8	18.0	30.5	3.8			15.5	5.3
Queue Delay				0.0	0.0	0.0	0.0	0.2			0.0	0.0
Total Delay				27.4	24.8	18.0	30.5	4.0			15.5	5.3
LOS				C	C	B	C	A			B	A
Approach Delay					23.4			7.6			11.9	
Approach LOS					C			A			B	
Queue Length 50th (ft)				89	75	53	34	21			67	0
Queue Length 95th (ft)				161	#159	125	m40	m36			91	53
Internal Link Dist (ft)		1484			1308			250			2960	
Turn Bay Length (ft)				325		325	110					210
Base Capacity (vph)				419	403	449	399	2400			1973	757
Starvation Cap Reductn				0	0	0	0	332			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.59	0.64	0.57	0.52	0.65			0.41	0.58

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 12.5

Intersection LOS: B

Intersection Capacity Utilization 68.4%

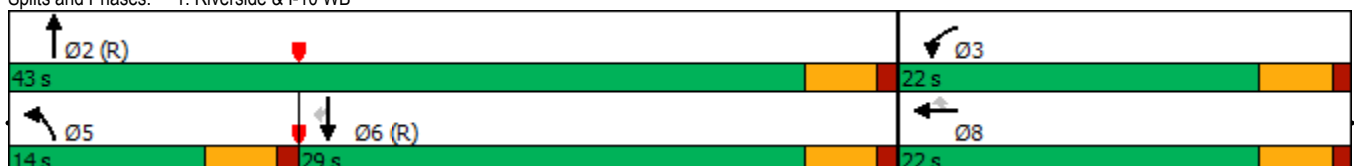
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Riverside & I-10 WB

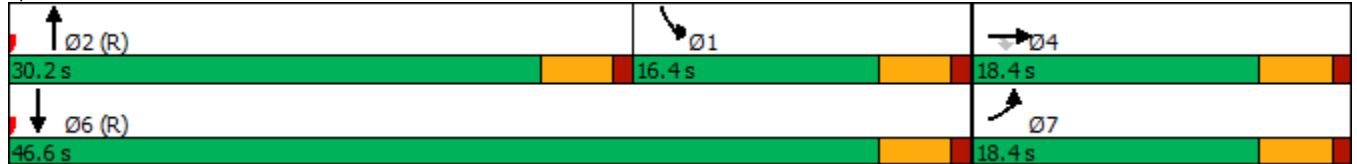


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	558	0	116	0	0	0	0	927	469	423	617	0
Future Volume (vph)	558	0	116	0	0	0	0	927	469	423	617	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325		325	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1559	1491	1395	0	0	0	0	3850	0	2736	2820	0
Flt Permitted	0.950	0.954								0.950		
Satd. Flow (perm)	1559	1491	1395	0	0	0	0	3850	0	2736	2820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		101	112					232				
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1551			1364			1911			330	
Travel Time (s)		19.2			16.9			26.1			4.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)	49%		10%									
Lane Group Flow (vph)	306	307	112	0	0	0	0	1501	0	455	663	0
Turn Type	Prot	NA	Perm					NA		Prot	NA	
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Total Split (s)	18.4	18.4	18.4					30.2		16.4	46.6	
Total Lost Time (s)	4.5	4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)	13.9	13.9	13.9					25.7		11.9	42.1	
Actuated g/C Ratio	0.21	0.21	0.21					0.40		0.18	0.65	
v/c Ratio	0.92	0.77	0.29					0.90		0.91	0.36	
Control Delay	61.3	31.5	7.3					25.1		46.5	2.5	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.0	
Total Delay	61.3	31.5	7.3					25.1		46.5	2.5	
LOS	E	C	A					C		D	A	
Approach Delay		40.4						25.1			20.4	
Approach LOS		D						C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	64 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.92
Intersection Signal Delay:	26.8
Intersection Capacity Utilization:	68.4%
Analysis Period (min):	15
Intersection LOS:	C
ICU Level of Service:	C

Splits and Phases: 2: Riverside & I-10 EB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	294	191	49	11	12	135	53	869	5	16	404	298
Future Volume (vph)	294	191	49	11	12	135	53	869	5	16	404	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	130		0	185		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1641	3180	0	1641	2832	0	1410	2817	0	1410	2640	0
Flt Permitted	0.654			0.597			0.950			0.950		
Satd. Flow (perm)	1130	3180	0	1031	2832	0	1410	2817	0	1410	2640	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			141			1				253
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1345			702			2629				1911
Travel Time (s)		20.4			10.6			35.9				26.1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	306	250	0	11	154	0	55	910	0	17	731	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	36.5	36.5		36.5	36.5		11.6	37.0		11.5	36.9	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effct Green (s)	24.1	24.1		24.1	24.1		7.3	37.7		7.3	33.6	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.10	0.52		0.10	0.46	
v/c Ratio	0.82	0.23		0.03	0.15		0.39	0.63		0.12	0.54	
Control Delay	42.4	15.1		17.3	4.6		44.5	17.8		38.2	12.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.4	15.1		17.3	4.6		44.5	17.8		38.2	12.9	
LOS	D	B		B	A		D	B		D	B	
Approach Delay		30.1			5.5			19.3			13.5	
Approach LOS		C			A			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	73.1
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.82
Intersection Signal Delay:	19.1
Intersection Capacity Utilization:	67.1%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	C

Splits and Phases: 3: Riverside & Slover

11.5 s	37 s	36.5 s
11.6 s	36.9 s	36.5 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	10	25	25	19	54	38	738	19	20	402	48
Future Volume (vph)	112	10	25	25	19	54	38	738	19	20	402	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	125		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1625	0	1641	1536	0	1410	2809	0	1410	2775	0
Flt Permitted		0.727		0.706			0.950			0.950		
Satd. Flow (perm)	0	1227	0	1219	1536	0	1410	2809	0	1410	2775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			57			3				17
Link Speed (mph)		40			40			55				50
Link Distance (ft)		1365			327			1640				2629
Travel Time (s)		23.3			5.6			20.3				35.9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	155	0	26	77	0	40	797	0	21	474	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	36.6	36.6		36.6	36.6		12.0	36.8		11.6	36.4	
Total Lost Time (s)		4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effect Green (s)		12.6		12.6	12.6		7.3	38.0		7.2	35.7	
Actuated g/C Ratio		0.20		0.20	0.20		0.12	0.62		0.12	0.58	
v/c Ratio		0.60		0.11	0.22		0.24	0.46		0.13	0.29	
Control Delay		30.0		20.8	10.7		30.9	9.2		29.6	9.1	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		30.0		20.8	10.7		30.9	9.2		29.6	9.1	
LOS		C		C	B		C	A		C	A	
Approach Delay		30.0			13.2			10.3			10.0	
Approach LOS		C			B			B			A	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	61.7
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	12.3
Intersection Capacity Utilization:	53.0%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	A

Splits and Phases: 4: Riverside & Santa Ana

11.6 s	36.8 s	36.6 s
12 s	36.4 s	36.6 s













Intersection

Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↕↕		↔	↕↕
Traffic Vol, veh/h	28	70	670	9	35	396
Future Vol, veh/h	28	70	670	9	35	396
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	10	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	10	10	28	28	28	28
Mvmt Flow	29	72	691	9	36	408

Major/Minor	Minor1	Major1	Major2	Major3	Major4
Conflicting Flow All	972	350	0	0	700
Stage 1	696	-	-	-	-
Stage 2	276	-	-	-	-
Critical Hdwy	7	7.1	-	-	4.66
Critical Hdwy Stg 1	6	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-
Follow-up Hdwy	3.6	3.4	-	-	2.48
Pot Cap-1 Maneuver	236	624	-	-	739
Stage 1	435	-	-	-	-
Stage 2	722	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	224	624	-	-	739
Mov Cap-2 Maneuver	337	-	-	-	-
Stage 1	435	-	-	-	-
Stage 2	687	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14	0	0.8
HCM LOS	B		

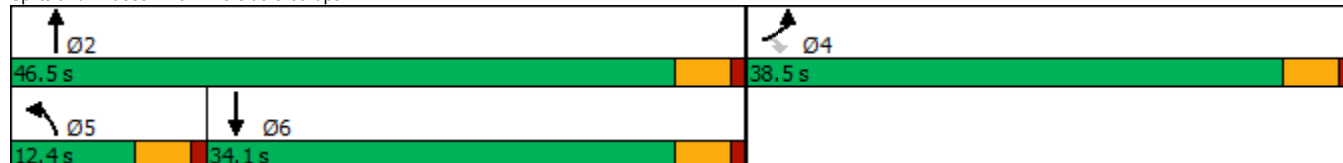
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	502	739	-
HCM Lane V/C Ratio	-	-	0.201	0.049	-
HCM Control Delay (s)	-	-	14	10.1	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.7	0.2	-

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	39	83	46	640	383	41
Future Volume (vph)	39	83	46	640	383	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	550			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1641	1468	1410	2820	2781	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1641	1468	1410	2820	2781	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		84			14	
Link Speed (mph)	40			55	55	
Link Distance (ft)	1442			2002	649	
Travel Time (s)	24.6			24.8	8.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	10%	10%	28%	28%	28%	28%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	84	46	646	428	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Total Split (s)	38.5	38.5	12.4	46.5	34.1	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Act Effct Green (s)	7.4	7.4	7.4	45.8	40.8	
Actuated g/C Ratio	0.13	0.13	0.13	0.77	0.69	
v/c Ratio	0.19	0.33	0.26	0.30	0.22	
Control Delay	25.2	10.3	27.2	3.2	6.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.2	10.3	27.2	3.2	6.0	
LOS	C	B	C	A	A	
Approach Delay	15.0			4.8	6.0	
Approach LOS	B			A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	59.1
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.33
Intersection Signal Delay:	6.2
Intersection LOS:	A
Intersection Capacity Utilization:	34.8%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 6: Riverside & Jurupa



Existing + Ambient Growth Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	370	1	361	135	694	0	0	914	628
Future Volume (vph)	0	0	0	370	1	361	135	694	0	0	914	628
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		325	110		0	0		210
Storage Lanes	0		0	1		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1559	1414	1395	2736	4052	0	0	5106	1262
Flt Permitted				0.950	0.977		0.950					
Satd. Flow (perm)	0	0	0	1559	1414	1395	2736	4052	0	0	5106	1262
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					89	223						668
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1564			1388			330			3040	
Travel Time (s)		19.4			17.2			4.5			41.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)				31%		36%						
Lane Group Flow (vph)	0	0	0	272	261	246	144	738	0	0	972	668
Turn Type				Prot	NA	Perm	Prot	NA			NA	Perm
Protected Phases				3	8		5	2				6
Permitted Phases						8						6
Total Split (s)				19.0	19.0	19.0	11.5	41.0			29.5	29.5
Total Lost Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	4.5
Act Effect Green (s)				14.5	14.5	14.5	7.0	36.5			27.3	27.3
Actuated g/C Ratio				0.24	0.24	0.24	0.12	0.61			0.46	0.46
v/c Ratio				0.72	0.64	0.49	0.45	0.30			0.42	0.71
Control Delay				34.5	21.7	7.9	33.1	1.8			12.4	6.5
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				34.5	21.7	7.9	33.1	1.8			12.4	6.5
LOS				C	C	A	C	A			B	A
Approach Delay					21.8			6.9			10.0	
Approach LOS					C			A			B	
Queue Length 50th (ft)				95	59	6	22	10			70	0
Queue Length 95th (ft)				#201	#143	58	m40	11			95	64
Internal Link Dist (ft)		1484			1308			250			2960	
Turn Bay Length (ft)				325		325	110					210
Base Capacity (vph)				376	409	506	319	2464			2323	938
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.72	0.64	0.49	0.45	0.30			0.42	0.71

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 12.0
 Intersection LOS: B
 Intersection Capacity Utilization 69.9%
 ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Riverside & I-10 WB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	319	2	178	0	0	0	0	521	340	482	801	0
Future Volume (vph)	319	2	178	0	0	0	0	521	340	482	801	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325		325	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1559	1477	1395	0	0	0	0	3813	0	2736	2820	0
Flt Permitted	0.950	0.959								0.950		
Satd. Flow (perm)	1559	1477	1395	0	0	0	0	3813	0	2736	2820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11	166					315				
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1551			1364			1911			330	
Travel Time (s)		19.2			16.9			26.1			4.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)	46%		13%									
Lane Group Flow (vph)	185	185	166	0	0	0	0	926	0	518	861	0
Turn Type	Prot	NA	Perm					NA		Prot	NA	
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Total Split (s)	14.4	14.4	14.4					27.2		18.4	45.6	
Total Lost Time (s)	4.5	4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)	9.9	9.9	9.9					22.7		13.9	41.1	
Actuated g/C Ratio	0.16	0.16	0.16					0.38		0.23	0.68	
v/c Ratio	0.72	0.73	0.45					0.57		0.82	0.45	
Control Delay	42.5	42.6	8.9					11.0		31.5	2.8	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.2	
Total Delay	42.5	42.6	8.9					11.0		31.5	3.0	
LOS	D	D	A					B		C	A	
Approach Delay		32.1						11.0			13.7	
Approach LOS		C						B			B	
Queue Length 50th (ft)	67	67	0					57		87	11	
Queue Length 95th (ft)	#158	#164	46					93		m#163	30	
Internal Link Dist (ft)		1471			1284			1831			250	
Turn Bay Length (ft)	325		325									
Base Capacity (vph)	257	252	368					1638		633	1931	
Starvation Cap Reductn	0	0	0					0		0	412	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.72	0.73	0.45					0.57		0.82	0.57	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 1 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 16.3

Intersection Capacity Utilization 69.9%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Riverside & I-10 EB

27.2 s	18.4 s	14.4 s
45.6 s		14.4 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	293	58	31	13	9	43	45	494	11	20	505	413
Future Volume (vph)	293	58	31	13	9	43	45	494	11	20	505	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	130		0	185		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1641	3108	0	1641	2875	0	1410	2812	0	1410	2629	0
Flt Permitted	0.717			0.689			0.950			0.950		
Satd. Flow (perm)	1238	3108	0	1190	2875	0	1410	2812	0	1410	2629	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			48			3			281	
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1345			702			2629			1911	
Travel Time (s)		20.4			10.6			35.9			26.1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	329	100	0	15	58	0	51	567	0	22	1031	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	36.5	36.5		36.5	36.5		11.6	37.0		11.5	36.9	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effect Green (s)	23.5	23.5		23.5	23.5		7.3	35.9		7.2	33.8	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.10	0.49		0.10	0.46	
v/c Ratio	0.82	0.10		0.04	0.06		0.36	0.41		0.16	0.75	
Control Delay	40.8	12.4		17.5	7.1		43.2	15.6		38.4	18.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.8	12.4		17.5	7.1		43.2	15.6		38.4	18.7	
LOS	D	B		B	A		D	B		D	B	
Approach Delay		34.2			9.3			17.9			19.1	
Approach LOS		C			A			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	72.7
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.82
Intersection Signal Delay:	21.4
Intersection Capacity Utilization:	67.2%
Analysis Period (min):	15
Intersection LOS:	C
ICU Level of Service:	C

Splits and Phases: 3: Riverside & Slover

11.5 s	37 s	36.5 s
11.6 s	36.9 s	36.5 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	12	25	20	17	44	23	490	20	16	416	34
Future Volume (vph)	82	12	25	20	17	44	23	490	20	16	416	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	125		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1622	0	1641	1539	0	1410	2803	0	1410	2789	0
Flt Permitted		0.756		0.739			0.950			0.950		
Satd. Flow (perm)	0	1268	0	1276	1539	0	1410	2803	0	1410	2789	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			45			5				11
Link Speed (mph)		40			40			55				50
Link Distance (ft)		1365			327			1640				2629
Travel Time (s)		23.3			5.6			20.3				35.9
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	122	0	20	62	0	23	520	0	16	459	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	37.0	37.0		37.0	37.0		12.0	36.0		12.0	36.0	
Total Lost Time (s)		4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effect Green (s)		10.1		10.1	10.1		7.2	37.3		7.2	37.3	
Actuated g/C Ratio		0.18		0.18	0.18		0.13	0.68		0.13	0.68	
v/c Ratio		0.49		0.09	0.19		0.12	0.27		0.09	0.24	
Control Delay		24.8		19.6	10.9		25.3	6.7		24.8	6.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		24.8		19.6	10.9		25.3	6.7		24.8	6.4	
LOS		C		B	B		C	A		C	A	
Approach Delay		24.8			13.0			7.4			7.0	
Approach LOS		C			B			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	55
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	9.4
Intersection Capacity Utilization:	40.0%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 4: Riverside & Santa Ana



Intersection

Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↕		↔	↕
Traffic Vol, veh/h	15	27	484	31	36	405
Future Vol, veh/h	15	27	484	31	36	405
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	10	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	28	28	28	28
Mvmt Flow	16	29	526	34	39	440

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	841	280	0	0	560
Stage 1	543	-	-	-	-
Stage 2	298	-	-	-	-
Critical Hdwy	7	7.1	-	-	4.66
Critical Hdwy Stg 1	6	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-
Follow-up Hdwy	3.6	3.4	-	-	2.48
Pot Cap-1 Maneuver	288	694	-	-	847
Stage 1	524	-	-	-	-
Stage 2	704	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	275	694	-	-	847
Mov Cap-2 Maneuver	391	-	-	-	-
Stage 1	524	-	-	-	-
Stage 2	672	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0.8
HCM LOS	B		

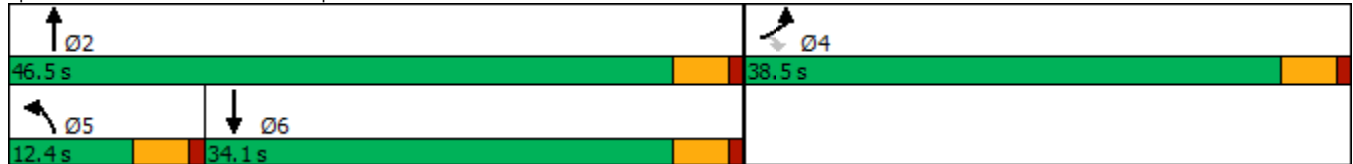
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	544	847	-
HCM Lane V/C Ratio	-	-	0.084	0.046	-
HCM Control Delay (s)	-	-	12.2	9.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	48	44	474	370	31
Future Volume (vph)	24	48	44	474	370	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	550			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1641	1468	1410	2820	2786	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1641	1468	1410	2820	2786	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		50			11	
Link Speed (mph)	40			55	55	
Link Distance (ft)	1442			2002	649	
Travel Time (s)	24.6			24.8	8.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	10%	10%	28%	28%	28%	28%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	50	46	494	417	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Total Split (s)	38.5	38.5	12.4	46.5	34.1	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Act Effct Green (s)	7.2	7.2	7.4	47.3	42.5	
Actuated g/C Ratio	0.13	0.13	0.13	0.83	0.75	
v/c Ratio	0.12	0.22	0.25	0.21	0.20	
Control Delay	24.2	10.8	26.3	2.3	5.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	24.2	10.8	26.3	2.3	5.4	
LOS	C	B	C	A	A	
Approach Delay	15.3			4.4	5.4	
Approach LOS	B			A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	56.8
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.25
Intersection Signal Delay:	5.6
Intersection Capacity Utilization:	34.1%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 6: Riverside & Jurupa



Existing + Ambient Growth - PM Peak Hour
1: Riverside & I-10 WB

Synchro 11 Report
Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	268	2	474	204	1308	0	0	798	430
Future Volume (vph)	0	0	0	268	2	474	204	1308	0	0	798	430
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		325	110		0	0		210
Storage Lanes	0		0	1		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1559	1356	1395	2736	4052	0	0	5106	1262
Flt Permitted				0.950	0.995		0.950					
Satd. Flow (perm)	0	0	0	1559	1356	1395	2736	4052	0	0	5106	1262
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					50	101						448
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1564			1388			330			3040	
Travel Time (s)		19.4			17.2			4.5			41.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)				10%		47%						
Lane Group Flow (vph)	0	0	0	251	262	262	213	1363	0	0	831	448
Turn Type				Prot	NA	Perm	Prot	NA			NA	Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Total Split (s)				22.0	22.0	22.0	14.0	43.0			29.0	29.0
Total Lost Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	4.5
Act Effct Green (s)				17.5	17.5	17.5	8.9	38.5			25.1	25.1
Actuated g/C Ratio				0.27	0.27	0.27	0.14	0.59			0.39	0.39
v/c Ratio				0.60	0.65	0.58	0.57	0.57			0.42	0.59
Control Delay				27.7	26.1	18.5	30.4	3.9			15.6	5.4
Queue Delay				0.0	0.0	0.0	0.0	0.2			0.0	0.0
Total Delay				27.7	26.1	18.5	30.4	4.1			15.6	5.4
LOS				C	C	B	C	A			B	A
Approach Delay					24.0			7.7			12.0	
Approach LOS					C			A			B	
Queue Length 50th (ft)				90	80	55	34	24			69	0
Queue Length 95th (ft)				164	#171	128	m40	m36			93	54
Internal Link Dist (ft)		1484			1308			250			2960	
Turn Bay Length (ft)				325		325	110					210
Base Capacity (vph)				419	401	449	399	2400			1970	761
Starvation Cap Reductn				0	0	0	0	331			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.60	0.65	0.58	0.53	0.66			0.42	0.59

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 12.7

Intersection LOS: B

Intersection Capacity Utilization 69.5%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Riverside & I-10 WB

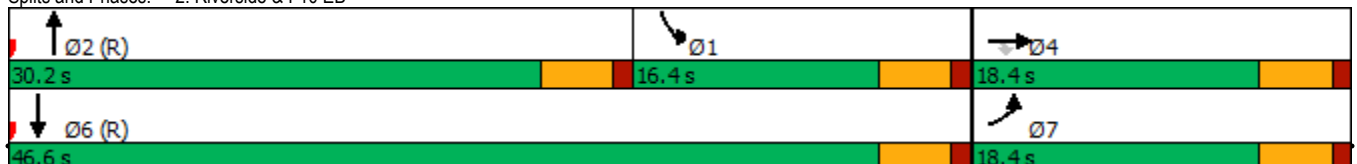


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	569	0	118	0	0	0	0	946	478	431	629	0
Future Volume (vph)	569	0	118	0	0	0	0	946	478	431	629	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325		325	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1559	1491	1395	0	0	0	0	3850	0	2736	2820	0
Flt Permitted	0.950	0.954								0.950		
Satd. Flow (perm)	1559	1491	1395	0	0	0	0	3850	0	2736	2820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		101	114					232				
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1551			1364			1911			330	
Travel Time (s)		19.2			16.9			26.1			4.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)	49%		10%									
Lane Group Flow (vph)	312	313	114	0	0	0	0	1531	0	463	676	0
Turn Type	Prot	NA	Perm					NA		Prot	NA	
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Total Split (s)	18.4	18.4	18.4					30.2		16.4	46.6	
Total Lost Time (s)	4.5	4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)	13.9	13.9	13.9					25.7		11.9	42.1	
Actuated g/C Ratio	0.21	0.21	0.21					0.40		0.18	0.65	
v/c Ratio	0.94	0.79	0.29					0.92		0.93	0.37	
Control Delay	64.8	32.9	7.4					27.0		49.0	2.6	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.0	
Total Delay	64.8	32.9	7.4					27.0		49.0	2.6	
LOS	E	C	A					C		D	A	
Approach Delay		42.4						27.0			21.4	
Approach LOS		D						C			C	
Queue Length 50th (ft)	128	86	0					177		88	12	
Queue Length 95th (ft)	#274	#221	37					#282		#178	30	
Internal Link Dist (ft)		1471			1284			1831			250	
Turn Bay Length (ft)	325		325									
Base Capacity (vph)	333	398	387					1662		500	1826	
Starvation Cap Reductn	0	0	0					0		0	0	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.94	0.79	0.29					0.92		0.93	0.37	

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 64 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 28.5
 Intersection LOS: C
 Intersection Capacity Utilization 69.5%
 ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Riverside & I-10 EB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	195	50	11	12	138	54	886	5	16	412	304
Future Volume (vph)	300	195	50	11	12	138	54	886	5	16	412	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	130		0	185		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1641	3180	0	1641	2829	0	1410	2817	0	1410	2640	0
Flt Permitted	0.652			0.594			0.950			0.950		
Satd. Flow (perm)	1126	3180	0	1026	2829	0	1410	2817	0	1410	2640	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			144			1			255	
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1345			702			2629			1911	
Travel Time (s)		20.4			10.6			35.9			26.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	313	255	0	11	157	0	56	928	0	17	746	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	36.5	36.5		36.5	36.5		11.6	37.0		11.5	36.9	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effect Green (s)	24.5	24.5		24.5	24.5		7.3	37.7		7.2	33.6	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.10	0.51		0.10	0.46	
v/c Ratio	0.83	0.23		0.03	0.15		0.40	0.64		0.12	0.56	
Control Delay	43.4	15.1		17.3	4.6		45.1	18.4		38.3	13.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	43.4	15.1		17.3	4.6		45.1	18.4		38.3	13.3	
LOS	D	B		B	A		D	B		D	B	
Approach Delay		30.7			5.4			19.9			13.9	
Approach LOS		C			A			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	73.5
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	19.5
Intersection Capacity Utilization:	67.9%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	C

Splits and Phases: 3: Riverside & Slover

11.5 s	37 s	36.5 s
11.6 s	36.9 s	36.5 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	10	25	25	19	55	39	753	19	20	410	49
Future Volume (vph)	114	10	25	25	19	55	39	753	19	20	410	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	125		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1627	0	1641	1534	0	1410	2809	0	1410	2775	0
Flt Permitted		0.726		0.706			0.950			0.950		
Satd. Flow (perm)	0	1226	0	1219	1534	0	1410	2809	0	1410	2775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			58			3				17
Link Speed (mph)		40			40			55				50
Link Distance (ft)		1365			327			1640				2629
Travel Time (s)		23.3			5.6			20.3				35.9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	157	0	26	78	0	41	813	0	21	484	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	36.6	36.6		36.6	36.6		12.0	36.8		11.6	36.4	
Total Lost Time (s)		4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effect Green (s)		12.7		12.7	12.7		7.4	38.0		7.2	35.7	
Actuated g/C Ratio		0.21		0.21	0.21		0.12	0.61		0.12	0.58	
v/c Ratio		0.60		0.10	0.22		0.24	0.47		0.13	0.30	
Control Delay		30.0		20.8	10.5		31.1	9.4		29.7	9.2	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		30.0		20.8	10.5		31.1	9.4		29.7	9.2	
LOS		C		C	B		C	A		C	A	
Approach Delay		30.0			13.1			10.5			10.1	
Approach LOS		C			B			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	61.8
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	12.4
Intersection Capacity Utilization:	53.5%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	A

Splits and Phases: 4: Riverside & Santa Ana

11.6 s	36.8 s	36.6 s
12 s	36.4 s	36.6 s

Intersection

Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↕		↔	↕
Traffic Vol, veh/h	29	71	683	9	36	404
Future Vol, veh/h	29	71	683	9	36	404
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	10	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	10	10	28	28	28	28
Mvmt Flow	30	73	704	9	37	416

Major/Minor	Minor1	Major1	Major2	Major3	Major4
Conflicting Flow All	991	357	0	0	713
Stage 1	709	-	-	-	-
Stage 2	282	-	-	-	-
Critical Hdwy	7	7.1	-	-	4.66
Critical Hdwy Stg 1	6	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-
Follow-up Hdwy	3.6	3.4	-	-	2.48
Pot Cap-1 Maneuver	229	617	-	-	730
Stage 1	428	-	-	-	-
Stage 2	717	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	217	617	-	-	730
Mov Cap-2 Maneuver	330	-	-	-	-
Stage 1	428	-	-	-	-
Stage 2	680	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	0.8
HCM LOS	B		

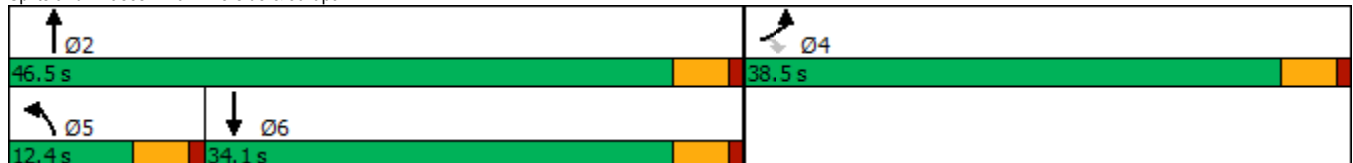
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	493	730	-
HCM Lane V/C Ratio	-	-	0.209	0.051	-
HCM Control Delay (s)	-	-	14.2	10.2	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	40	85	47	653	391	42
Future Volume (vph)	40	85	47	653	391	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	550			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1641	1468	1410	2820	2781	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1641	1468	1410	2820	2781	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		86			15	
Link Speed (mph)	40			55	55	
Link Distance (ft)	1442			2002	649	
Travel Time (s)	24.6			24.8	8.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	10%	10%	28%	28%	28%	28%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	86	47	660	437	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Total Split (s)	38.5	38.5	12.4	46.5	34.1	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Act Effct Green (s)	7.5	7.5	7.4	45.8	40.8	
Actuated g/C Ratio	0.13	0.13	0.12	0.77	0.69	
v/c Ratio	0.19	0.33	0.27	0.30	0.23	
Control Delay	25.2	10.3	27.3	3.2	6.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.2	10.3	27.3	3.2	6.0	
LOS	C	B	C	A	A	
Approach Delay	15.0			4.8	6.0	
Approach LOS	B			A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	59.2
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.33
Intersection Signal Delay:	6.2
Intersection LOS:	A
Intersection Capacity Utilization:	35.1%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 6: Riverside & Jurupa



Existing + Ambient + Project (PCE) Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	387	1	361	141	695	0	0	919	628
Future Volume (vph)	0	0	0	387	1	361	141	695	0	0	919	628
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		325	110		0	0		210
Storage Lanes	0		0	1		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1559	1421	1395	2736	4052	0	0	5106	1262
Flt Permitted				0.950	0.975		0.950					
Satd. Flow (perm)	0	0	0	1559	1421	1395	2736	4052	0	0	5106	1262
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					76	223						668
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1564			1388			330			3040	
Travel Time (s)		19.4			17.2			4.5			41.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)				33%		34%						
Lane Group Flow (vph)	0	0	0	276	268	253	150	739	0	0	978	668
Turn Type				Prot	NA	Perm	Prot	NA			NA	Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Total Split (s)				19.0	19.0	19.0	11.5	41.0			29.5	29.5
Total Lost Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	4.5
Act Effect Green (s)				14.5	14.5	14.5	7.0	36.5			27.3	27.3
Actuated g/C Ratio				0.24	0.24	0.24	0.12	0.61			0.46	0.46
v/c Ratio				0.73	0.67	0.50	0.47	0.30			0.42	0.71
Control Delay				35.2	24.6	8.4	33.6	1.9			12.5	6.5
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				35.2	24.6	8.4	33.6	1.9			12.5	6.5
LOS				D	C	A	C	A			B	A
Approach Delay					23.1			7.2			10.0	
Approach LOS					C			A			B	
Queue Length 50th (ft)				96	67	8	23	10			70	0
Queue Length 95th (ft)				#205	#170	63	m41	11			95	64
Internal Link Dist (ft)		1484			1308			250			2960	
Turn Bay Length (ft)				325		325	110					210
Base Capacity (vph)				376	401	506	319	2464			2323	938
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.73	0.67	0.50	0.47	0.30			0.42	0.71

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 12.4
 Intersection LOS: B
 Intersection Capacity Utilization 70.4%
 ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Riverside & I-10 WB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	319	2	195	0	0	0	0	528	345	482	823	0
Future Volume (vph)	319	2	195	0	0	0	0	528	345	482	823	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325		325	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1559	1467	1395	0	0	0	0	3813	0	2736	2820	0
Flt Permitted	0.950	0.962								0.950		
Satd. Flow (perm)	1559	1467	1395	0	0	0	0	3813	0	2736	2820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18	172					317				
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1551			1364			1911			330	
Travel Time (s)		19.2			16.9			26.1			4.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)	44%		18%									
Lane Group Flow (vph)	192	191	172	0	0	0	0	939	0	518	885	0
Turn Type	Prot	NA	Perm					NA		Prot	NA	
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Total Split (s)	14.4	14.4	14.4					27.2		18.4	45.6	
Total Lost Time (s)	4.5	4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)	9.9	9.9	9.9					22.7		13.9	41.1	
Actuated g/C Ratio	0.16	0.16	0.16					0.38		0.23	0.68	
v/c Ratio	0.75	0.74	0.46					0.57		0.82	0.46	
Control Delay	44.8	42.2	8.9					11.1		31.3	2.9	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.3	
Total Delay	44.8	42.2	8.9					11.1		31.3	3.2	
LOS	D	D	A					B		C	A	
Approach Delay		32.8						11.1			13.6	
Approach LOS		C						B			B	
Queue Length 50th (ft)	70	65	0					59		87	12	
Queue Length 95th (ft)	#166	#168	47					95		m#162	32	
Internal Link Dist (ft)		1471			1284			1831			250	
Turn Bay Length (ft)	325		325									
Base Capacity (vph)	257	257	373					1639		633	1931	
Starvation Cap Reductn	0	0	0					0		0	405	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.75	0.74	0.46					0.57		0.82	0.58	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 1 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 16.4
 Intersection Capacity Utilization 70.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Riverside & I-10 EB

27.2 s	18.4 s	14.4 s
45.6 s		14.4 s

Existing + Ambient + Project - AM Peak Hour
 3: Riverside & Slover

Synchro 11 Report
 Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	293	58	33	13	9	43	46	506	11	20	544	413
Future Volume (vph)	293	58	33	13	9	43	46	506	11	20	544	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	130		0	185		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1641	3105	0	1641	2875	0	1410	2812	0	1410	2637	0
Flt Permitted	0.717			0.688			0.950			0.950		
Satd. Flow (perm)	1238	3105	0	1188	2875	0	1410	2812	0	1410	2637	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			48			3				260
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1345			702			2629				1911
Travel Time (s)		20.4			10.6			35.9				26.1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	329	102	0	15	58	0	52	581	0	22	1075	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	36.5	36.5		36.5	36.5		11.6	37.0		11.5	36.9	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effect Green (s)	23.5	23.5		23.5	23.5		7.3	35.9		7.2	33.7	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.10	0.49		0.10	0.46	
v/c Ratio	0.82	0.10		0.04	0.06		0.37	0.42		0.16	0.79	
Control Delay	40.9	12.2		17.5	7.1		43.3	15.7		38.4	20.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.9	12.2		17.5	7.1		43.3	15.7		38.4	20.7	
LOS	D	B		B	A		D	B		D	C	
Approach Delay		34.1			9.3			18.0			21.1	
Approach LOS		C			A			B			C	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	72.6
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.82
Intersection Signal Delay:	22.3
Intersection Capacity Utilization:	68.3%
Analysis Period (min):	15
Intersection LOS:	C
ICU Level of Service:	C

Splits and Phases: 3: Riverside & Slover

11.5 s	37 s	36.5 s
11.6 s	36.9 s	36.5 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	12	27	20	17	44	24	503	20	16	457	34
Future Volume (vph)	82	12	27	20	17	44	24	503	20	16	457	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	125		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1620	0	1641	1539	0	1410	2803	0	1410	2792	0
Flt Permitted		0.759		0.735			0.950			0.950		
Satd. Flow (perm)	0	1272	0	1270	1539	0	1410	2803	0	1410	2792	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			45			5			10	
Link Speed (mph)		40			40			55			50	
Link Distance (ft)		1365			327			1640			2629	
Travel Time (s)		23.3			5.6			20.3			35.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	0	20	62	0	24	533	0	16	501	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	37.0	37.0		37.0	37.0		12.0	36.0		12.0	36.0	
Total Lost Time (s)		4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effct Green (s)		10.2		10.2	10.2		7.2	37.2		7.2	37.2	
Actuated g/C Ratio		0.19		0.19	0.19		0.13	0.68		0.13	0.68	
v/c Ratio		0.49		0.09	0.19		0.13	0.28		0.09	0.26	
Control Delay		24.6		19.6	10.9		25.3	6.7		24.8	6.6	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		24.6		19.6	10.9		25.3	6.7		24.8	6.6	
LOS		C		B	B		C	A		C	A	
Approach Delay		24.6			13.0			7.5			7.1	
Approach LOS		C			B			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	55
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	9.4
Intersection Capacity Utilization:	40.9%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 4: Riverside & Santa Ana



Intersection

Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↕↕		↔↔	↕↕
Traffic Vol, veh/h	15	27	498	31	36	448
Future Vol, veh/h	15	27	498	31	36	448
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	10	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	28	28	28	28
Mvmt Flow	16	29	541	34	39	487

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	880	288	0	0	575
Stage 1	558	-	-	-	-
Stage 2	322	-	-	-	-
Critical Hdwy	7	7.1	-	-	4.66
Critical Hdwy Stg 1	6	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-
Follow-up Hdwy	3.6	3.4	-	-	2.48
Pot Cap-1 Maneuver	272	685	-	-	835
Stage 1	515	-	-	-	-
Stage 2	684	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	259	685	-	-	835
Mov Cap-2 Maneuver	378	-	-	-	-
Stage 1	515	-	-	-	-
Stage 2	652	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	0.7
HCM LOS	B		

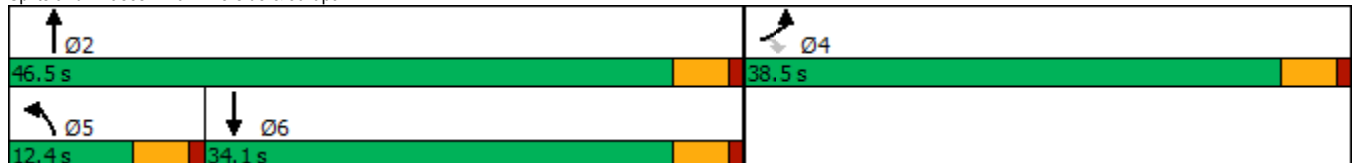
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	531	835	-
HCM Lane V/C Ratio	-	-	0.086	0.047	-
HCM Control Delay (s)	-	-	12.4	9.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	48	44	478	372	31
Future Volume (vph)	24	48	44	478	372	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	550			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1641	1468	1410	2820	2789	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1641	1468	1410	2820	2789	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		50			11	
Link Speed (mph)	40			55	55	
Link Distance (ft)	1442			2002	649	
Travel Time (s)	24.6			24.8	8.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	10%	10%	28%	28%	28%	28%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	50	46	498	420	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Total Split (s)	38.5	38.5	12.4	46.5	34.1	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Act Effct Green (s)	7.2	7.2	7.4	47.3	42.5	
Actuated g/C Ratio	0.13	0.13	0.13	0.83	0.75	
v/c Ratio	0.12	0.22	0.25	0.21	0.20	
Control Delay	24.2	10.8	26.3	2.3	5.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	24.2	10.8	26.3	2.3	5.4	
LOS	C	B	C	A	A	
Approach Delay	15.3			4.4	5.4	
Approach LOS	B			A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	56.8
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.25
Intersection Signal Delay:	5.6
Intersection Capacity Utilization:	34.2%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 6: Riverside & Jurupa



Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	W	W	
Traffic Vol, veh/h	10	0	0	519	434	29
Future Vol, veh/h	10	0	0	519	434	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	0	0	564	472	32

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	770	252	504	0	0
Stage 1	488	-	-	-	-
Stage 2	282	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	337	748	1057	-	-
Stage 1	583	-	-	-	-
Stage 2	741	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	337	748	1057	-	-
Mov Cap-2 Maneuver	447	-	-	-	-
Stage 1	583	-	-	-	-
Stage 2	741	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1057	-	447	-	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	0	-	13.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔↔		↔	↑↑	↑↑	
Traffic Vol, veh/h	4	2	4	515	420	14
Future Vol, veh/h	4	2	4	515	420	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	2	4	560	457	15

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	753	236	472	0	-	0
Stage 1	465	-	-	-	-	-
Stage 2	288	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	346	766	1086	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	345	766	1086	-	-	-
Mov Cap-2 Maneuver	455	-	-	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	735	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1086	-	526	-	-
HCM Lane V/C Ratio	0.004	-	0.012	-	-
HCM Control Delay (s)	8.3	-	11.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	273	2	474	221	1313	0	0	800	430
Future Volume (vph)	0	0	0	273	2	474	221	1313	0	0	800	430
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		325	110		0	0		210
Storage Lanes	0		0	1		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1559	1356	1395	2736	4052	0	0	5106	1262
Flt Permitted				0.950	0.995		0.950					
Satd. Flow (perm)	0	0	0	1559	1356	1395	2736	4052	0	0	5106	1262
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					49	101						448
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1564			1388			330			3040	
Travel Time (s)		19.4			17.2			4.5			41.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)				10%		47%						
Lane Group Flow (vph)	0	0	0	256	262	262	230	1368	0	0	833	448
Turn Type				Prot	NA	Perm	Prot	NA			NA	Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Total Split (s)				22.0	22.0	22.0	14.0	43.0			29.0	29.0
Total Lost Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	4.5
Act Effect Green (s)				17.5	17.5	17.5	9.0	38.5			25.0	25.0
Actuated g/C Ratio				0.27	0.27	0.27	0.14	0.59			0.38	0.38
v/c Ratio				0.61	0.66	0.58	0.61	0.57			0.42	0.59
Control Delay				28.1	26.3	18.5	30.8	4.0			15.7	5.4
Queue Delay				0.0	0.0	0.0	0.0	0.2			0.0	0.0
Total Delay				28.1	26.3	18.5	30.8	4.2			15.7	5.4
LOS				C	C	B	C	A			B	A
Approach Delay					24.2			8.0			12.1	
Approach LOS					C			A			B	
Queue Length 50th (ft)				92	81	55	38	27			69	0
Queue Length 95th (ft)				167	#172	128	m42	m36			93	54
Internal Link Dist (ft)		1484			1308			250			2960	
Turn Bay Length (ft)				325		325	110					210
Base Capacity (vph)				419	400	449	399	2400			1960	760
Starvation Cap Reductn				0	0	0	0	337			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.61	0.66	0.58	0.58	0.66			0.42	0.59

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 12.9
 Intersection LOS: B
 Intersection Capacity Utilization 70.4%
 ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Riverside & I-10 WB

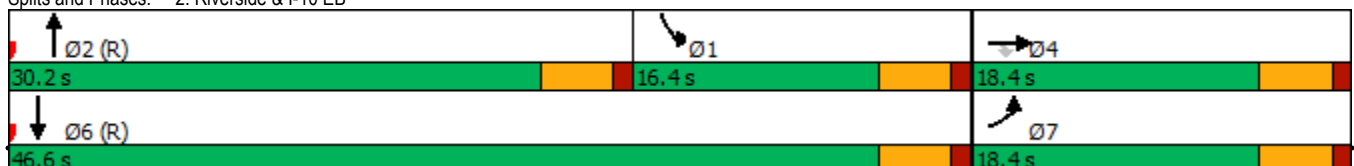


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	569	0	125	0	0	0	0	968	495	431	636	0
Future Volume (vph)	569	0	125	0	0	0	0	968	495	431	636	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325		325	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1559	1491	1395	0	0	0	0	3846	0	2736	2820	0
Flt Permitted	0.950	0.954								0.950		
Satd. Flow (perm)	1559	1491	1395	0	0	0	0	3846	0	2736	2820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		101	121					234				
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1551			1364			1911			330	
Travel Time (s)		19.2			16.9			26.1			4.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)	49%		10%									
Lane Group Flow (vph)	312	313	121	0	0	0	0	1573	0	463	684	0
Turn Type	Prot	NA	Perm					NA		Prot	NA	
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Total Split (s)	18.4	18.4	18.4					30.2		16.4	46.6	
Total Lost Time (s)	4.5	4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)	13.9	13.9	13.9					25.7		11.9	42.1	
Actuated g/C Ratio	0.21	0.21	0.21					0.40		0.18	0.65	
v/c Ratio	0.94	0.79	0.31					0.95		0.93	0.37	
Control Delay	64.8	32.9	7.3					30.3		48.9	2.6	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.0	
Total Delay	64.8	32.9	7.3					30.3		48.9	2.6	
LOS	E	C	A					C		D	A	
Approach Delay		42.1						30.3			21.3	
Approach LOS		D						C			C	
Queue Length 50th (ft)	128	86	0					186		88	12	
Queue Length 95th (ft)	#274	#221	38					#295		#178	31	
Internal Link Dist (ft)		1471			1284			1831			250	
Turn Bay Length (ft)	325		325									
Base Capacity (vph)	333	398	393					1662		500	1826	
Starvation Cap Reductn	0	0	0					0		0	0	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.94	0.79	0.31					0.95		0.93	0.37	

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 64 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 29.8
 Intersection LOS: C
 Intersection Capacity Utilization 70.4%
 ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Riverside & I-10 EB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	195	51	11	12	138	56	925	5	16	426	304
Future Volume (vph)	300	195	51	11	12	138	56	925	5	16	426	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	130		0	185		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1641	3180	0	1641	2829	0	1410	2817	0	1410	2645	0
Flt Permitted	0.652			0.593			0.950			0.950		
Satd. Flow (perm)	1126	3180	0	1024	2829	0	1410	2817	0	1410	2645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			144			1				247
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1345			702			2629				1911
Travel Time (s)		20.4			10.6			35.9				26.1
Adj. Flow (vph)	313	203	53	11	13	144	58	964	5	17	444	317
Lane Group Flow (vph)	313	256	0	11	157	0	58	969	0	17	761	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1		6
Permitted Phases	4			8								
Total Split (s)	36.5	36.5		36.5	36.5		11.6	37.0		11.5		36.9
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5		4.5
Act Effct Green (s)	25.3	25.3		25.3	25.3		7.3	37.6		7.2		33.4
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.10	0.51		0.10		0.45
v/c Ratio	0.82	0.23		0.03	0.15		0.42	0.68		0.12		0.57
Control Delay	41.3	15.0		17.3	4.5		46.2	19.5		38.2		14.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	41.3	15.0		17.3	4.5		46.2	19.5		38.2		14.0
LOS	D	B		B	A		D	B		D		B
Approach Delay		29.5			5.4			21.0				14.5
Approach LOS		C			A			C				B

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	74.2
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.82
Intersection Signal Delay:	19.9
Intersection Capacity Utilization:	69.0%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	C

Splits and Phases: 3: Riverside & Slover

11.5 s	37 s	36.5 s
11.6 s	36.9 s	36.5 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	10	26	25	19	55	41	794	19	20	425	49
Future Volume (vph)	114	10	26	25	19	55	41	794	19	20	425	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	125		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1625	0	1641	1534	0	1410	2809	0	1410	2775	0
Flt Permitted		0.727		0.705			0.950			0.950		
Satd. Flow (perm)	0	1227	0	1218	1534	0	1410	2809	0	1410	2775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			58			3				17
Link Speed (mph)		40			40			55				50
Link Distance (ft)		1365			327			1640				2629
Travel Time (s)		23.3			5.6			20.3				35.9
Adj. Flow (vph)	120	11	27	26	20	58	43	836	20	21	447	52
Lane Group Flow (vph)	0	158	0	26	78	0	43	856	0	21	499	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	36.6	36.6		36.6	36.6		12.0	36.8		11.6	36.4	
Total Lost Time (s)		4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effct Green (s)		12.7		12.7	12.7		7.4	40.2		7.1	35.6	
Actuated g/C Ratio		0.20		0.20	0.20		0.12	0.63		0.11	0.56	
v/c Ratio		0.62		0.11	0.22		0.27	0.49		0.13	0.32	
Control Delay		32.5		21.8	10.9		32.8	9.5		30.9	10.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		32.5		21.8	10.9		32.8	9.5		30.9	10.4	
LOS		C		C	B		C	A		C	B	
Approach Delay		32.5			13.6			10.6			11.2	
Approach LOS		C			B			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	64.1
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	13.0
Intersection LOS:	B
Intersection Capacity Utilization:	54.7%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 4: Riverside & Santa Ana

11.6 s	36.8 s	36.6 s
12 s	36.4 s	36.6 s













Intersection

Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↕↕		↔	↕↕
Traffic Vol, veh/h	29	71	726	9	36	419
Future Vol, veh/h	29	71	726	9	36	419
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	10	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	10	10	28	28	28	28
Mvmt Flow	30	73	748	9	37	432

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1043	379	0	0	757
Stage 1	753	-	-	-	-
Stage 2	290	-	-	-	-
Critical Hdwy	7	7.1	-	-	4.66
Critical Hdwy Stg 1	6	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-
Follow-up Hdwy	3.6	3.4	-	-	2.48
Pot Cap-1 Maneuver	212	597	-	-	699
Stage 1	406	-	-	-	-
Stage 2	710	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	201	597	-	-	699
Mov Cap-2 Maneuver	314	-	-	-	-
Stage 1	406	-	-	-	-
Stage 2	672	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	0.8
HCM LOS	B		





Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	473	699	-
HCM Lane V/C Ratio	-	-	0.218	0.053	-
HCM Control Delay (s)	-	-	14.7	10.4	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	40	85	47	655	395	42
Future Volume (vph)	40	85	47	655	395	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	550			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1641	1468	1410	2820	2781	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1641	1468	1410	2820	2781	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		86			14	
Link Speed (mph)	40			55	55	
Link Distance (ft)	1442			2002	649	
Travel Time (s)	24.6			24.8	8.0	
Adj. Flow (vph)	40	86	47	662	399	42
Lane Group Flow (vph)	40	86	47	662	441	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Total Split (s)	38.5	38.5	12.4	46.5	34.1	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Act Effct Green (s)	7.5	7.5	7.4	45.8	40.8	
Actuated g/C Ratio	0.13	0.13	0.12	0.77	0.69	
v/c Ratio	0.19	0.33	0.27	0.30	0.23	
Control Delay	25.2	10.3	27.3	3.2	6.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.2	10.3	27.3	3.2	6.1	
LOS	C	B	C	A	A	
Approach Delay	15.0			4.8	6.1	
Approach LOS	B			A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	59.2
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.33
Intersection Signal Delay:	6.3
Intersection LOS:	A
Intersection Capacity Utilization:	35.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 6: Riverside & Jurupa

 Ø2	 Ø4
46.5 s	38.5 s
 Ø5	 Ø6
12.4 s	34.1 s

Intersection

Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	👉👉		👉	👈👈	👈👈	
Traffic Vol, veh/h	29	0	0	707	437	11
Future Vol, veh/h	29	0	0	707	437	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	0	0	768	475	12

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	865	244	487	0	0
Stage 1	481	-	-	-	-
Stage 2	384	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	293	757	1072	-	-
Stage 1	588	-	-	-	-
Stage 2	658	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	293	757	1072	-	-
Mov Cap-2 Maneuver	416	-	-	-	-
Stage 1	588	-	-	-	-
Stage 2	658	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1072	-	416	-	-
HCM Lane V/C Ratio	-	-	0.076	-	-
HCM Control Delay (s)	0	-	14.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection

Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	W	W	
Traffic Vol, veh/h	14	4	2	693	432	5
Future Vol, veh/h	14	4	2	693	432	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	4	2	753	470	5

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	854	238	475	0	0
Stage 1	473	-	-	-	-
Stage 2	381	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	298	763	1083	-	-
Stage 1	593	-	-	-	-
Stage 2	660	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	297	763	1083	-	-
Mov Cap-2 Maneuver	420	-	-	-	-
Stage 1	592	-	-	-	-
Stage 2	660	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1083	-	467	-	-
HCM Lane V/C Ratio	0.002	-	0.042	-	-
HCM Control Delay (s)	8.3	-	13	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Existing + Ambient + Project + Cumulative Conditions

Existing + Ambient + Project + Cumulative - AM Peak Hour
 1: Riverside & I-10 WB

Synchro 11 Report
 Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	454	1	368	183	785	0	0	1014	631
Future Volume (vph)	0	0	0	454	1	368	183	785	0	0	1014	631
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		325	110		0	0		210
Storage Lanes	0		0	1		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1559	1436	1395	2736	4052	0	0	5106	1262
Flt Permitted				0.950	0.970		0.950					
Satd. Flow (perm)	0	0	0	1559	1436	1395	2736	4052	0	0	5106	1262
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					50	180						671
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1564			1388			330			3040	
Travel Time (s)		19.4			17.2			4.5			41.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)				37%		29%						
Lane Group Flow (vph)	0	0	0	304	293	278	195	835	0	0	1079	671
Turn Type				Prot	NA	Perm	Prot	NA			NA	Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Total Split (s)				19.0	19.0	19.0	11.5	41.0			29.5	29.5
Total Lost Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	4.5
Act Effect Green (s)				14.5	14.5	14.5	7.0	36.5			25.0	25.0
Actuated g/C Ratio				0.24	0.24	0.24	0.12	0.61			0.42	0.42
v/c Ratio				0.81	0.76	0.59	0.61	0.34			0.51	0.73
Control Delay				41.1	33.3	13.5	37.1	1.8			14.0	7.0
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				41.1	33.3	13.5	37.1	1.8			14.0	7.0
LOS				D	C	B	D	A			B	A
Approach Delay					29.7			8.5			11.3	
Approach LOS					C			A			B	
Queue Length 50th (ft)				109	89	30	33	11			79	0
Queue Length 95th (ft)				#233	#214	98	m48	m12			107	65
Internal Link Dist (ft)		1484			1308			250			2960	
Turn Bay Length (ft)				325		325	110					210
Base Capacity (vph)				376	384	473	319	2464			2127	917
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.81	0.76	0.59	0.61	0.34			0.51	0.73

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 14.9
 Intersection LOS: B
 Intersection Capacity Utilization 95.9%
 ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Riverside & I-10 WB



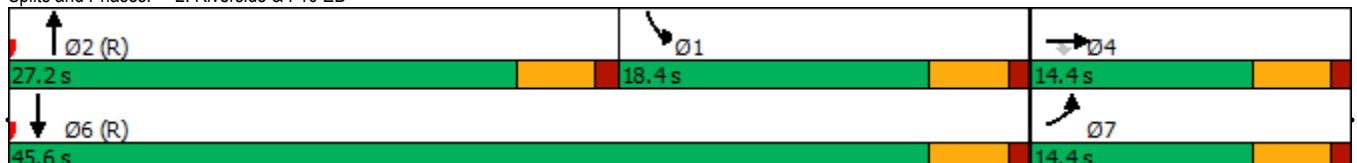
Existing + Ambient + Project + Cumulative - AM Peak Hour
 2: Riverside & I-10 EB

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	2	269	0	0	0	0	650	383	484	983	0
Future Volume (vph)	328	2	269	0	0	0	0	650	383	484	983	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325		325	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1559	1438	1395	0	0	0	0	3825	0	2736	2820	0
Flt Permitted	0.950	0.971								0.950		
Satd. Flow (perm)	1559	1438	1395	0	0	0	0	3825	0	2736	2820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45	143					286				
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1551			1364			1911			330	
Travel Time (s)		19.2			16.9			26.1			4.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)	37%		29%									
Lane Group Flow (vph)	222	217	205	0	0	0	0	1111	0	520	1057	0
Turn Type	Prot	NA	Perm					NA		Prot	NA	
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Total Split (s)	14.4	14.4	14.4					27.2		18.4	45.6	
Total Lost Time (s)	4.5	4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)	9.9	9.9	9.9					22.7		13.9	41.1	
Actuated g/C Ratio	0.16	0.16	0.16					0.38		0.23	0.68	
v/c Ratio	0.86	0.79	0.59					0.68		0.82	0.55	
Control Delay	58.7	42.8	16.2					13.9		30.4	3.3	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.4	
Total Delay	58.7	42.8	16.2					13.9		30.4	3.7	
LOS	E	D	B					B		C	A	
Approach Delay		39.8						13.9			12.5	
Approach LOS		D						B			B	
Queue Length 50th (ft)	83	65	21					86		88	20	
Queue Length 95th (ft)	#198	#180	80					130		m#155	m39	
Internal Link Dist (ft)		1471			1284			1831			250	
Turn Bay Length (ft)	325		325									
Base Capacity (vph)	257	274	349					1624		633	1931	
Starvation Cap Reductn	0	0	0					0		0	380	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.86	0.79	0.59					0.68		0.82	0.68	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 1 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 18.2
 Intersection LOS: B
 Intersection Capacity Utilization 95.9%
 ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Riverside & I-10 EB



Existing + Ambient + Project + Cumulative - AM Peak Hour
 3: Riverside & Slover

Synchro 11 Report
 Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	58	52	13	9	43	63	660	11	20	760	432
Future Volume (vph)	300	58	52	13	9	43	63	660	11	20	760	432
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	130		0	185		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1641	3049	0	1641	2875	0	1410	2815	0	1410	2668	0
Flt Permitted	0.717			0.674			0.950			0.950		
Satd. Flow (perm)	1238	3049	0	1164	2875	0	1410	2815	0	1410	2668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			48			2				151
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1345			702			2629				1911
Travel Time (s)		20.4			10.6			35.9				26.1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	337	123	0	15	58	0	71	754	0	22	1339	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	36.5	36.5		36.5	36.5		11.6	37.0		11.5	36.9	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effct Green (s)	24.7	24.7		24.7	24.7		7.3	37.9		7.2	33.3	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.10	0.50		0.09	0.44	
v/c Ratio	0.84	0.12		0.04	0.06		0.53	0.54		0.17	1.07	
Control Delay	43.2	10.7		17.5	7.0		52.7	17.7		39.0	69.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	43.2	10.7		17.5	7.0		52.7	17.7		39.0	69.1	
LOS	D	B		B	A		D	B		D	E	
Approach Delay		34.5			9.2			20.7			68.6	
Approach LOS		C			A			C			E	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	75.9
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.07
Intersection Signal Delay:	46.7
Intersection Capacity Utilization:	75.2%
Analysis Period (min):	15
Intersection LOS:	D
ICU Level of Service:	D

Splits and Phases: 3: Riverside & Slover

Ø1	Ø2	Ø4
11.5 s	37 s	36.5 s
Ø5	Ø6	Ø8
11.6 s	36.9 s	36.5 s

Existing + Ambient + Project + Cumulative - AM Peak Hour
 4: Riverside & Santa Ana

Synchro 11 Report
 Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	238	14	35	22	18	58	38	503	24	59	458	226
Future Volume (vph)	238	14	35	22	18	58	38	503	24	59	458	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	125		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1630	0	1641	1529	0	1410	2801	0	1410	2679	0
Flt Permitted		0.710		0.679			0.950			0.950		
Satd. Flow (perm)	0	1206	0	1173	1529	0	1410	2801	0	1410	2679	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			59			6			114	
Link Speed (mph)		40			40			55			50	
Link Distance (ft)		1365			327			1640			2629	
Travel Time (s)		23.3			5.6			20.3			35.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	293	0	22	77	0	39	537	0	60	698	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	37.0	37.0		37.0	37.0		12.0	36.0		12.0	36.0	
Total Lost Time (s)		4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effct Green (s)		21.8		21.8	21.8		7.5	33.2		7.5	33.2	
Actuated g/C Ratio		0.31		0.31	0.31		0.11	0.47		0.11	0.47	
v/c Ratio		0.77		0.06	0.15		0.26	0.41		0.40	0.53	
Control Delay		36.3		17.9	8.0		38.8	16.4		42.7	15.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		36.3		17.9	8.0		38.8	16.4		42.7	15.5	
LOS		D		B	A		D	B		D	B	
Approach Delay		36.3			10.2			18.0			17.6	
Approach LOS		D			B			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	70.7
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	20.5
Intersection LOS:	C
Intersection Capacity Utilization:	59.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 4: Riverside & Santa Ana















Intersection

Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↕↕		↔	↕↕
Traffic Vol, veh/h	15	27	516	31	36	458
Future Vol, veh/h	15	27	516	31	36	458
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	10	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	28	28	28	28
Mvmt Flow	16	29	561	34	39	498

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	905	298	0	0	595
Stage 1	578	-	-	-	-
Stage 2	327	-	-	-	-
Critical Hdwy	7	7.1	-	-	4.66
Critical Hdwy Stg 1	6	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-
Follow-up Hdwy	3.6	3.4	-	-	2.48
Pot Cap-1 Maneuver	262	675	-	-	819
Stage 1	502	-	-	-	-
Stage 2	680	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	249	675	-	-	819
Mov Cap-2 Maneuver	368	-	-	-	-
Stage 1	502	-	-	-	-
Stage 2	647	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	0.7
HCM LOS	B		

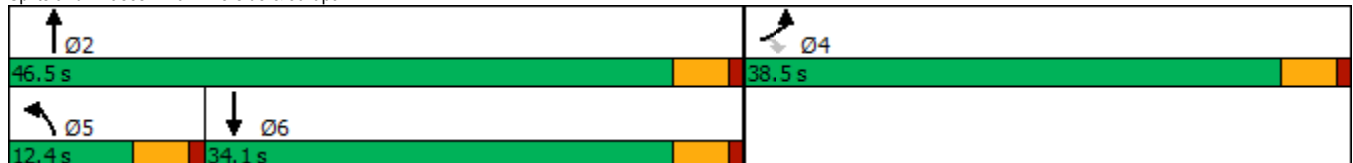
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	520	819	-
HCM Lane V/C Ratio	-	-	0.088	0.048	-
HCM Control Delay (s)	-	-	12.6	9.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	48	44	496	382	31
Future Volume (vph)	24	48	44	496	382	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	550			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1641	1468	1410	2820	2789	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1641	1468	1410	2820	2789	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		50			11	
Link Speed (mph)	40			55	55	
Link Distance (ft)	1442			2002	649	
Travel Time (s)	24.6			24.8	8.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	10%	10%	28%	28%	28%	28%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	50	46	517	430	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Total Split (s)	38.5	38.5	12.4	46.5	34.1	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Act Effct Green (s)	7.2	7.2	7.4	47.3	42.5	
Actuated g/C Ratio	0.13	0.13	0.13	0.83	0.75	
v/c Ratio	0.12	0.22	0.25	0.22	0.21	
Control Delay	24.2	10.8	26.3	2.4	5.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	24.2	10.8	26.3	2.4	5.5	
LOS	C	B	C	A	A	
Approach Delay	15.3			4.3	5.5	
Approach LOS	B			A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	56.8
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.25
Intersection Signal Delay:	5.5
Intersection Capacity Utilization:	34.5%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 6: Riverside & Jurupa



Intersection

Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	W	W	
Traffic Vol, veh/h	10	0	0	535	442	29
Future Vol, veh/h	10	0	0	535	442	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	0	0	582	480	32

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	787	256	512	0	0
Stage 1	496	-	-	-	-
Stage 2	291	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	329	743	1050	-	-
Stage 1	577	-	-	-	-
Stage 2	733	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	329	743	1050	-	-
Mov Cap-2 Maneuver	441	-	-	-	-
Stage 1	577	-	-	-	-
Stage 2	733	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1050	-	441	-	-
HCM Lane V/C Ratio	-	-	0.025	-	-
HCM Control Delay (s)	0	-	13.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	W	W	
Traffic Vol, veh/h	4	2	4	531	428	14
Future Vol, veh/h	4	2	4	531	428	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	2	4	577	465	15

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	770	240	480	0	0
Stage 1	473	-	-	-	-
Stage 2	297	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	337	761	1079	-	-
Stage 1	593	-	-	-	-
Stage 2	728	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	336	761	1079	-	-
Mov Cap-2 Maneuver	448	-	-	-	-
Stage 1	591	-	-	-	-
Stage 2	728	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1079	-	519	-	-
HCM Lane V/C Ratio	0.004	-	0.013	-	-
HCM Control Delay (s)	8.3	-	12	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Existing + Ambient + Project + Cumulative - PM Peak Hour
 1: Riverside & I-10 WB

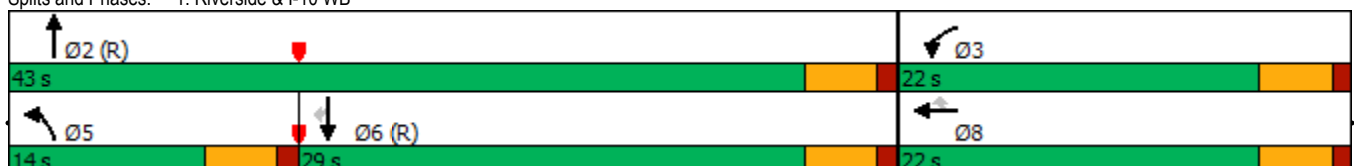
Synchro 11 Report
 Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	317	2	477	299	1421	0	0	896	438
Future Volume (vph)	0	0	0	317	2	477	299	1421	0	0	896	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		325	110		0	0		210
Storage Lanes	0		0	1		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1559	1364	1395	2736	4052	0	0	5106	1262
Flt Permitted				0.950	0.992		0.950					
Satd. Flow (perm)	0	0	0	1559	1364	1395	2736	4052	0	0	5106	1262
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					38	101						456
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1564			1388			330			3040	
Travel Time (s)		19.4			17.2			4.5			41.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)				13%		46%						
Lane Group Flow (vph)	0	0	0	287	274	268	311	1480	0	0	933	456
Turn Type				Prot	NA	Perm	Prot	NA			NA	Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Total Split (s)				22.0	22.0	22.0	14.0	43.0			29.0	29.0
Total Lost Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	4.5
Act Effct Green (s)				17.5	17.5	17.5	9.4	38.5			24.6	24.6
Actuated g/C Ratio				0.27	0.27	0.27	0.14	0.59			0.38	0.38
v/c Ratio				0.68	0.69	0.60	0.78	0.62			0.48	0.60
Control Delay				31.5	29.5	19.0	32.2	4.3			16.5	5.5
Queue Delay				0.0	0.0	0.0	0.0	0.3			0.0	0.0
Total Delay				31.5	29.5	19.0	32.2	4.6			16.5	5.5
LOS				C	C	B	C	A			B	A
Approach Delay					26.8			9.4			12.9	
Approach LOS					C			A			B	
Queue Length 50th (ft)				107	91	57	54	38			79	0
Queue Length 95th (ft)				#209	#203	132	m55	m36			106	54
Internal Link Dist (ft)		1484			1308			250			2960	
Turn Bay Length (ft)				325		325	110					210
Base Capacity (vph)				419	395	449	399	2400			1929	760
Starvation Cap Reductn				0	0	0	0	345			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.68	0.69	0.60	0.78	0.72			0.48	0.60

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 14.2
 Intersection LOS: B
 Intersection Capacity Utilization 76.2%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Riverside & I-10 WB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	572	0	174	0	0	0	0	1150	566	438	769	0
Future Volume (vph)	572	0	174	0	0	0	0	1150	566	438	769	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325		325	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1559	1488	1395	0	0	0	0	3854	0	2736	2820	0
Flt Permitted	0.950	0.955								0.950		
Satd. Flow (perm)	1559	1488	1395	0	0	0	0	3854	0	2736	2820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		101	168					226				
Link Speed (mph)		55			55			50			50	
Link Distance (ft)		1551			1364			1911			330	
Travel Time (s)		19.2			16.9			26.1			4.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)	48%		10%									
Lane Group Flow (vph)	320	314	168	0	0	0	0	1846	0	471	827	0
Turn Type	Prot	NA	Perm					NA		Prot	NA	
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Total Split (s)	18.4	18.4	18.4					30.2		16.4	46.6	
Total Lost Time (s)	4.5	4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)	13.9	13.9	13.9					25.7		11.9	42.1	
Actuated g/C Ratio	0.21	0.21	0.21					0.40		0.18	0.65	
v/c Ratio	0.96	0.79	0.39					1.11		0.94	0.45	
Control Delay	69.9	33.3	7.2					79.3		51.0	3.3	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.3	
Total Delay	69.9	33.3	7.2					79.3		51.0	3.5	
LOS	E	C	A					E		D	A	
Approach Delay		42.4						79.3			20.8	
Approach LOS		D						E			C	
Queue Length 50th (ft)	132	86	0					~294		91	19	
Queue Length 95th (ft)	#284	#223	45					#387		#183	38	
Internal Link Dist (ft)		1471			1284			1831			250	
Turn Bay Length (ft)	325		325									
Base Capacity (vph)	333	397	430					1660		500	1826	
Starvation Cap Reductn	0	0	0					0		0	395	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.96	0.79	0.39					1.11		0.94	0.58	

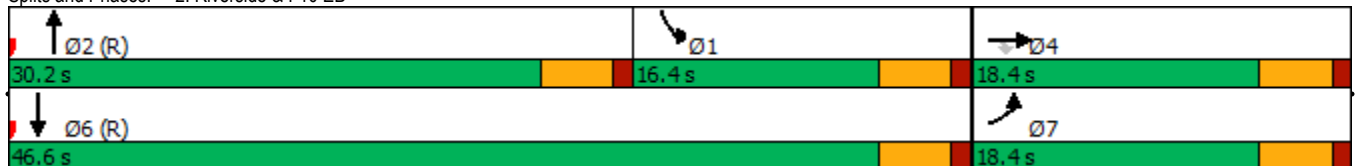
Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 64 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 52.6
 Intersection Capacity Utilization 76.2%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D

~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Riverside & I-10 EB



Existing + Ambient + Project + Cumulative - PM Peak Hour
 3: Riverside & Slover

Synchro 11 Report
 Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	319	195	69	11	12	138	77	1160	5	16	601	311
Future Volume (vph)	319	195	69	11	12	138	77	1160	5	16	601	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	130		0	185		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1641	3154	0	1641	2829	0	1410	2817	0	1410	2676	0
Flt Permitted	0.652			0.577			0.950			0.950		
Satd. Flow (perm)	1126	3154	0	997	2829	0	1410	2817	0	1410	2676	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		67			144			1			126	
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1345			702			2629			1911	
Travel Time (s)		20.4			10.6			35.9			26.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	332	275	0	11	157	0	80	1213	0	17	950	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	36.5	36.5		36.5	36.5		11.6	37.0		11.5	36.9	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effct Green (s)	26.5	26.5		26.5	26.5		7.2	39.8		7.2	33.2	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.09	0.51		0.09	0.43	
v/c Ratio	0.86	0.25		0.03	0.15		0.61	0.84		0.13	0.78	
Control Delay	47.6	14.2		17.2	4.5		59.3	25.8		38.7	24.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	47.6	14.2		17.2	4.5		59.3	25.8		38.7	24.6	
LOS	D	B		B	A		E	C		D	C	
Approach Delay		32.5			5.3			27.9			24.8	
Approach LOS		C			A			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	77.7
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.86
Intersection Signal Delay:	26.6
Intersection LOS:	C
Intersection Capacity Utilization:	76.6%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 3: Riverside & Slover

11.5 s	37 s	36.5 s
11.6 s	36.9 s	36.5 s

Existing + Ambient + Project + Cumulative - PM Peak Hour
 4: Riverside & Santa Ana

Synchro 11 Report
 Lanes, Volumes, Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	327	11	42	29	21	98	50	794	21	36	425	225
Future Volume (vph)	327	11	42	29	21	98	50	794	21	36	425	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	125		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1632	0	1641	1513	0	1410	2809	0	1410	2674	0
Flt Permitted		0.671		0.655			0.950			0.950		
Satd. Flow (perm)	0	1142	0	1131	1513	0	1410	2809	0	1410	2674	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			103			3				131
Link Speed (mph)		40			40			55				50
Link Distance (ft)		1365			327			1640				2629
Travel Time (s)		23.3			5.6			20.3				35.9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	28%	28%	28%	28%	28%	28%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	400	0	31	125	0	53	858	0	38	684	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	36.6	36.6		36.6	36.6		12.0	36.8		11.6	36.4	
Total Lost Time (s)		4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effct Green (s)		29.6		29.6	29.6		7.4	32.8		7.2	32.6	
Actuated g/C Ratio		0.38		0.38	0.38		0.09	0.42		0.09	0.42	
v/c Ratio		0.91		0.07	0.20		0.40	0.72		0.29	0.57	
Control Delay		51.6		17.4	6.4		45.6	25.1		42.6	17.6	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		51.6		17.4	6.4		45.6	25.1		42.6	17.6	
LOS		D		B	A		D	C		D	B	
Approach Delay		51.6			8.6			26.3			18.9	
Approach LOS		D			A			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	77.9
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	27.2
Intersection LOS:	C
Intersection Capacity Utilization:	67.6%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 4: Riverside & Santa Ana















Intersection

Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	71	737	9	36	439
Future Vol, veh/h	29	71	737	9	36	439
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	10	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	10	10	28	28	28	28
Mvmt Flow	30	73	760	9	37	453

Major/Minor	Minor1	Major1	Major2	Major3	Major4
Conflicting Flow All	1066	385	0	0	769
Stage 1	765	-	-	-	-
Stage 2	301	-	-	-	-
Critical Hdwy	7	7.1	-	-	4.66
Critical Hdwy Stg 1	6	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-
Follow-up Hdwy	3.6	3.4	-	-	2.48
Pot Cap-1 Maneuver	205	591	-	-	691
Stage 1	400	-	-	-	-
Stage 2	701	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	194	591	-	-	691
Mov Cap-2 Maneuver	308	-	-	-	-
Stage 1	400	-	-	-	-
Stage 2	663	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	0	0.8
HCM LOS	B		

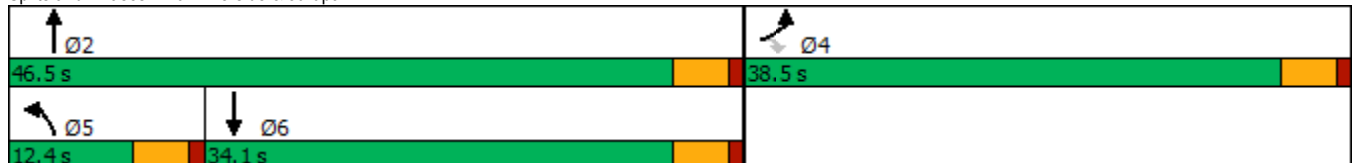
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	467	691	-
HCM Lane V/C Ratio	-	-	0.221	0.054	-
HCM Control Delay (s)	-	-	14.9	10.5	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	40	85	47	666	415	42
Future Volume (vph)	40	85	47	666	415	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	550			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1641	1468	1410	2820	2781	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1641	1468	1410	2820	2781	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		86			14	
Link Speed (mph)	40			55	55	
Link Distance (ft)	1442			2002	649	
Travel Time (s)	24.6			24.8	8.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	10%	10%	28%	28%	28%	28%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	86	47	673	461	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Total Split (s)	38.5	38.5	12.4	46.5	34.1	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Act Effct Green (s)	7.5	7.5	7.4	45.8	40.8	
Actuated g/C Ratio	0.13	0.13	0.12	0.77	0.69	
v/c Ratio	0.19	0.33	0.27	0.31	0.24	
Control Delay	25.2	10.3	27.3	3.2	6.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.2	10.3	27.3	3.2	6.1	
LOS	C	B	C	A	A	
Approach Delay	15.0			4.8	6.1	
Approach LOS	B			A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	59.2
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.33
Intersection Signal Delay:	6.3
Intersection LOS:	A
Intersection Capacity Utilization:	35.7%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 6: Riverside & Jurupa



Intersection

Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	W	W	
Traffic Vol, veh/h	29	0	0	716	453	11
Future Vol, veh/h	29	0	0	716	453	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	0	0	778	492	12

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	887	252	504	0	0
Stage 1	498	-	-	-	-
Stage 2	389	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	284	748	1057	-	-
Stage 1	576	-	-	-	-
Stage 2	654	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	284	748	1057	-	-
Mov Cap-2 Maneuver	408	-	-	-	-
Stage 1	576	-	-	-	-
Stage 2	654	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1057	-	408	-	-
HCM Lane V/C Ratio	-	-	0.077	-	-
HCM Control Delay (s)	0	-	14.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection

Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	W	W	
Traffic Vol, veh/h	14	4	2	707	448	5
Future Vol, veh/h	14	4	2	707	448	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	4	2	768	487	5

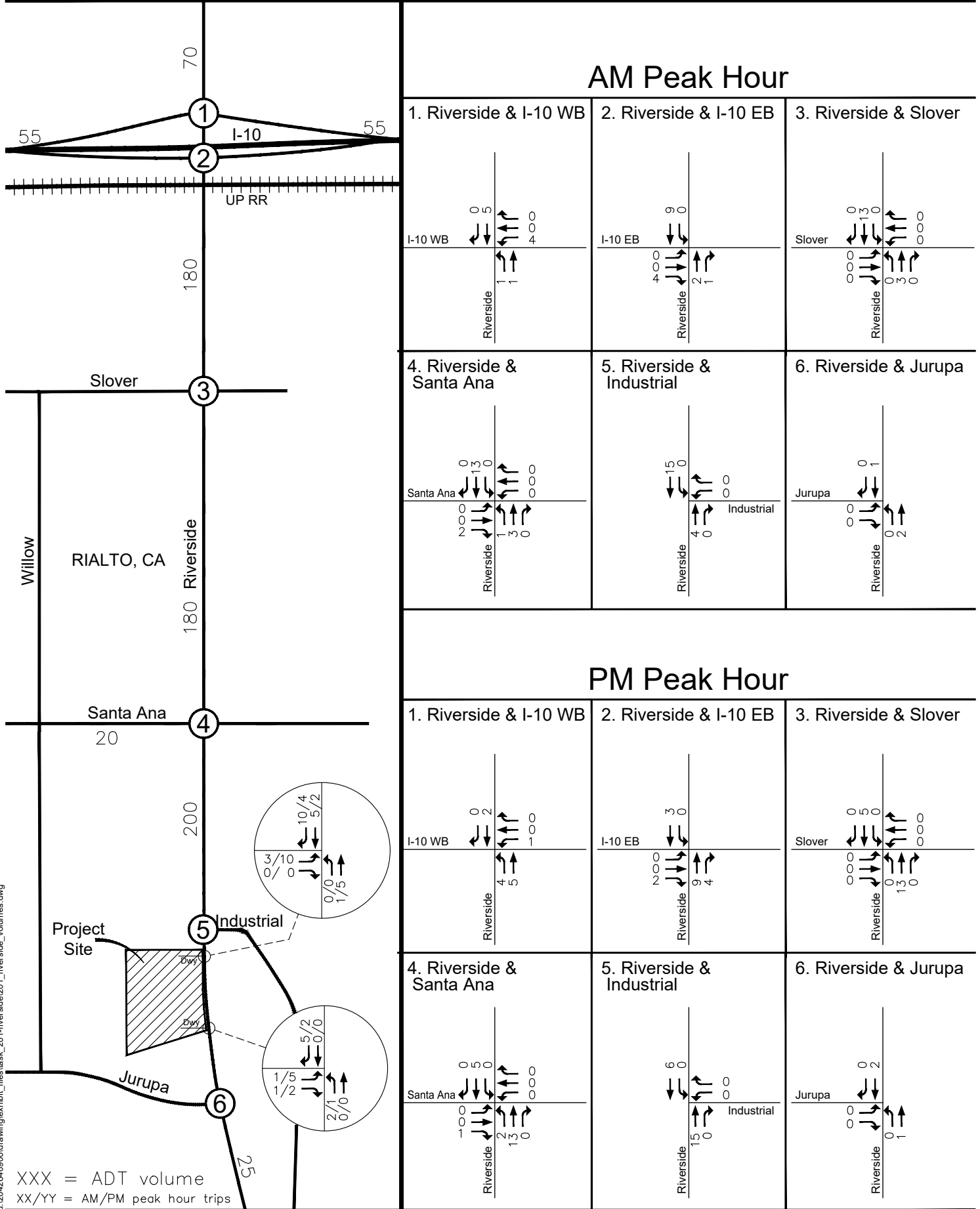
Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	878	246	492	0	0
Stage 1	490	-	-	-	-
Stage 2	388	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	287	754	1068	-	-
Stage 1	581	-	-	-	-
Stage 2	655	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	286	754	1068	-	-
Mov Cap-2 Maneuver	410	-	-	-	-
Stage 1	580	-	-	-	-
Stage 2	655	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1068	-	456	-	-
HCM Lane V/C Ratio	0.002	-	0.043	-	-
HCM Control Delay (s)	8.4	-	13.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix C PROJECT PEAK HOUR TRIPS

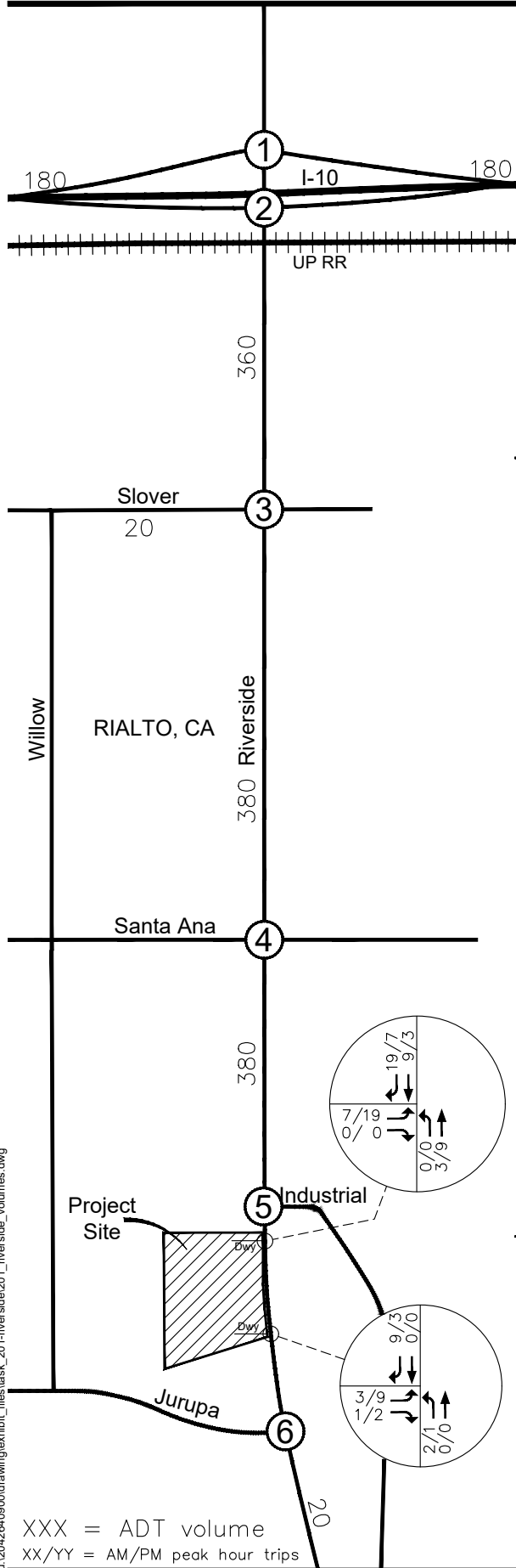




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Figure C-1
 Project Passenger Vehicle Peak Hour Trips



AM Peak Hour

<p>1. Riverside & I-10 WB</p>	<p>2. Riverside & I-10 EB</p>	<p>3. Riverside & Slover</p>
<p>4. Riverside & Santa Ana</p>	<p>5. Riverside & Industrial</p>	<p>6. Riverside & Jurupa</p>

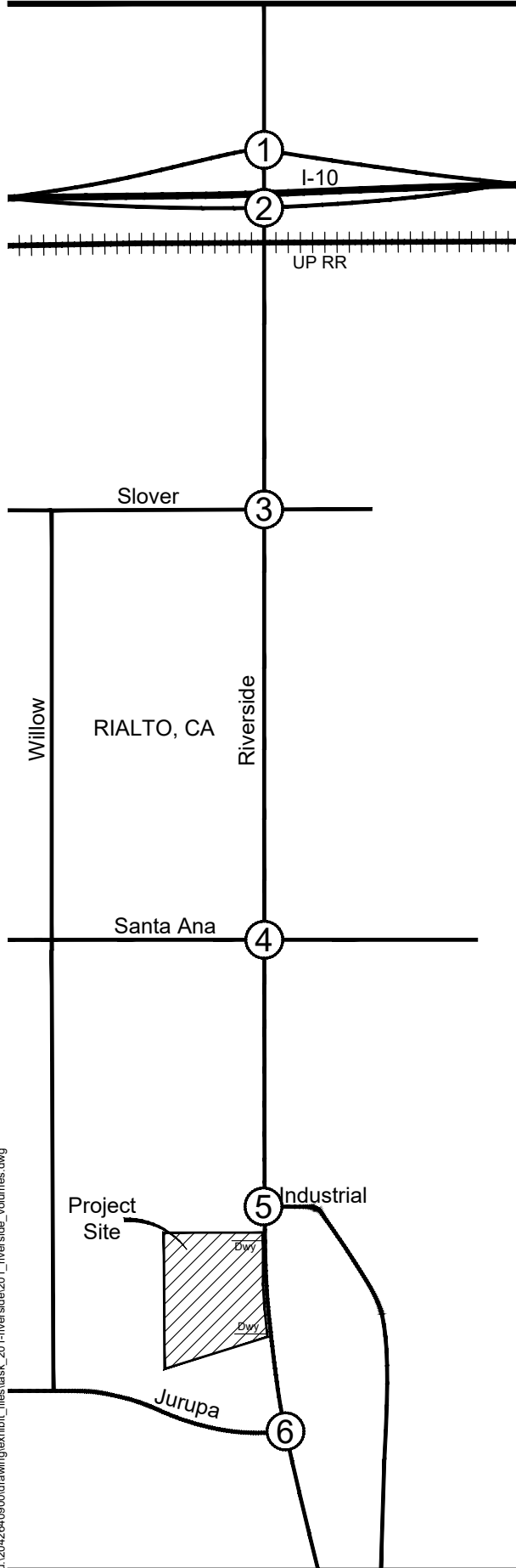
PM Peak Hour

<p>1. Riverside & I-10 WB</p>	<p>2. Riverside & I-10 EB</p>	<p>3. Riverside & Slover</p>
<p>4. Riverside & Santa Ana</p>	<p>5. Riverside & Industrial</p>	<p>6. Riverside & Jurupa</p>

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Figure C-2

Project Truck PCE Peak Hour Trips



AM Peak Hour

<p>1. Riverside & I-10 WB</p>	<p>2. Riverside & I-10 EB</p>	<p>3. Riverside & Slover</p>
<p>4. Riverside & Santa Ana</p>	<p>5. Riverside & Industrial</p>	<p>6. Riverside & Jurupa</p>

PM Peak Hour

<p>1. Riverside & I-10 WB</p>	<p>2. Riverside & I-10 EB</p>	<p>3. Riverside & Slover</p>
<p>4. Riverside & Santa Ana</p>	<p>5. Riverside & Industrial</p>	<p>6. Riverside & Jurupa</p>

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Figure C-3
 Cumulative Projects Peak Hour PCE Trips

Appendix D TRUCK ROUTING PLAN



To:	Phil Martin Phil Martin & Associates 2987 NW Fairway Heights Drive Bend, OR 97703 Phone 949-454-1800	From:	Cathy Lawrence 38 Technology Drive, Suite 200 Irvine CA 92618
File:	2042640900	Date:	February 2, 2023

Reference: 11190 S. Riverside Avenue, Rialto, CA – Industrial Building Truck Routing Plan

As requested in Dionne Harris's application completeness letter of December 7, 2022, this updated Truck Routing Plan summarizes the Truck Routing Plan for the Project and meets the requirements of Section 18.112.050B(2) of the Rialto Municipal Code.

The Project is located at 11190 S. Riverside Avenue as shown in **Figure 1**. Based on the Rialto City Council's adoption of Interim Urgency Ordinance No. 1673 on December 13, 2022, Riverside Avenue that is adjacent to and east of the project is a City of Rialto designated truck route based on the City's adopted Interim Urgency Ordinance as shown in **Figure 2**.

The Project proposes a 219,000 square foot warehouse with two driveways on Riverside Avenue. The southern driveway is designated for truck ingress and the northern driveway is designated for truck egress as shown in **Figure 3**.

The Project site is located on the west side of Riverside Avenue between Santa Ana Avenue to the north and Jurupa Avenue to the south. The project site is located approximately 1.2 miles south of I-10 and approximately 3.7 miles north of SR 60. Although an end-use has not been identified at this time, the operation of the project is expected to be a typical warehouse use. The operation would be Monday through Friday with operating hours from 8 AM to 5 PM. The number of employees and items to be stored in the building are not known at this time. The majority of truck traffic is calculated in the traffic study to travel north toward the I-10 freeway via Riverside Avenue and a small amount toward the south on Riverside Avenue.

Project-generated trucks would directly access Riverside Avenue, which is a City-designated Truck Route. The Project site provides adequate on-site truck parking and queuing so that no trucks would queue on Riverside Avenue adjacent to the site. Trucks can make left and right turns in at the southern Project driveway and left and right turns out at the northern driveway.

Stantec Consulting Services Inc.

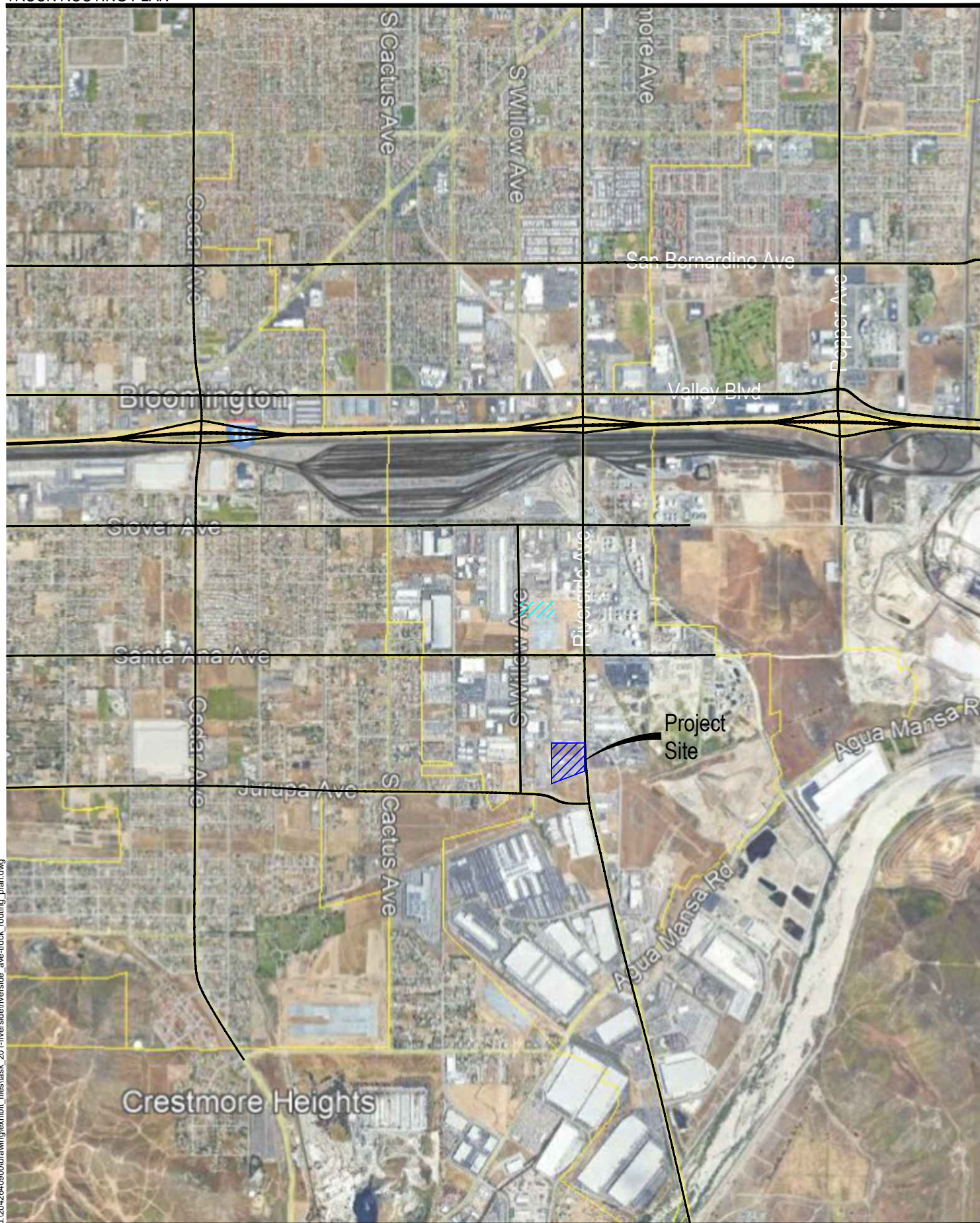
Cathy Lawrence PE
Transportation Engineer
Phone: 949 923 6064
Cathy.Lawrence@stantec.com



Keith Rutherford PE
Principal
Phone: 949 923 6952
Keith.Rutherford@stantec.com

Attachment: Figure 1 Project Location
Figure 2 City of Rialto Truck Route Map – Project Truck Routing Plan
Figure 3 Site Plan

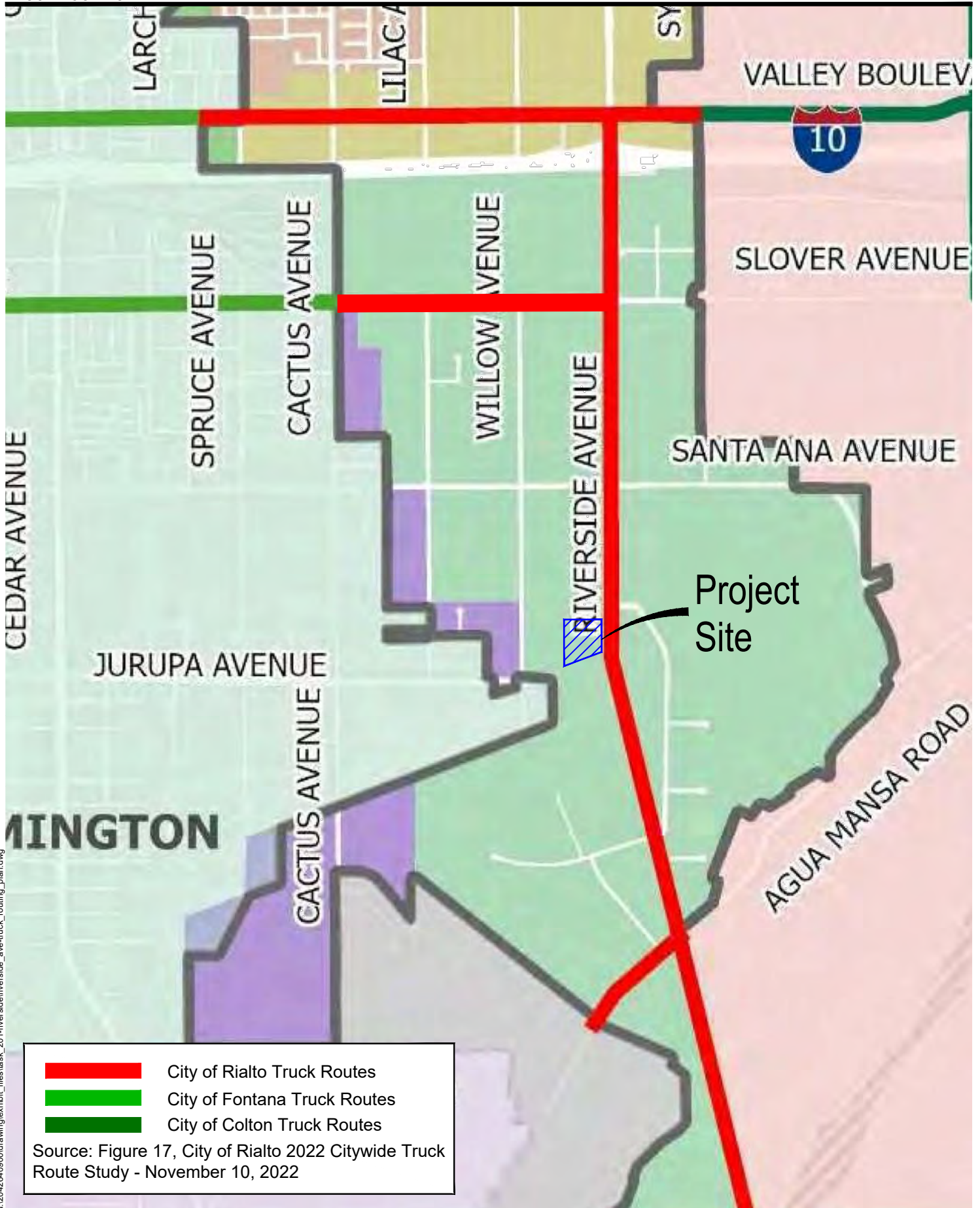
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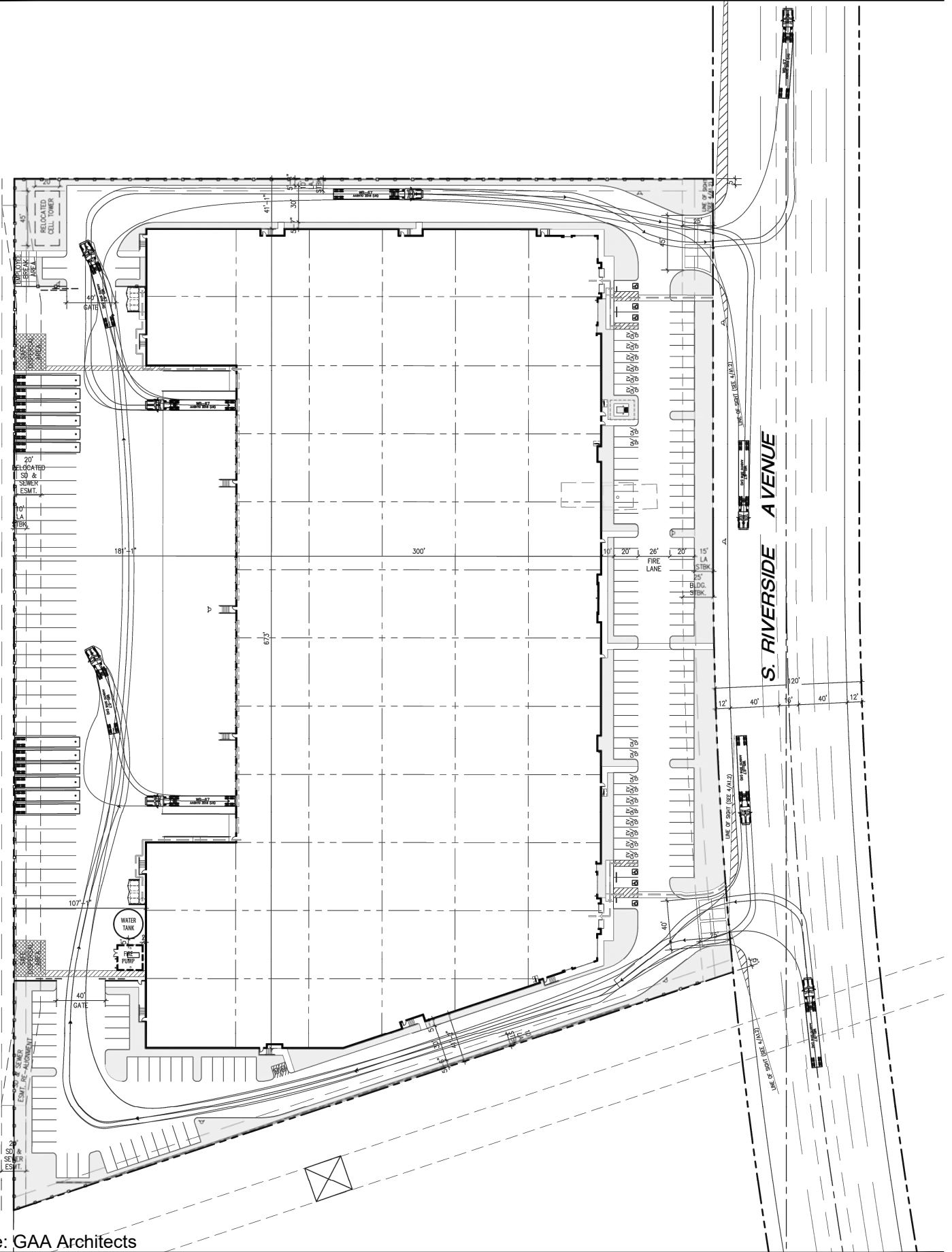
Figure 1
Project Location



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Figure 2
City of Rialto Truck Route Map - Project Truck Routing Plan



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Source: GAA Architects



Figure 3
Site Plan

Appendix E VEHICLE MILES TRAVELED (VMT) SCREENING RESULTS



Find address or place

Complete #1 - 4, Then Click 'Run'

#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.*

PA VMT Per Worker

#3. Select the Baseline Year. The years available for analysis are from 2016 to 2040.*

2024

#4. Select the Threshold (% reduction from baseline year). 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.*

Below City Baseline (-15%)

Project Area VMT (1 of 2)

Assessor Parcel Number (APN)	025812133
Traffic Analysis Zone (TAZ)	53749302
TAZ VMT	19.7
Jurisdiction VMT	16
% Difference	23.46%
VMT Metric	PA VMT Per Worker
Threshold	13.6

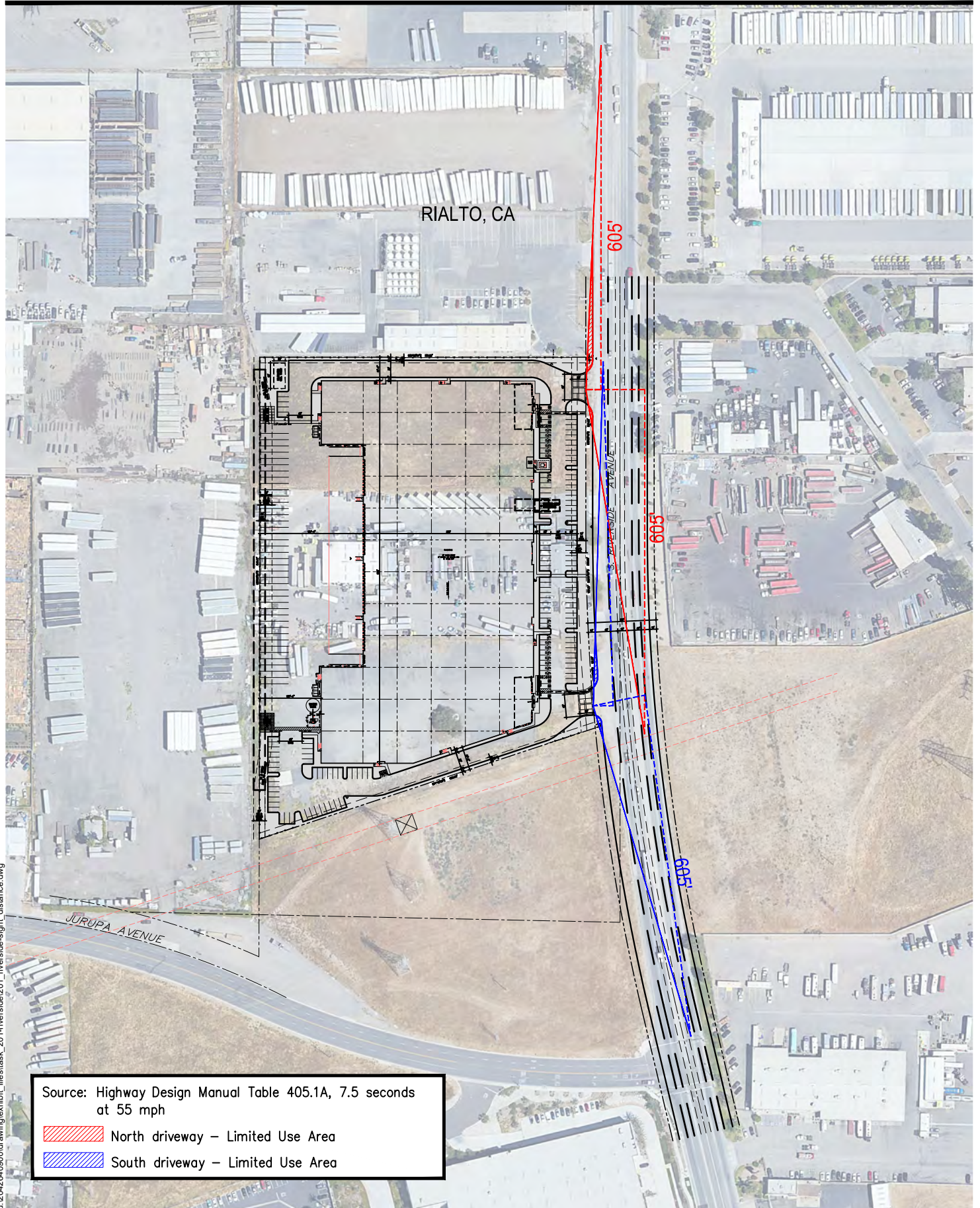
Zoom to



Appendix F DRIVEWAY LINES OF SIGHT



RIVERSIDE AVENUE INDUSTRIAL BUILDING, RIALTO, CA
SIGHT DISTANCE ANALYSIS



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N

Figure 1
Riverside Avenue Industrial Building Driveway Line of Sight

Appendix G APPROVED SCOPING AGREEMENT FOR TRAFFIC IMPACT ANALYSIS



Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT ANALYSIS

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

City of Rialto

Traffic Impact Analysis

Scoping Agreement

Case No. 2022-0060

Related Cases -

SP No. _____

EIR No. 2022-0055

GPA No. _____

ZC No. _____

Project Name: Xebec Riverside Avenue Industrial Building

Project Address: 11190 S. Riverside Ave

Project Description: 221,000 square foot Warehouse

Consultant

Developer

Name: Stantec Consulting Services Inc.

Xebec Realty

Address: 38 Technology Dr, Suite 200
Irvine CA 92618

3010 Old Ranch Parkway, Suite 480
Seal Beach CA 90740

Telephone: 949-923-6064

562-284-5001

Fax: _____

1. Trip Generation Source: 40% of total trips based on City guidelines

Existing GP Land Use General Industrial Proposed Land Use Warehouse

Current Zoning: General Industrial Proposed Zoning: General Industrial

Total Daily Project Trips: 634 (PCE)

	Current Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	<u>Nom.</u>	<u>Nom.</u>	<u>Nom.</u>	<u>47 (PCE)</u>	<u>16 (PCE)</u>	<u>64 (PCE)</u>
PM Trips	<u>Nom.</u>	<u>Nom.</u>	<u>Nom.</u>	<u>18 (PCE)</u>	<u>47 (PCE)</u>	<u>65 (PCE)</u>
Internal Trip Allowance	Yes	No	(_____ % Trip Discount)			
Pass-By Trip Allowance	Yes	No	(_____ % Trip Discount)			

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

2. Trip Geographic Distribution: N 70/90 % S 10/5 % E 10/0 % W 10/5 %
 Passenger Car/Truck Distribution

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

3. Background Growth Traffic

Project Completion Year: 2024 Annual Background Growth Rate: 1.0 %

Other Phase Years _____

Other area projects to be considered: TBD

(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: N/A

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

- | | |
|--|--|
| 1. <u>S. Riverside Ave & Santa Ana Ave</u> | 6. <u>S. Riverside Ave & Industrial Dr</u> |
| 2. <u>S. Riverside Ave & Jurupa Ave</u> | 7. <u>S. Riverside Ave & Private Dwy 1</u> |
| 3. <u>S. Riverside Ave & I-10 WB Ramps</u> | 8. <u>S. Riverside Ave & Private Dwy 2</u> |
| 4. <u>S. Riverside Ave & I-10 EB Ramps</u> | 9. <u>S. Riverside Ave & Project Driveways</u> |
| 5. <u>S. Riverside Ave & Slover Ave</u> | 10. _____ |

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

- | | |
|---|-----------|
| 1. <u>Riverside Ave s/o Santa Ana Ave</u> | 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: City of Colton, San Bernardino County

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

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

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 _____

Scoping Agreement Resubmittal date _____

Applicant/Engineer

Date

Land Use Concurrence:

Development Services Department

Date

Approved by:

Public Works Department

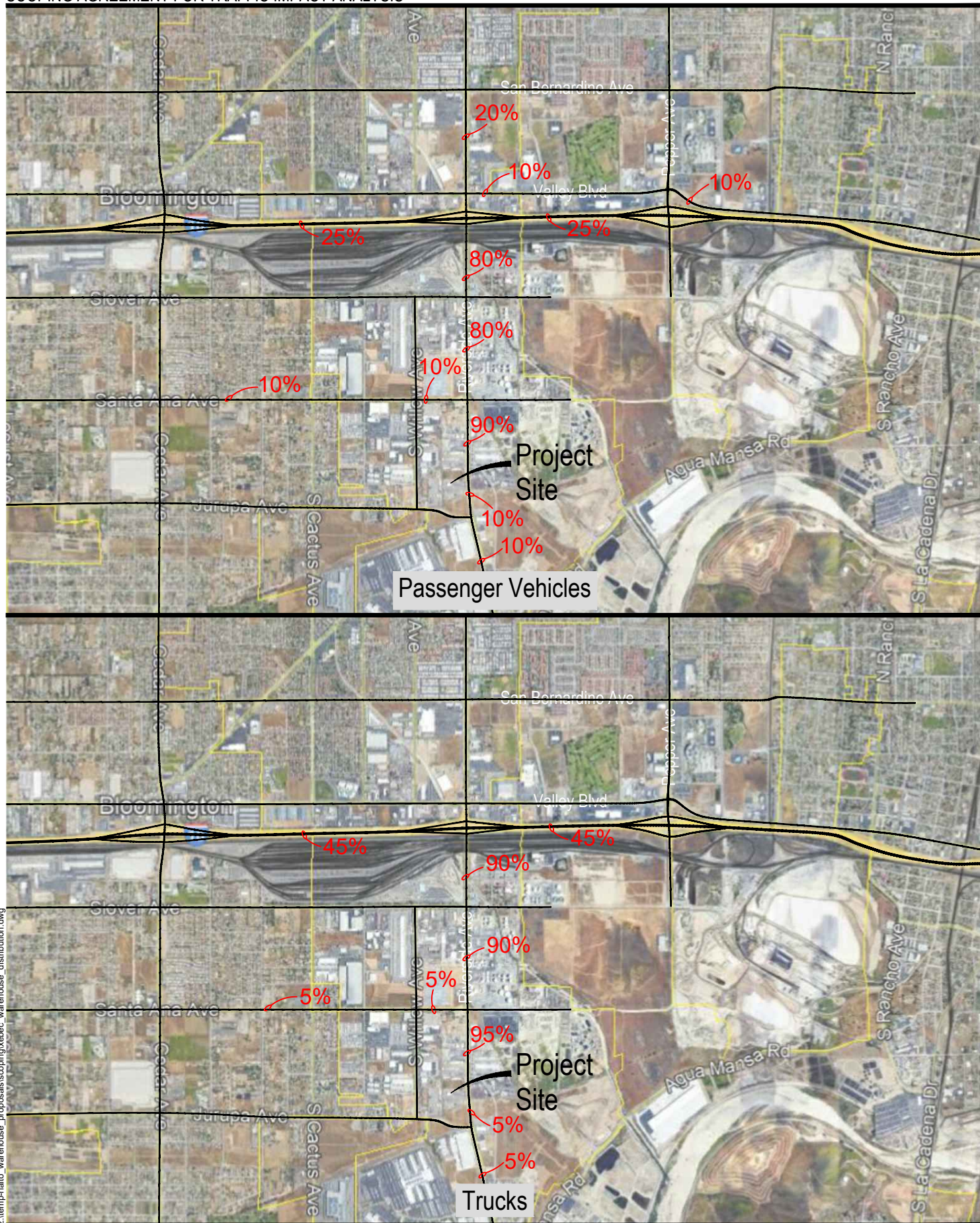
Date

NOTE:

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

Riverside Avenue Industrial Building - Trip Generation Summary

	Units	ADT	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Trips								
Warehouse								
Total Vehicles	221 TSF	378	29	9	38	11	29	40
Trucks								
4-axle (3.0 PCE)		318	24	9	33	9	24	33
3-axle (2.0 PCE)		84	6	2	8	2	6	8
2-axle (1.5 PCE)		5	0	0	0	0	0	0
Passenger Vehs		227	17	6	23	7	17	24
Total PCE Trips		634	47	17	64	18	47	65
Trip Rates - ITE 150 Warehousing								
Total	TSF	1.71	0.13	0.04	0.17	0.05	0.13	0.18
Truck Estimate = 40% of total trip generation, 70% 4-axle, 28% 3-axle, 2% 2-axle								



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Figure 1
 General Project Distribution



TABULATIONS

SITE AREA	SF	ACRES
Gross	440,354	10.11
Street Dedication	7,067	0.16
NET SITE AREA	433,287	9.95
BUILDING AREA		BUILDING 1
Ground Floor Office		5,000
Warehouse		209,500
Total Building Footprint		214,500
Mezzanine		5,000
TOTAL BUILDING AREA	219,500	
COVERAGE FAR	49.5%	
PARKING REQUIRED	140	
Office - Ground Floor	1/250	20
Office - Mezzanine	1/500	10
Warehouse		
0 - 10,000 sf	1/1000	10
10,000 sf +	1/2000	100
TOTAL PARKING REQUIRED	140	
PARKING PROVIDED	145	
PARKING RATIO	0.66/1000	
DOCK DOORS	23	
GRADE DOORS	2	
TRAILER STALLS	38	

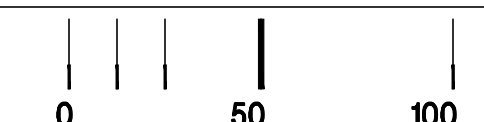
1190 RIVERSIDE AVE. INDUSTRIAL BUILDING - RIALTO, CA

XEBEC REALTY

SCHEME D.8
CONCEPTUAL SITE PLAN



8811 Research Drive,
Suite 200,
Irvine, CA 92618
T 949 474 1775
www.GAAarchitects.com



PROJECT NO.: XRP051.01
DATE: 8/4/2022

NOTE: LAND AREA AND BUILDING SQUARE FOOTAGE ARE PRELIMINARY AND MAY BE SUBJECT TO CHANGE UPON REVIEW BY GOVERNING AGENCIES, CIVIL ENGINEER, AND OWNER.
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