APPENDIX F

Traffic Analysis

MIKASA LUXURY VILLAS RESIDENTIAL DEVELOPEMNT PROJECT

Traffic Impact Analysis

JULY 2025

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Executive Summary

The purpose of this Traffic Impact Analysis (TIA) is to evaluate how the proposed Mikasa Multi-Family residential project (the "Project") will affect the surrounding local transportation network, as well as to determine if transportation improvements will be needed.

The Project proposes to construct 117 multi-family units spread across the addresses of 4618 Jones Avenue, 4663 Hedrick Avenue, and 4705 Hedrick Avenue in the City of Riverside. Access to the site will be provided via two driveways with one on Jones Avenue and one on Hedrick Avenue, providing both ingress and egress into and out of the Project site.

Summary

This section provides a discussion on the findings from the TIA prepared per the City of Riverside Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment, July 2020 (City Guidelines). The Project has been evaluated during the peak period of the AM (7 AM to 9 AM) and PM (4 PM to 6 PM) under the following scenarios:

- Existing Conditions
- 2027 Background Conditions (Existing + 2045 Cumulative Projects)
- 2027 Background Conditions Plus Project
- 2045 Cumulative No Project Conditions (Ambient Growth to the 2045 Cumulative Horizon)
- 2045 Cumulative Plus Project Conditions

Table ES.1 displays the level of service (LOS) intersection results under the study scenarios.

Table ES.1 – Peak Hour Intersection LOS Results Summary

Intersection	Peak Hour	LOS				
		Existing	2027 Background Conditions	2027 Background Plus Project	2045 Cumulative No Project	2045 Cumulative Plus Project
1. Jones Avenue & Cook Avenue	AM	B	C	C	C	C
	PM	B	C	C	C	C
2. Hedrick Avenue & Hole Avenue	AM	B	B	B	B	B
	PM	B	B	B	B	B
3. Jones Avenue & Project Driveway #1/Hole Avenue	AM	A	A	A	A	A
	PM	A	A	A	A	A
4. Hedrick Avenue & Project Driveway #2[1]	AM	-	-	A	-	A
	PM	-	-	A	-	A

Source: CR Associates (2024)

Note:
[1] Intersection does not exist in all "without project" scenarios

Recommended Improvements

Intersection Analysis

Based on the City guidelines, the addition of Project traffic would not cause any study intersection currently operating at an acceptable LOS C or better degrade to an LOS D or worse. However, as one of the parcels is a 5th cycle housing element site, the Project will be conditioned to install flashing LED-lit stop signs at all approaches at the intersection of Cook Avenue and Jones Avenue.

Roadway Segment Analysis

Based on the City guidelines, the addition of Project traffic would not cause any studied roadway segments currently operating at an acceptable LOS D or better to degrade to an LOS of E or F. Therefore, no roadway segment improvements are required or proposed.

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1.0 Introduction

The purpose of this Traffic Impact Analysis (TIA) is to evaluate how the proposed Mikasa Multi-Family residential project (the "Project") will affect the surrounding local transportation network, as well as to determine if transportation improvements will be needed.

1.1 Project Description

The Project is located on three currently vacant parcels between Hedrick Avenue and Jones Avenue, in the City of Riverside. The Project will involve the construction of 117 multi-family units across the three parcels. Of these parcels, one is designated as a 5th cycle Housing Element site and approximately 53 units will be constructed on that parcel. An excerpt from the Housing Element depicting the parcel is included as **Appendix A**. Access to the site will be provided via two driveways with one on Jones Avenue and one on Hedrick Avenue, providing both ingress and egress into and out of the Project site. **Figure 1.1** displays the Project's regional location. **Figure 1.2** displays the project site plan.

1.2 Project Trip Generation

Per the City guidelines, the Project's trip generation was calculated based upon rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition.

Table 1.1 displays the total project trip generation.

Table 1.1 – Project Trip Generation

Land Use	Units	Trip Rate	ADT	AM Peak Hour				PM Peak Hour			
				Trips	Split	In	Out	Trips	Split	In	Out
Multi-Family Residential	117 DU	6.74 / DU	789	55	24:76	13	42	67	63:37	42	25
		Project Total	**789**	**55**	**-**	**13**	**42**	**67**	**-**	**42**	**25**

Source; Institute of Transportation Engineers Trip Generation Manual 11th Edition; CR Associates (2024)

As shown, the Project would generate a total of 789 average daily trips, including 55 (13-in/42-out) AM peak hour trips and 67 (42-in/25-out) PM peak hour trips. These primary trips were utilized for the analysis of all study area intersections.

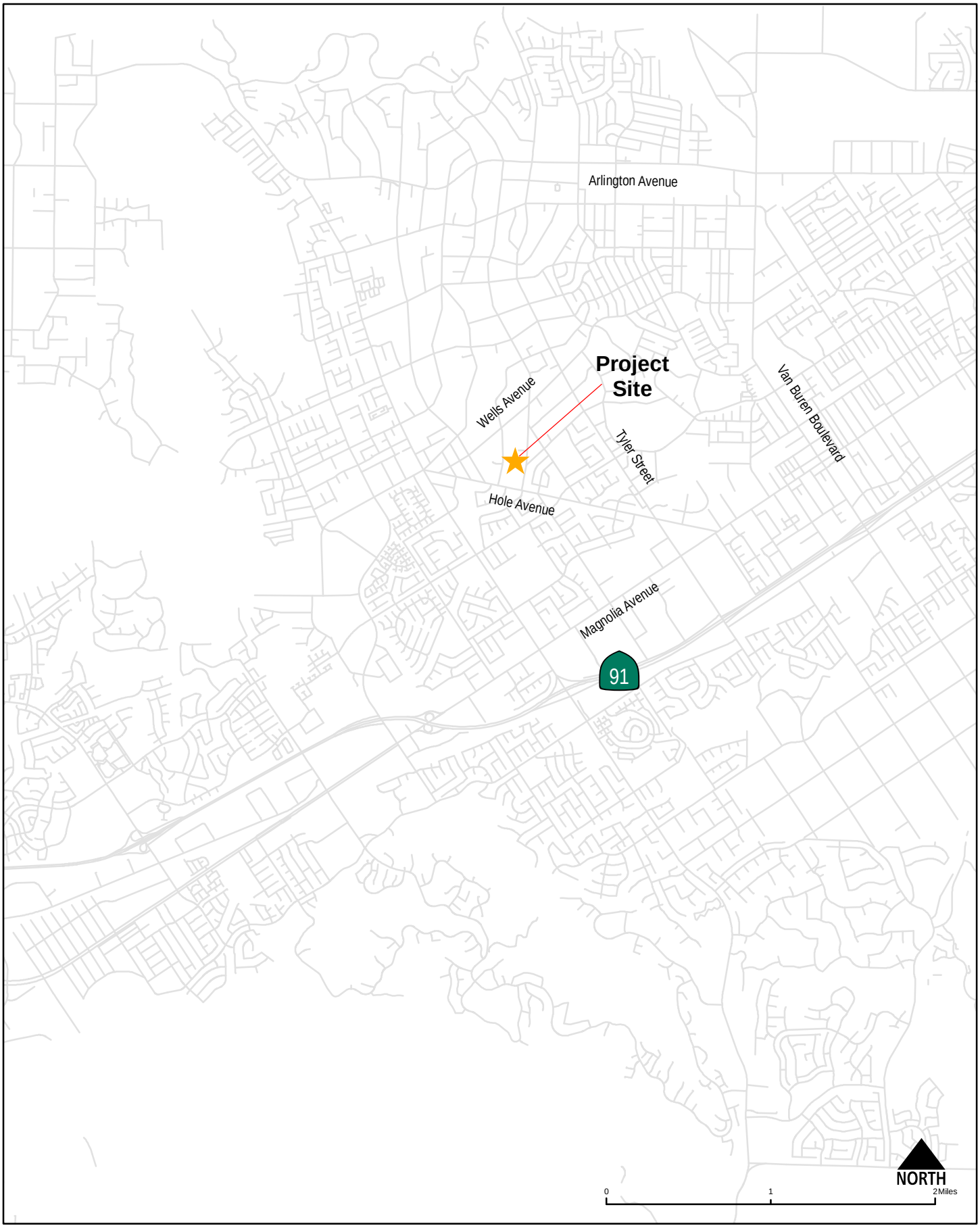

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Figure 1.1
Project Regional Location

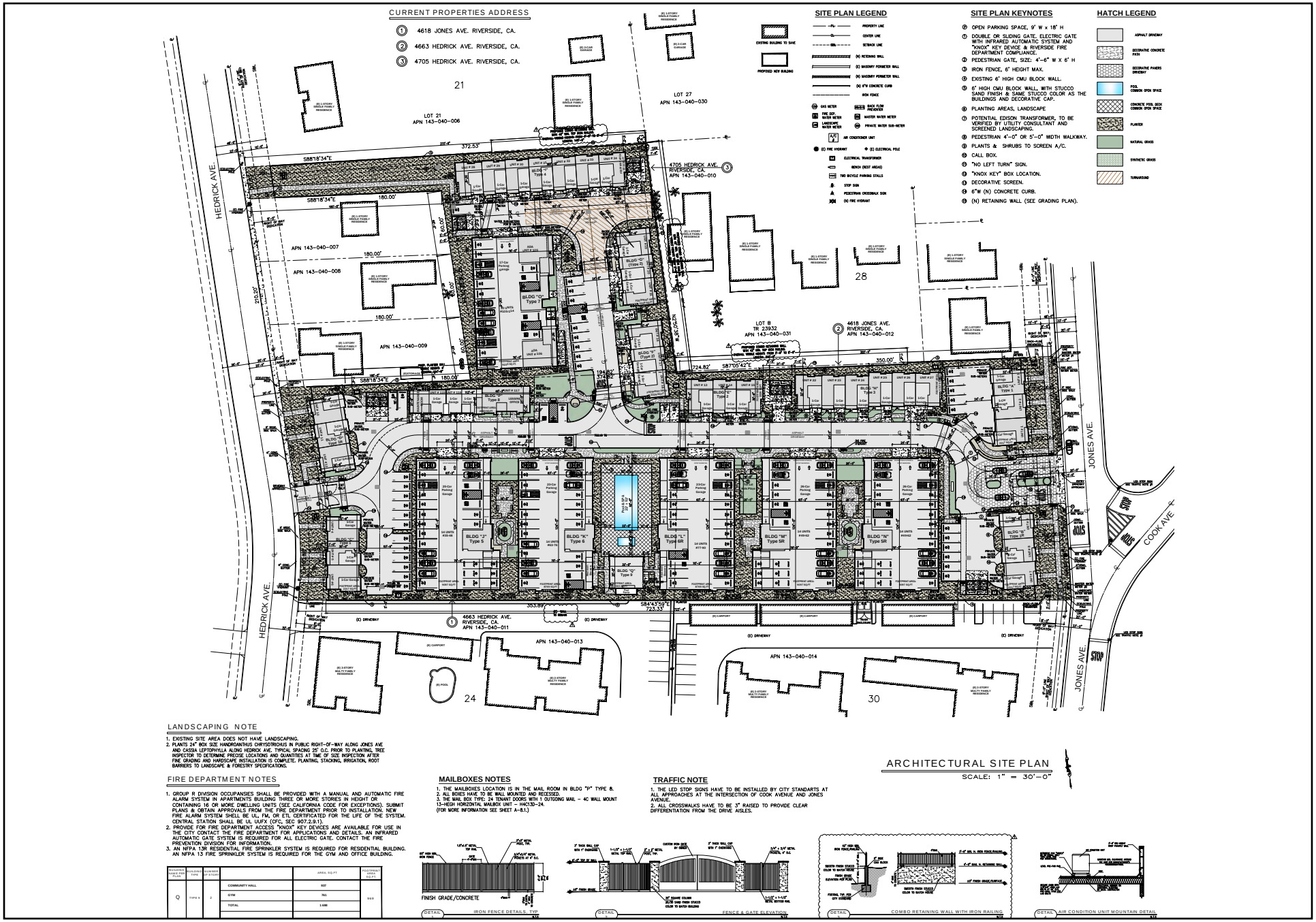

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Figure 1.2
Project Site Plan

1.3 Project Trip Distribution & Assignment

The project trip distribution was developed in coordination with City of Riverside staff as well as based on the geographical location of the project, the characteristics of the proposed land use, nearest freeway facilities, and location of major shopping centers, schools, and other communities. Additionally, a review of existing travel patterns was conducted for the project site's tract via Replica big data[1] hosting services. Per Replica's big data hosting services, it was determined that the majority of trips from the project area would travel along Hole Avenue in both the east and west directions. **Figure 1.3** displays the project trip distribution pattern for the Project. Based on the project trip generation and distribution, AM/PM peak hour project trips were assigned to the adjacent study intersections. **Figure 1.4** displays the primary trip assignment.

1.4 Project Study Area

The project study area was developed in coordination with the City of Riverside staff. The TIA includes the analysis of the following roadway segments and intersections:

<u>Roadway Segments</u>

1. Jones Avenue from Hole Avenue to Mobley Avenue
2. Hedrick Avenue from Hole Avenue to Wells Avenue

<u>Intersections</u>

1. Hedrick Avenue & Hole Avenue (side-street stop-controlled)
2. Jones Avenue & Hole Avenue (signalized)
3. Jones Avenue & Project Driveway #1/Cook Avenue (all-way stop-controlled)
4. Hedrick Avenue & Project Driveway #2 (side-street stop-controlled)[1]

[1] Intersection provides project access and does not currently exist; therefore, it is only analyzed under the "with Project" scenarios.

The study locations were established in consultation with City staff through the Traffic Analysis Scoping process. A copy of the Traffic Analysis Scoping Form is provided in **Appendix B**. **Figure 1.5** displays the project study area.

[1] Big Data – Describes the collection of complex and large data sets that is difficult to capture, process, store, search, and analyze using conventional data base systems.

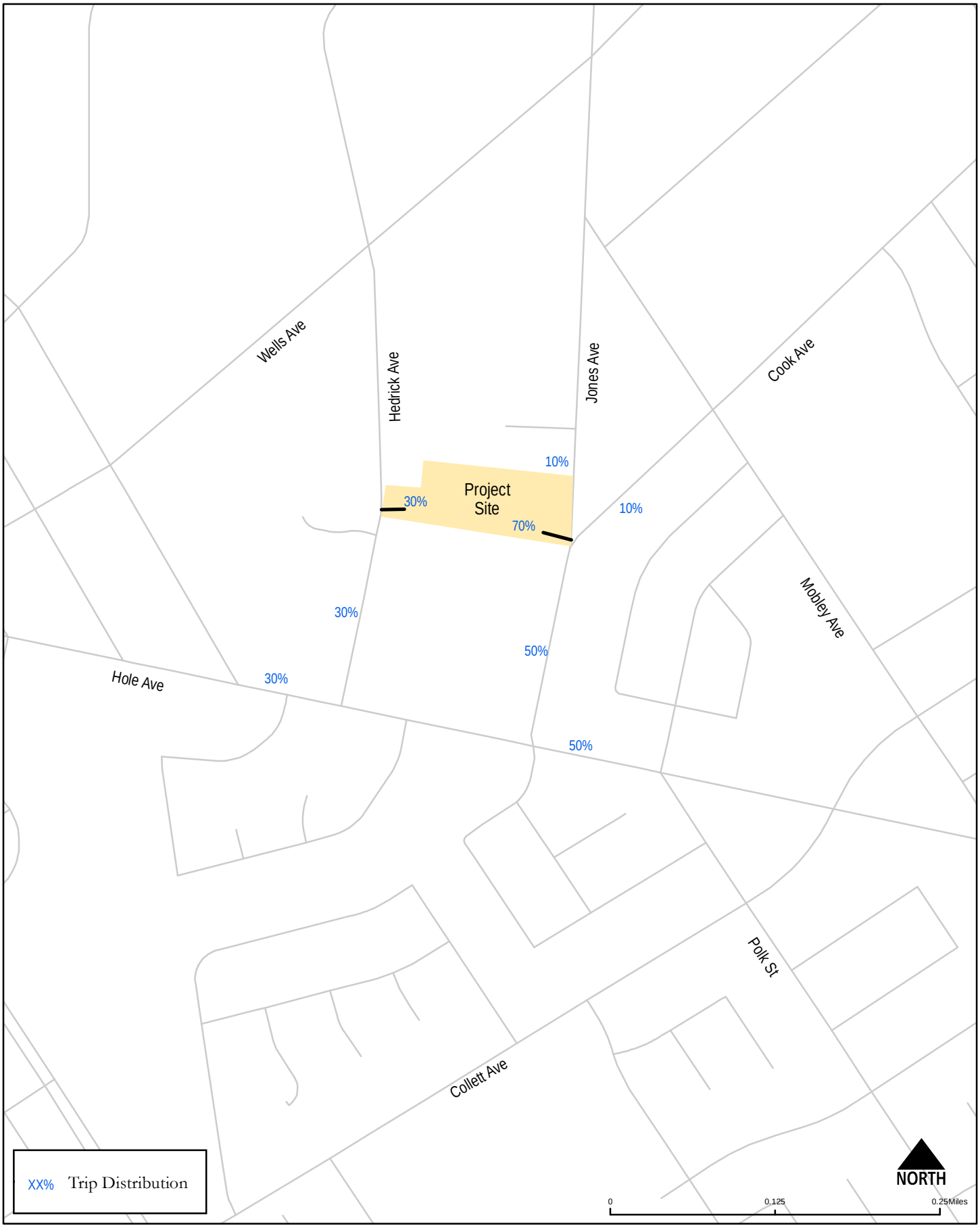

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Figure 1.3
Project Trip Distribution

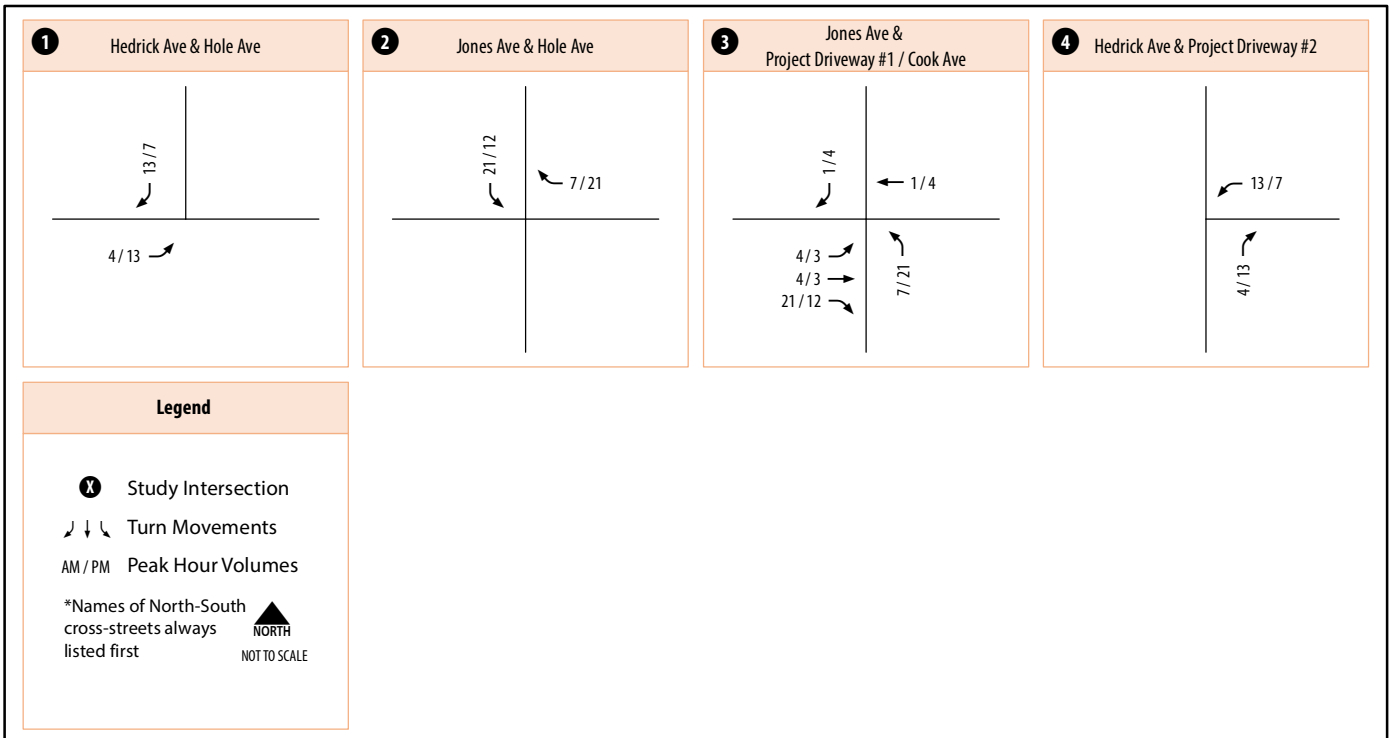

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Figure 1.4
Project Trip Assignment

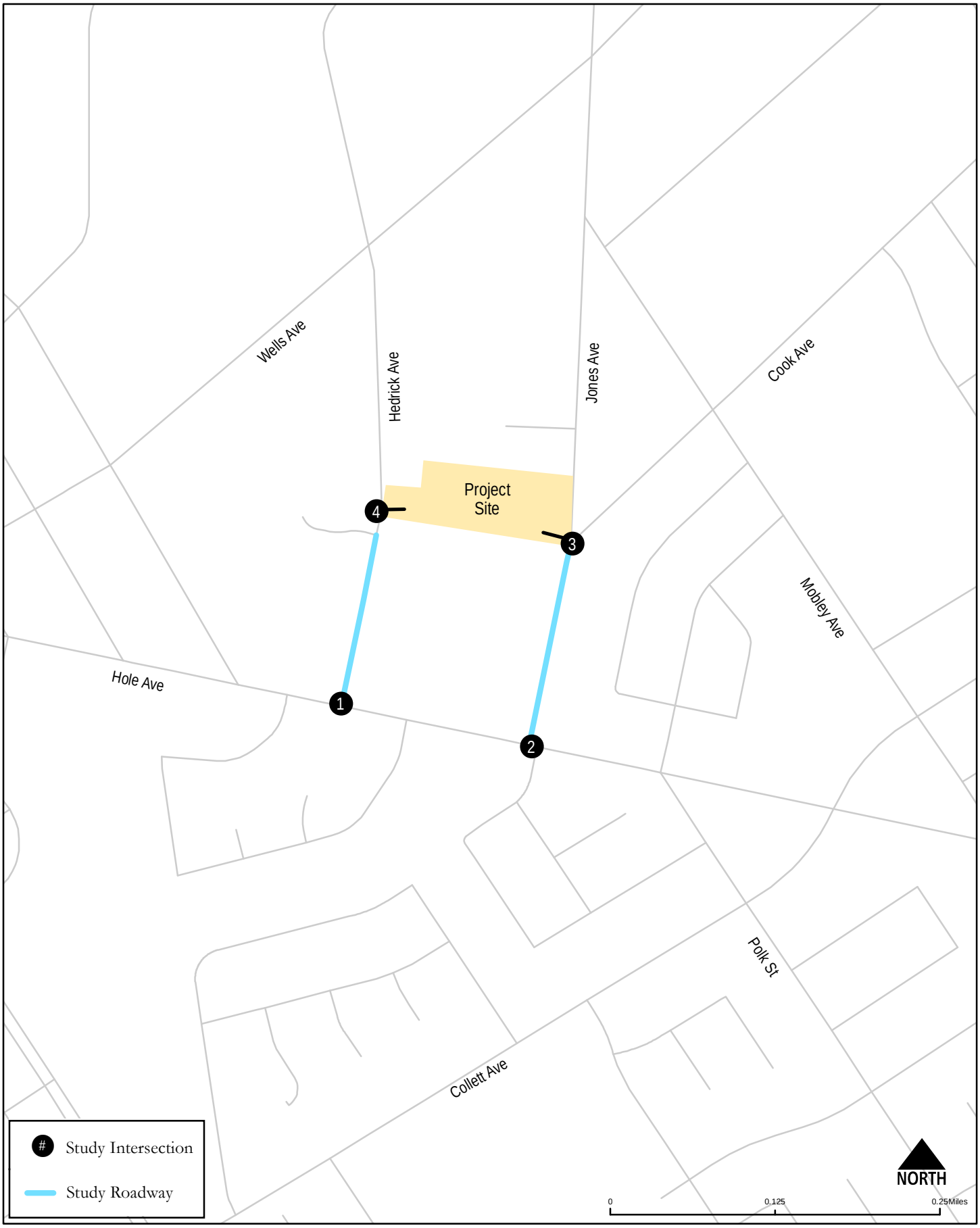

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Figure 1.5
Project Study Area

1.5 Report Organization

Following this introductory chapter, this report is organized into the following chapters:

2. *Analysis Methodology* – This chapter reviews the methods utilized to evaluate any potential inconsistencies associated with the implementation of the Project, as required by the City guidelines for a TIA.
3. *Project Setting* – This chapter describes the Project's land uses and associated trip generation. Additional information such as trip distribution patterns and project trip assignment are also included in this chapter, which is used to determine the project study area.
4. *Existing Conditions* – This chapter describes and evaluates the existing transportation network. The operations of the vehicular, pedestrian, bicycle, and transit facilities within the study area are evaluated and substandard facilities are identified. LOS analyses and results are provided for Existing Conditions.
5. *2027 Background Conditions* – This chapter describes the 2027 Background traffic volumes by adding other projects volumes to existing traffic volumes. It also analyzes any change in the transportation network caused by the Project. The Project's generated traffic is added to the 2027 Background conditions volumes to evaluate "with Project" conditions. LOS analyses and results are provided for 2027 Background and 2027 Background with Project conditions.
6. *2045 Cumulative Conditions* - This chapter describes the 2045 Cumulative traffic volumes by growing existing traffic volumes according to the cumulative horizon as determined by the Riverside County Transportation Model (RIVCOM). It also analyzes any change in the transportation network caused by the Project. The Project's generated traffic is added to the 2045 Cumulative conditions volumes to evaluate "with Project" conditions. LOS analyses and results are provided for 2045 Cumulative and 2045 Cumulative with Project conditions.
7. *Improvements and Recommendations* – This chapter identifies any substandard facilities and provides improvement requirements to improve substandard facilities to acceptable LOS or pre-project conditions.
8. *Site Access and Signal Warrants* – This chapter discusses site access and traffic signal warrants conducted at all studied unsignalized intersections.

2.0 Analysis Methodology and Thresholds

This TIA was performed in accordance with the standards and requirements identified in the City Guidelines. Detailed information on intersection analysis methodologies, standards, and thresholds are discussed in the following sections.

2.1 Level of Service (LOS) Definition

LOS is a quantitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as delay, speed, travel time, freedom to maneuver, interruptions in traffic flow, queuing, comfort, and convenience. **Table 2.1** describes generalized definitions of the various LOS categories (A through F) as applied to roadway operations.

Table 2.1 – LOS Definitions

LOS Category	Definition of Operation
A	This LOS represents a completely free-flow condition, where the operation of vehicles is virtually unaffected by the presence of other vehicles and only constrained by the geometric features of the highway and by driver preferences.
B	This LOS represents a relatively free-flow condition, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.
C	At this LOS, the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles.
D	At this LOS, the ability to maneuver is notably restricted due to traffic congestion, and only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.
E	This LOS represents operations at or near capacity. LOS E is an unstable level, with vehicles operating with minimum spacing for maintaining uniform flow. At LOS E, disruptions cannot be dissipated readily thus causing deterioration down to LOS F.
F	At this LOS, forced or breakdown of traffic flow occurs, although operations appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

Source: Highway Capacity Manual 6th Edition

2.2 Peak Hour Intersection LOS Standards and Thresholds

This section presents the methodologies used to perform peak hour intersection capacity analysis. The following assumptions were utilized in conducting all intersection LOS analyses:

- Peak Hour Factor – PHF information was obtained from the June 2024 (Wednesday, June 12) peak hour intersection count data, included in **Appendix C**, and utilized for Existing and 2027 Background analysis. Per City guidelines, a PHF of 0.95 was utilized at all intersections for 2045 Cumulative analysis.
- Signal Timing – Obtained from field observations. Inputs consistent with City Guidelines regarding minimum greens, yellow and red clearances, and cycle length. See **Appendix D** for all signalized intersection inputs.

2.2.1 Signalized Intersections

Signalized intersections were analyzed using the Highway Capacity 6th Edition signalized intersection analysis methodology. This method defines LOS in terms of delay, or more specifically, average stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption and lost travel time. The LOS criteria used for the analysis of signalized intersections are described in **Table 2.2**, identifying the thresholds of control delays and the associated LOS. The computerized analysis of intersection operations was performed utilizing the Synchro Version 11 traffic analysis software by Trafficware Ltd.

Table 2.2– Signalized Intersection LOS Operational Analysis Method

Average Stopped Delay Per Vehicles (seconds)	Level of Service (LOS) Characteristics
≤10	*LOS A* describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
>10– 20	*LOS B* describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
>20 – 35	*LOS C* describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
>35– 55	*LOS D* describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
>55 – 80	*LOS E* is considered the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80	*LOS F* describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the LOS D capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: Highway Capacity Manual 6th Edition

2.2.2 Unsignalized Intersections

Unsignalized intersections were analyzed using the Highway Capacity 6th Edition side-street stop (Chapter 20) and all-way stop (Chapter 21) intersection analysis methodology. The computerized analysis of intersection operations was performed utilizing the Synchro Version 11 traffic analysis software by Trafficware Ltd.

LOS was determined as follows:

- Side-Street Stop Intersections – Reported for the worst-case approach.
- All-Way Stop Intersections – Average intersection delay reported.

The LOS criteria used for the analysis of unsignalized intersections are described in **Table 2.3**.

Table 2.3 – LOS Criteria for Stop-Controlled Unsignalized Intersections

Average Stopped Delay Per Vehicle (Seconds)	LOS Characteristics
0 – 10	A
> 10 – 15	B
> 15 – 25	C
> 25 – 35	D
> 35 – 50	E
> 50	F

Source: Highway Capacity Manual 6th Edition

2.3 Roadway Segment LOS Standards and Thresholds

This section presents the methodologies used to perform roadway segment capacity analysis. All studied roadway segments were done in accordance with the City Guidelines. **Table 2.4** displays the roadway segment capacity table from the City Guidelines.

Table 2.4 – City of Riverside Roadway Capacity[1]

Roadway Classification	Number of Lanes	Two-Way Traffic Volume (ADT)[2]		
		Service Level C	Service Level D	Service Level E
Local	2	2,500 – 2,799	2,800 – 3,099	3,100+
Collector (66' or 80')	2	9,900 – 11,199	11,200 – 12,499	12,500+
Arterial[3]	2	14,400 – 16,199	16,200 – 17,999	18,000+
Arterial (88')	4	16,800 – 19,399	19,400 – 21,199	22,000+
Arterial (100')	4	26,200 – 29,599	29,600 – 32,999	33,000+
Arterial (120')	6	38,700 – 44,099	44,100 – 49,499	49,500+
Arterial (144')	8	50,600 – 57,799	57,800 – 64,999	65,000+

Source: City of Riverside Traffic Impact Analysis Guidelines July 2020

Note:
[1] All capacity figures are based on optimum conditions and are intended as guidelines for planning purposes only
[2] Maximum two-way ADT values are based on the 1999 Modified Highway Capacity Manual Level of Service tables
[3] Two-lane roadways designated as future arterials that conform to arterial design standards for vertical and horizonal alignments are analyzed as arterials

2.4 Intersection and Roadway Segment General Plan Consistency Requirements

This section presents the requirements that must be fulfilled in order to be considered consistent with the City's General Plan.

2.4.1 Intersections

Intersections are considered consistent with the acceptable LOS for the City's General Plan if they meet the following criteria:

- LOS C is to be maintained at all street intersections
- LOS D is to be maintained at intersections of Collector or higher classification

Operational improvements would be required if the addition of project traffic causes either peak hour LOS to degrade from acceptable to unacceptable or for the peak hour delay to increase as follows:

- LOS A/B By 10 seconds
- LOS C By 8 seconds
- LOS D By 5 seconds
- LOS E By 2 seconds
- LOS F By 1 second

2.4.2 Roadway Segments

Roadway segments are considered acceptable LOS if they maintain at least LOS D or better in accordance with the roadway capacity provided in Table 2.4. Roadway segment improvements would be required should the project cause either of the following:

- Any study roadway segments operating at a LOS D or better without project traffic in which the addition of project traffic causes the segment to degrade to an LOS E or F
- Any roadway segment that operates unacceptably in the no project scenario where the project adds traffic in excess of 5% of the roadway capacity

3.0 Project Setting

This chapter provides a detailed description of the active transportation facilities within the project study area.

3.1 Study Area Roadway System

Description of all major transportation network facilities located within ½ mile distance of the project site are provided below.

North-South Roadways

Jones Avenue – This north-south 2-lane undivided roadway has a posted speed limit of 25 miles per hour. Currently, there are no bicycle facilities and sidewalks are only present on the west side of the roadway south of Cook Avenue. Parking is generally permitted on both sides of the roadway. Jones Avenue is designated as a Collector roadway in the City of Riverside's General Plan Circulation Element (City's General Plan).

Hedrick Avenue – This north-south 2-lane undivided roadway has a posted speed limit of 25 miles per hour. Currently, there are no bicycle facilities and sidewalks are only present along the east side of the roadway south of Mimosa Hill Court. Parking is generally permitted on both sides of the roadway. Hedrick Avenue is designated as a Local roadway in the City's General Plan.

East-West Roadways

Hole Avenue – This east-west 4-lane with two-way left-turn lane roadway has a posted speed limit of 40 miles per hour. There are no bicycle facilities on either side of the roadway between Hedrick Avenue and Jones Avenue. Sidewalks are present on both sides of the roadway between Hedrick Avenue and Jones Avenue. Parking is prohibited on both sides of the roadway. Hole Avenue is designated as an Arterial roadway in the City's General Plan.

3.2 Transit Service

Transit service to the project area is provided by the Riverside Transit Agency (RTA). The bus stop closest to the project site is located at the intersection of La Sierra Avenue and Pierce Street. A description of the bus route serving the project area is provided below. Detailed information regarding the below route is included in **Appendix E**.

RTA Route 12 (La Cadena & Interchange – Downtown Riverside – Corona Hills Plaza)
This bus route operates between the Mckinley Street interchange and downtown Riverside. Route 856 operates Monday through Friday from approximately 5:05 AM to 11:01 PM with approximately one-hour headways, weekends from approximately 6:27 AM to 8:28 PM with approximately one-hour headways.

4.0 Existing Conditions

This chapter provides an analysis of the existing vehicular operations at the intersections analyzed within the study area.

4.1 Existing Traffic Volumes

This section presents the existing daily and peak hour traffic volume information. Traffic counts were conducted at the study roadway segments and intersections on June 12, 2024, by Counts Unlimited, Inc. Traffic counts were conducted during AM peak period (7am–9am) and PM peak period (4pm-6pm), when schools were not in session. Therefore, an adjustment was necessary. After consulting with City staff and comparing these counts to a previous count in the same area from 2022 (when schools were in session), an adjustment factor of 35% was applied to the AM peak period and no adjustment factor was applied to the PM peak period. Existing traffic counts as well as the utilized historical count are provided in Appendix B.

Figure 4.1 displays the study area intersection geometrics under Existing conditions. Daily traffic and AM/PM peak hour turning movement volumes for the study intersections are displayed in **Figure 4.2**.

4.2 Existing Traffic Conditions

Table 4.1 displays intersection LOS and average vehicle delay results for the study intersections under Existing conditions. LOS calculation worksheets are provided in **Appendix F**.

Table 4.1 – Peak Hour Intersection LOS Results – Existing Conditions

Intersection	Peak Hour	Traffic Control	Delay (sec/veh)	LOS
1. Hedrick Avenue & Hole Ave	AM	SSSC	12.9	B
	PM		14.2	B
2. Jones Avenue & Hole Avenue	AM	Signal	12.4	B
	PM		11.9	B
3. Jones Avenue & Project Driveway #1/Cook Avenue	AM	AWSC	8.0	A
	PM		7.6	A
4. Hedrick Avenue & Project Driveway #2	AM	Intersection Does Not Exist	-	-
	PM		-	-

Source: CR Associates (2024)

Note:
SSSC = Side-street stop-controlled intersection and the delay shown is the worst delay experience by any of the approaches

As shown in the table, all of the study intersections currently operate at acceptable LOS B or better during both the AM and PM peak hours under existing conditions. **Table 4.2** displays LOS results for roadway segments under Existing conditions.

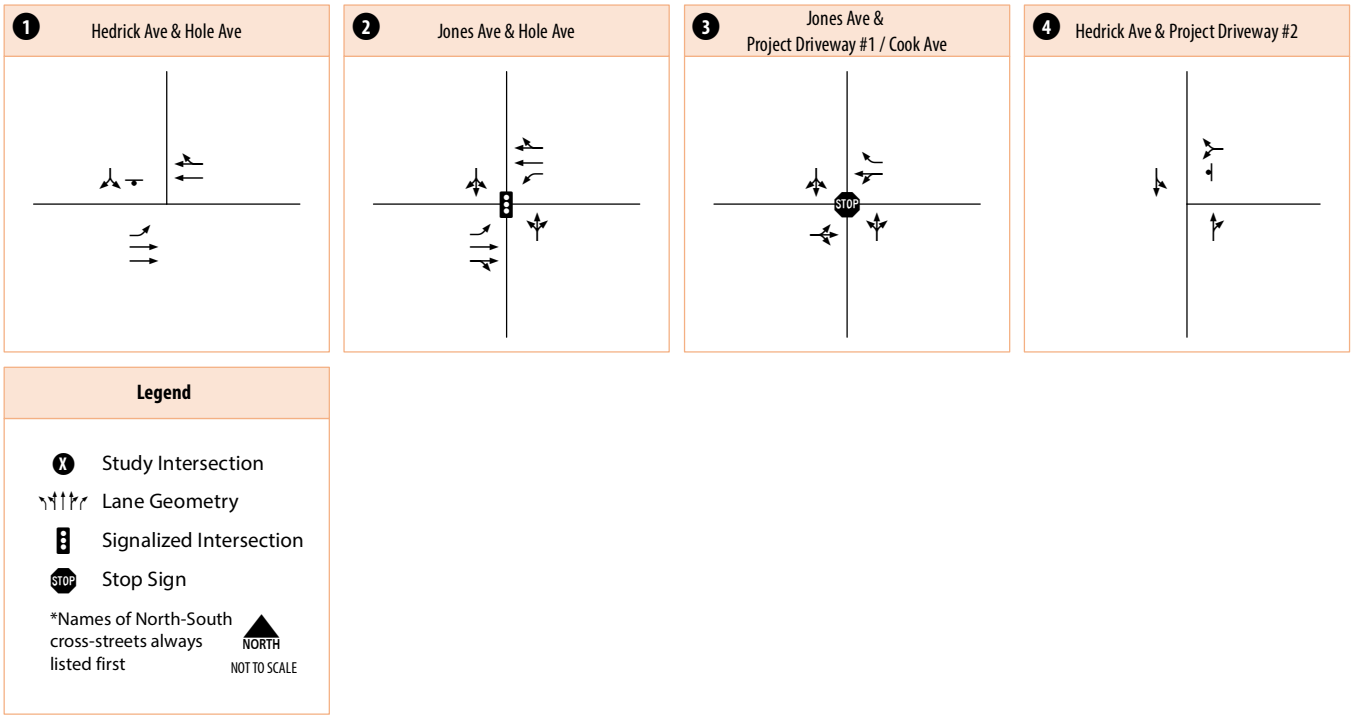

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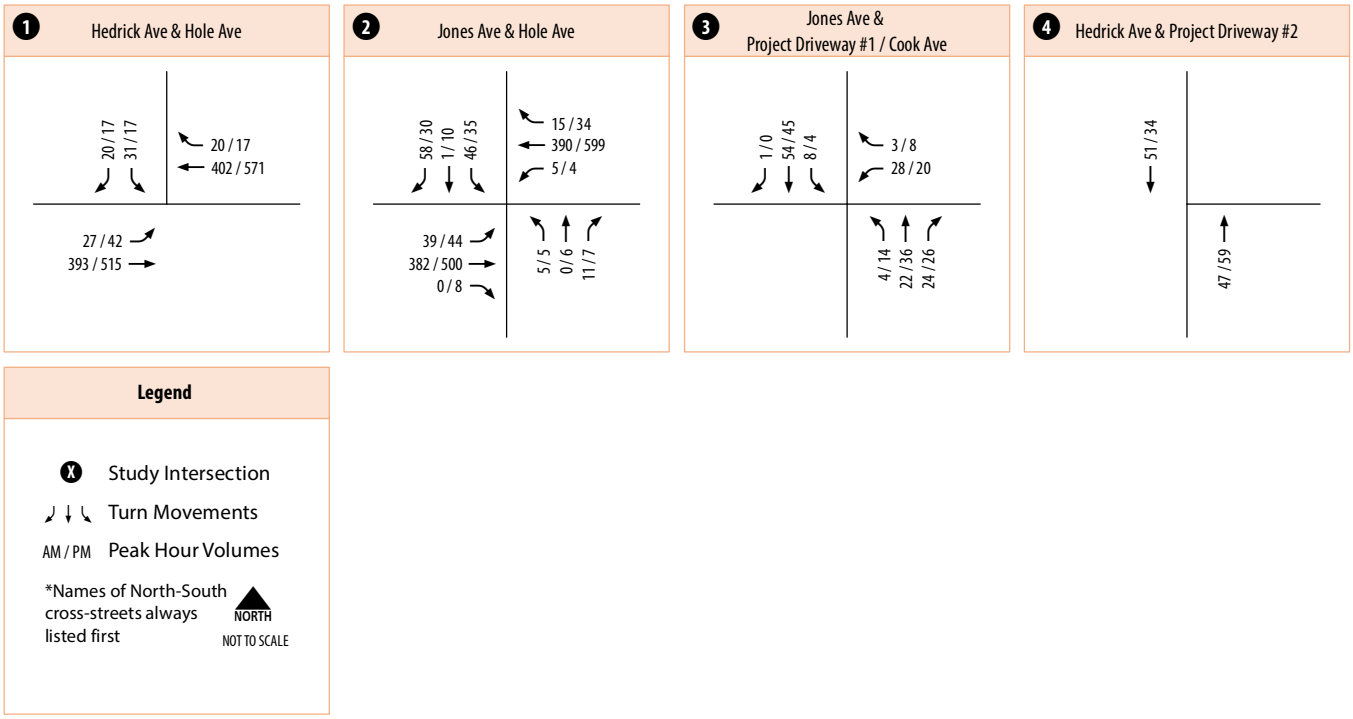
Figure 4.1
Intersection Geometrics



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Traffic Impact Analysis

Figure 4.2
Peak Hour Intersection Volumes - Existing Conditions

Table 4.2 – Roadway Segment LOS Results – Existing Conditions

Roadway	Segment	ADT	LOS E Capacity	V / C	LOS
Jones Avenue	Hole Avenue to Mobley Avenue	1,824	12,500	0.146	C or better
Hedrick Avenue	Hole Avenue to Wells Avenue	1,132	3,100	0.365	C or better

Source: CR Associates (2024)

As shown in the table, all of the study roadway segments operate at acceptable LOS C or better under Existing conditions.

5.0 2027 Background Conditions

This chapter provides an analysis of 2027 Background traffic conditions, the Project's opening year, both with and without the Project. The scenarios analyzed in this section include:

- 2027 Background Conditions
- 2027 Background Conditions with Project

5.1 2027 Background Traffic Volumes

Functional roadway classifications and intersection geometrics under 2027 Background Conditions were assumed to be identical to Existing conditions.

<u>2045 Cumulative Projects</u>

To determine 2027 Background conditions traffic volumes, traffic from cumulative projects in the project vicinity were added to Existing counts. A list of projects in the project vicinity was provided by City staff.

A summary of 2045 Cumulative Projects, including the associated trip generation is provided in **Table 5.1**. The locations of the 2045 Cumulative Projects are shown in **Figure 5.1** while the 2045 Cumulative Project's trip assignment is displayed in **Figure 5.2**. **Appendix G** displays the additional cumulative project information.

AM/PM peak hour turning movement volumes for the study intersections under 2027 Background conditions are displayed in **Figure 5.3**.

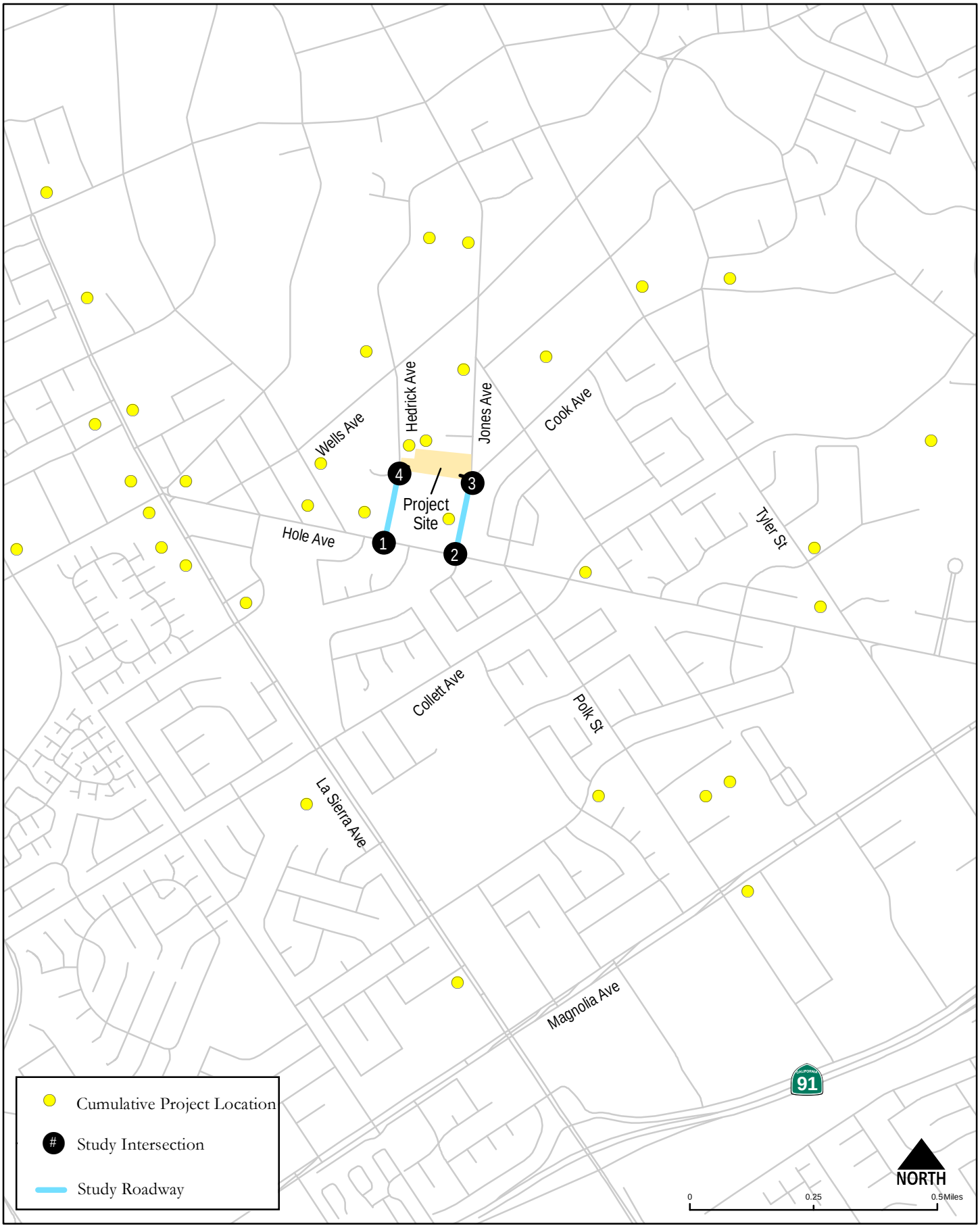

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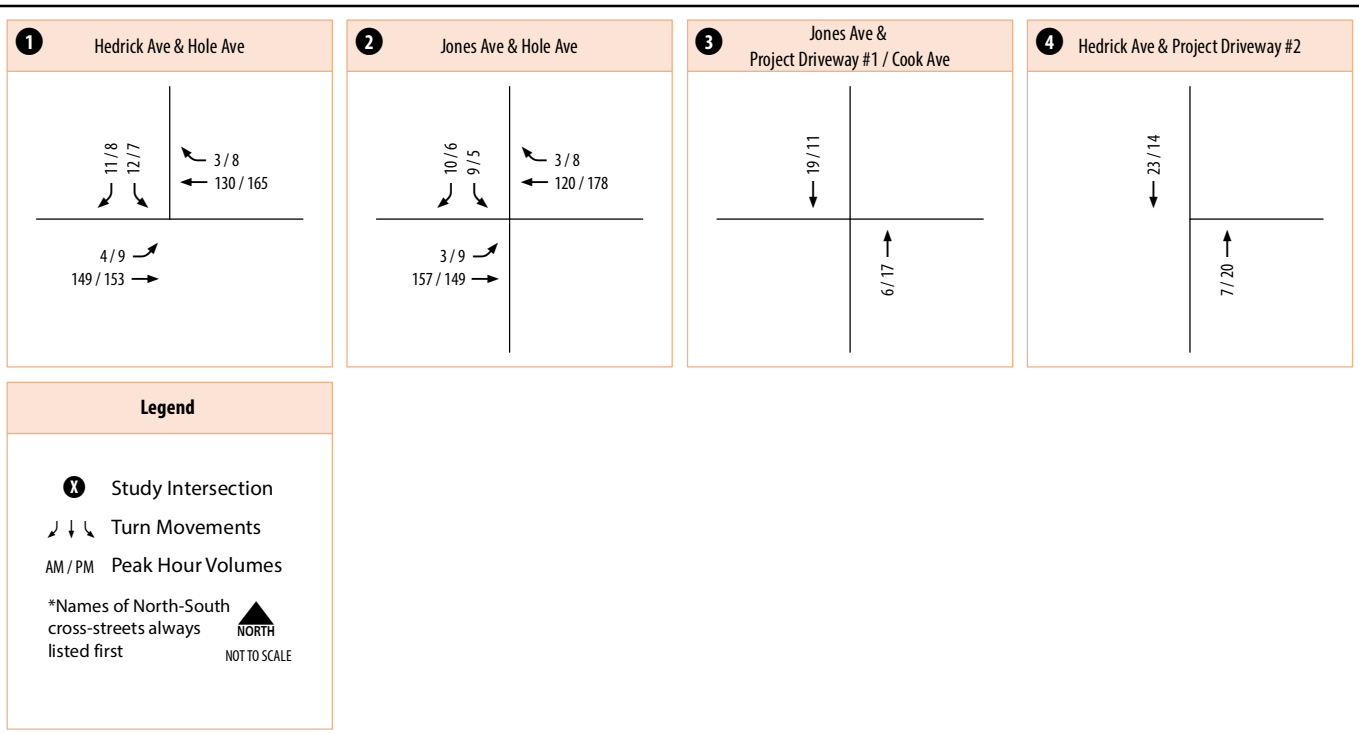
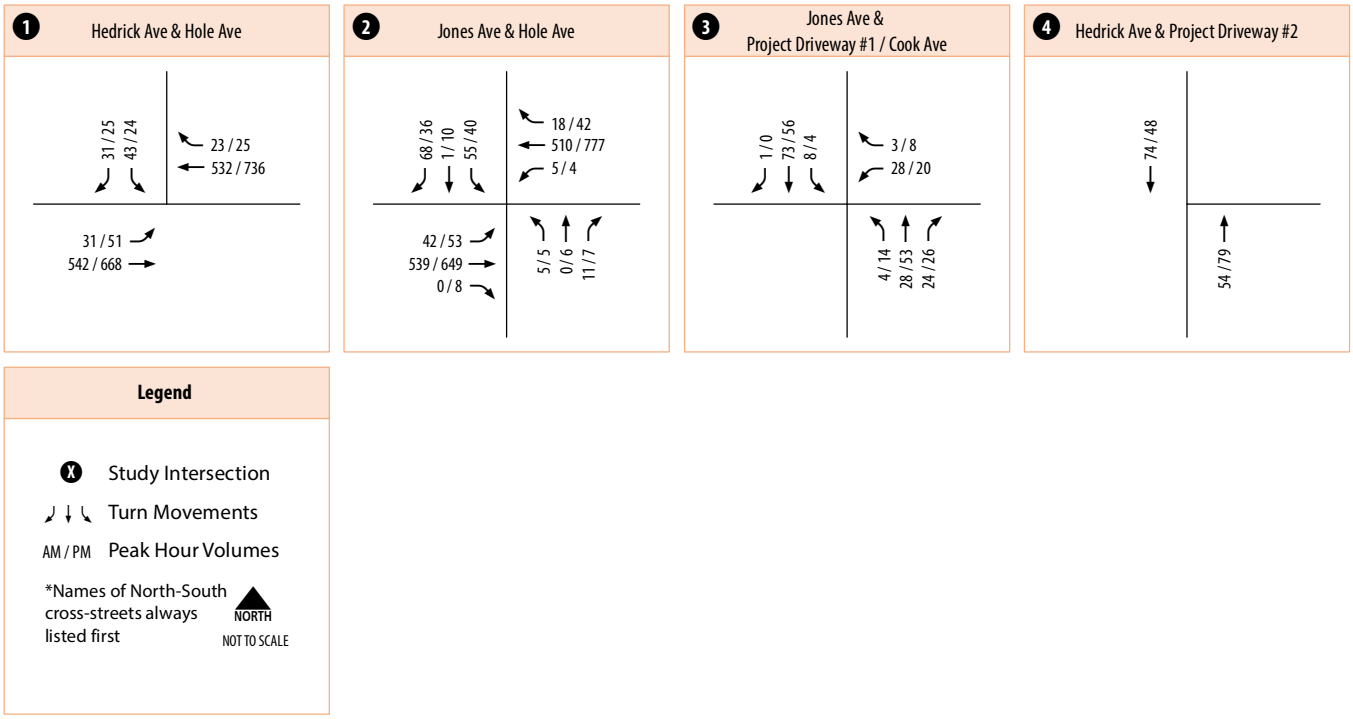
Figure 5.1
Cumulative Projects Location


1 Hedrick Ave & Hole Ave
11 / 8
12 / 7
3 / 8
130 / 165
4 / 9
149 / 153
2 Jones Ave & Hole Ave
10 / 6
9 / 5
3 / 8
120 / 178
3 / 9
157 / 149
3 Jones Ave & Project Driveway #1 / Cook Ave
19 / 11
6 / 17
4 Hedrick Ave & Project Driveway #2
23 / 14
7 / 20
Legend
Study Intersection
Turn Movements
AM / PM Peak Hour Volumes
*Names of North-South cross-streets always listed first
NORTH
NOT TO SCALE



Mikasa Residential
Traffic Impact Analysis

Figure 5.3
Peak Hour Intersection Volumes - Background Conditions

Table 5.1 2045 Cumulative Project Trip Generation

2045 Cumulative Project Address	Land Use	Quantity	Daily Trips	AM Peak Hour (In / Out)	PM Peak Hour (In / Out)
4663 Hedrick Avenue	Single-Family Detached Housing	7 Dwelling Units	66	5 (1-in / 4-out)	7 (4-in/3-out)
3907 Polk Street	Multi-Family Housing	92 Dwelling Units	418	34 (8-in / 26-out)	36 (22-in / 14-out)
4046 Tyler Street	Assisted Living Facility	36 Beds	94	6 (4-in / 2-out)	9 (3-in / 6-out)
11124 Pierce Street	Senior Apartments / Commercial Space	60 Dwelling Units / 5.75 KSF	560	29 {14-in / 15-out)	54 (28-in / 26-out)
10660 Magnolia Avenue	Fast Food Restaurant	4.473 KSF	2,090	199 (102-in / 97-out)	148 (77-in / 71-out)
Wells Avenue / Hedrick Avenue	Multi-Family Housing	22 Dwelling Units	161	13 (3-in / 10-out)	15 (10-in / 5-out)
4824 Jones Avenue	Assembly Area	23.12 KSF	666	44 (29-in / 15-out)	58 (27-in / 31-out)
4920-4980 La Sierra Avenue	Drive-thru fast food restaurant, Pharmacy Drive-thru, Commercial	2.4 KSF 17.3 KSF 15.9 KSF	3862	191 (102-in / 89-out)	335 (169-in / 166-out)
11253 Pierce Street	Affordable Housing	79 Dwelling Units	380	40 (11-in / 29-out)	36 (21-in / 15-out)
4631 Tyler Street	Multi-Family Housing	4 Dwelling Units	29	2 (0-in / 2-out)	2 (1-in / 1-out)
10750 Cochran Avenue	Assembly Area	0.6 KSF	5	0	0
3907 Polk Street	Multi-Family Housing, Commercial	57 DU 0.8 KSF	396	24 (6-in / 18-out)	31 (19-in / 12-out)
4790 La Sierra Avenue	Indoor Playground	18 KSF	64	34 (23-in / 11-out)	78 (37-in / 41-out)
4663 Hedrick Avenue	Multi-Family Housing	90 Dwelling Units	409	33 (8-in / 25-out)	35 (21-in / 14-out)
4698 Jones Avenue	Multi-Family Housing	82 Dwelling Units	372	30 (7-in / 23-out)	32 (20-in / 12-out)
11159 Doverwood Drive	Square foot expansion to existing residence	0.6 KSF	3	0	0

Table 5.1 2045 Cumulative Project Trip Generation (cont.)

2045 Cumulative Project Address	Land Use	Quantity	Daily Trips	AM Peak Hour (In / Out)	PM Peak Hour (In / Out)
11099 Hole Avenue	Multi-Family Housing	24 Dwelling Units	109	9 (2-in / 7-out)	9 (6-in / 3-out)
5033 La Sierra Avenue	Multi-Family Housing	281 Dwelling Units	1,276	104 (24-in / 80-out)	110 (67-in / 43-out)
4745 Hiers Avenue	Vehicle Repair Facility	4 KSF	66	8 (6-in / 2-out)	8 (3-in / 5-out)
10525 Hole Avenue	Drive-thru, Automated Car Wash	5.4 KSF 1 Tunnel	3,568	318 (161-in / 157-out)	256 (131-in / 125-out)
5189 La Sierra Avenue	Multi-Family Housing	52 Dwelling Units	235	19 (4-in / 15-out)	20 (12-in / 8-out)
10762 Wells Avenue	Multi-Family Housing	78 Dwelling Units	354	29 (7-in / 22-out)	30 (19-in / 11-out)
4824 Jones Avenue	Cargo Containers	3 Containers	2	0	0
10769 Hole Avenue	Multi-Family Housing	22 Dwelling Units	207	9 (2-in – 7-out)	11 (7-in / 4-out)
4601 La Sierra Avenue	Classrooms	20 Students	37	0	1 (1-in / 0-out)
10450 Mull Avenue	Single-Family Detached Housing	20 Dwelling Units	189	14 (4-in / 10-out)	19 (12-in / 7-out)
4350 La Sierra Avenue	Multi-Family Housing	34 Dwelling Units	249	19 (4-in / 15-out)	23 (15-in / 8-out)
4682 Mitchell Avenue	Multi-Family Housing	56 Dwelling Units	409	32 (7-in / 25-out)	39 (25-in / 14-out)
5301 La Sierra Avenue	Restaurant, Retail	3.1 KSF 2 KSF	459	36 (19-in / 17-out)	41 (24-in / 17-out)
4820 La Sierra Avenue	Martial Arts Studio	6.4 KSF	60	20 (12-in / 8-out)	40 (25-in / 15-out)
3856 La Sierra Avenue	Drive-thru Coffee Shop	2.3 KSF	846	181 (91-in / 90-out)	44 (22-in / 22-out)

Table 5.1 2045 Cumulative Project Trip Generation (cont.)

2045 Cumulative Project Address	Land Use	Quantity	Daily Trips	AM Peak Hour (In / Out)	PM Peak Hour (In / Out)
4103 Tyler Street	Childcare Facility	10.2 KSF	485	112 (59-in / 53-out)	113 (53-in / 60-out)
10000 County Farm Road	Juvenile Detention	15 KSF	62	10 (7-in / 3-out)	7 (1-in / 6-out)
		Total	**19,022**	**1,651 (754-in / 897-out)**	**1,732 (928-in / 804-out)**

Source: City of Riverside, CR Associates (2024)

As shown, the cumulative projects are anticipated to generate 19,022 daily trips, including 1,651 trips (754-in / 897-out) during the AM peak hour and 1,732 trips (928-in / 804-out) during the PM peak hour.

5.2 2027 Background Traffic Conditions

Table 5.2 displays intersection LOS and average vehicle delay results for the study intersections under 2027 Background conditions. LOS calculation worksheets are provided in **Appendix H**.

Table 5.2 – Peak Hour Intersection LOS Results – 2027 Background Conditions

Intersection	Peak Hour	Traffic Control	Delay (sec/veh)	LOS
1. Hedrick Avenue & Hole Ave	AM	SSSC	15.5	C
	PM		17.7	C
2. Jones Avenue & Hole Avenue	AM	Signal	13.1	B
	PM		12.5	B
3. Jones Avenue & Project Driveway #1/Cook Avenue	AM	AWSC	8.1	A
	PM		7.8	A
4. Hedrick Avenue & Project Driveway #2	AM	Intersection Does Not Exist	-	-
	PM		-	-

Source: CR Associates (2024)

Note:
SSSC = Side-street stop-controlled intersection and the delay shown is the worst delay experience by any of the approaches
AWSC – All-way Stop-Controlled and the delay shown is the worst delay experience by any of the approaches

As shown, all of the study intersections currently operate at acceptable LOS B or better during both the AM and PM peak hours under this scenario. **Table 5.3** displays LOS results for roadway segments under 2027 Background conditions.

Table 5.3 – Roadway Segment LOS Results – 2027 Background Conditions

Roadway	Segment	ADT	LOS E Capacity	V / C	LOS
Jones Avenue	Hole Avenue to Mobley Avenue	2,144	12,500	0.172	C or better
Hedrick Avenue	Hole Avenue to Wells Avenue	1,512	3,100	0.488	C or better

Source: CR Associates (2024)

As shown in the table, all of the study roadway segments operate at acceptable LOS C or better under 2027 Background conditions.

5.3 2027 Background with Project Traffic Volumes

Functional classifications and intersection geometrics under 2027 Background with Project Conditions were assumed to be identical to 2027 Background conditions, with the exception of the new proposed project driveways:

- *Project Driveway #1* – Located approximately 800 feet north of Hole Avenue along Jones Avenue and will function as the fourth leg of the existing Jones Avenue / Cook Avenue intersection. This all-access driveway will provide both ingress and egress.
- *Project Driveway #2* – Located approximately 760 feet north of Hole Avenue along Hedrick Avenue this all-access driveway will provide both ingress and egress.

Traffic volumes for 2027 Background with Project Conditions were derived by adding the project trips to the 2027 Background traffic volumes. Peak hour intersection volumes for this scenario are displayed in **Figure 5.4**.

5.4 2027 Background with Project Traffic Conditions

Table 5.4 displays intersection LOS and average vehicle delay results for the study intersections under 2027 Background with Project conditions. LOS calculation worksheets are provided in **Appendix I**.

Table 5.4 – Peak Hour Intersection LOS Results – 2027 Background with Project Conditions

Intersection	Peak Hour	Traffic Control	2027 Background with Project		2027 Background without Project		Δ Delay	GPI?[1]
			Delay (sec/veh)	LOS	Delay (sec/ veh)	LOS		
1. Hedrick Avenue & Hole Ave	AM	SSSC	15.6	C	15.5	C	0.1	No
	PM		17.7	C	17.7	C	0.0	No
2. Jones Avenue & Hole Avenue	AM	Signal	13.5	B	13.1	B	0.4	No
	PM		12.9	B	12.5	B	0.3	No
3. Jones Avenue & Project Driveway #1/Cook Avenue	AM	AWSC	8.3	A	8.1	A	0.1	No
	PM		8.0	A	7.8	A	0.2	No
4. Hedrick Avenue & Project Driveway #2	AM	SSSC	9.3	A	-	-	9.2	No
	PM		9.3	A	-	-	9.1	No

Source: CR Associates (2024)

Note:
[1] Column indicates whether or not the addition of project traffic constitutes a General Plan Inconsistency
SSSC = Side-street stop-controlled intersection and the delay shown is the worst delay experience by any of the approaches

As shown in the table, all of the study intersections are projected to continue operating at acceptable LOS B or better during both the AM and PM peak hours under this scenario. **Table 5.5** displays roadway segment LOS results for study segments under 2027 Background with Project conditions.

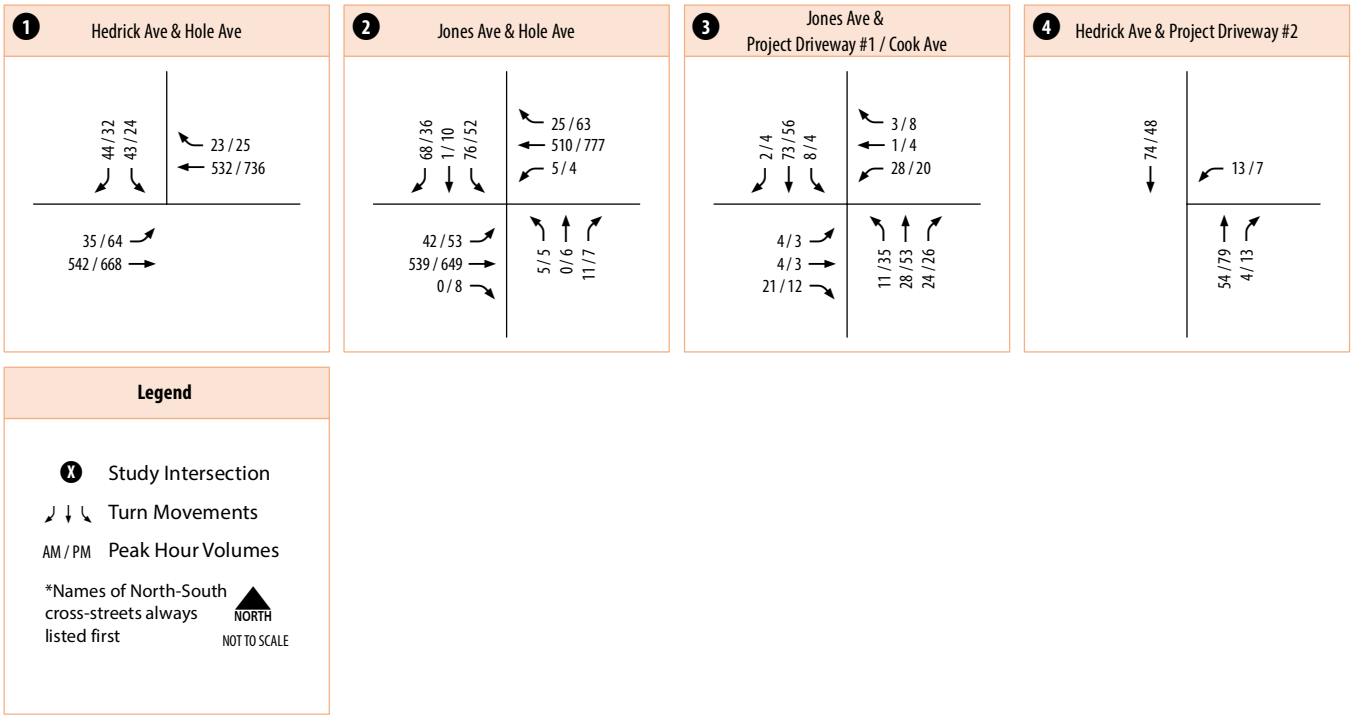
Table 5.5 – Roadway Segment LOS Results – 2027 Background with Project Conditions

Roadway	Segment	2027 Background with Project			2027 Background without Project			Δ	GPI?[1]
		ADT	V / C	LOS	ADT	V / C	LOS		
Jones Avenue	Hole Avenue to Mobley Avenue	2,539	0.203	C or better	2,144	0.172	C or better	0.031	No
Hedrick Avenue	Hole Avenue to Wells Avenue	1,749	0.564	C or better	1,512	0.488	C or better	0.076	No

Source: CR Associates (2024)

Note
[1] Column indicates whether or not the addition of project traffic constitutes a General Plan Inconsistency

As shown in the table, all of the study roadway segments operate at acceptable LOS C or better under 2027 Background with Project conditions.



Mikasa Residential
Traffic Impact Analysis

Figure 5.4
Peak Hour Intersection Volumes - Background + Project Conditions

6.0 2045 Cumulative Conditions

This chapter provides an analysis of 2045 Cumulative (2045) traffic conditions, the Project's horizon year, both with and without the Project. The scenarios analyzed in this section include:

- 2045 Cumulative Conditions
- 2045 Cumulative Conditions with Project

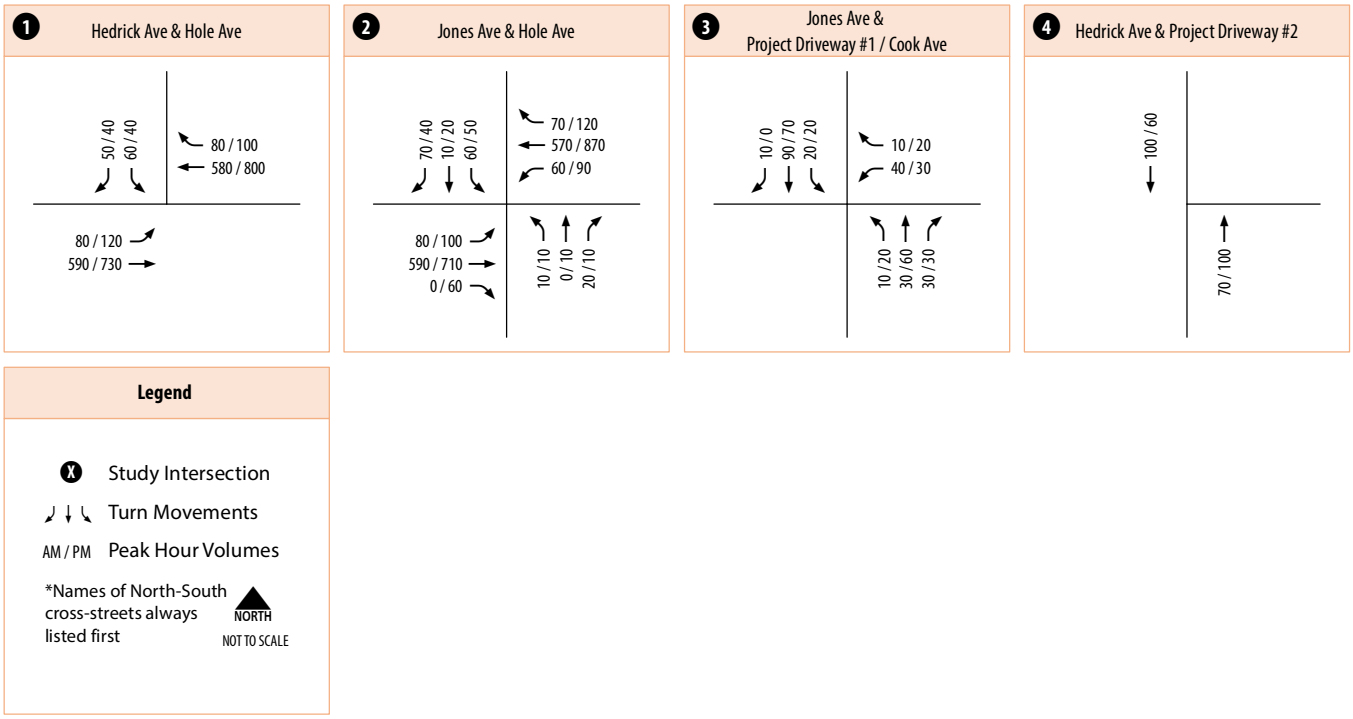
6.1 2045 Cumulative Traffic Volumes

Functional roadway classifications and intersection geometrics under 2045 Cumulative Conditions were assumed to be identical to 2027 Background conditions.

RIVCOM Model Growth

To determine 2045 Cumulative conditions traffic volumes per City guidelines, the Riverside County Transportation Model (RIVCOM) was utilized. The baseline 2018 model was compared to the 2045 horizon model to determine a growth percentage at each leg of all study intersections. This growth percentage was then applied to the calculated Background traffic counts to determine baseline 2045 Cumulative conditions traffic volumes. **Appendix J** displays relevant RIVCOM excerpts.

AM/PM peak hour turning movement volumes for the study intersections under Cumulative conditions are displayed in **Figure 6.1**.



Mikasa Residential
Traffic Impact Analysis

Figure 6.1
Peak Hour Intersection Volumes - Cumulative Conditions

6.2 2045 Cumulative Traffic Conditions

Table 6.1 displays intersection LOS and average vehicle delay results for the study intersections under 2045 Cumulative conditions. LOS calculation worksheets are provided in **Appendix K**.

Table 6.1 – Peak Hour Intersection LOS Results – 2045 Cumulative Conditions

Intersection	Peak Hour	Traffic Control	Delay (sec/veh)	LOS
1. Hedrick Avenue & Hole Ave	AM	SSSC	17.6	C
	PM		22.0	C
2. Jones Avenue & Hole Avenue	AM	Signal	15.3	B
	PM		16.5	B
3. Jones Avenue & Project Driveway #1/Cook Avenue	AM	AWSC	7.8	A
	PM		7.8	A
4. Hedrick Avenue & Project Driveway #2	AM	Intersection Does Not Exist	-	-
	PM		-	-

Source: CR Associates (2024)

Note:
SSSC = Side-street stop-controlled intersection and the delay shown is the worst delay experience by any of the approaches

As shown, all of the study intersections currently operate at acceptable LOS C or better during both the AM and PM peak hours under this scenario. **Table 6.2** displays LOS results for roadway segments under 2045 Cumulative conditions.

Table 6.2 – Roadway Segment LOS Results – 2045 Cumulative Conditions

Roadway	Segment	ADT[1]	LOS E Capacity	V / C	LOS
Jones Avenue	Hole Avenue to Mobley Avenue	2,191	12,500	0.175	C or better
Hedrick Avenue	Hole Avenue to Wells Avenue	1,790	3,100	0.577	C or better

Source: CR Associates (2024)

Note:
[1] ADT for 2045 Cumulative Conditions taken from RIVCOM 2045 Horizon Model

As shown in the table, all of the study roadway segments operate at acceptable LOS C or better under 2045 Cumulative conditions.

6.3 2045 Cumulative with Project Traffic Volumes

Functional classifications and intersection geometrics under 2045 Cumulative with Project Conditions were assumed to be identical to 2045 Cumulative conditions, with the exception of the new proposed project driveways:

- *Project Driveway #1* – Located approximately 800 feet north of Hole Avenue along Jones Avenue and will function as the fourth leg of the existing Jones Avenue / Cook Avenue intersection. This all-access driveway will provide both ingress and egress.
- *Project Driveway #2* – Located approximately 760 feet north of Hole Avenue along Hedrick Avenue this all-access driveway will provide both ingress and egress.

Traffic volumes for 2045 Cumulative with Project Conditions were derived by adding the project trips to the 2045 Cumulative traffic volumes. Peak hour intersection volumes for this scenario are displayed in **Figure 6.2**.

6.4 2045 Cumulative with Project Traffic Conditions

Table 6.3 displays intersection LOS and average vehicle delay results for the study intersections under 2045 Cumulative with Project conditions. LOS calculation worksheets are provided in **Appendix L**.

Table 6.3 – Peak Hour Intersection LOS Results – 2045 Cumulative with Project Conditions

Intersection	Peak Hour	Traffic Control	2045 Cumulative with Project		2045 Cumulative without Project		Δ Delay	GPI?[1]
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
1. Hedrick Avenue & Hole Ave	AM	SSSC	18.4	C	17.6	C	0.8	No
	PM		22.3	C	22.0	C	0.3	No
2. Jones Avenue & Hole Avenue	AM	Signal	15.7	B	15.3	B	0.4	No
	PM		16.9	B	16.5	B	0.4	No
3. Jones Avenue & Project Driveway #1/Cook Avenue	AM	AWSC	7.8	A	7.8	A	0.0	No
	PM		7.9	A	7.8	A	0.1	No
4. Hedrick Avenue & Project Driveway #2	AM	SSSC	9.5	A	-	-	9.5	No
	PM		9.5	A	-	-	9.5	No

Source: CR Associates (2024)

Note:
[1] Column indicates whether or not the addition of project traffic constitutes a General Plan Inconsistency
SSSC = Side-street stop-controlled intersection and the delay shown is the worst delay experience by any of the approaches

As shown in the table, all of the study intersections are projected to continue operating at acceptable LOS C or better during both the AM and PM peak hours under this scenario. **Table 6.4** displays roadway segment LOS results for study segments under 2045 Cumulative with Project conditions.

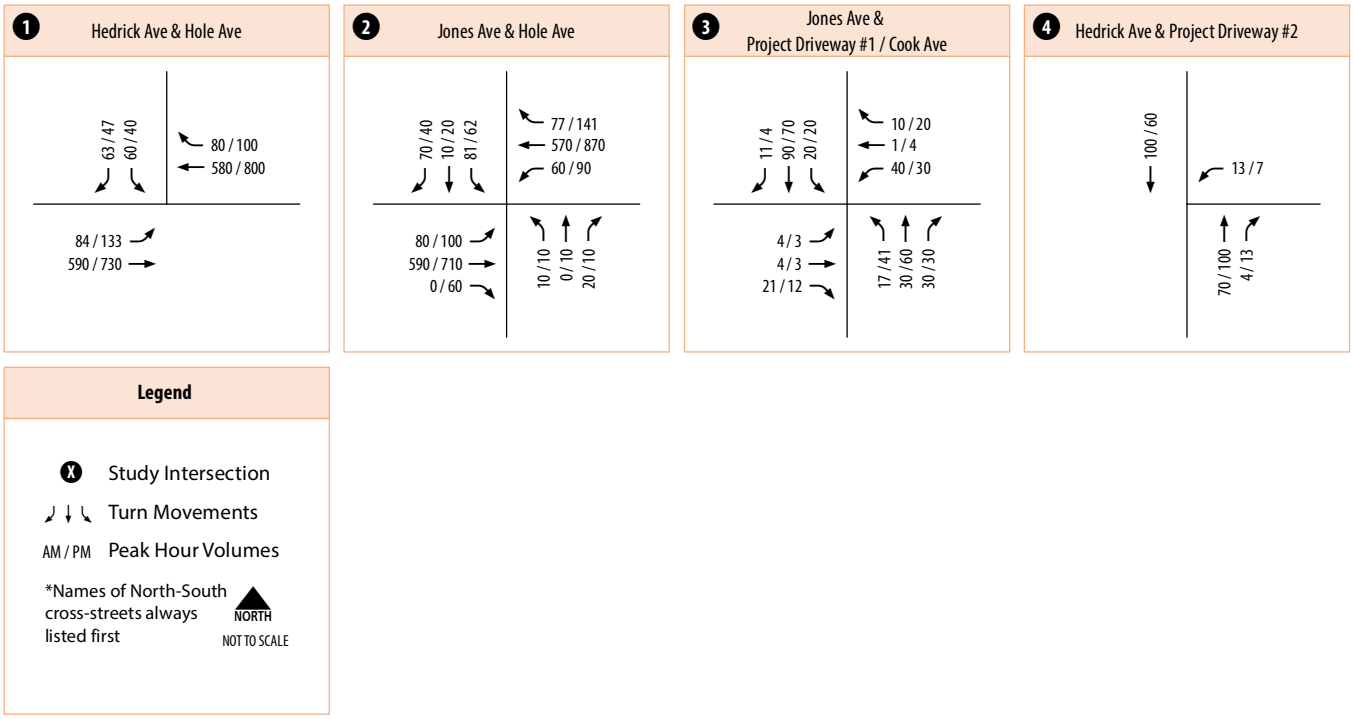


Figure 6.2
Peak Hour Intersection Volumes - Cumulative + Project Conditions

Table 6.4 – Roadway Segment LOS Results – 2045 Cumulative with Project Conditions

Roadway	Segment	2045 Cumulative with Project			2045 Cumulative without Project			Δ	GPI?[1]
		ADT	V / C	LOS	ADT	V / C	LOS		
Jones Avenue	Hole Avenue to Mobley Avenue	2,586	0.207	C or better	2,191	0.175	C or better	0.032	No
Hedrick Avenue	Hole Avenue to Wells Avenue	2,027	0.654	C or better	1,790	0.577	C or better	0.077	No

Source: CR Associates (2024)

Note
[1] Column indicates whether or not the addition of project traffic constitutes a General Plan Inconsistency

As shown in the table, all of the study roadway segments operate at acceptable LOS C or better under 2045 Cumulative with Project conditions.

7.0 Improvements & Recommendations

This chapter identifies any substandard facilities and provides improvement requirements to improve substandard facilities to acceptable LOS or pre-project conditions.

7.1 Determination of the Need for Off-Site Improvements to Accommodate Project Traffic – 2027 Background with Project and 2045 Cumulative with Project Conditions

This section identifies recommended off-site improvements under 2027 Background with Project and 2045 Cumulative with Project conditions, consistent with City Guidelines.

Based upon the LOS analysis results presented in sections 5 and 6, and the significance criteria presented in the City Guidelines, the addition of Project traffic would not have an adverse effect on traffic operations at any of the study intersections or roadway segments under 2027 Background with Project or 2045 Cumulative with Project conditions. Therefore, no off-site improvements are recommended with the exception of the installation of flashing LED-lit stop sings at all approaches at the intersection of Cook Avenue and Jones Avenue.

8.0 Site Access and Signal Warrants

This chapter discusses site access and the traffic signal warrants run for all studied unsignalized intersections.

8.1 Site Access

Project site access will be provided via two new project driveways, along Jones Avenue and Hedrick Avenue. A brief description of each of the two driveways is provided below:

- *Project Driveway #1* – Located approximately 800 feet north of Hole Avenue along Jones Avenue and will function as the fourth leg of the existing Jones Avenue / Cook Avenue intersection. This all-access driveway will provide both ingress and egress. This driveway is projected to operate at LOS A under all with project scenarios.
- *Project Driveway #2* – Located approximately 760 feet north of Hole Avenue along Hedrick Avenue this all-access driveway will provide both ingress and egress. This driveway is projected to operate at LOS A under all with project scenarios.

8.2 Internal Circulation

As shown in Figure 1.2, the site plan displays internal pathways on the project site that allow for two-way flow of vehicle traffic and connects the project driveways to different residential buildings and parking areas throughout the site perimeter.

A total of 175 parking garage spaces and 38 surface parking spaces for a total of 213 on-site parking spaces, with parking lots adjacent to residential buildings. The driving aisle widths within the project site range between 20-feet and 24-feet.

Per the site plan, sidewalks are present throughout the project site. The following recommendations are provided:

- Appropriate signage to warn drivers of pedestrian foot traffic

8.3 Traffic Signal Warrants

All traffic signal warrants conducted were done in accordance with Chapter 4 of the California Manual on Uniform Traffic Control Devices (CA MUTCD). Both eight-hour and four-hour traffic signal warrants for the following intersections are included in **Appendix M**:

- Hedrick Avenue & Hole Avenue
- Jones Avenue & Project Driveway #1/Cook Avenue
- Hedrick Avenue & Project Driveway #2

The intersections of Jones Avenue & Project Driveway #1/Cook Avenue and Hedrick Avenue & Project Driveway #2 do not meet any MUTCD signal warrants. The intersection of Hedrick Avenue & Hole Avenue does meet the MUTCD four-hour signal warrant. However, per Section 4C of the MUTCD, “The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.” While this intersection does meet the warrant a traffic signal is not assumed to be necessary as the intersection functions at an acceptable level of service with the current configuration and the project does not trigger any improvements.

Appendix A - City of Riverside Housing Element Excerpt

Parcel ID	APN	Site Address	Ward	Lot Acreage	Year Built	Vacant Lot Type	Existing Land Use	General Plan Land Use	Current Zoning	Zoning Change Category	Proposed Zoning	Proposed Density (DU/Acre)	Potential Units	Income Level	RHNA 4th Cycle	RHNA 5th Cycle
575	143040012	4618 Jones Ave	Ward 6	1.84	1955	Non-Vacant	SFRD	HDR	R-3-1500	No Zone Change	R-3-1500	25	46	Moderate Income	No	Yes

Appendix B - Scoping Agreement

Traffic Analysis Scoping Form

This scoping form shall be submitted to the City of Riverside Traffic Engineering Division

Project Identification:

Case Number:	PR-2021-001114
Related Cases:	
SP No.	
EIR No.	
GPA No.	
CZ No.	
Project Name:	Mikasa Multi Family
Project Address:	4618 Jones Avenue, 4663 Hedrick Avenue, and 4705 Hedrick Avenue
Project Opening Year:	2025
Project Description:	117 multi-family units spread across the 3 parcels comprising approximately 4 acres.

	Consultant:	Developer:
Name:	Jonathan Sanchez, Chen Ryan Asso.	Hugo Lepe, Century Heritage Builders, Inc
Address:	3900 Fifth Avenue, Suite 310, San Diego, CA 92103	1240 N Van Buren Street Suite 209, Anaheim, CA 92807
Telephone:	(619) 468-2739	(714) 844-2494
Fax/Email:	jsanchez@cramobility.com	hugo@centuryheritageinc.com

Scoping & Study Fees:

Fees to be made payable to "City of Riverside" and delivered to Land Development. City Hall 3rd Floor, 3900 Main Street, Riverside, CA 92522

1) Scoping Agreement Fee (For all projects not screened from analysis): **$271.00**

2) TIA Review (For projects with both LOS & VMT analysis of any scale, or standalone LOS analyses with over 100 vehicle trips per hour): **$2671.02**

3) TIA Review (For standalone VMT analysis, or standalone LOS analyses with under 100 vehicle trips per hour): **$1288.20**

Trip Generation Information:

Trip Generation Data Source: ITE Trip Generation 11th Edition

Current General Plan Land Use:
MDR- Medium Density Residential
HDR- High Density Residential

Proposed General Plan Land Use:
HDR- High Density Residential

Current Zoning:
R-1-7000, R-3-1500

Proposed Zoning:
R-3-1500

	Existing Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	0	0	0	11	36	47
PM Trips	0	0	0	40	23	63

Trip Internalization: ☐ Yes ☒ No (0 % Trip Discount)

Pass-By Allowance: ☐ Yes ☒ No (0 % Trip Discount)

Potential Screening Checks

Is your project screened from specific analyses in accordance with City Guidelines?

Is the project screened from LOS assessment? ☐ Yes ☒ No

Mikasa Residential Trip Generation

								AM					PM				
Land Use	Units	Type	Trip Rate	Per	ADT	%	Trips	Split			In	Out	%	Trips	Split		In	Out
RESIDENTIAL [86:11:3] - Multi-Family Units (More Than 20 DU/Acre)	117.0	DU	6.74	Units	789	6%	47	2.4	:	7.6	11	36	8%	63	6.3	: 3.7	40	23
				Total	789		47				11	36		63			40	23

LOS screening justification (see Page 6 of the guidelines): Proposed Project is not screened from performing LOS analysis. Please see Attachment A for details.

Is the project screened from VMT assessment? ☐ Yes ☒ No

VMT screening justification (see Pages 23-25 of the guidelines): Image from WRCOG tool included as **Attachment B**.

Level of Service Scoping

- Proposed Trip Distribution (Attach Graphic for Detailed Distribution):

North	South	East	West
See attachment A %	See attachment A %	See attachment A %	See attachment A %

- Attach list of Approved and Pending Projects that need to be considered (provided by the lead agency and adjacent agencies)
- Attach list of study intersections/roadway segments
- Attach legible site plan
- Note other specific items to be addressed:
  - Site access
  - On-site circulation
  - Parking
  - Consistency with Plans supporting Bikes/Peds/Transit
  - Other _____
- Date of Traffic Counts 6/12/2024
- Attach proposed analysis scenarios (years plus proposed forecasting approach)
- Attach proposed phasing approach (if the project is phased)

VMT Scoping

For projects that are not screened, identify the following:

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

Specific Issues to be addressed in the Study (in addition to the standard analysis described in the Guidelines) (To be filled out by the Public Works Traffic Engineering Division)

1. As conveyed during the DRC Meeting on 06/01/2022, due to recent complaints of vehicles not coming to a complete STOP, project will be conditioned to install LED STOP signs at all approaches at the intersection of Cook Avenue and Jones Avenue.
2. If project is proposing gates, sufficient stacking space and turn around space should be provided for each driveway entrance.
3. Traffic Division will be assessing a 5-year collision history to determine necessary safety improvements project will be conditioned to construct.
4. For project driveway on Jones Ave, the city is evaluating the driveway to have a right-in / right-out only access based on existing intersection geometry at Jones & Cook.
5. Add stop signs / stop bars at project driveways.
6. Project shall provide bike racks to be consistent with the Active Transportation Plan Goal.

Attachment A - Supplemental Information

Traffic Impact Analysis

Since the Proposed Project is not screened out from level of service (LOS) assessment due to requiring a zone change this document will provide project specific details and a list of scenarios to be included in the Traffic Impact Analysis (TIA) document.

Project Trip Generation

Per the City guidelines, the Project's trip generation was calculated based upon rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition.

Table 1 displays the total project trip generation.

Table 1 – Project Trip Generation

Land Use	Units	Trip Rate	ADT	AM Peak Hour				PM Peak Hour			
				Trips	Split	In	Out	Trips	Split	In	Out
Multi-Family Residential	117 DU	6.74 / DU	789	55	24:76	13	42	67	63:37	42	25
		Project Total	**789**	**55**	**-**	**13**	**42**	**67**	**-**	**42**	**25**

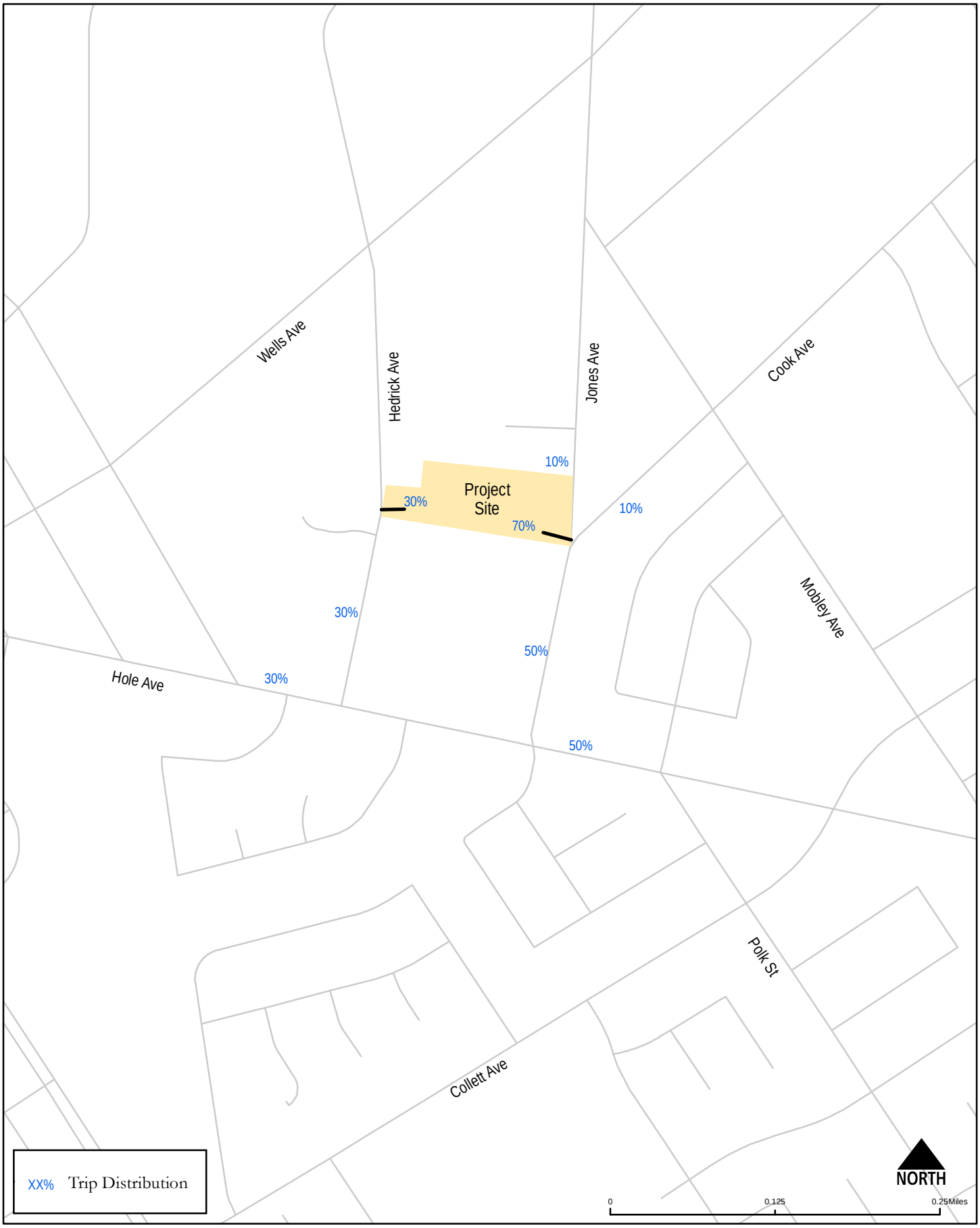
Source; Institute of Transportation Engineers Trip Generation Manual 11th Edition; CR Associates (2024)

As shown, the Project would generate a total of 789 average daily trips, including 55 (13-in/42-out) AM peak hour trips and 67 (42-in/25-out) PM peak hour trips. These primary trips were utilized for the analysis of all study area intersections.

Project Trip Distribution and Assignment

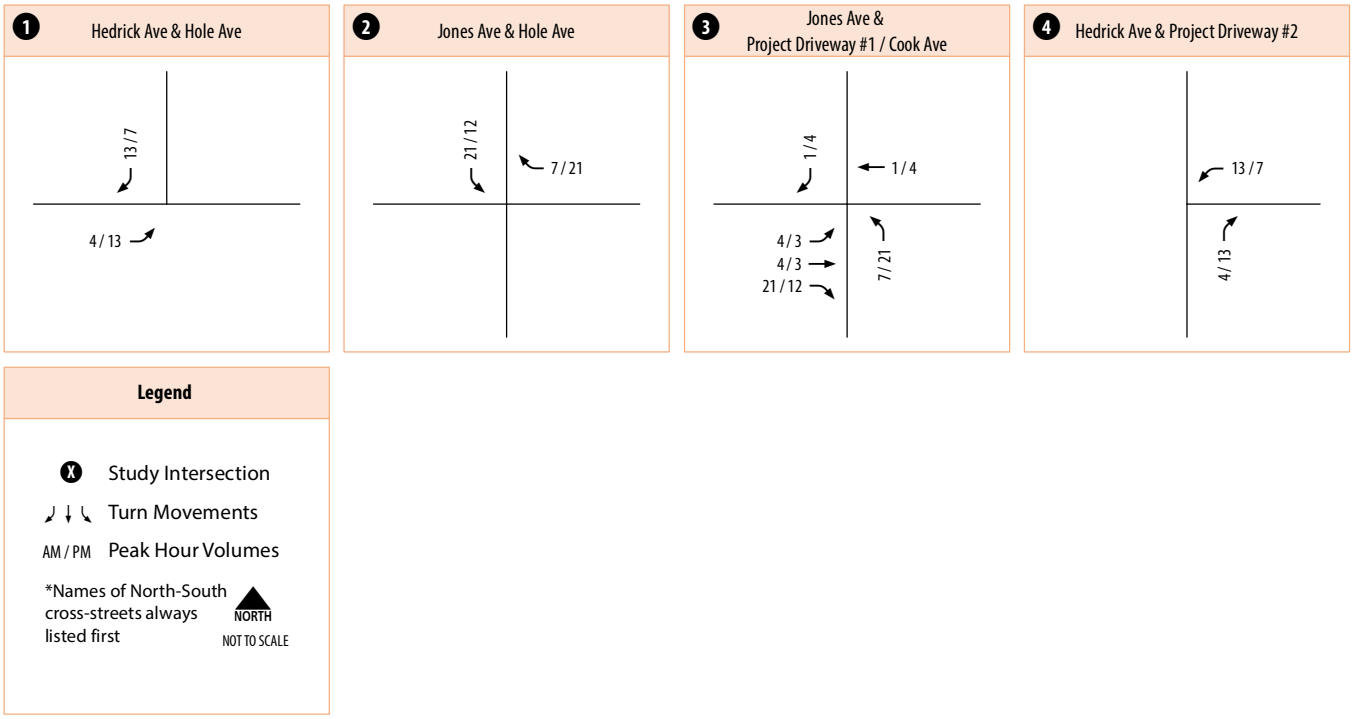
The project trip distribution was developed in coordination with City of Riverside staff as well as based on the geographical location of the project, the characteristics of the proposed land use, nearest freeway facilities, and location of major shopping centers, schools, and other communities. Additionally, a review of existing travel patterns was conducted for the project site's tract via Replica big data[1] hosting services. Per Replica's big data hosting services, it was determined that the majority of trip from the project area would travel along Hole Avenue in both the east and west directions. **Figure 1** displays the project trip distribution pattern for the Project. Based on the project trip generation and distribution, AM/PM peak hour project trips were assigned to the adjacent study intersections. **Figure 2** displays the primary trip assignment.

[1] Big Data – Describes the collection of complex and large data sets that is difficult to capture, process, store, search, and analyze using conventional data base systems.



Mikasa Residential
Traffic Analysis Scoping Form

Figure 1
Project Trip Distribution



Mikasa Residential
Traffic Analysis Scoping Form

Figure 2
Project Trip Assignment

Project Study Area

The project study area was developed in coordination with the City of Riverside staff. The TIA includes the analysis of the following roadway segments and intersections:

<u>Roadway Segments</u>

1. Jones Avenue from Hole Avenue to Mobley Avenue
2. Hedrick Avenue from Hole Avenue to Wells Avenue

<u>Intersections</u>

1. Hedrick Avenue & Hole Avenue (side-street stop-controlled)
2. Jones Avenue & Hole Avenue (signalized)
3. Jones Avenue & Project Driveway #1/Cook Avenue (all-way stop-controlled)
4. Hedrick Avenue & Project Driveway #2 (side-street stop-controlled)[1]

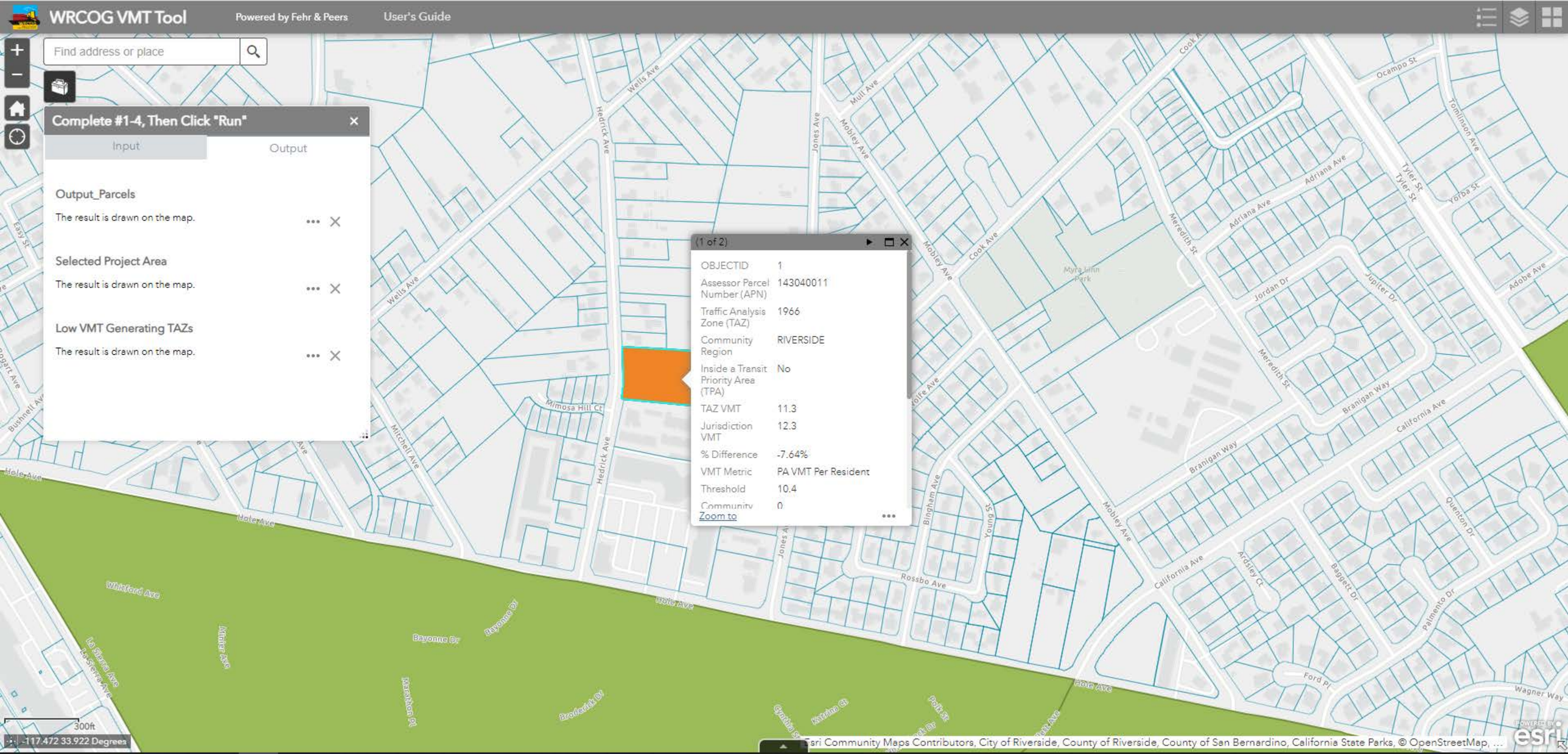
[1] Intersection provides project access and does not currently exist; therefore, it is only analyzed under the "with Project" scenarios.

Study Scenarios

The following scenarios will be the scenarios studied in the TIA.

- Existing Conditions
- Background Conditions (Existing + Cumulative Projects)
- Background Conditions Plus Project
- Cumulative No Project Conditions (Ambient Growth to the Cumulative Horizon)
- Cumulative Plus Project Conditions

Attachment B - WRCOG Tool Image


WRCOG VMT Tool
Powered by Fehr & Peers
User's Guide
Find address or place
Complete #1-4, Then Click "Run"
Input
Output
Output_Parcels
The result is drawn on the map.
Selected Project Area
The result is drawn on the map.
Low VMT Generating TAZs
The result is drawn on the map.
(1 of 2)
OBJECTID 1
Assessor Parcel Number (APN) 143040011
Traffic Analysis Zone (TAZ) 1966
Community Region RIVERSIDE
Inside a Transit Priority Area (TPA) No
TAZ VMT 11.3
Jurisdiction VMT 12.3
% Difference -7.64%
VMT Metric PA VMT Per Resident
Threshold 10.4
Community 0
Zoom to
Hole Ave
Wells Ave
Hedrick Ave
Mobley Ave
Cook Ave
Meredith St
Adriana Ave
Jordan Dr
Jupiter Dr
Branigan Way
California Ave
Rossbo Ave
Mimosa Hill Ct
Mitchell Ave
Whitford Ave
Bayonne Dr
Broderick Dr
Ocampo St
Tomlinson Ave
Tyler St
Yorba St
Adobe Ave
Quenton Dr
Palmento Dr
Ford Pl
Wagner Way
Bingham Ave
Young St
Myra Linn Park
300ft
-117.472 33.922 Degrees
Esri Community Maps Contributors, City of Riverside, County of Riverside, County of San Bernardino, California State Parks, © OpenStreetMap, ...
esri

WRCOG VMT Tool

Powered by Fehr & Peers

User's Guide

Find address or place

Complete #1-4, Then Click "Run"

Input | Output

Output_Parcels

The result is drawn on the map.

Selected Project Area

The result is drawn on the map.

Low VMT Generating TAZs

The result is drawn on the map.

(2 of 2)

OBJECTID	1
Completely within a TPA?	No (Fail)
Within a low VMT generating TAZ?	No (Fail)
Note	Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
Community Regions have different thresholds (1=Yes, 0=No)	0

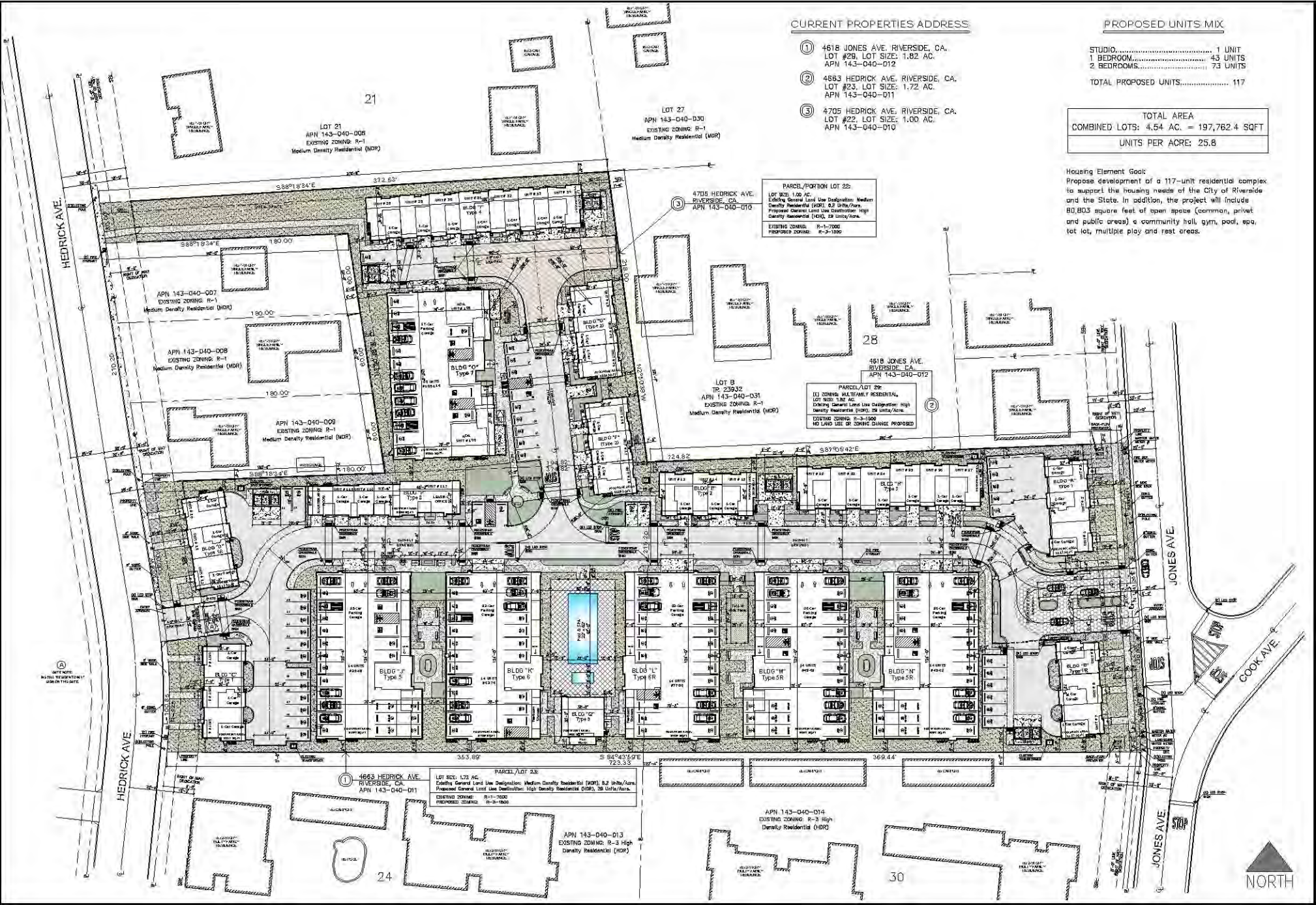
Zoom to

300ft

-117.482 33.916 Degrees

Esri Community Maps Contributors, City of Riverside, County of Riverside, County of San Bernardino, California State Parks, © OpenStreetMap, ...

Attachment C - Project Site Plan


CURRENT PROPERTIES ADDRESS
① 4618 JONES AVE. RIVERSIDE, CA.
LOT #29, LOT SIZE: 1.82 AC.
APN 143-040-012
② 4663 HEDRICK AVE. RIVERSIDE, CA.
LOT #23, LOT SIZE: 1.72 AC.
APN 143-040-011
③ 4705 HEDRICK AVE. RIVERSIDE, CA.
LOT #22, LOT SIZE: 1.00 AC.
APN 143-040-010
PROPOSED UNITS MIX
STUDIO..... 1 UNIT
1 BEDROOM..... 43 UNITS
2 BEDROOMS..... 73 UNITS
TOTAL PROPOSED UNITS..... 117
TOTAL AREA
COMBINED LOTS: 4.54 AC. = 197,762.4 SQFT
UNITS PER ACRE: 25.8
Housing Element Goal:
Propose development of a 117-unit residential complex to support the housing needs of the City of Riverside and the State. In addition, the project will include 80,803 square feet of open space (common, private and public areas) a community hall, gym, pool, spa, tot lot, multiple play and rest areas.
PARCEL/PORTION LOT 22:
LOT SIZE: 1.00 AC.
Existing General Land Use Designation: Medium Density Residential (MDR), 8.2 Units/Acre.
Proposed General Land Use Designation: High Density Residential (HDR), 39 Units/Acre.
EXISTING ZONING: R-1-7000
PROPOSED ZONING: R-3-1500
PARCEL/LOT 29:
(C) ZONING: MULTIFAMILY RESIDENTIAL
LOT SIZE: 1.82 AC.
Existing General Land Use Designation: High Density Residential (HDR), 39 Units/Acre.
EXISTING ZONING: R-3-1500
NO LAND USE OR ZONING CHANGE PROPOSED
PARCEL/LOT 23:
LOT SIZE: 1.72 AC.
Existing General Land Use Designation: Medium Density Residential (MDR), 8.2 Units/Acre.
Proposed General Land Use Designation: High Density Residential (HDR), 39 Units/Acre.
EXISTING ZONING: R-1-7000
PROPOSED ZONING: R-3-1500
HEDRICK AVE.
JONES AVE.
COOK AVE.
LOT 21
APN 143-040-006
EXISTING ZONING: R-1
Medium Density Residential (MDR)
LOT 27
APN 143-040-030
EXISTING ZONING: R-1
Medium Density Residential (MDR)
APN 143-040-007
EXISTING ZONING: R-1
Medium Density Residential (MDR)
APN 143-040-008
EXISTING ZONING: R-1
Medium Density Residential (MDR)
APN 143-040-009
EXISTING ZONING: R-1
Medium Density Residential (MDR)
LOT B
TR. 23932
APN 143-040-031
EXISTING ZONING: R-1
Medium Density Residential (MDR)
4705 HEDRICK AVE.
RIVERSIDE, CA.
APN 143-040-010
4618 JONES AVE.
RIVERSIDE, CA.
APN 143-040-012
4663 HEDRICK AVE.
RIVERSIDE, CA.
APN 143-040-011
APN 143-040-013
EXISTING ZONING: R-3 High
Density Residential (HDR)
APN 143-040-014
EXISTING ZONING: R-3 High
Density Residential (HDR)
BLDG "J" Type 5
BLDG "K" Type 6
BLDG "L" Type 6R
BLDG "M" Type 5R
BLDG "N" Type 5R
BLDG "O" Type 7
BLDG "P" Type 2
BLDG "Q" Type 10
BLDG "R" Type 1
BLDG "S" Type 3
BLDG "T" Type 4
BLDG "U" Type 8
BLDG "V" Type 9
BLDG "W" Type 12
BLDG "C"
POOL & SPA
S 88°18'34"E
S 87°05'42"E
S 84°43'10"E
N 02°08'38"W
372.53'
180.00'
210.29'
194.82'
724.82'
353.89'
723.33'
369.44'
21
24
28
30
NORTH

Appendix C - Traffic Counts

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Riverside
N/S: Jones Avenue
E/W: Cook Avenue
Weather: Clear

File Name : 01_RIV_Jones_Cook AM
Site Code : 22924575
Start Date : 6/12/2024
Page No : 1

Groups Printed- Total Volume

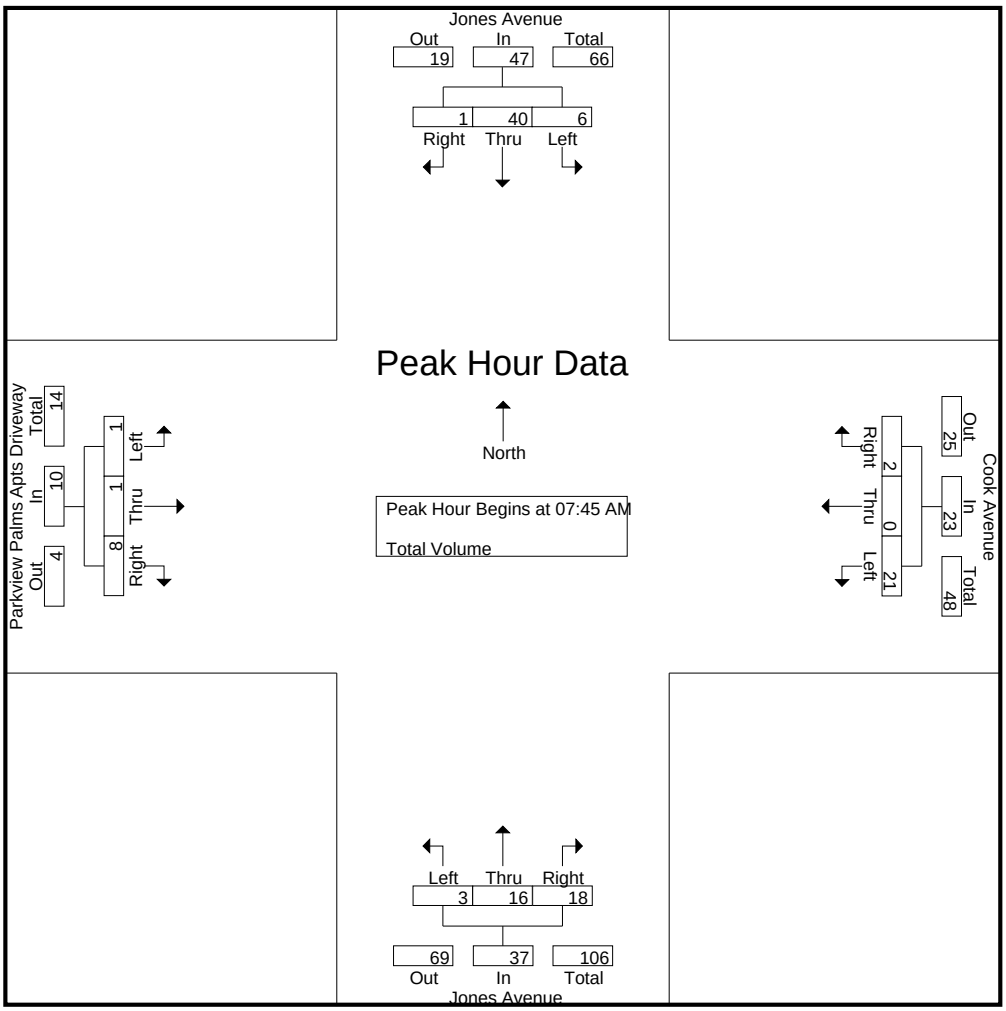
	Jones Avenue Southbound				Cook Avenue Westbound				Jones Avenue Northbound				Parkview Palms Apts Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	3	0	3	7	0	0	7	0	0	2	2	0	0	0	0	12
07:15 AM	0	5	0	5	3	0	0	3	0	1	0	1	0	0	2	2	11
07:30 AM	1	10	0	11	6	0	1	7	0	3	2	5	0	0	1	1	24
07:45 AM	2	13	1	16	9	0	1	10	2	7	7	16	0	0	2	2	44
Total	3	31	1	35	25	0	2	27	2	11	11	24	0	0	5	5	91
08:00 AM	3	8	0	11	6	0	0	6	0	2	6	8	1	0	4	5	30
08:15 AM	0	10	0	10	1	0	0	1	0	3	2	5	0	0	2	2	18
08:30 AM	1	9	0	10	5	0	1	6	1	4	3	8	0	1	0	1	25
08:45 AM	1	11	1	13	2	0	0	2	0	6	0	6	0	0	1	1	22
Total	5	38	1	44	14	0	1	15	1	15	11	27	1	1	7	9	95
Grand Total	8	69	2	79	39	0	3	42	3	26	22	51	1	1	12	14	186
Apprch %	10.1	87.3	2.5		92.9	0	7.1		5.9	51	43.1		7.1	7.1	85.7		
Total %	4.3	37.1	1.1	42.5	21	0	1.6	22.6	1.6	14	11.8	27.4	0.5	0.5	6.5	7.5	

	Jones Avenue Southbound				Cook Avenue Westbound				Jones Avenue Northbound				Parkview Palms Apts Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	2	**13**	**1**	**16**	**9**	0	**1**	**10**	**2**	**7**	**7**	**16**	0	0	2	2	**44**
08:00 AM	**3**	8	0	11	6	0	0	6	0	2	6	8	**1**	0	**4**	**5**	30
08:15 AM	0	10	0	10	1	0	0	1	0	3	2	5	0	0	2	2	18
08:30 AM	1	9	0	10	5	0	1	6	1	4	3	8	0	**1**	0	1	25
Total Volume	6	40	1	47	21	0	2	23	3	16	18	37	1	1	8	10	117
% App. Total	12.8	85.1	2.1		91.3	0	8.7		8.1	43.2	48.6		10	10	80		
PHF	.500	.769	.250	.734	.583	.000	.500	.575	.375	.571	.643	.578	.250	.250	.500	.500	.665

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Riverside
N/S: Jones Avenue
E/W: Cook Avenue
Weather: Clear

File Name : 01_RIV_Jones_Cook AM
Site Code : 22924575
Start Date : 6/12/2024
Page No : 2



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

	07:30 AM				07:00 AM				07:45 AM				07:15 AM			
+0 mins.	1	10	0	11	7	0	0	7	**2**	**7**	**7**	**16**	0	0	2	2
+15 mins.	2	**13**	**1**	**16**	3	0	0	3	0	2	6	8	0	0	1	1
+30 mins.	**3**	8	0	11	6	0	**1**	7	0	3	2	5	0	0	2	2
+45 mins.	0	10	0	10	**9**	0	1	**10**	1	4	3	8	**1**	0	**4**	**5**
Total Volume	6	41	1	48	25	0	2	27	3	16	18	37	1	0	9	10
% App. Total	12.5	85.4	2.1		92.6	0	7.4		8.1	43.2	48.6		10	0	90	
PHF	.500	.788	.250	.750	.694	.000	.500	.675	.375	.571	.643	.578	.250	.000	.563	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Riverside
N/S: Jones Avenue
E/W: Cook Avenue
Weather: Clear

File Name : 01_RIV_Jones_Cook PM
Site Code : 22924575
Start Date : 6/12/2024
Page No : 1

Groups Printed- Total Volume

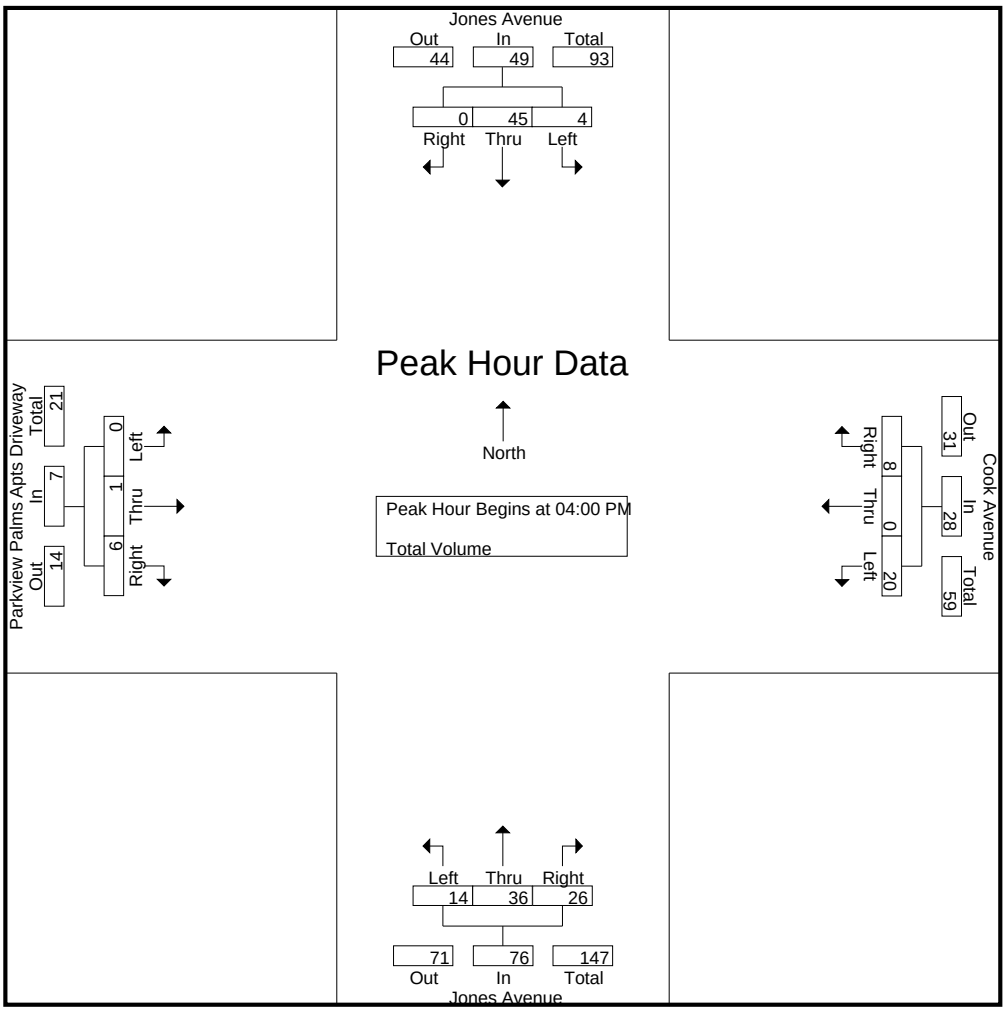
	Jones Avenue Southbound				Cook Avenue Westbound				Jones Avenue Northbound				Parkview Palms Apts Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	3	5	0	8	5	0	3	8	3	9	10	22	0	0	1	1	39
04:15 PM	1	16	0	17	8	0	1	9	1	7	6	14	0	1	1	2	42
04:30 PM	0	11	0	11	5	0	2	7	6	7	4	17	0	0	1	1	36
04:45 PM	0	13	0	13	2	0	2	4	4	13	6	23	0	0	3	3	43
Total	4	45	0	49	20	0	8	28	14	36	26	76	0	1	6	7	160
05:00 PM	1	11	0	12	6	1	1	8	2	5	7	14	0	1	0	1	35
05:15 PM	0	11	1	12	3	1	0	4	2	11	2	15	0	0	1	1	32
05:30 PM	0	10	0	10	3	0	0	3	3	15	3	21	0	0	3	3	37
05:45 PM	2	7	0	9	10	0	0	10	1	9	5	15	1	0	0	1	35
Total	3	39	1	43	22	2	1	25	8	40	17	65	1	1	4	6	139
Grand Total	7	84	1	92	42	2	9	53	22	76	43	141	1	2	10	13	299
Apprch %	7.6	91.3	1.1		79.2	3.8	17		15.6	53.9	30.5		7.7	15.4	76.9		
Total %	2.3	28.1	0.3	30.8	14	0.7	3	17.7	7.4	25.4	14.4	47.2	0.3	0.7	3.3	4.3	

	Jones Avenue Southbound				Cook Avenue Westbound				Jones Avenue Northbound				Parkview Palms Apts Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**3**	5	0	8	5	0	**3**	8	3	9	**10**	22	0	0	1	1	39
04:15 PM	1	**16**	0	**17**	**8**	0	1	**9**	1	7	6	14	0	**1**	1	2	42
04:30 PM	0	11	0	11	5	0	2	7	**6**	7	4	17	0	0	1	1	36
04:45 PM	0	13	0	13	2	0	2	4	4	**13**	6	**23**	0	0	**3**	**3**	**43**
Total Volume	4	45	0	49	20	0	8	28	14	36	26	76	0	1	6	7	160
% App. Total	8.2	91.8	0		71.4	0	28.6		18.4	47.4	34.2		0	14.3	85.7		
PHF	.333	.703	.000	.721	.625	.000	.667	.778	.583	.692	.650	.826	.000	.250	.500	.583	.930

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Riverside
N/S: Jones Avenue
E/W: Cook Avenue
Weather: Clear

File Name : 01_RIV_Jones_Cook PM
Site Code : 22924575
Start Date : 6/12/2024
Page No : 2



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

	04:15 PM				04:00 PM				04:00 PM				04:45 PM			
+0 mins.	**1**	**16**	0	**17**	5	0	**3**	8	3	9	**10**	22	0	0	**3**	**3**
+15 mins.	0	11	0	11	**8**	0	1	**9**	1	7	6	14	0	**1**	0	1
+30 mins.	0	13	0	13	5	0	2	7	**6**	7	4	17	0	0	1	1
+45 mins.	1	11	0	12	2	0	2	4	4	**13**	6	**23**	0	0	3	3
Total Volume	2	51	0	53	20	0	8	28	14	36	26	76	0	1	7	8
% App. Total	3.8	96.2	0		71.4	0	28.6		18.4	47.4	34.2		0	12.5	87.5	
PHF	.500	.797	.000	.779	.625	.000	.667	.778	.583	.692	.650	.826	.000	.250	.583	.667

Location: Riverside
N/S: Jones Avenue
E/W: Cook Avenue

Date: 6/12/2024
Day: Wednesday

PEDESTRIANS

	North Leg Jones Avenue	East Leg Cook Avenue	South Leg Jones Avenue	West Leg Parkview Palms Apts DW	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	1	1	0	0	2
7:15 AM	0	0	2	0	2
7:30 AM	0	0	0	0	0
7:45 AM	1	3	1	0	5
8:00 AM	0	0	1	0	1
8:15 AM	0	0	1	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	3	0	3
TOTAL VOLUMES:	2	4	8	0	14

	North Leg Jones Avenue	East Leg Cook Avenue	South Leg Jones Avenue	West Leg Parkview Palms Apts DW	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	2	0	2
4:15 PM	1	0	3	0	4
4:30 PM	0	0	0	0	0
4:45 PM	2	0	1	0	3
5:00 PM	1	1	1	0	3
5:15 PM	0	0	0	0	0
5:30 PM	0	0	1	0	1
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	4	1	8	0	13

Location: Riverside
N/S: Jones Avenue
E/W: Cook Avenue

Date: 6/12/2024
Day: Wednesday

BICYCLES

	Southbound Jones Avenue			Westbound Cook Avenue			Northbound Jones Avenue			Eastbound Parkview Palms Apts DW			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

	Southbound Jones Avenue			Westbound Cook Avenue			Northbound Jones Avenue			Eastbound Parkview Palms Apts DW			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

Counts Unlimited, Inc.
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(951) 268-6268

City of Riverside
N/S: Jones Avenue
E/W: Hole Avenue
Weather: Clear

File Name : 02_RIV_Jones_Hole AM
Site Code : 22924575
Start Date : 6/12/2024
Page No : 1

Groups Printed- Total Volume

	Jones Avenue Southbound				Hole Avenue Westbound				Jones Avenue Northbound				Hole Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	1	7	12	2	33	1	36	0	0	2	2	5	42	0	47	97
07:15 AM	6	0	9	15	0	41	1	42	1	0	3	4	1	50	1	52	113
07:30 AM	15	0	9	24	0	41	3	44	1	0	1	2	4	67	0	71	141
07:45 AM	10	0	15	25	1	73	6	80	1	0	2	3	12	72	0	84	192
Total	35	1	40	76	3	188	11	202	3	0	8	11	22	231	1	254	543
08:00 AM	10	0	10	20	2	71	3	76	3	0	1	4	6	64	0	70	170
08:15 AM	4	0	12	16	0	84	0	84	0	0	3	3	6	78	0	84	187
08:30 AM	10	1	6	17	1	61	2	64	0	0	2	2	5	69	0	74	157
08:45 AM	5	2	10	17	0	63	2	65	2	1	1	4	7	94	0	101	187
Total	29	3	38	70	3	279	7	289	5	1	7	13	24	305	0	329	701
Grand Total	64	4	78	146	6	467	18	491	8	1	15	24	46	536	1	583	1244
Apprch %	43.8	2.7	53.4		1.2	95.1	3.7		33.3	4.2	62.5		7.9	91.9	0.2		
Total %	5.1	0.3	6.3	11.7	0.5	37.5	1.4	39.5	0.6	0.1	1.2	1.9	3.7	43.1	0.1	46.9	

	Jones Avenue Southbound				Hole Avenue Westbound				Jones Avenue Northbound				Hole Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**10**	0	**15**	**25**	1	73	**6**	80	1	0	2	3	**12**	72	0	**84**	**192**
08:00 AM	10	0	10	20	**2**	71	3	76	**3**	0	1	**4**	6	64	0	70	170
08:15 AM	4	0	12	16	0	**84**	0	**84**	0	0	**3**	3	6	**78**	0	84	187
08:30 AM	10	**1**	6	17	1	61	2	64	0	0	2	2	5	69	0	74	157
Total Volume	34	1	43	78	4	289	11	304	4	0	8	12	29	283	0	312	706
% App. Total	43.6	1.3	55.1		1.3	95.1	3.6		33.3	0	66.7		9.3	90.7	0		
PHF	.850	.250	.717	.780	.500	.860	.458	.905	.333	.000	.667	.750	.604	.907	.000	.929	.919

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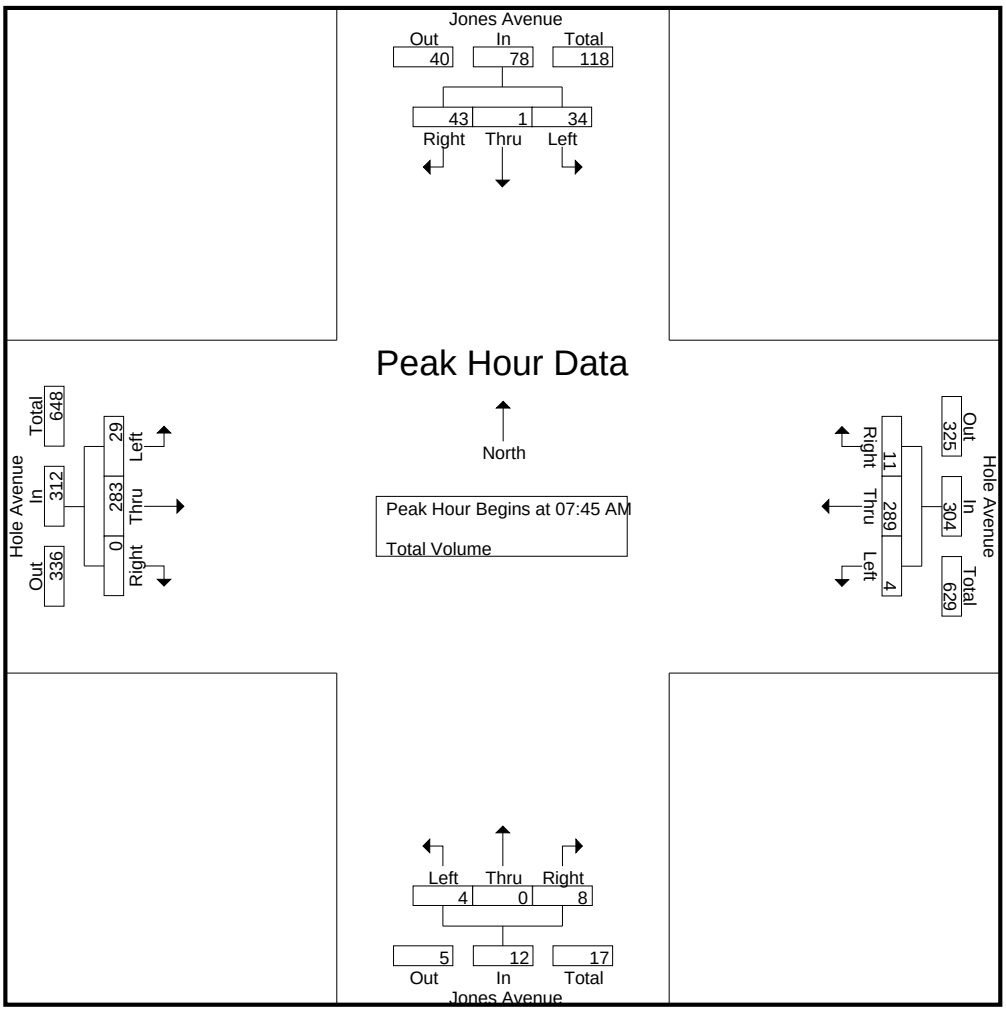
City of Riverside
N/S: Jones Avenue
E/W: Hole Avenue
Weather: Clear

File Name : 02_RIV_Jones_Hole AM
Site Code : 22924575
Start Date : 6/12/2024
Page No : 2



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

	07:30 AM				07:45 AM				07:15 AM				08:00 AM			
+0 mins.	**15**	0	9	24	1	73	**6**	80	1	0	**3**	**4**	6	64	0	70
+15 mins.	10	0	**15**	**25**	**2**	71	3	76	1	0	1	2	6	78	0	84
+30 mins.	10	0	10	20	0	**84**	0	**84**	1	0	2	3	5	69	0	74
+45 mins.	4	0	12	16	1	61	2	64	**3**	0	1	4	**7**	**94**	0	**101**
Total Volume	39	0	46	85	4	289	11	304	6	0	7	13	24	305	0	329
% App. Total	45.9	0	54.1		1.3	95.1	3.6		46.2	0	53.8		7.3	92.7	0	
PHF	.650	.000	.767	.850	.500	.860	.458	.905	.500	.000	.583	.813	.857	.811	.000	.814

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City of Riverside
N/S: Jones Avenue
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File Name : 02_RIV_Jones_Hole PM
Site Code : 22924575
Start Date : 6/12/2024
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Groups Printed- Total Volume

	Jones Avenue Southbound				Hole Avenue Westbound				Jones Avenue Northbound				Hole Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	4	0	6	10	1	130	9	140	2	0	3	5	12	110	1	123	278
04:15 PM	9	1	15	25	2	146	8	156	4	0	2	6	9	120	3	132	319
04:30 PM	7	0	10	17	3	121	9	133	0	1	5	6	8	104	3	115	271
04:45 PM	15	2	3	20	0	146	12	158	4	1	0	5	13	135	3	151	334
Total	35	3	34	72	6	543	38	587	10	2	10	22	42	469	10	521	1202
05:00 PM	6	3	11	20	1	162	4	167	0	0	1	1	13	120	4	137	325
05:15 PM	7	4	6	17	1	143	8	152	1	1	0	2	8	152	0	160	331
05:30 PM	7	1	10	18	2	148	10	160	0	4	6	10	10	93	1	104	292
05:45 PM	8	1	5	14	1	143	4	148	2	3	4	9	7	103	3	113	284
Total	28	9	32	69	5	596	26	627	3	8	11	22	38	468	8	514	1232
Grand Total	63	12	66	141	11	1139	64	1214	13	10	21	44	80	937	18	1035	2434
Apprch %	44.7	8.5	46.8		0.9	93.8	5.3		29.5	22.7	47.7		7.7	90.5	1.7		
Total %	2.6	0.5	2.7	5.8	0.5	46.8	2.6	49.9	0.5	0.4	0.9	1.8	3.3	38.5	0.7	42.5	

	Jones Avenue Southbound				Hole Avenue Westbound				Jones Avenue Northbound				Hole Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**15**	2	3	**20**	0	146	**12**	158	**4**	1	0	5	**13**	135	3	151	**334**
05:00 PM	6	3	**11**	20	1	**162**	4	**167**	0	0	1	1	13	120	**4**	137	325
05:15 PM	7	**4**	6	17	1	143	8	152	1	1	0	2	8	**152**	0	**160**	331
05:30 PM	7	1	10	18	**2**	148	10	160	0	**4**	**6**	**10**	10	93	1	104	292
Total Volume	35	10	30	75	4	599	34	637	5	6	7	18	44	500	8	552	1282
% App. Total	46.7	13.3	40		0.6	94	5.3		27.8	33.3	38.9		8	90.6	1.4		
PHF	.583	.625	.682	.938	.500	.924	.708	.954	.313	.375	.292	.450	.846	.822	.500	.863	.960

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City of Riverside
N/S: Jones Avenue
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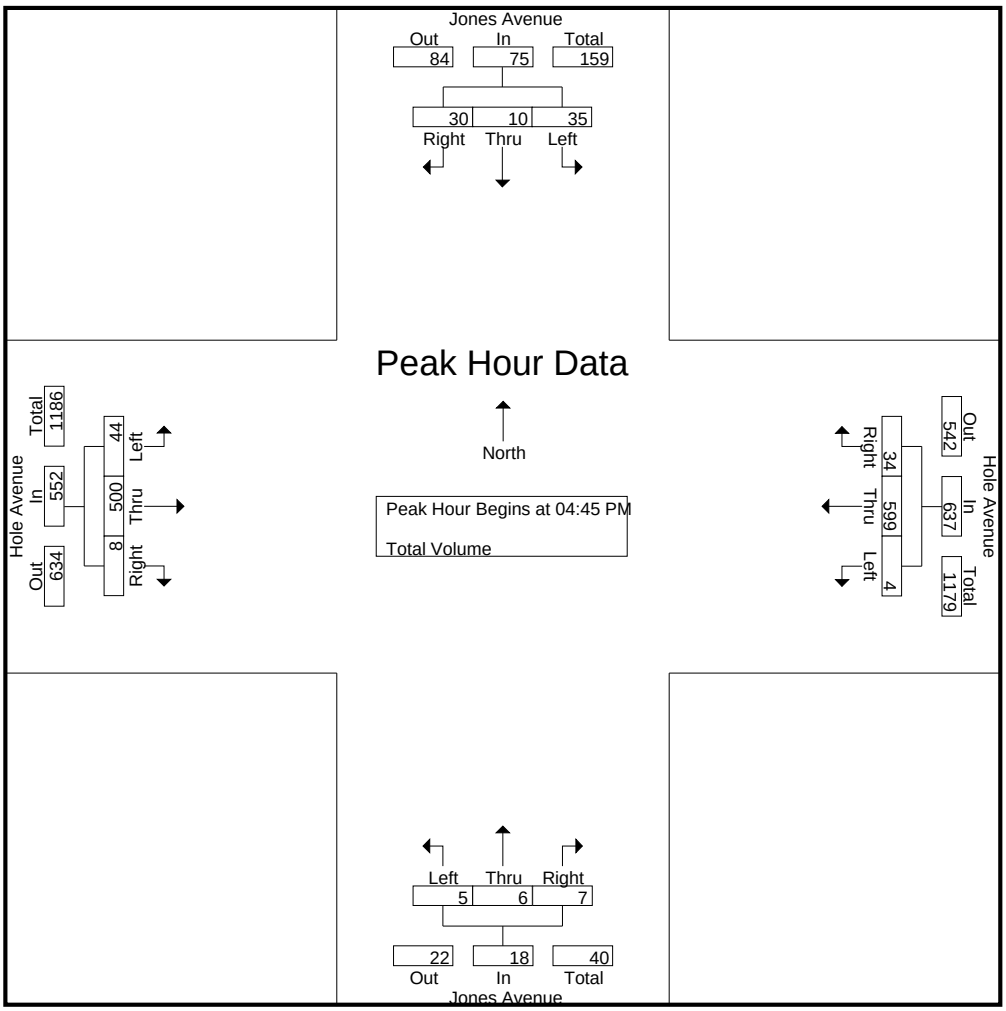
Weather: Clear

File Name : 02_RIV_Jones_Hole PM
Site Code : 22924575
Start Date : 6/12/2024
Page No : 2



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

	04:15 PM				04:45 PM				04:00 PM				04:30 PM			
+0 mins.	9	1	**15**	**25**	0	146	**12**	158	2	0	3	5	8	104	3	115
+15 mins.	7	0	10	17	1	**162**	4	**167**	**4**	0	2	**6**	**13**	135	3	151
+30 mins.	**15**	2	3	20	1	143	8	152	0	**1**	**5**	6	13	120	**4**	137
+45 mins.	6	**3**	11	20	**2**	148	10	160	4	1	0	5	8	**152**	0	**160**
Total Volume	37	6	39	82	4	599	34	637	10	2	10	22	42	511	10	563
% App. Total	45.1	7.3	47.6		0.6	94	5.3		45.5	9.1	45.5		7.5	90.8	1.8	
PHF	.617	.500	.650	.820	.500	.924	.708	.954	.625	.500	.500	.917	.808	.840	.625	.880

Location: Riverside
N/S: Jones Avenue
E/W: Hole Avenue

Date: 6/12/2024
Day: Wednesday

PEDESTRIANS

	North Leg Jones Avenue Pedestrians	East Leg Hole Avenue Pedestrians	South Leg Jones Avenue Pedestrians	West Leg Hole Avenue Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	1	1	0	2	4
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	1	0	0	0	1
8:30 AM	2	2	0	2	6
8:45 AM	2	1	0	1	4
TOTAL VOLUMES:	6	4	0	5	15

	North Leg Jones Avenue Pedestrians	East Leg Hole Avenue Pedestrians	South Leg Jones Avenue Pedestrians	West Leg Hole Avenue Pedestrians	
4:00 PM	0	0	1	0	1
4:15 PM	1	1	0	0	2
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	1	1
5:00 PM	0	3	0	0	3
5:15 PM	1	2	0	0	3
5:30 PM	3	4	0	1	8
5:45 PM	0	1	0	1	2
TOTAL VOLUMES:	5	11	1	3	20

Location: Riverside
N/S: Jones Avenue
E/W: Hole Avenue

Date: 6/12/2024
Day: Wednesday

BICYCLES

	Southbound Jones Avenue			Westbound Hole Avenue			Northbound Jones Avenue			Eastbound Hole Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	1	0	0	1	0	0	0	0	0	0	2

	Southbound Jones Avenue			Westbound Hole Avenue			Northbound Jones Avenue			Eastbound Hole Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	1	0	2	0	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	1	0	1	0	4	0	0	0	0	0	0	0	6

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City of Riverside
N/S: Hedrick Avenue
E/W: Hole Avenue
Weather: Clear

File Name : 03_RIV_Hed_Hole AM
Site Code : 22924575
Start Date : 6/12/2024
Page No : 1

Groups Printed- Total Volume

	Hedrick Avenue Southbound			Hole Avenue Westbound			Hole Avenue Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	1	2	3	40	0	40	1	44	45	88
07:15 AM	4	5	9	50	0	50	1	46	47	106
07:30 AM	4	6	10	52	0	52	3	66	69	131
07:45 AM	7	2	9	81	4	85	2	79	81	175
Total	16	15	31	223	4	227	7	235	242	500
08:00 AM	4	2	6	78	3	81	6	63	69	156
08:15 AM	8	3	11	81	5	86	5	75	80	177
08:30 AM	5	6	11	66	4	70	3	68	71	152
08:45 AM	6	4	10	73	3	76	6	85	91	177
Total	23	15	38	298	15	313	20	291	311	662
Grand Total	39	30	69	521	19	540	27	526	553	1162
Apprch %	56.5	43.5		96.5	3.5		4.9	95.1		
Total %	3.4	2.6	5.9	44.8	1.6	46.5	2.3	45.3	47.6	

	Hedrick Avenue Southbound			Hole Avenue Westbound			Hole Avenue Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	4	2	6	78	3	81	**6**	63	69	156
08:15 AM	**8**	3	**11**	**81**	**5**	**86**	5	75	80	**177**
08:30 AM	5	**6**	11	66	4	70	3	68	71	152
08:45 AM	6	4	10	73	3	76	6	**85**	**91**	177
Total Volume	23	15	38	298	15	313	20	291	311	662
% App. Total	60.5	39.5		95.2	4.8		6.4	93.6		
PHF	.719	.625	.864	.920	.750	.910	.833	.856	.854	.935

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City of Riverside
N/S: Hedrick Avenue
E/W: Hole Avenue
Weather: Clear

File Name : 03_RIV_Hed_Hole AM
Site Code : 22924575
Start Date : 6/12/2024
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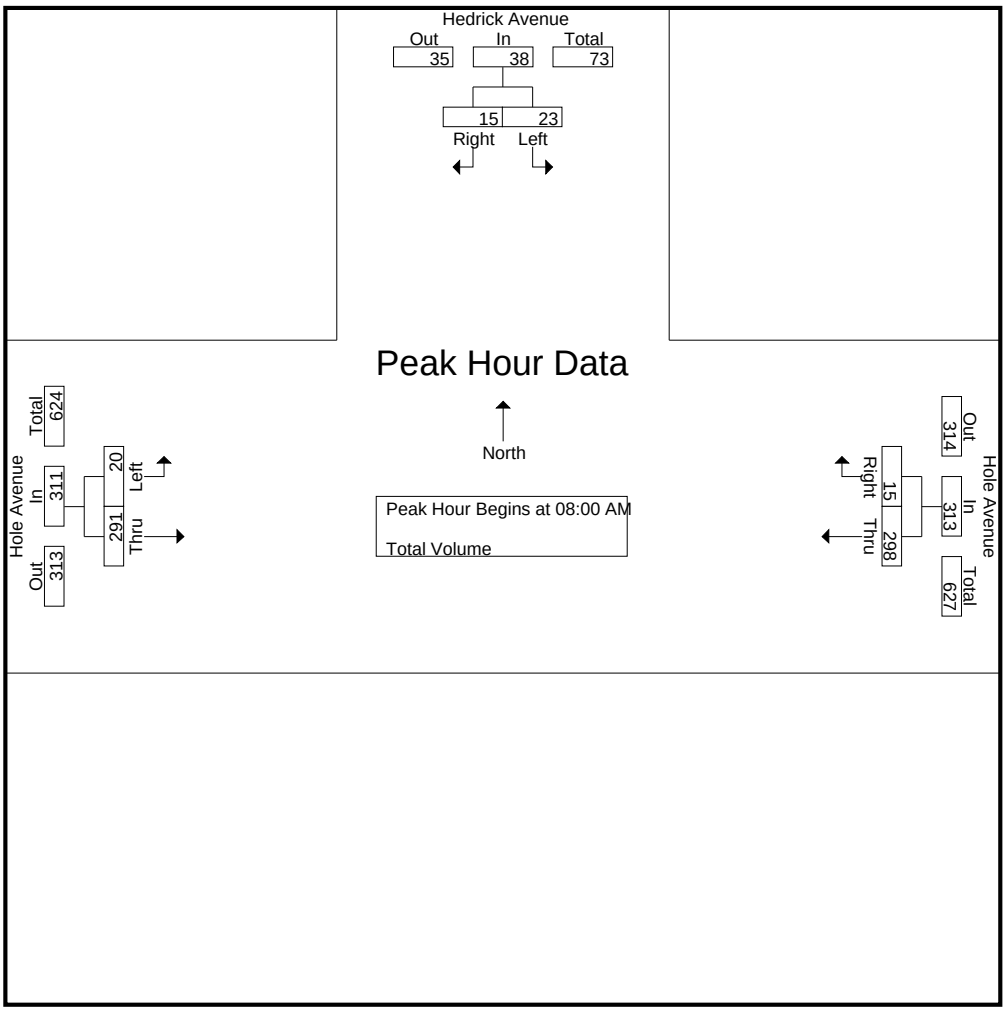

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			07:45 AM			08:00 AM		
+0 mins.	4	2	6	**81**	4	85	**6**	63	69
+15 mins.	**8**	3	**11**	78	3	81	5	75	80
+30 mins.	5	**6**	11	81	**5**	**86**	3	68	71
+45 mins.	6	4	10	66	4	70	6	**85**	**91**
Total Volume	23	15	38	306	16	322	20	291	311
% App. Total	60.5	39.5		95	5		6.4	93.6	
PHF	.719	.625	.864	.944	.800	.936	.833	.856	.854

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City of Riverside
N/S: Hedrick Avenue
E/W: Hole Avenue
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File Name : 03_RIV_Hed_Hole PM
Site Code : 22924575
Start Date : 6/12/2024
Page No : 1

Groups Printed- Total Volume

	Hedrick Avenue Southbound			Hole Avenue Westbound			Hole Avenue Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	6	3	9	128	3	131	8	122	130	270
04:15 PM	2	8	10	154	6	160	13	126	139	309
04:30 PM	7	7	14	119	8	127	10	108	118	259
04:45 PM	4	4	8	146	3	149	12	141	153	310
Total	19	22	41	547	20	567	43	497	540	1148
05:00 PM	4	3	7	150	4	154	9	119	128	289
05:15 PM	3	4	7	133	4	137	7	159	166	310
05:30 PM	6	6	12	142	6	148	14	96	110	270
05:45 PM	7	8	15	131	5	136	10	112	122	273
Total	20	21	41	556	19	575	40	486	526	1142
Grand Total	39	43	82	1103	39	1142	83	983	1066	2290
Apprch %	47.6	52.4		96.6	3.4		7.8	92.2		
Total %	1.7	1.9	3.6	48.2	1.7	49.9	3.6	42.9	46.6	

	Hedrick Avenue Southbound			Hole Avenue Westbound			Hole Avenue Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	4	4	8	146	3	149	12	141	153	**310**
05:00 PM	4	3	7	**150**	4	**154**	9	119	128	289
05:15 PM	3	4	7	133	4	137	7	**159**	**166**	310
05:30 PM	**6**	**6**	**12**	142	**6**	148	**14**	96	110	270
Total Volume	17	17	34	571	17	588	42	515	557	1179
% App. Total	50	50		97.1	2.9		7.5	92.5		
PHF	.708	.708	.708	.952	.708	.955	.750	.810	.839	.951

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City of Riverside
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Site Code : 22924575
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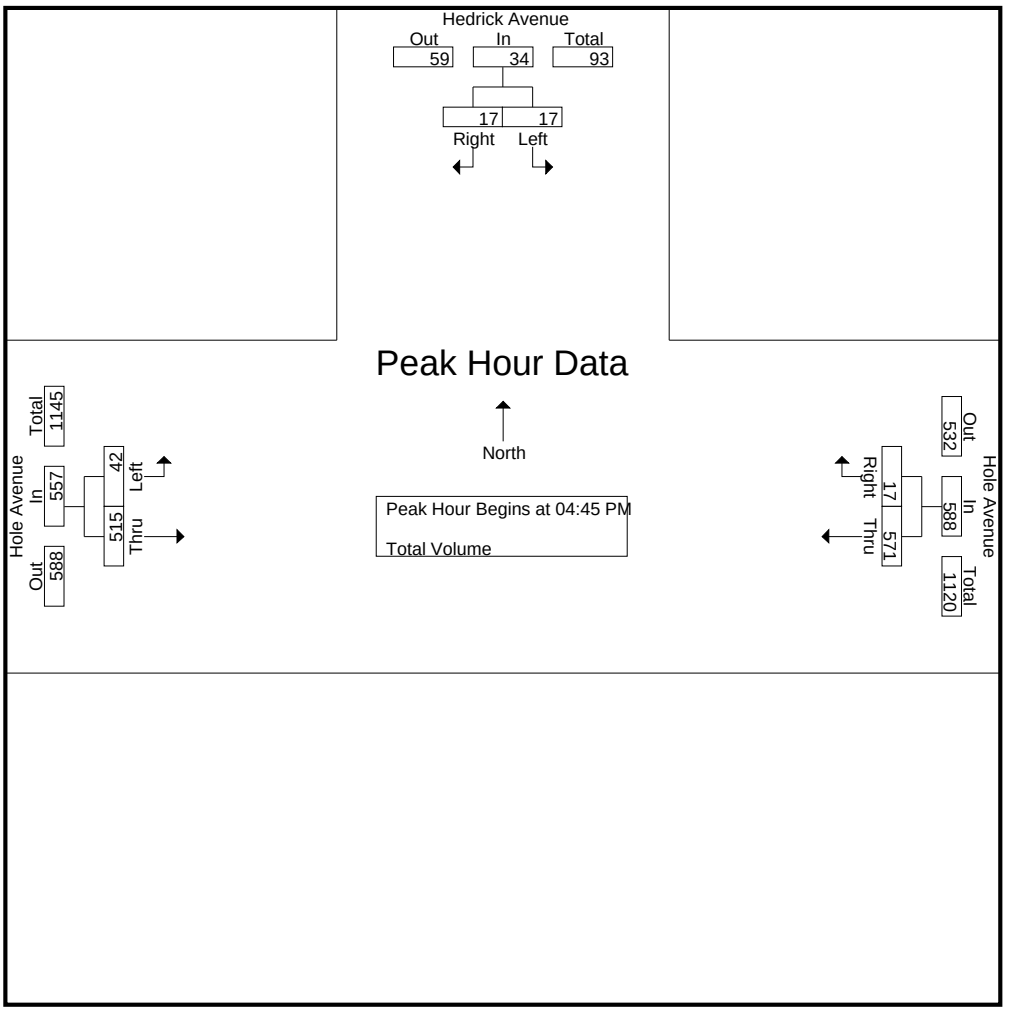
Page No : 2



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

	04:00 PM			04:15 PM			04:30 PM		
+0 mins.	6	3	9	**154**	6	**160**	10	108	118
+15 mins.	2	**8**	10	119	**8**	127	**12**	141	153
+30 mins.	**7**	7	**14**	146	3	149	9	119	128
+45 mins.	4	4	8	150	4	154	7	**159**	**166**
Total Volume	19	22	41	569	21	590	38	527	565
% App. Total	46.3	53.7		96.4	3.6		6.7	93.3	
PHF	.679	.688	.732	.924	.656	.922	.792	.829	.851

Location: Riverside
N/S: Hedrick Avenue
E/W: Hole Avenue

Date: 6/12/2024
Day: Wednesday

PEDESTRIANS

	North Leg Hedrick Avenue	East Leg Hole Avenue	South Leg Dead End	West Leg Hole Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	2	0	2
7:30 AM	0	0	0	0	0
7:45 AM	0	0	1	0	1
8:00 AM	0	0	0	0	0
8:15 AM	0	0	3	0	3
8:30 AM	0	2	2	0	4
8:45 AM	0	0	1	0	1
TOTAL VOLUMES:	0	2	9	0	11

	North Leg Hedrick Avenue	East Leg Hole Avenue	South Leg Dead End	West Leg Hole Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	4	4
4:15 PM	0	3	0	1	4
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	1	1	0	2	4
5:15 PM	0	1	0	0	1
5:30 PM	0	1	0	0	1
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	1	6	0	7	14

Location: Riverside
N/S: Hedrick Avenue
E/W: Hole Avenue

Date: 6/12/2024
Day: Wednesday

BICYCLES

	Southbound Hedrick Avenue			Westbound Hole Avenue			Northbound Dead End			Eastbound Hole Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	1	0	0	0	1	0	0	0	0	0	1	0	3

	Southbound Hedrick Avenue			Westbound Hole Avenue			Northbound Dead End			Eastbound Hole Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	1	0	0	0	5	0	0	0	0	0	2	0	8

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City of Riverside
N/S: Jones Avenue
E/W: Hole Avenue
Weather: Clear

File Name : 26_RIV_Jon_Hole veh
Site Code : 08022361
Start Date : 4/28/2022
Page No : 1

Groups Printed- Total Volume

	Jones Avenue Southbound					Hole Avenue Westbound					Jones Avenue Northbound					Hole Avenue Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
12:00 AM	0	0	1	0	1	0	15	3	0	18	0	0	0	0	0	0	13	0	0	13	32
12:15 AM	1	0	2	0	3	0	8	2	0	10	1	0	0	0	1	2	6	0	0	8	22
12:30 AM	1	0	1	0	2	0	8	0	0	8	0	0	0	0	0	1	9	0	0	10	20
12:45 AM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	5	0	0	5	15
Total	2	0	4	0	6	0	41	5	0	46	1	0	0	0	1	3	33	0	0	36	89
01:00 AM	1	0	0	0	1	0	7	1	0	8	0	0	0	0	0	0	7	0	0	7	16
01:15 AM	0	0	0	0	0	0	8	2	0	10	0	0	0	0	0	1	6	0	0	7	17
01:30 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	10
01:45 AM	0	1	0	0	1	0	9	3	0	12	0	0	0	0	0	0	3	0	0	3	16
Total	1	1	0	0	2	0	30	6	0	36	0	0	0	0	0	1	20	0	0	21	59
02:00 AM	1	0	1	0	2	0	4	1	0	5	0	0	0	0	0	1	2	0	0	3	10
02:15 AM	1	0	0	0	1	0	5	1	0	6	0	0	0	0	0	0	6	0	0	6	13
02:30 AM	0	0	0	0	0	0	4	1	0	5	1	1	0	0	2	0	5	0	0	5	12
02:45 AM	0	0	0	0	0	0	5	2	0	7	0	0	0	0	0	2	2	0	0	4	11
Total	2	0	1	0	3	0	18	5	0	23	1	1	0	0	2	3	15	0	0	18	46
03:00 AM	0	0	5	0	5	0	6	1	0	7	0	0	0	0	0	0	8	0	0	8	20
03:15 AM	0	0	1	0	1	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	9
03:30 AM	0	0	1	0	1	1	6	0	0	7	2	0	0	0	2	0	7	0	0	7	17
03:45 AM	2	0	2	0	4	0	4	0	0	4	0	0	0	0	0	1	10	1	0	12	20
Total	2	0	9	0	11	1	20	1	0	22	2	0	0	0	2	1	29	1	0	31	66
04:00 AM	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	10
04:15 AM	1	0	3	0	4	0	10	0	0	10	0	0	1	0	1	1	11	0	2	14	29
04:30 AM	1	0	4	0	5	0	10	0	0	10	1	2	1	0	4	0	13	0	0	13	32
04:45 AM	0	0	1	0	1	0	10	0	0	10	0	0	0	0	0	0	12	0	0	12	23
Total	3	0	8	0	11	0	35	0	0	35	1	2	2	0	5	1	40	0	2	43	94
05:00 AM	1	0	8	0	9	0	14	0	0	14	1	1	0	0	2	1	12	0	0	13	38
05:15 AM	3	0	2	0	5	0	13	3	0	16	0	0	1	0	1	2	21	0	0	23	45
05:30 AM	2	0	3	0	5	0	15	1	0	16	2	1	1	0	4	3	18	0	0	21	46
05:45 AM	2	0	8	0	10	0	23	1	0	24	1	0	0	0	1	2	34	0	0	36	71
Total	8	0	21	0	29	0	65	5	0	70	4	2	2	0	8	8	85	0	0	93	200
06:00 AM	0	0	5	0	5	0	26	4	0	30	1	1	1	0	3	0	25	0	0	25	63
06:15 AM	5	0	5	0	10	1	21	0	0	22	0	0	1	0	1	1	42	0	0	43	76
06:30 AM	7	0	7	0	14	2	34	4	0	40	0	1	4	0	5	0	43	0	0	43	102
06:45 AM	6	0	7	0	13	1	46	4	0	51	0	1	0	0	1	2	58	0	0	60	125
Total	18	0	24	0	42	4	127	12	0	143	1	3	6	0	10	3	168	0	0	171	366
07:00 AM	12	0	8	0	20	0	84	2	0	86	2	0	0	0	2	7	59	1	0	67	175
07:15 AM	14	0	10	0	24	1	97	2	0	100	1	2	0	0	3	5	88	0	0	93	220
07:30 AM	12	0	8	0	20	1	115	6	0	122	2	1	1	0	4	16	106	2	0	124	270
07:45 AM	12	0	20	0	32	1	148	6	0	155	0	4	1	0	5	13	110	2	0	125	317
Total	50	0	46	0	96	3	444	16	0	463	5	7	2	0	14	41	363	5	0	409	982
08:00 AM	9	0	14	0	23	0	100	3	0	103	0	0	3	0	3	9	108	2	0	119	248
08:15 AM	10	1	7	0	18	0	114	7	0	121	0	2	1	0	3	7	79	0	0	86	228
08:30 AM	8	0	6	0	14	0	107	7	0	114	1	1	2	0	4	5	94	0	0	99	231
08:45 AM	7	1	7	0	15	0	79	4	1	84	2	1	3	0	6	4	95	2	0	101	206
Total	34	2	34	0	70	0	400	21	1	422	3	4	9	0	16	25	376	4	0	405	913
09:00 AM	11	1	8	0	20	1	75	2	0	78	1	0	1	0	2	4	82	1	0	87	187

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Weather: Clear

File Name : 26_RIV_Jon_Hole veh
Site Code : 08022361
Start Date : 4/28/2022
Page No : 2

Groups Printed- Total Volume

	Jones Avenue Southbound					Hole Avenue Westbound					Jones Avenue Northbound					Hole Avenue Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
09:15 AM	8	0	4	0	12	2	49	3	0	54	1	0	1	0	2	4	68	0	0	72	140
09:30 AM	9	0	5	0	14	0	74	4	0	78	1	1	1	0	3	5	74	0	0	79	174
09:45 AM	7	1	3	0	11	2	80	6	0	88	1	1	0	0	2	9	86	2	0	97	198
Total	35	2	20	0	57	5	278	15	0	298	4	2	3	0	9	22	310	3	0	335	699
10:00 AM	5	0	3	0	8	0	75	2	0	77	2	0	2	0	4	3	77	1	0	81	170
10:15 AM	7	0	1	0	8	0	74	10	0	84	2	0	1	0	3	1	75	0	0	76	171
10:30 AM	2	0	6	0	8	3	91	3	0	97	0	0	1	0	1	3	80	1	0	84	190
10:45 AM	5	0	7	0	12	3	71	2	0	76	0	0	5	0	5	4	97	2	0	103	196
Total	19	0	17	0	36	6	311	17	0	334	4	0	9	0	13	11	329	4	0	344	727
11:00 AM	3	1	4	0	8	0	95	5	0	100	1	0	2	0	3	7	97	1	0	105	216
11:15 AM	10	0	10	0	20	0	82	2	0	84	1	1	0	0	2	4	100	1	0	105	211
11:30 AM	5	1	5	0	11	0	107	7	1	115	0	0	0	0	0	6	82	2	0	90	216
11:45 AM	9	0	9	0	18	2	98	2	0	102	1	2	2	0	5	5	94	0	0	99	224
Total	27	2	28	0	57	2	382	16	1	401	3	3	4	0	10	22	373	4	0	399	867
12:00 PM	7	1	11	0	19	0	142	4	0	146	0	1	0	0	1	6	95	2	0	103	269
12:15 PM	4	1	12	0	17	0	117	4	0	121	0	0	0	0	0	9	116	0	0	125	263
12:30 PM	6	1	6	0	13	2	125	6	1	134	1	1	1	0	3	4	117	0	0	121	271
12:45 PM	4	1	9	0	14	0	98	6	0	104	0	0	2	0	2	7	119	0	0	126	246
Total	21	4	38	0	63	2	482	20	1	505	1	2	3	0	6	26	447	2	0	475	1049
01:00 PM	5	2	4	0	11	6	89	3	0	98	0	0	7	0	7	10	93	0	0	103	219
01:15 PM	4	1	6	0	11	1	108	2	0	111	0	1	1	0	2	3	74	0	0	77	201
01:30 PM	3	2	6	0	11	3	108	6	0	117	2	2	0	0	4	6	93	0	0	99	231
01:45 PM	5	1	9	0	15	0	115	9	0	124	3	0	0	0	3	8	94	2	0	104	246
Total	17	6	25	0	48	10	420	20	0	450	5	3	8	0	16	27	354	2	0	383	897
02:00 PM	10	0	6	0	16	1	125	3	0	129	0	0	1	0	1	10	90	2	0	102	248
02:15 PM	8	0	24	0	32	3	137	4	0	144	2	4	1	0	7	13	102	0	0	115	298
02:30 PM	10	0	4	0	14	1	111	5	0	117	1	1	3	0	5	11	129	2	0	142	278
02:45 PM	21	3	20	0	44	0	136	11	0	147	1	2	1	0	4	12	128	2	0	142	337
Total	49	3	54	0	106	5	509	23	0	537	4	7	6	0	17	46	449	6	0	501	1161
03:00 PM	6	1	10	0	17	1	155	10	0	166	2	1	0	0	3	10	136	4	0	150	336
03:15 PM	8	0	8	0	16	1	140	9	0	150	1	0	3	0	4	17	126	2	0	145	315
03:30 PM	8	0	8	0	16	3	134	7	0	144	0	2	3	0	5	12	136	0	0	148	313
03:45 PM	9	3	7	0	19	2	146	6	0	154	0	0	2	0	2	12	129	1	0	142	317
Total	31	4	33	0	68	7	575	32	0	614	3	3	8	0	14	51	527	7	0	585	1281
04:00 PM	10	3	10	0	23	1	141	7	0	149	0	0	2	0	2	8	145	0	0	153	327
04:15 PM	7	0	6	0	13	1	152	8	1	162	3	0	3	0	6	13	144	3	0	160	341
04:30 PM	10	1	6	0	17	2	132	5	0	139	1	0	1	0	2	9	134	3	0	146	304
04:45 PM	10	0	8	0	18	4	139	6	0	149	4	0	2	0	6	16	103	3	0	122	295
Total	37	4	30	0	71	8	564	26	1	599	8	0	8	0	16	46	526	9	0	581	1267
05:00 PM	3	0	2	0	5	3	144	9	0	156	3	1	0	0	4	6	133	5	0	144	309
05:15 PM	6	0	6	0	12	3	129	4	0	136	2	1	3	0	6	14	124	6	0	144	298
05:30 PM	11	0	7	0	18	1	143	6	0	150	4	2	2	0	8	12	117	2	0	131	307
05:45 PM	9	0	7	0	16	5	143	7	0	155	0	3	2	0	5	17	106	2	0	125	301
Total	29	0	22	0	51	12	559	26	0	597	9	7	7	0	23	49	480	15	0	544	1215
06:00 PM	6	0	9	0	15	0	145	10	0	155	0	2	1	0	3	8	136	5	0	149	322
06:15 PM	3	0	4	0	7	1	121	9	0	131	1	0	0	0	1	11	121	2	0	134	273
06:30 PM	7	1	9	0	17	2	114	4	0	120	0	1	1	0	2	6	119	0	1	126	265
06:45 PM	5	0	13	0	18	2	96	9	0	107	2	1	1	0	4	13	122	1	0	136	265
Total	21	1	35	0	57	5	476	32	0	513	3	4	3	0	10	38	498	8	1	545	1125

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N/S: Jones Avenue
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File Name : 26_RIV_Jon_Hole veh
Site Code : 08022361
Start Date : 4/28/2022
Page No : 3

Groups Printed- Total Volume

	Jones Avenue Southbound					Hole Avenue Westbound					Jones Avenue Northbound					Hole Avenue Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
07:00 PM	3	2	5	0	10	1	90	9	0	100	0	0	2	0	2	13	89	0	0	102	214
07:15 PM	7	1	4	0	12	1	84	6	0	91	0	0	2	0	2	5	87	0	0	92	197
07:30 PM	4	3	8	0	15	1	89	3	1	94	2	2	1	0	5	10	73	1	0	84	198
07:45 PM	9	1	8	0	18	1	94	8	0	103	2	1	2	0	5	9	78	1	0	88	214
Total	23	7	25	0	55	4	357	26	1	388	4	3	7	0	14	37	327	2	0	366	823
08:00 PM	6	1	4	0	11	2	91	3	0	96	0	1	2	0	3	11	87	4	0	102	212
08:15 PM	10	1	2	0	13	4	79	3	0	86	4	0	0	0	4	3	65	1	1	70	173
08:30 PM	1	0	2	0	3	0	94	5	0	99	2	0	3	0	5	7	62	4	0	73	180
08:45 PM	5	0	5	0	10	2	60	5	0	67	1	0	2	0	3	6	45	0	0	51	131
Total	22	2	13	0	37	8	324	16	0	348	7	1	7	0	15	27	259	9	1	296	696
09:00 PM	3	2	4	0	9	1	68	1	0	70	1	0	0	0	1	4	47	0	0	51	131
09:15 PM	4	0	7	0	11	2	60	3	0	65	2	1	2	0	5	8	35	1	0	44	125
09:30 PM	1	0	4	0	5	0	53	4	0	57	0	0	0	0	0	4	27	0	0	31	93
09:45 PM	4	0	2	0	6	2	34	1	0	37	1	1	0	0	2	3	28	1	0	32	77
Total	12	2	17	0	31	5	215	9	0	229	4	2	2	0	8	19	137	2	0	158	426
10:00 PM	0	0	3	0	3	2	46	4	0	52	1	0	1	0	2	2	26	1	0	29	86
10:15 PM	0	0	2	0	2	1	38	1	0	40	0	0	0	0	0	2	32	1	0	35	77
10:30 PM	3	0	0	0	3	1	26	3	0	30	0	0	0	0	0	5	24	2	0	31	64
10:45 PM	2	0	1	0	3	0	26	3	0	29	0	0	0	0	0	2	22	0	0	24	56
Total	5	0	6	0	11	4	136	11	0	151	1	0	1	0	2	11	104	4	0	119	283
11:00 PM	0	1	2	0	3	0	32	2	0	34	0	0	0	0	0	3	12	2	0	17	54
11:15 PM	0	0	1	0	1	0	17	1	1	19	0	0	1	0	1	3	12	0	0	15	36
11:30 PM	2	0	2	1	5	0	27	2	0	29	0	1	0	0	1	2	8	0	0	10	45
11:45 PM	2	0	1	0	3	0	10	4	0	14	1	0	0	0	1	0	11	0	0	11	29
Total	4	1	6	1	12	0	86	9	1	96	1	1	1	0	3	8	43	2	0	53	164
Grand Total	472	41	516	1	1030	91	6854	369	6	7320	79	57	98	0	234	526	6292	89	4	6911	15495
Apprch %	45.8	4	50.1	0.1		1.2	93.6	5	0.1		33.8	24.4	41.9	0		7.6	91	1.3	0.1		
Total %	3	0.3	3.3	0	6.6	0.6	44.2	2.4	0	47.2	0.5	0.4	0.6	0	1.5	3.4	40.6	0.6	0	44.6	

	Jones Avenue Southbound					Hole Avenue Westbound					Jones Avenue Northbound					Hole Avenue Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 12:00 AM to 11:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:45 PM																					
02:45 PM	**21**	**3**	**20**	0	**44**	0	136	**11**	0	147	1	**2**	1	0	4	12	128	2	0	142	**337**
03:00 PM	6	1	10	0	17	1	**155**	10	0	**166**	**2**	1	0	0	3	10	**136**	**4**	0	**150**	336
03:15 PM	8	0	8	0	16	1	140	9	0	150	1	0	**3**	0	4	**17**	126	2	0	145	315
03:30 PM	8	0	8	0	16	**3**	134	7	0	144	0	2	3	0	**5**	12	136	0	0	148	313
Total Volume	43	4	46	0	93	5	565	37	0	607	4	5	7	0	16	51	526	8	0	585	1301
% App. Total	46.2	4.3	49.5	0		0.8	93.1	6.1	0		25	31.2	43.8	0		8.7	89.9	1.4	0		
PHF	.512	.333	.575	.000	.528	.417	.911	.841	.000	.914	.500	.625	.583	.000	.800	.750	.967	.500	.000	.975	.965

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Site Code : 08022361
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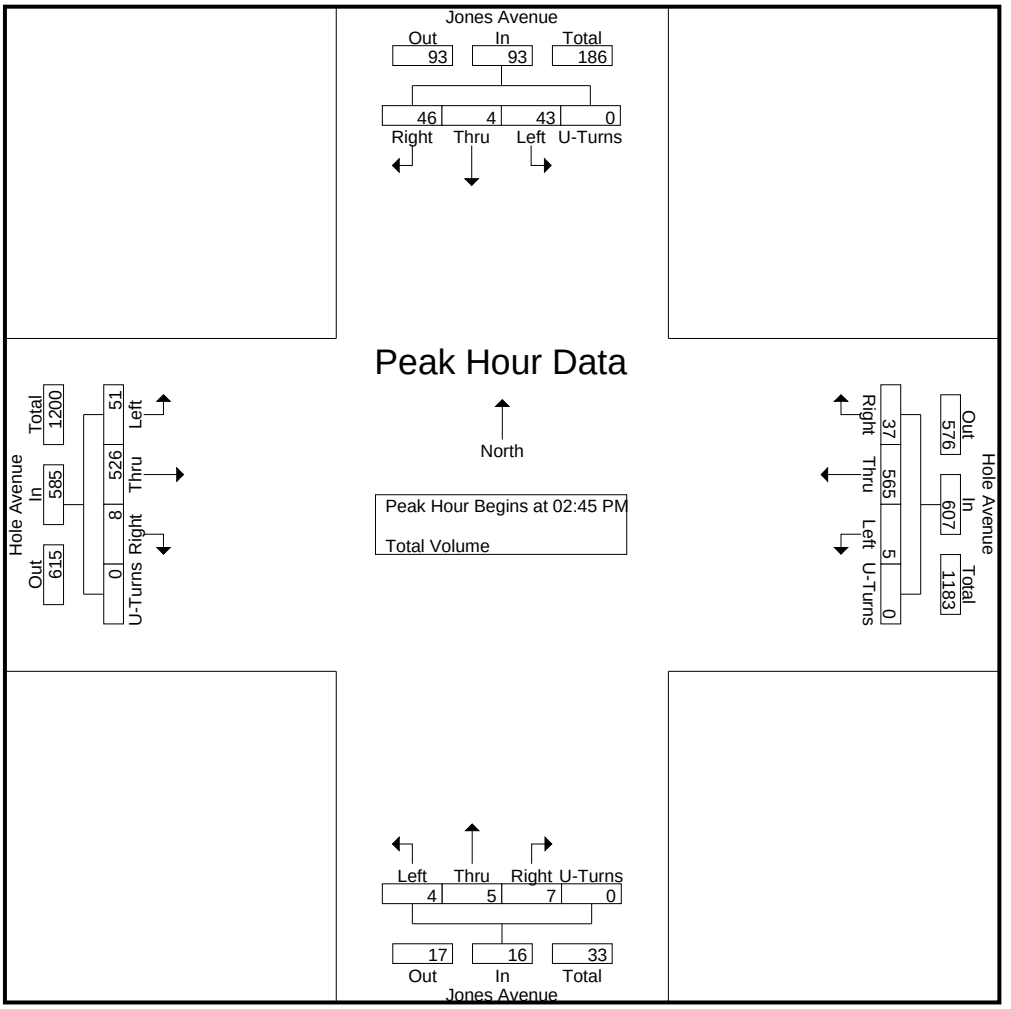

Peak Hour Analysis From 12:00 AM to 11:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:15 PM					03:00 PM					04:45 PM					03:30 PM				
+0 mins.	8	0	**24**	0	32	1	**155**	**10**	0	**166**	**4**	0	2	0	6	12	136	0	0	148
+15 mins.	10	0	4	0	14	1	140	9	0	150	3	1	0	0	4	12	129	1	0	142
+30 mins.	**21**	**3**	20	0	**44**	**3**	134	7	0	144	2	1	**3**	0	6	8	**145**	0	0	153
+45 mins.	6	1	10	0	17	2	146	6	0	154	4	**2**	2	0	**8**	**13**	144	**3**	0	**160**
Total Volume	45	4	58	0	107	7	575	32	0	614	13	4	7	0	24	45	554	4	0	603
% App. Total	42.1	3.7	54.2	0		1.1	93.6	5.2	0		54.2	16.7	29.2	0		7.5	91.9	0.7	0	
PHF	.536	.333	.604	.000	.608	.583	.927	.800	.000	.925	.813	.500	.583	.000	.750	.865	.955	.333	.000	.942

Location: Riverside
N/S: Jones Avenue
E/W: Hole Avenue

Date: 4/28/2022
Day Thursday

PEDESTRIANS

Time	North Leg Jones Avenue	East Leg Hole Avenue	South Leg Jones Avenue	West Leg Hole Avenue	TOTAL
12:00 AM	0	0	0	0	0
12:15 AM	0	0	0	0	0
12:30 AM	0	0	0	0	0
12:45 AM	0	0	0	0	0
1:00 AM	0	0	0	0	0
1:15 AM	0	0	0	0	0
1:30 AM	0	0	0	0	0
1:45 AM	0	0	0	0	0
2:00 AM	0	0	0	0	0
2:15 AM	0	0	0	0	0
2:30 AM	0	0	0	0	0
2:45 AM	0	0	0	0	0
3:00 AM	0	0	0	0	0
3:15 AM	0	0	0	0	0
3:30 AM	0	0	0	0	0
3:45 AM	0	0	0	0	0
4:00 AM	0	0	0	0	0
4:15 AM	0	0	0	0	0
4:30 AM	0	0	0	0	0
4:45 AM	0	0	0	0	0
5:00 AM	0	0	0	0	0
5:15 AM	0	0	0	0	0
5:30 AM	0	0	0	0	0
5:45 AM	1	0	0	1	2
6:00 AM	0	0	0	0	0
6:15 AM	0	0	1	1	2
6:30 AM	0	0	0	0	0
6:45 AM	0	0	4	3	7
7:00 AM	0	0	3	5	8
7:15 AM	0	0	0	0	0
7:30 AM	0	0	1	0	1
7:45 AM	0	0	2	0	2
8:00 AM	0	0	0	1	1
8:15 AM	2	0	5	0	7
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
9:00 AM	0	0	0	0	0
9:15 AM	1	0	0	0	1
9:30 AM	0	0	0	1	1
9:45 AM	1	0	2	0	3
10:00 AM	0	0	0	0	0
10:15 AM	0	0	1	0	1
10:30 AM	1	0	1	0	2
10:45 AM	0	0	0	0	0
11:00 AM	1	0	0	0	1
11:15 AM	1	0	0	0	1
11:30 AM	0	0	1	0	1
11:45 AM	0	0	2	0	2
12:00 PM	0	0	0	0	0
12:15 PM	1	0	0	0	1
12:30 PM	1	0	0	0	1
12:45 PM	0	0	0	0	0
1:00 PM	1	0	0	1	2
1:15 PM	0	0	1	0	1
1:30 PM	0	0	0	0	0
1:45 PM	0	0	2	0	2
2:00 PM	0	0	0	0	0
2:15 PM	1	0	0	0	1
2:30 PM	0	0	1	1	2
2:45 PM	0	0	5	6	11
3:00 PM	0	0	4	1	5
3:15 PM	0	0	2	0	2
3:30 PM	0	0	0	0	0
3:45 PM	0	0	1	0	1
4:00 PM	0	0	1	1	2
4:15 PM	1	0	2	1	4
4:30 PM	0	1	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	1	0	0	0	1
5:30 PM	2	0	0	0	2
5:45 PM	2	0	0	3	5
6:00 PM	2	0	0	1	3
6:15 PM	0	0	0	2	2
6:30 PM	1	0	0	0	1
6:45 PM	0	0	1	0	1
7:00 PM	0	0	0	0	0
7:15 PM	0	0	2	1	3
7:30 PM	0	0	0	0	0
7:45 PM	0	0	0	0	0
8:00 PM	0	0	0	0	0
8:15 PM	0	0	1	0	1
8:30 PM	0	0	2	0	2
8:45 PM	0	0	0	1	1
9:00 PM	0	0	0	0	0
9:15 PM	0	0	0	0	0
9:30 PM	0	0	2	0	2
9:45 PM	0	0	0	0	0
10:00 PM	0	0	1	0	1
10:15 PM	0	0	0	0	0
10:30 PM	0	0	0	0	0
10:45 PM	0	0	0	0	0
11:00 PM	0	0	0	0	0
11:15 PM	0	0	0	0	0
11:30 PM	0	0	0	0	0
11:45 PM	0	0	0	0	0
TOTAL VOLUMES:	21	1	51	31	104

Location: Riverside
N/S: Jones Avenue
E/W: Hole Avenue

Date: 4/28/2022
Day: Thursday

BICYCLES

	Southbound Jones Avenue			Westbound Hole Avenue			Northbound Jones Avenue			Eastbound Hole Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
10:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
10:30 AM	0	0	0	0	0	0	1	0	0	0	1	0	2
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
3:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	1	0	1	0	0	0	0	0	2
5:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
6:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
6:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	18	1	3	0	0	0	13	1	37

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Riverside
N/S: Jones Avenue
E/W: Hole Avenue
Weather: Clear

File Name : 26_RIV_Jon_Hole veh
Site Code : 08022361
Start Date : 4/28/2022
Page No : 1

Groups Printed- Total Volume

	Jones Avenue Southbound					Hole Avenue Westbound					Jones Avenue Northbound					Hole Avenue Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
07:00 AM	12	0	8	0	20	0	84	2	0	86	2	0	0	0	2	7	59	1	0	67	175
07:15 AM	14	0	10	0	24	1	97	2	0	100	1	2	0	0	3	5	88	0	0	93	220
07:30 AM	12	0	8	0	20	1	115	6	0	122	2	1	1	0	4	16	106	2	0	124	270
07:45 AM	12	0	20	0	32	1	148	6	0	155	0	4	1	0	5	13	110	2	0	125	317
Total	50	0	46	0	96	3	444	16	0	463	5	7	2	0	14	41	363	5	0	409	982
08:00 AM	9	0	14	0	23	0	100	3	0	103	0	0	3	0	3	9	108	2	0	119	248
08:15 AM	10	1	7	0	18	0	114	7	0	121	0	2	1	0	3	7	79	0	0	86	228
08:30 AM	8	0	6	0	14	0	107	7	0	114	1	1	2	0	4	5	94	0	0	99	231
08:45 AM	7	1	7	0	15	0	79	4	1	84	2	1	3	0	6	4	95	2	0	101	206
Total	34	2	34	0	70	0	400	21	1	422	3	4	9	0	16	25	376	4	0	405	913
Grand Total	84	2	80	0	166	3	844	37	1	885	8	11	11	0	30	66	739	9	0	814	1895
Apprch %	50.6	1.2	48.2	0		0.3	95.4	4.2	0.1		26.7	36.7	36.7	0		8.1	90.8	1.1	0		
Total %	4.4	0.1	4.2	0	8.8	0.2	44.5	2	0.1	46.7	0.4	0.6	0.6	0	1.6	3.5	39	0.5	0	43	

	Jones Avenue Southbound					Hole Avenue Westbound					Jones Avenue Northbound					Hole Avenue Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	**12**	0	8	0	20	**1**	115	6	0	122	**2**	1	1	0	4	**16**	106	**2**	0	124	270
07:45 AM	12	0	**20**	0	**32**	1	**148**	6	0	**155**	0	**4**	1	0	**5**	13	**110**	2	0	**125**	**317**
08:00 AM	9	0	14	0	23	0	100	3	0	103	0	0	**3**	0	3	9	108	2	0	119	248
08:15 AM	10	**1**	7	0	18	0	114	**7**	0	121	0	2	1	0	3	7	79	0	0	86	228
Total Volume	43	1	49	0	93	2	477	22	0	501	2	7	6	0	15	45	403	6	0	454	1063
% App. Total	46.2	1.1	52.7	0		0.4	95.2	4.4	0		13.3	46.7	40	0		9.9	88.8	1.3	0		
PHF	.896	.250	.613	.000	.727	.500	.806	.786	.000	.808	.250	.438	.500	.000	.750	.703	.916	.750	.000	.908	.838

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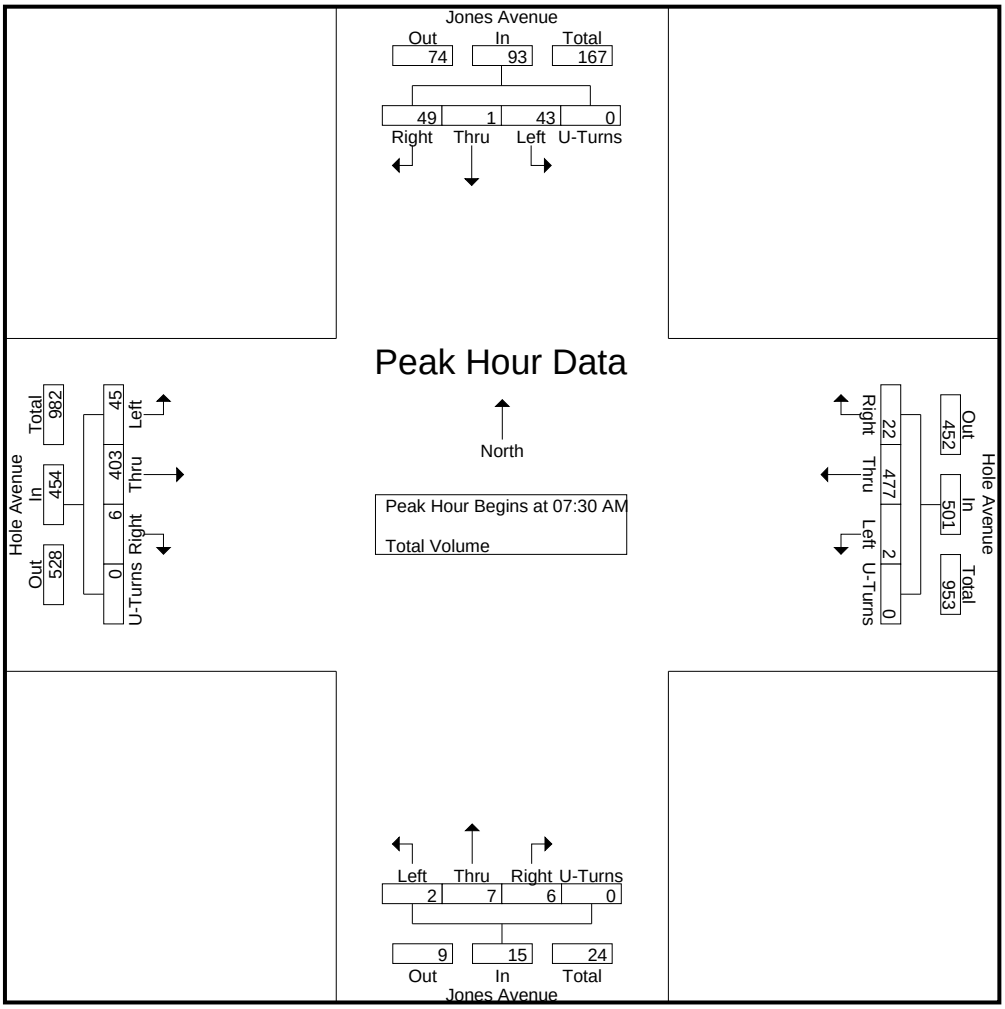
City of Riverside
N/S: Jones Avenue
E/W: Hole Avenue
Weather: Clear

File Name : 26_RIV_Jon_Hole veh
Site Code : 08022361
Start Date : 4/28/2022
Page No : 2



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

	07:15 AM					07:30 AM					08:00 AM					07:15 AM				
+0 mins.	**14**	0	10	0	24	**1**	115	6	0	122	0	0	**3**	0	3	5	88	0	0	93
+15 mins.	12	0	8	0	20	1	**148**	6	0	**155**	0	**2**	1	0	3	**16**	106	**2**	0	124
+30 mins.	12	0	**20**	0	**32**	0	100	3	0	103	1	1	2	0	4	13	**110**	2	0	**125**
+45 mins.	9	0	14	0	23	0	114	**7**	0	121	**2**	1	3	0	**6**	9	108	2	0	119
Total Volume	47	0	52	0	99	2	477	22	0	501	3	4	9	0	16	43	412	6	0	461
% App. Total	47.5	0	52.5	0		0.4	95.2	4.4	0		18.8	25	56.2	0		9.3	89.4	1.3	0	
PHF	.839	.000	.650	.000	.773	.500	.806	.786	.000	.808	.375	.500	.750	.000	.667	.672	.936	.750	.000	.922

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City of Riverside
N/S: Jones Avenue
E/W: Hole Avenue
Weather: Clear

File Name : 26_RIV_Jon_Hole veh
Site Code : 08022361
Start Date : 4/28/2022
Page No : 1

Groups Printed- Total Volume

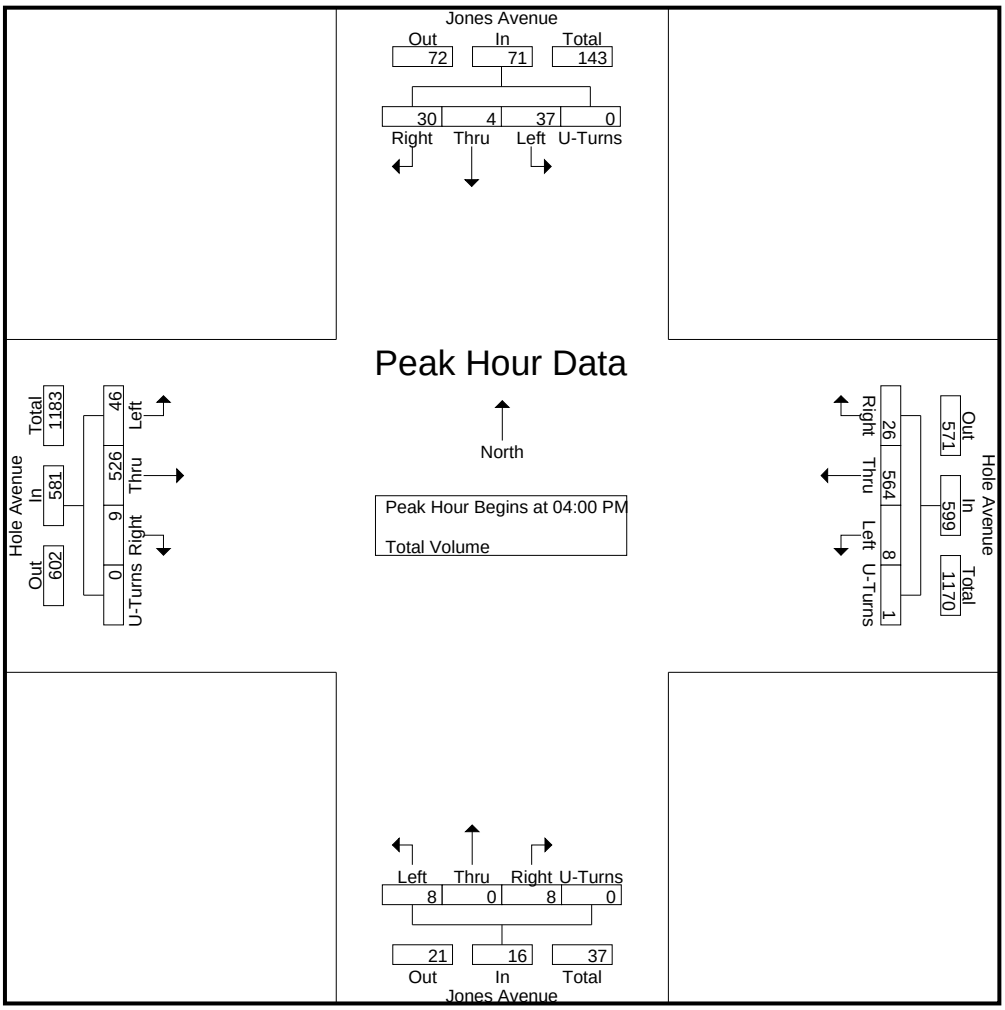
	Jones Avenue Southbound					Hole Avenue Westbound					Jones Avenue Northbound					Hole Avenue Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
04:00 PM	10	3	10	0	23	1	141	7	0	149	0	0	2	0	2	8	145	0	0	153	327
04:15 PM	7	0	6	0	13	1	152	8	1	162	3	0	3	0	6	13	144	3	0	160	341
04:30 PM	10	1	6	0	17	2	132	5	0	139	1	0	1	0	2	9	134	3	0	146	304
04:45 PM	10	0	8	0	18	4	139	6	0	149	4	0	2	0	6	16	103	3	0	122	295
Total	37	4	30	0	71	8	564	26	1	599	8	0	8	0	16	46	526	9	0	581	1267
05:00 PM	3	0	2	0	5	3	144	9	0	156	3	1	0	0	4	6	133	5	0	144	309
05:15 PM	6	0	6	0	12	3	129	4	0	136	2	1	3	0	6	14	124	6	0	144	298
05:30 PM	11	0	7	0	18	1	143	6	0	150	4	2	2	0	8	12	117	2	0	131	307
05:45 PM	9	0	7	0	16	5	143	7	0	155	0	3	2	0	5	17	106	2	0	125	301
Total	29	0	22	0	51	12	559	26	0	597	9	7	7	0	23	49	480	15	0	544	1215
Grand Total	66	4	52	0	122	20	1123	52	1	1196	17	7	15	0	39	95	1006	24	0	1125	2482
Apprch %	54.1	3.3	42.6	0		1.7	93.9	4.3	0.1		43.6	17.9	38.5	0		8.4	89.4	2.1	0		
Total %	2.7	0.2	2.1	0	4.9	0.8	45.2	2.1	0	48.2	0.7	0.3	0.6	0	1.6	3.8	40.5	1	0	45.3	

	Jones Avenue Southbound					Hole Avenue Westbound					Jones Avenue Northbound					Hole Avenue Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**10**	**3**	**10**	0	**23**	1	141	7	0	149	0	0	2	0	2	8	**145**	0	0	153	327
04:15 PM	7	0	6	0	13	1	**152**	**8**	**1**	**162**	3	0	**3**	0	**6**	13	144	**3**	0	**160**	**341**
04:30 PM	10	1	6	0	17	2	132	5	0	139	1	0	1	0	2	9	134	3	0	146	304
04:45 PM	10	0	8	0	18	**4**	139	6	0	149	**4**	0	2	0	6	**16**	103	3	0	122	295
Total Volume	37	4	30	0	71	8	564	26	1	599	8	0	8	0	16	46	526	9	0	581	1267
% App. Total	52.1	5.6	42.3	0		1.3	94.2	4.3	0.2		50	0	50	0		7.9	90.5	1.5	0		
PHF	.925	.333	.750	.000	.772	.500	.928	.813	.250	.924	.500	.000	.667	.000	.667	.719	.907	.750	.000	.908	.929

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Riverside
N/S: Jones Avenue
E/W: Hole Avenue
Weather: Clear

File Name : 26_RIV_Jon_Hole veh
Site Code : 08022361
Start Date : 4/28/2022
Page No : 2



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

	04:00 PM					04:15 PM					04:45 PM					04:00 PM				
+0 mins.	**10**	**3**	**10**	0	**23**	1	**152**	8	**1**	**162**	**4**	0	2	0	6	8	**145**	0	0	153
+15 mins.	7	0	6	0	13	2	132	5	0	139	3	1	0	0	4	13	144	**3**	0	**160**
+30 mins.	10	1	6	0	17	**4**	139	6	0	149	2	1	**3**	0	6	9	134	3	0	146
+45 mins.	10	0	8	0	18	3	144	**9**	0	156	4	**2**	2	0	**8**	**16**	103	3	0	122
Total Volume	37	4	30	0	71	10	567	28	1	606	13	4	7	0	24	46	526	9	0	581
% App. Total	52.1	5.6	42.3	0		1.7	93.6	4.6	0.2		54.2	16.7	29.2	0		7.9	90.5	1.5	0	
PHF	.925	.333	.750	.000	.772	.625	.933	.778	.250	.935	.813	.500	.583	.000	.750	.719	.907	.750	.000	.908

Location: Riverside
N/S: Jones Avenue
E/W: Hole Avenue

Date: 4/28/2022
Day: Thursday

PEDESTRIANS

	North Leg Jones Avenue	East Leg Hole Avenue	South Leg Jones Avenue	West Leg Hole Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	3	5	8
7:15 AM	0	0	0	0	0
7:30 AM	0	0	1	0	1
7:45 AM	0	0	2	0	2
8:00 AM	0	0	0	1	1
8:15 AM	2	0	5	0	7
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	2	0	11	6	19

	North Leg Jones Avenue	East Leg Hole Avenue	South Leg Jones Avenue	West Leg Hole Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	1	1	2
4:15 PM	1	0	2	1	4
4:30 PM	0	1	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	1	0	0	0	1
5:30 PM	2	0	0	0	2
5:45 PM	2	0	0	3	5
TOTAL VOLUMES:	6	1	3	5	15

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Location: Riverside
N/S: Jones Avenue
E/W: Hole Avenue

Date: 4/28/2022
Day: Thursday

BICYCLES

	Southbound Jones Avenue			Westbound Hole Avenue			Northbound Jones Avenue			Eastbound Hole Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	2	1	0	0	0	0	0	0	3

	Southbound Jones Avenue			Westbound Hole Avenue			Northbound Jones Avenue			Eastbound Hole Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	1	0	1	0	0	0	0	0	2
5:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
TOTAL VOLUMES:	0	1	0	0	6	0	1	0	0	0	2	0	10

Counts Unimited, Inc.

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email: counts@countsunlimited.com

City of Riverside
Hedrick Avenue
B/ Wells Avenue - Hole Avenue
24 Hour Directional Volume Count

RIV002
Site Code: 229-24575

Start Time	6/12/24 Wed	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	6			0	16				
12:15		3	3			1	8				
12:30		2	10			2	11				
12:45		1	7	7	26	1	9	4	44	11	70
01:00		1	11			1	6				
01:15		0	7			0	12				
01:30		1	2			0	7				
01:45		2	5	4	25	1	6	2	31	6	56
02:00		1	5			0	11				
02:15		2	11			3	5				
02:30		2	10			0	11				
02:45		3	14	8	40	0	8	3	35	11	75
03:00		0	14			1	13				
03:15		3	12			1	8				
03:30		0	**18**			4	6				
03:45		2	**14**	5	58	0	**20**	6	47	11	105
04:00		0	**11**			2	**10**				
04:15		1	**19**			1	**7**				
04:30		0	12			2	**16**				
04:45		0	12	1	54	2	8	7	41	8	95
05:00		3	10			5	8				
05:15		0	9			7	6				
05:30		3	18			5	11				
05:45		1	8	7	45	3	12	20	37	27	82
06:00		4	15			8	15				
06:15		0	11			8	15				
06:30		2	5			5	10				
06:45		1	7	7	38	9	9	30	49	37	87
07:00		2	10			2	4				
07:15		1	8			9	9				
07:30		1	10			9	9				
07:45		5	12	9	40	6	9	26	31	35	71
08:00		7	7			6	4				
08:15		4	13			**10**	6				
08:30		3	6			**14**	6				
08:45		8	8	22	34	**8**	6	38	22	60	56
09:00		5	8			**8**	5				
09:15		**5**	7			7	6				
09:30		**3**	5			9	3				
09:45		**6**	5	19	25	2	3	26	17	45	42
10:00		**9**	5			9	1				
10:15		2	7			4	1				
10:30		3	6			5	6				
10:45		6	4	20	22	4	2	22	10	42	32
11:00		1	3			15	3				
11:15		6	6			6	1				
11:30		6	1			5	0				
11:45		8	1	21	11	6	0	32	4	53	15
Total		130	418	130	418	216	368	216	368	346	786
Combined Total		548		548		584		584		1132	
AM Peak	-	09:15	-	-	-	08:15	-	-	-	-	-
Vol.	-	23	-	-	-	40	-	-	-	-	-
P.H.F.		0.639				0.714					
PM Peak	-	-	03:30	-	-	-	03:45	-	-	-	-
Vol.	-	-	62	-	-	-	53	-	-	-	-
P.H.F.			0.816				0.663				
Percentage		23.7%	76.3%			37.0%	63.0%				
ADT/AADT		ADT 1,132		AADT 1,132							

Counts Unimited, Inc.

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City of Riverside
Jones Avenue
B/ Hole Avenue - Mobley Avenue
24 Hour Directional Volume Count

RIV001
Site Code: 229-24575

Start Time	6/12/24 Wed	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		4	17			0	14				
12:15		6	12			2	4				
12:30		2	10			1	10				
12:45		5	15	17	54	5	15	8	43	25	97
01:00		2	10			1	10				
01:15		0	10			1	11				
01:30		2	8			1	10				
01:45		3	14	7	42	1	10	4	41	11	83
02:00		0	13			0	14				
02:15		2	10			2	20				
02:30		2	22			0	16				
02:45		2	13	6	58	4	22	6	72	12	130
03:00		0	16			2	14				
03:15		2	12			0	20				
03:30		1	20			4	17				
03:45		2	13	5	61	3	16	9	67	14	128
04:00		2	**20**			4	12				
04:15		4	**16**			7	**27**				
04:30		3	**18**			5	**16**				
04:45		3	**25**	12	79	5	**19**	21	74	33	153
05:00		5	15			10	**21**				
05:15		6	16			8	16				
05:30		8	23			10	16				
05:45		5	16	24	70	4	14	32	67	56	137
06:00		3	16			3	22				
06:15		4	16			6	12				
06:30		5	12			7	14				
06:45		6	17	18	61	7	11	23	59	41	120
07:00		6	14			11	11				
07:15		4	19			12	14				
07:30		6	22			**23**	6				
07:45		**18**	12	34	67	**24**	12	70	43	104	110
08:00		**7**	16			**20**	9				
08:15		**6**	16			**15**	12				
08:30		**8**	18			16	14				
08:45		10	10	31	60	15	12	66	47	97	107
09:00		13	9			14	12				
09:15		4	15			11	5				
09:30		8	8			13	5				
09:45		6	6	31	38	13	12	51	34	82	72
10:00		9	8			7	4				
10:15		2	5			9	3				
10:30		11	8			12	4				
10:45		10	2	32	23	14	3	42	14	74	37
11:00		7	5			13	1				
11:15		7	1			11	3				
11:30		10	5			12	2				
11:45		5	1	29	12	14	4	50	10	79	22
Total		246	625	246	625	382	571	382	571	628	1196
Combined Total		871		871		953		953		1824	
AM Peak	-	07:45	-	-	-	07:30	-	-	-	-	-
Vol.	-	39	-	-	-	82	-	-	-	-	-
P.H.F.		0.542				0.854					
PM Peak	-	-	04:00	-	-	-	04:15	-	-	-	-
Vol.	-	-	79	-	-	-	83	-	-	-	-
P.H.F.			0.790				0.769				
Percentage		28.2%	71.8%			40.1%	59.9%				
ADT/AADT		ADT 1,824		AADT 1,824							

Appendix D - Signal Timing Information

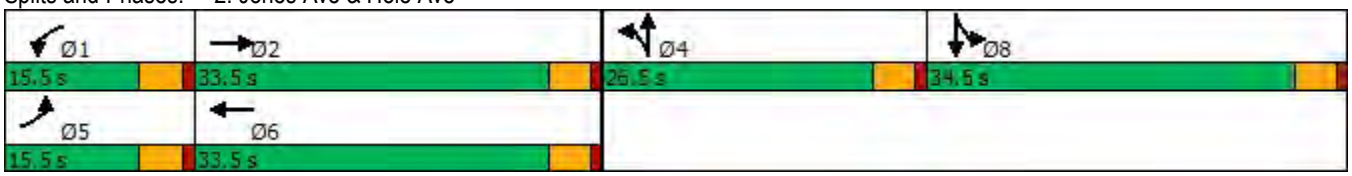
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	382	0	5	390	15	5	0	11	46	1	58
Future Volume (vph)	39	382	0	5	390	15	5	0	11	46	1	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00			0.99			0.99	
Frt					0.994			0.905			0.925	
Flt Protected	0.950			0.950				0.985			0.979	
Satd. Flow (prot)	1752	3505	0	1752	3480	0	0	1627	0	0	1657	0
Flt Permitted	0.950			0.950				0.985			0.979	
Satd. Flow (perm)	1752	3505	0	1752	3480	0	0	1627	0	0	1657	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3			104			56	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		764			550			250			842	
Travel Time (s)		13.0			9.4			6.8			23.0	
Confl. Peds. (#/hr)						3			2			2
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	48	472	0	6	481	19	6	0	14	57	1	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	472	0	6	500	0	0	20	0	0	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases												
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.5	26.5		11.5	30.5		22.5	22.5		30.5	30.5	
Total Split (s)	15.5	33.5		15.5	33.5		26.5	26.5		34.5	34.5	
Total Split (%)	14.1%	30.5%		14.1%	30.5%		24.1%	24.1%		31.4%	31.4%	
Maximum Green (s)	11.0	29.0		11.0	29.0		22.0	22.0		30.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)		7.0			7.0					10.0	10.0	
Flash Dont Walk (s)		15.0			11.0					16.0	16.0	
Pedestrian Calls (#/hr)		10			10					10	10	
Act Effct Green (s)	11.0	21.0		10.5	18.6			10.5			12.9	
Actuated g/C Ratio	0.28	0.54		0.27	0.48			0.27			0.33	
v/c Ratio	0.10	0.25		0.01	0.30			0.04			0.22	
Control Delay	22.4	10.7		25.8	13.7			0.1			11.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	22.4	10.7		25.8	13.7			0.1			11.4	
LOS	C	B		C	B			A			B	
Approach Delay		11.8			13.8			0.1			11.4	
Approach LOS		B			B			A			B	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 39.1
Natural Cycle: 95
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.30
Intersection Signal Delay: 12.4 — Intersection LOS: B
Intersection Capacity Utilization 39.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Jones Ave & Hole Ave



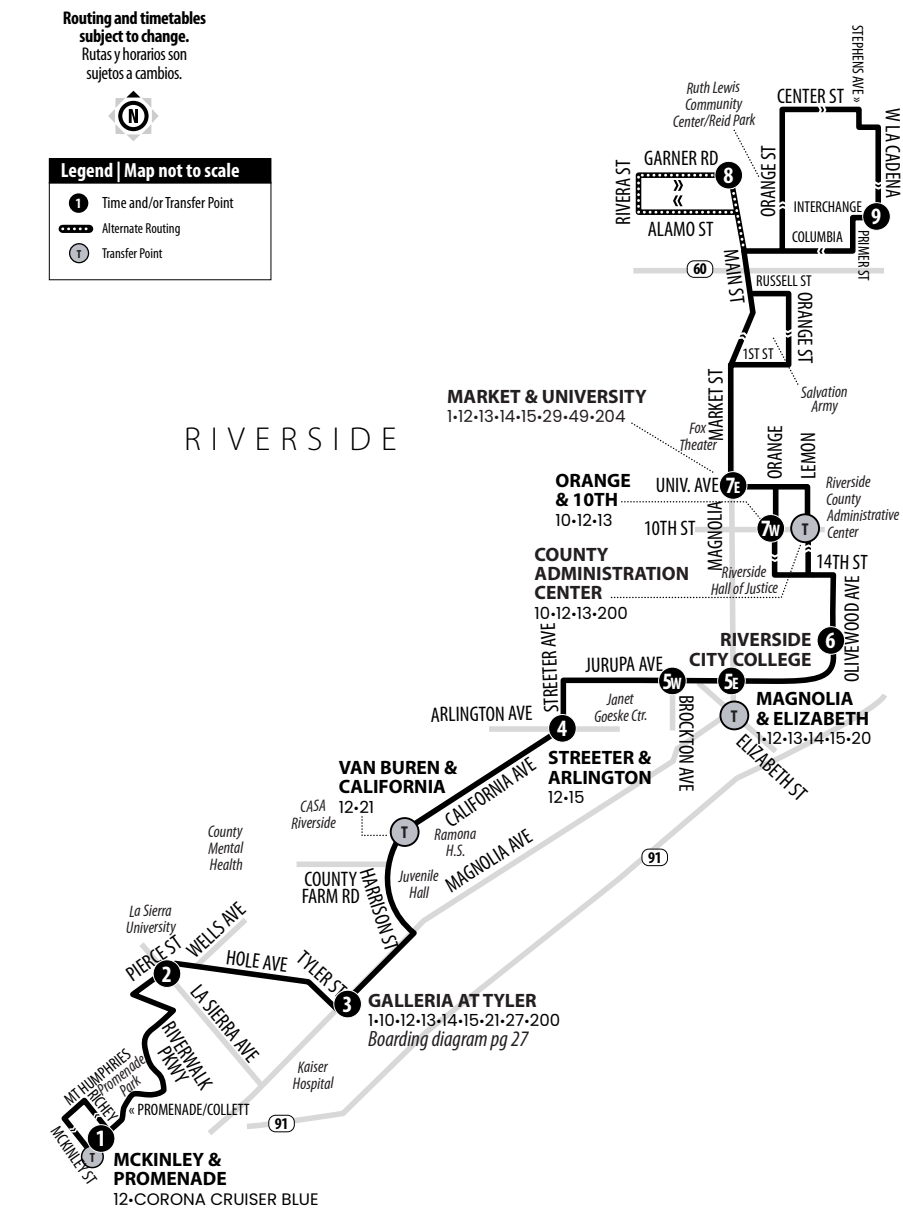
Appendix E - RTA Route 12 Details

12 LA CADENA & INTERCHANGE - DOWNTOWN RIVERSIDE - CORONA HILLS PLAZA

Routing and timetables subject to change.
Rutas y horarios son sujetos a cambios.

Legend | Map not to scale

- 1 Time and/or Transfer Point
- Alternate Routing
- T Transfer Point



12 EASTBOUND TO LA CADENA & INTERCHANGE | WEEKDAYS

A.M. times are in PLAIN, P.M. times are in BOLD | Times are approximate
* Trip will end service at Primer and Columbia bus stop.

PROMENADE & MCKINLEY	PIERCE & LA SIERRA	GALLERIA AT TYLER	ARLINGTON & STREETER	JURUPA & MAGNOLIA	OLIVEWOOD & RCC	UNIVERSITY & MARKET	MAIN & GARNER	LA CADENA & INTERCHANGE
1	2	3	4	5E	6	7E	8	9
5:05	5:16	5:23	5:36	5:44	5:49	5:59	—	6:17
5:55	6:06	6:13	6:26	6:34	6:39	6:49	7:02	7:13
7:00	7:11	7:20	7:34	7:44	7:49	7:59	—	8:23
8:01	8:13	8:21	8:35	8:43	8:48	8:58	—	9:21
9:01	9:13	9:21	9:35	9:43	9:48	9:58	—	10:22
10:01	10:13	10:21	10:36	10:46	10:51	11:01	—	11:26
11:01	11:13	11:22	11:37	11:50	11:55	**12:05**	**—**	**12:31**
12:04	**12:16**	**12:25**	**12:41**	**12:54**	**12:59**	**1:09**	**—**	**1:37**
1:09	**1:21**	**1:30**	**1:46**	**1:59**	**2:04**	**2:14**	**—**	**2:40**
2:14	**2:26**	**2:35**	**2:52**	**3:06**	**3:11**	**3:21**	**3:34**	**3:45**
3:20	**3:33**	**3:42**	**3:59**	**4:09**	**4:14**	**4:24**	**—**	**4:55**
4:28	**4:40**	**4:49**	**5:06**	**5:16**	**5:21**	**5:31**	**—**	**5:59**
5:32	**5:44**	**5:53**	**6:09**	**6:19**	**6:24**	**6:34**	**—**	**7:02**
6:39	**6:51**	**7:00**	**7:16**	**7:25**	**7:29**	**7:39**	**—**	**8:02**
7:42	**7:54**	**8:03**	**8:19**	**8:28**	**8:32**	**8:42**	**—**	**9:01**
8:41	**8:53**	**9:02**	**9:18**	**9:27**	**9:31**	**9:41**	**—**	**10:00**
9:42	**9:54**	**10:03**	**10:19**	**10:28**	**10:32**	**10:42**	**—**	**11:01***

12 WESTBOUND TO CORONA HILLS PLAZA | WEEKDAYS

A.M. times are in PLAIN, P.M. times are in BOLD | Times are approximate

LA CADENA & INTERCHANGE	ORANGE & 10TH	OLIVEWOOD & RCC	JURUPA & BROCKTON	ARLINGTON & STREETER	GALLERIA AT TYLER	PIERCE & LA SIERRA	PROMENADE & MCKINLEY
9	7W	6	5W	4	3	2	1
5:35	5:51	5:55	6:00	6:07	6:20	6:27	6:47
The 5:35 a.m. trip will start service at the first stop on Orange St. north of Columbia Ave. at approximately 5:30 a.m.							
6:33	6:49	6:53	6:56	7:05	7:18	7:25	7:45
7:23	7:40	7:45	7:46	7:59	8:12	8:18	8:38
8:33	8:51	8:56	9:00	9:10	9:24	9:31	9:51
9:31	9:49	9:54	9:58	10:08	10:23	10:31	10:51
10:32	10:50	10:55	10:59	11:09	11:25	11:34	11:54
11:36	11:54	11:59	**12:03**	**12:13**	**12:30**	**12:39**	**12:59**
12:41	**12:59**	**1:04**	**1:08**	**1:18**	**1:35**	**1:44**	**2:04**
1:47	**2:05**	**2:10**	**2:14**	**2:24**	**2:41**	**2:50**	**3:10**
2:50	**3:11**	**3:16**	**3:17**	**3:30**	**3:49**	**3:58**	**4:18**
3:58	**4:17**	**4:22**	**4:25**	**4:36**	**4:53**	**5:02**	**5:22**
5:05	**5:23**	**5:29**	**5:32**	**5:43**	**6:00**	**6:09**	**6:29**
6:09	**6:27**	**6:32**	**6:36**	**6:46**	**7:03**	**7:12**	**7:32**
7:12	**7:29**	**7:34**	**7:37**	**7:47**	**8:02**	**8:10**	**8:30**
8:12	**8:28**	**8:33**	**8:36**	**8:46**	**9:01**	**9:09**	**9:29**

12 EASTBOUND TO LA CADENA & INTERCHANGE | WEEKENDS

A.M. times are in PLAIN, P.M. times are in BOLD | Times are approximate
* Trip will end service at Primer & Columbia bus stop.

PROMENADE & MCKINLEY	PIERCE & LA SIERRA	GALLERIA AT TYLER	ARLINGTON & STREETER	JURUPA & MAGNOLIA	OLIVEWOOD & RCC	UNIVERSITY & MARKET	LA CADENA & INTERCHANGE
1	2	3	4	5E	6	7E	9
6:27	6:41	6:48	7:01	7:10	7:14	7:24	7:43
7:24	7:38	7:45	7:58	8:07	8:11	8:21	8:40
8:17	8:31	8:38	8:52	9:02	9:06	9:16	9:35
9:18	9:32	9:39	9:53	10:06	10:10	10:20	10:39
10:20	10:35	10:43	10:57	11:07	11:11	11:21	11:42
11:20	11:35	11:43	11:57	**12:07**	**12:11**	**12:21**	**12:42**
12:22	**12:37**	**12:46**	**1:02**	**1:16**	**1:20**	**1:30**	**1:51**
1:25	**1:40**	**1:49**	**2:05**	**2:19**	**2:23**	**2:33**	**2:54**
2:28	**2:43**	**2:52**	**3:08**	**3:19**	**3:23**	**3:33**	**3:54**
3:32	**3:47**	**3:56**	**4:12**	**4:23**	**4:27**	**4:37**	**4:58**
4:35	**4:50**	**4:59**	**5:15**	**5:26**	**5:30**	**5:40**	**6:01**
5:36	**5:51**	**5:59**	**6:15**	**6:26**	**6:30**	**6:40**	**7:01**
6:40	**6:55**	**7:03**	**7:19**	**7:28**	**7:32**	**7:42**	**8:03***

12 WESTBOUND TO CORONA HILLS PLAZA | WEEKENDS

A.M. times are in PLAIN, P.M. times are in BOLD | Times are approximate

LA CADENA & INTERCHANGE	ORANGE & 10TH	OLIVEWOOD & RCC	JURUPA & BROCKTON	ARLINGTON & STREETER	GALLERIA AT TYLER	PIERCE & LA SIERRA	PROMENADE & MCKINLEY
9	7W	6	5W	4	3	2	1
6:49	7:02	7:07	7:14	7:19	7:34	7:40	7:57
The 6:49 a.m. trip will start service at the first stop on Orange St. north of Columbia Ave. at approximately 6:40 a.m.							
7:53	8:08	8:13	8:17	8:27	8:42	8:49	9:06
8:50	9:10	9:15	9:19	9:29	9:46	9:53	10:10
9:50	10:10	10:15	10:19	10:29	10:46	10:53	11:10
10:49	11:08	11:13	11:17	11:29	11:47	11:54	**12:12**
11:52	**12:11**	**12:16**	**12:20**	**12:32**	**12:50**	**12:57**	**1:15**
12:52	**1:11**	**1:16**	**1:20**	**1:32**	**1:53**	**2:00**	**2:18**
2:01	**2:18**	**2:23**	**2:27**	**2:39**	**2:57**	**3:04**	**3:22**
3:04	**3:21**	**3:26**	**3:30**	**3:42**	**4:00**	**4:07**	**4:25**
4:04	**4:21**	**4:26**	**4:30**	**4:42**	**5:00**	**5:08**	**5:26**
5:08	**5:25**	**5:30**	**5:34**	**5:46**	**6:04**	**6:12**	**6:30**
6:11	**6:28**	**6:33**	**6:37**	**6:49**	**7:07**	**7:15**	**7:33**
7:11	**7:26**	**7:31**	**7:35**	**7:47**	**8:02**	**8:10**	**8:28**

Appendix F - LOS Calculation Worksheets – Existing Conditions

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	393	402	20	31	20
Future Vol, veh/h	27	393	402	20	31	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	32	462	473	24	36	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	497	0	-	0	780	249
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	295	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	1056	-	-	-	330	748
Stage 1	-	-	-	-	582	-
Stage 2	-	-	-	-	727	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1056	-	-	-	320	748
Mov Cap-2 Maneuver	-	-	-	-	432	-
Stage 1	-	-	-	-	565	-
Stage 2	-	-	-	-	727	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1056	-	-	-	518
HCM Lane V/C Ratio	0.03	-	-	-	0.116
HCM Control Delay (s)	8.5	-	-	-	12.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	382	0	5	390	15	5	0	11	46	1	58
Future Volume (veh/h)	39	382	0	5	390	15	5	0	11	46	1	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	48	472	0	6	481	19	6	0	14	57	1	72
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	131	1112	0	20	874	34	17	0	40	106	2	134
Arrive On Green	0.07	0.32	0.00	0.01	0.25	0.25	0.04	0.00	0.04	0.15	0.15	0.15
Sat Flow, veh/h	1767	3618	0	1767	3453	136	487	0	1136	724	13	915
Grp Volume(v), veh/h	48	472	0	6	245	255	20	0	0	130	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1767	1763	1827	1623	0	0	1651	0	0
Q Serve(g_s), s	0.9	3.9	0.0	0.1	4.4	4.4	0.4	0.0	0.0	2.7	0.0	0.0
Cycle Q Clear(g_c), s	0.9	3.9	0.0	0.1	4.4	4.4	0.4	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.07	0.30		0.70	0.44		0.55
Lane Grp Cap(c), veh/h	131	1112	0	20	446	462	57	0	0	241	0	0
V/C Ratio(X)	0.37	0.42	0.00	0.30	0.55	0.55	0.35	0.00	0.00	0.54	0.00	0.00
Avail Cap(c_a), veh/h	531	2794	0	531	1397	1447	975	0	0	1354	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.1	9.9	0.0	17.9	11.9	11.9	17.2	0.0	0.0	14.5	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.3	0.0	8.1	1.1	1.0	3.6	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.0	0.0	0.1	1.3	1.4	0.2	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	10.2	0.0	26.1	12.9	12.9	20.9	0.0	0.0	16.3	0.0	0.0
LnGrp LOS	B	B	A	C	B	B	C	A	A	B	A	A
Approach Vol, veh/h		520			506			20			130	
Approach Delay, s/veh		10.9			13.1			20.9			16.3	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	16.0		5.8	7.2	13.8		9.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.0	29.0		22.0	11.0	29.0		30.0
Max Q Clear Time (g_c+I1), s	2.1	5.9		2.4	2.9	6.4		4.7
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	2.7		0.8

Intersection Summary		
HCM 6th Ctrl Delay		12.6
HCM 6th LOS		B

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	28	0	3	4	22	24	8	54	1
Future Vol, veh/h	0	0	0	28	0	3	4	22	24	8	54	1
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	56	0	6	8	44	48	16	108	2
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	0	8.6	7.5	8
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	8%	0%	100%	0%	13%
Vol Thru, %	44%	100%	0%	0%	86%
Vol Right, %	48%	0%	0%	100%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	0	28	3	63
LT Vol	4	0	28	0	8
Through Vol	22	0	0	0	54
RT Vol	24	0	0	3	1
Lane Flow Rate	100	0	56	6	126
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.111	0	0.086	0.007	0.145
Departure Headway (Hd)	3.983	4.627	5.545	4.34	4.15
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	905	0	650	830	850
Service Time	1.985	2.634	3.245	2.04	2.244
HCM Lane V/C Ratio	0.11	0	0.086	0.007	0.148
HCM Control Delay	7.5	7.6	8.8	7.1	8
HCM Lane LOS	A	N	A	A	A
HCM 95th-tile Q	0.4	0	0.3	0	0.5

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	47	0	0	51
Future Vol, veh/h	0	0	47	0	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	51	0	0	55

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	106	51	0	0	51	0
Stage 1	51	-	-	-	-	-
Stage 2	55	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	889	1014	-	-	1549	-
Stage 1	969	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	889	1014	-	-	1549	-
Mov Cap-2 Maneuver	889	-	-	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	965	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1549	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	515	571	17	17	17
Future Vol, veh/h	42	515	571	17	17	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	49	606	672	20	20	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	692	0	-	0	1083	346
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	401	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	892	-	-	-	210	647
Stage 1	-	-	-	-	461	-
Stage 2	-	-	-	-	642	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	892	-	-	-	198	647
Mov Cap-2 Maneuver	-	-	-	-	322	-
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	642	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	892	-	-	-	430
HCM Lane V/C Ratio	0.055	-	-	-	0.093
HCM Control Delay (s)	9.3	-	-	-	14.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	500	8	4	599	34	5	6	7	35	10	30
Future Volume (veh/h)	44	500	8	4	599	34	5	6	7	35	10	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	50	568	9	5	681	39	6	7	8	40	11	34
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	132	1388	22	17	1101	63	18	21	24	89	25	76
Arrive On Green	0.07	0.39	0.39	0.01	0.33	0.33	0.04	0.04	0.04	0.11	0.11	0.11
Sat Flow, veh/h	1767	3552	56	1767	3383	194	486	568	649	791	218	673
Grp Volume(v), veh/h	50	282	295	5	355	365	21	0	0	85	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1845	1767	1763	1814	1702	0	0	1681	0	0
Q Serve(g_s), s	1.1	4.6	4.6	0.1	6.8	6.8	0.5	0.0	0.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	1.1	4.6	4.6	0.1	6.8	6.8	0.5	0.0	0.0	1.9	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.11	0.29		0.38	0.47		0.40
Lane Grp Cap(c), veh/h	132	689	721	17	574	590	62	0	0	190	0	0
V/C Ratio(X)	0.38	0.41	0.41	0.30	0.62	0.62	0.34	0.00	0.00	0.45	0.00	0.00
Avail Cap(c_a), veh/h	486	1279	1339	486	1279	1316	937	0	0	1262	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.6	8.8	8.8	19.7	11.4	11.4	18.8	0.0	0.0	16.6	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.4	0.4	9.6	1.1	1.1	3.2	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.2	1.3	0.1	2.0	2.1	0.2	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	9.2	9.2	29.3	12.5	12.4	22.0	0.0	0.0	18.2	0.0	0.0
LnGrp LOS	B	A	A	C	B	B	C	A	A	B	A	A
Approach Vol, veh/h		627			725			21			85	
Approach Delay, s/veh		10.0			12.6			22.0			18.2	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	20.1		6.0	7.5	17.5		9.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.0	29.0		22.0	11.0	29.0		30.0
Max Q Clear Time (g_c+I1), s	2.1	6.6		2.5	3.1	8.8		3.9
Green Ext Time (p_c), s	0.0	3.2		0.0	0.0	4.1		0.4

Intersection Summary	
HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	20	0	8	14	36	26	4	45	0
Future Vol, veh/h	0	0	0	20	0	8	14	36	26	4	45	0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	30	0	12	21	54	39	6	67	0
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	0	8	7.5	7.6
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	18%	0%	100%	0%	8%
Vol Thru, %	47%	100%	0%	0%	92%
Vol Right, %	34%	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	76	0	20	8	49
LT Vol	14	0	20	0	4
Through Vol	36	0	0	0	45
RT Vol	26	0	0	8	0
Lane Flow Rate	113	0	30	12	73
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.123	0	0.045	0.014	0.084
Departure Headway (Hd)	3.911	4.408	5.374	4.171	4.127
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	909	0	661	848	861
Service Time	1.968	2.507	3.152	1.948	2.187
HCM Lane V/C Ratio	0.124	0	0.045	0.014	0.085
HCM Control Delay	7.5	7.5	8.4	7	7.6
HCM Lane LOS	A	N	A	A	A
HCM 95th-tile Q	0.4	0	0.1	0	0.3

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	59	0	0	34
Future Vol, veh/h	0	0	59	0	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	64	0	0	37

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	101	64	0	0	64	0
Stage 1	64	-	-	-	-	-
Stage 2	37	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	895	998	-	-	1532	-
Stage 1	956	-	-	-	-	-
Stage 2	983	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	895	998	-	-	1532	-
Mov Cap-2 Maneuver	895	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	983	-	-	-	-	-

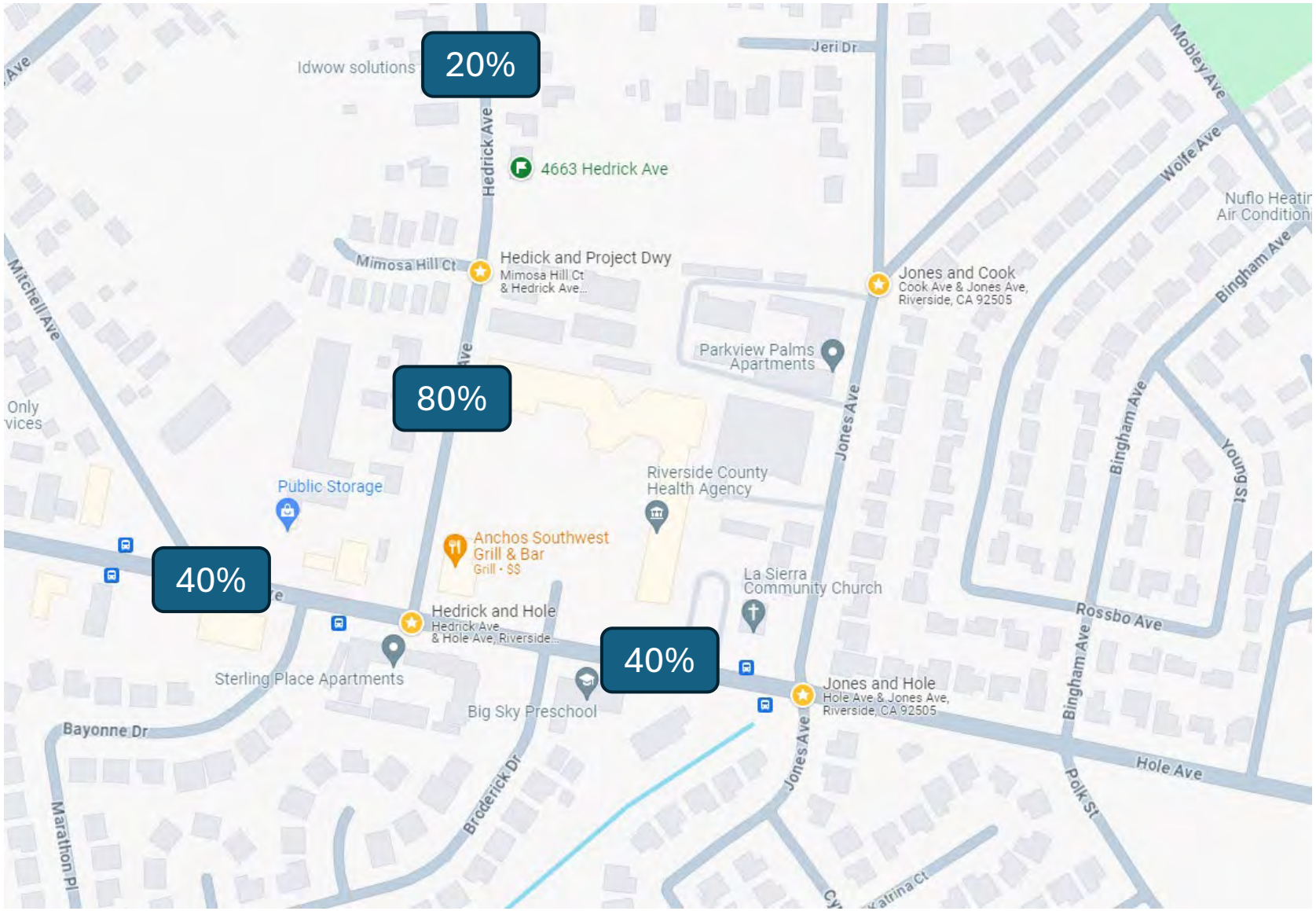
Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1532	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

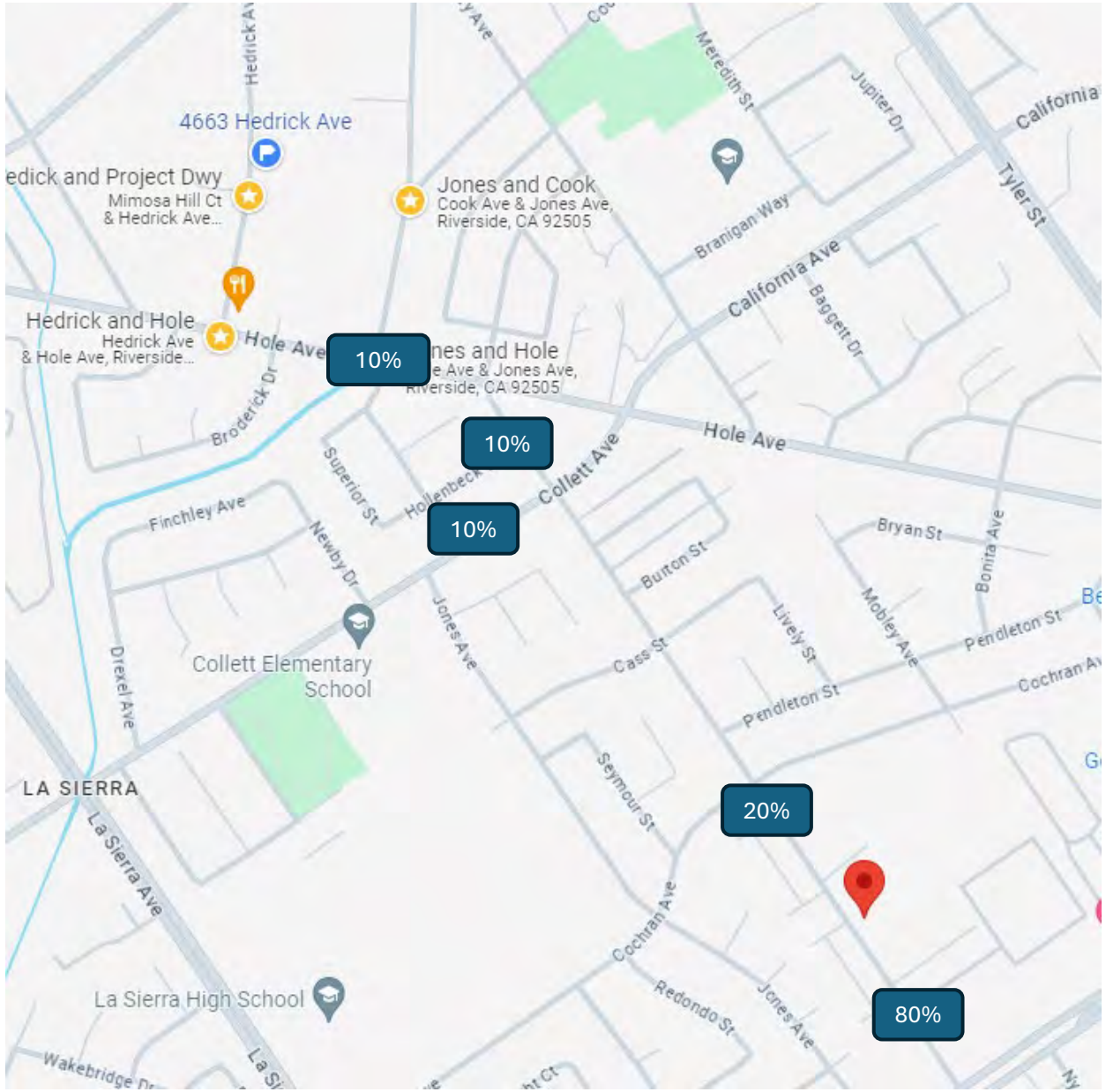
Appendix G - 2045 Cumulative Projects Information

Mikasa Trip Distribution Graphics

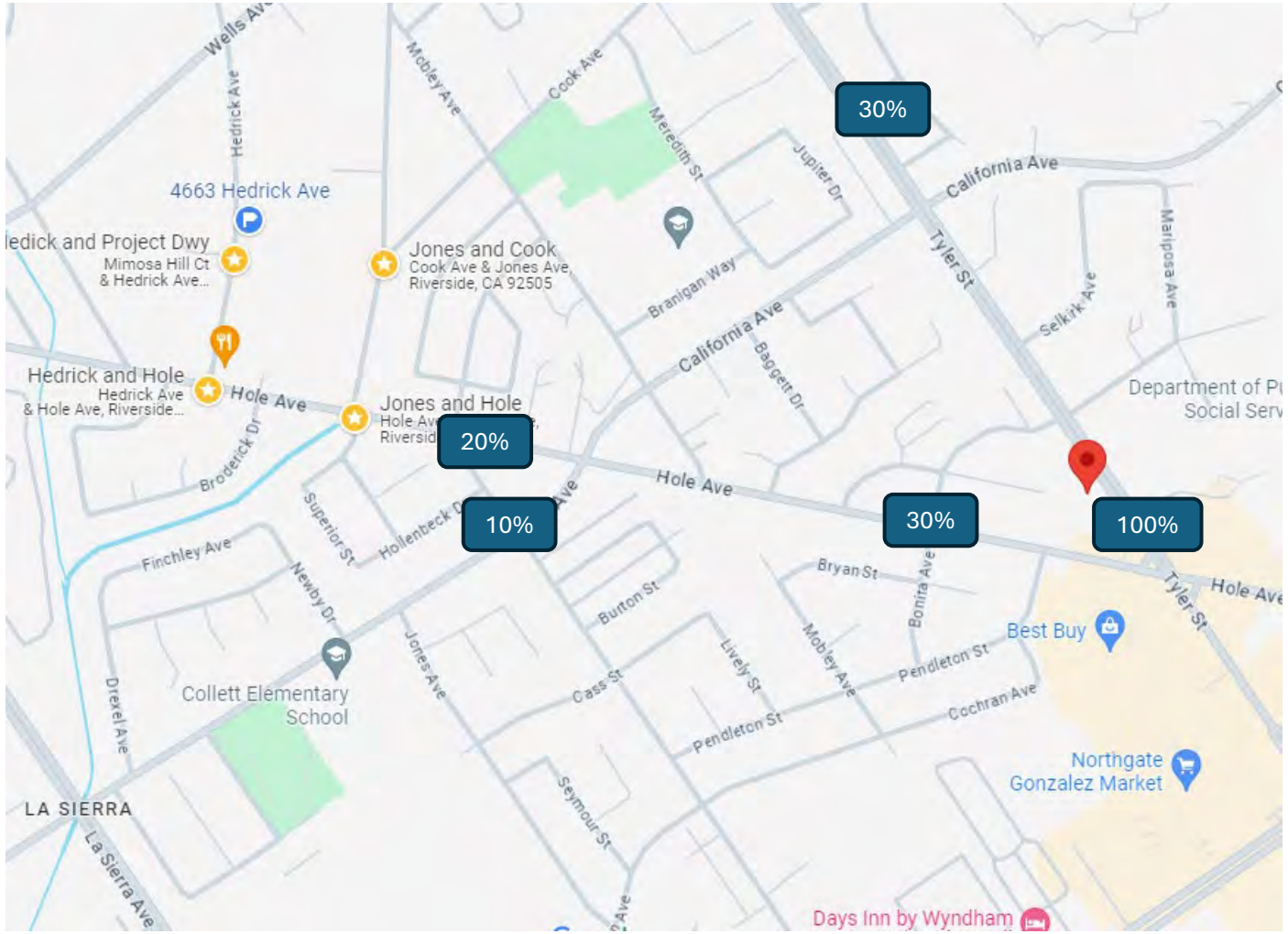
4663 Hedrick Ave -



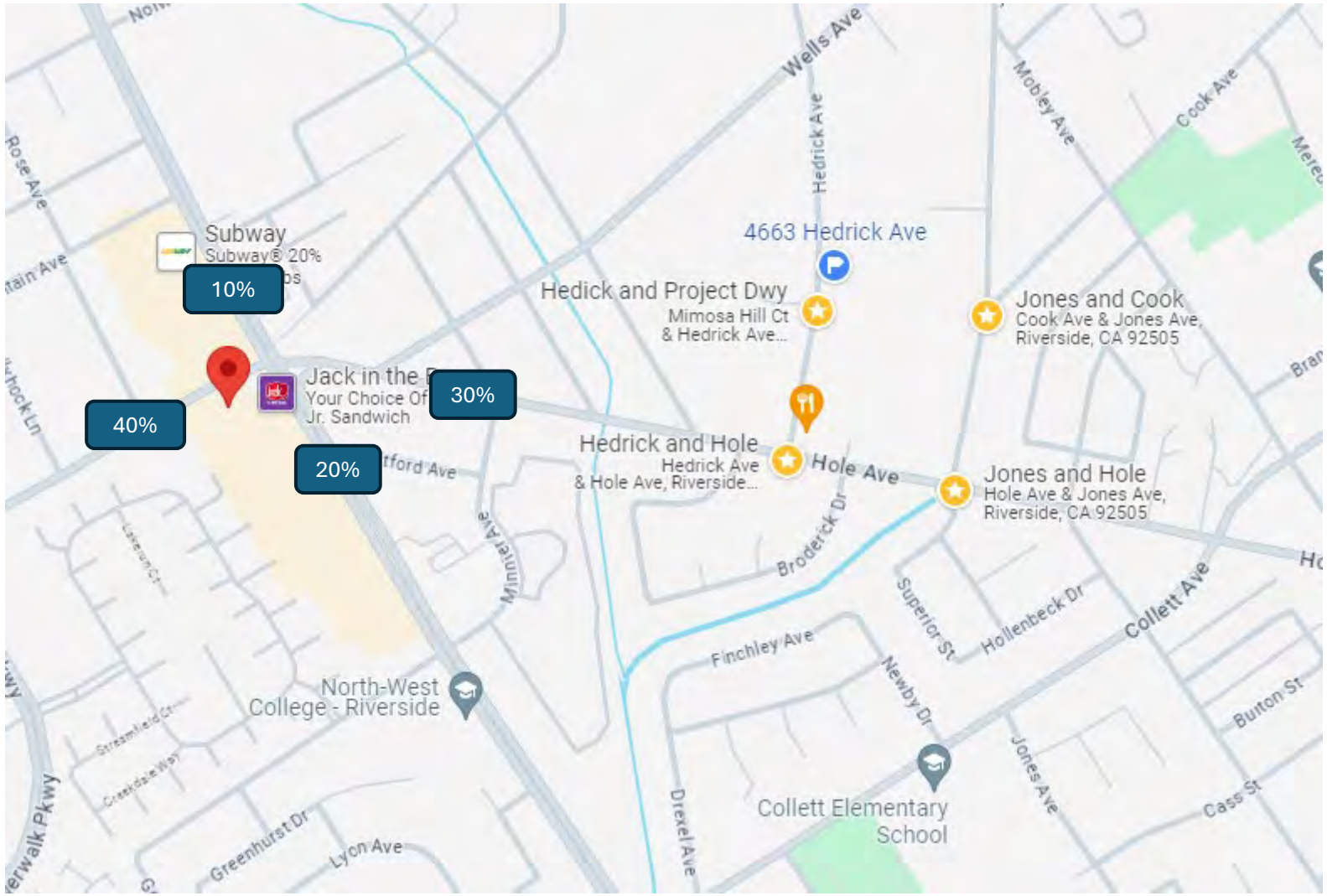
3907 Polk Street



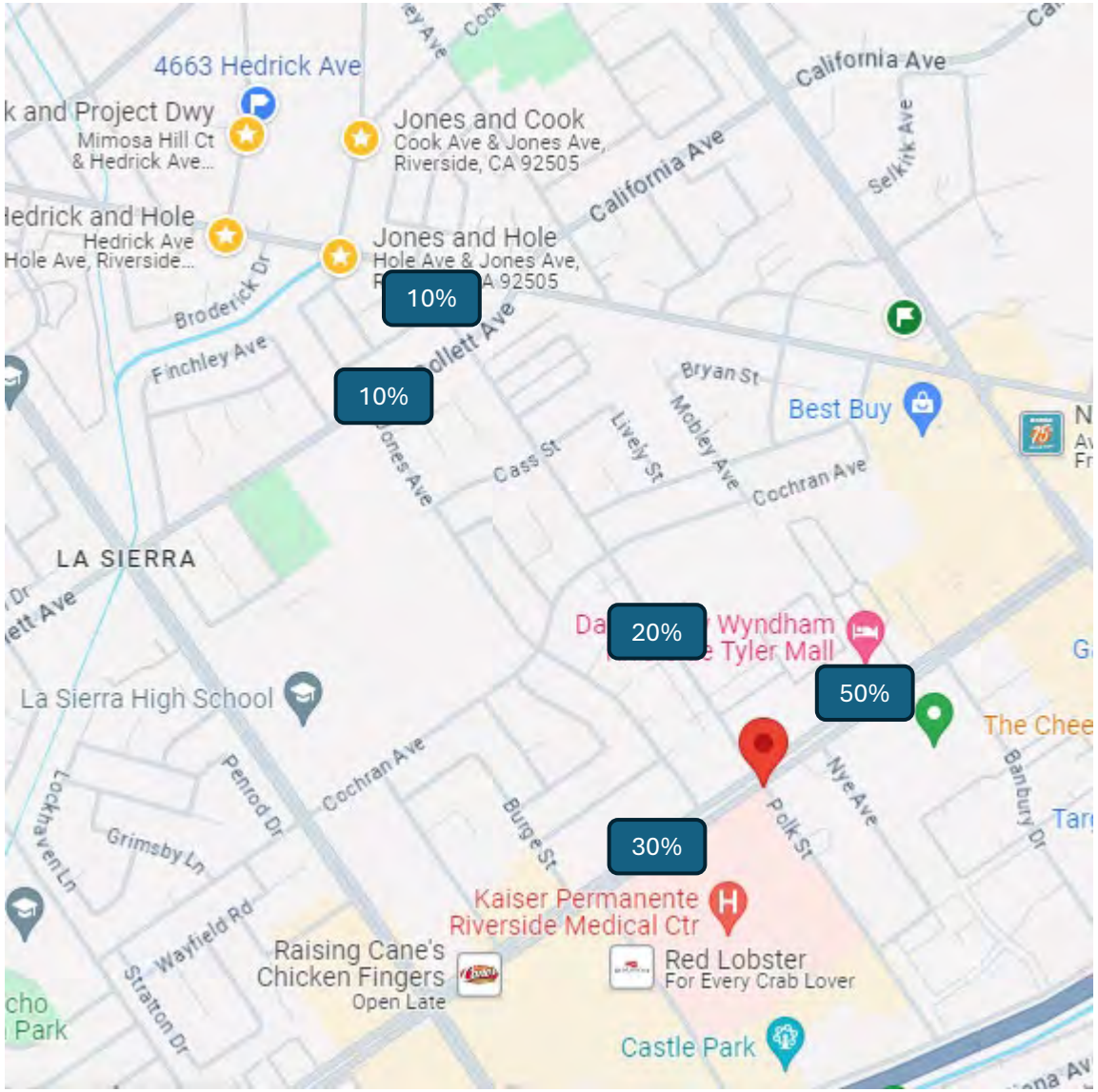
4046 Tyler Street



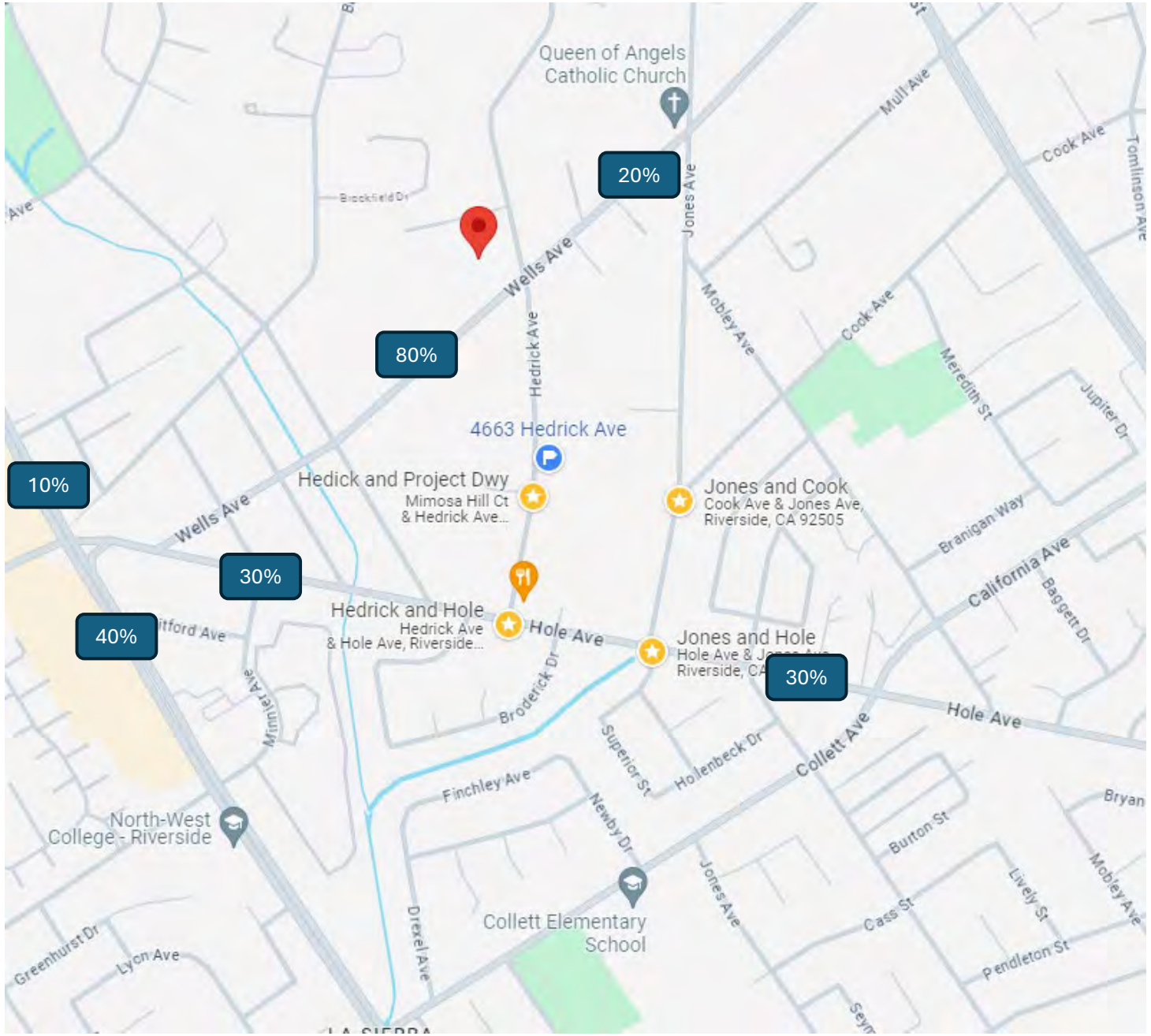
11124 Pierce Street



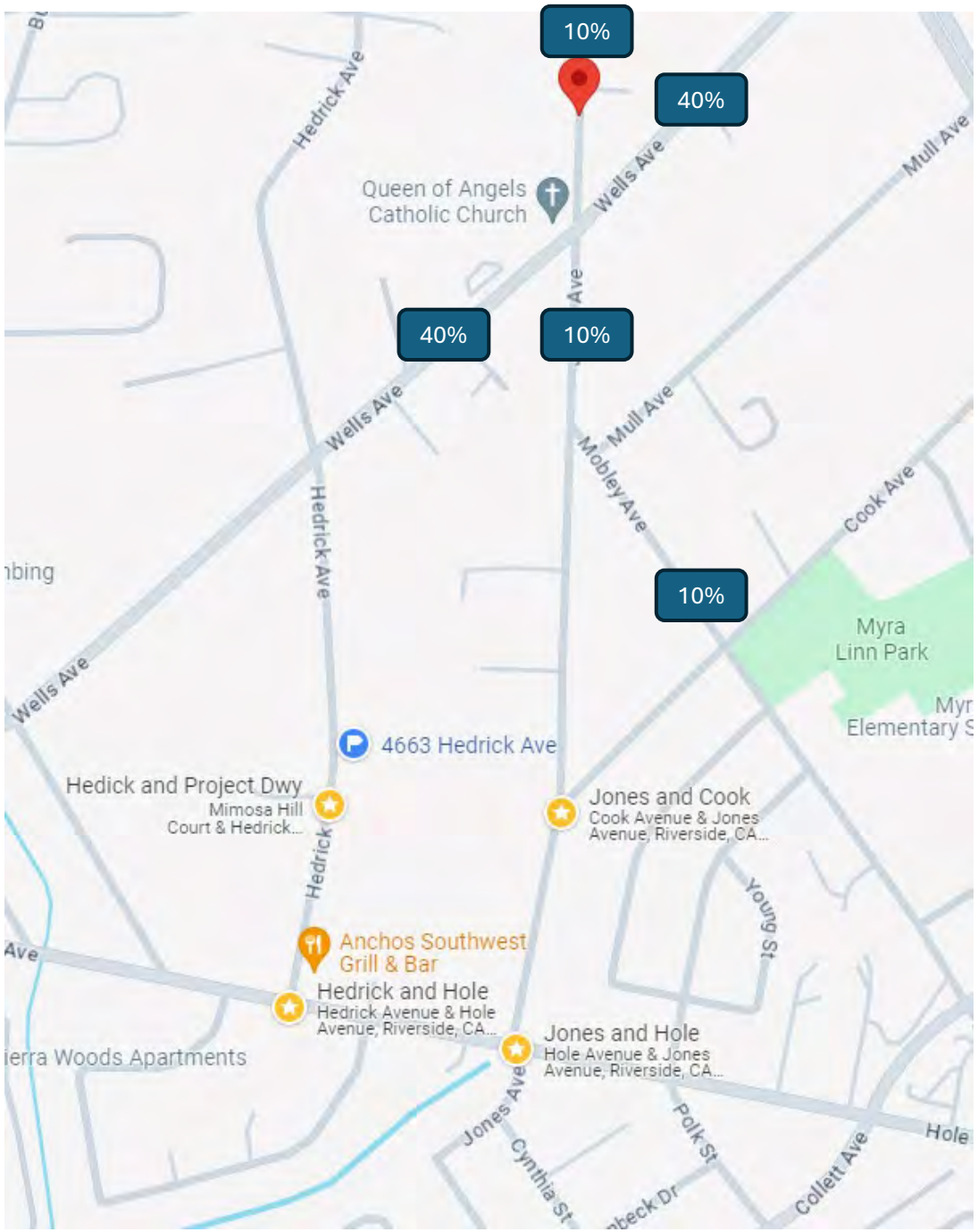
10660 Magnolia Ave



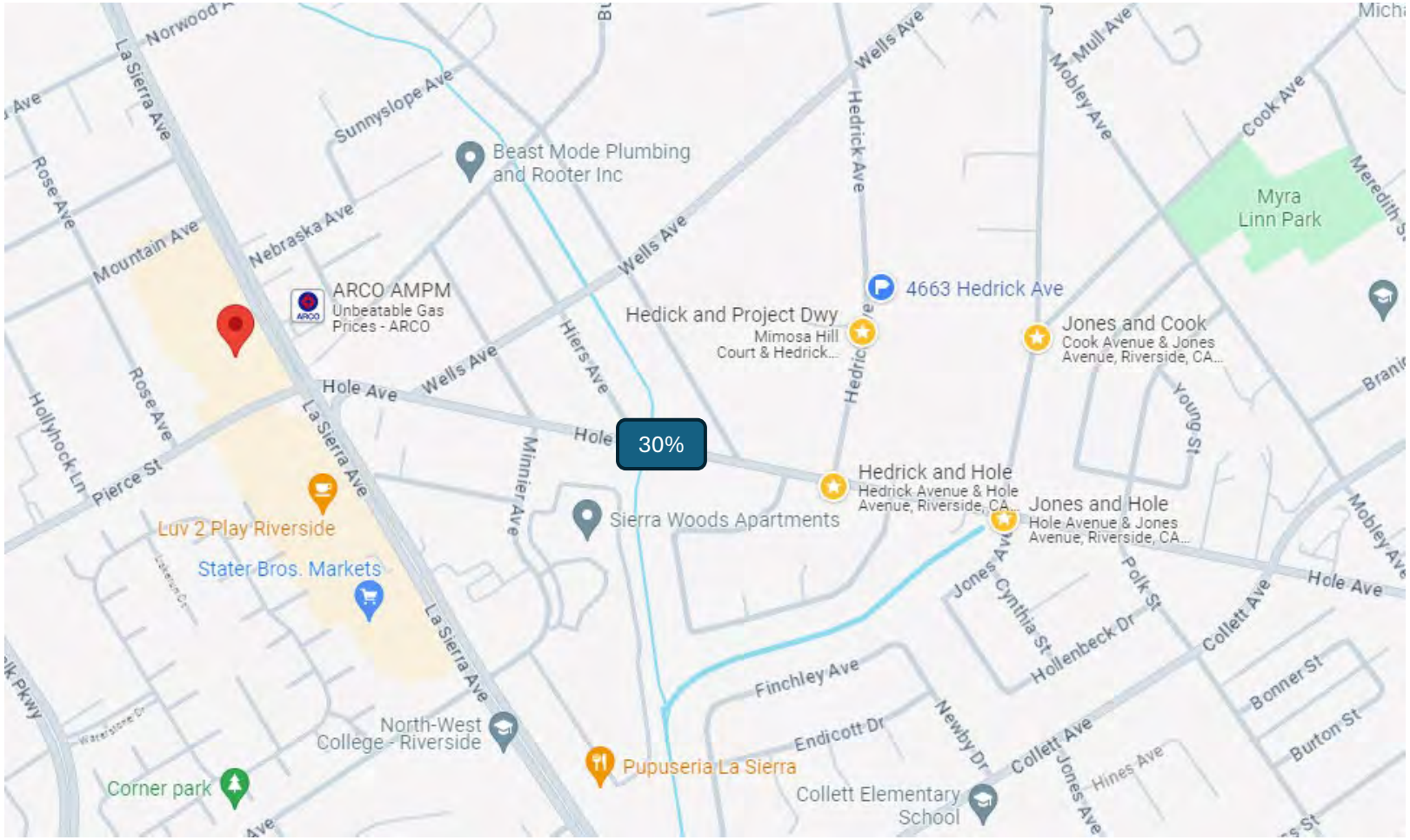
Wells Ave and Hedrick Ave



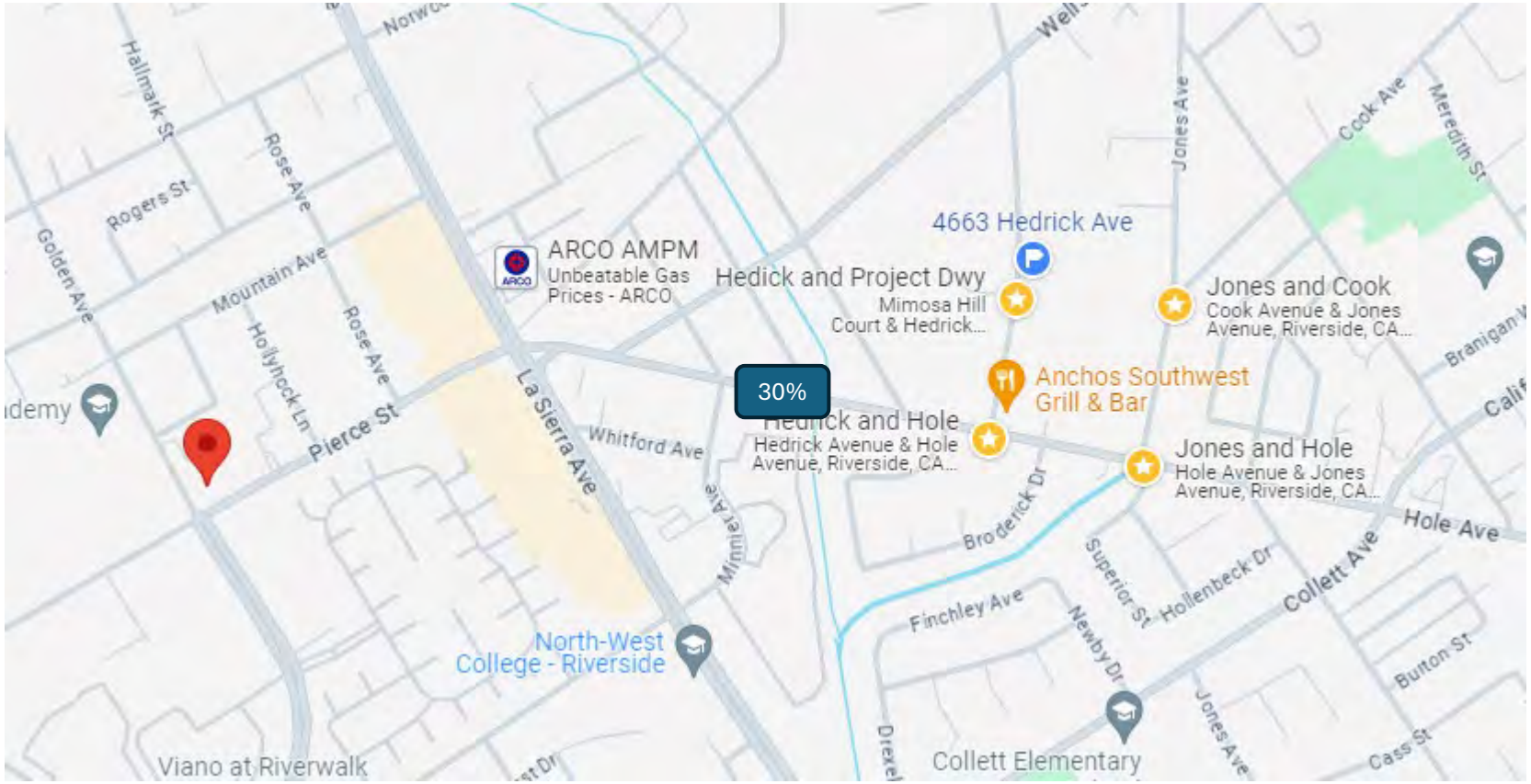
4824 Jones Ave



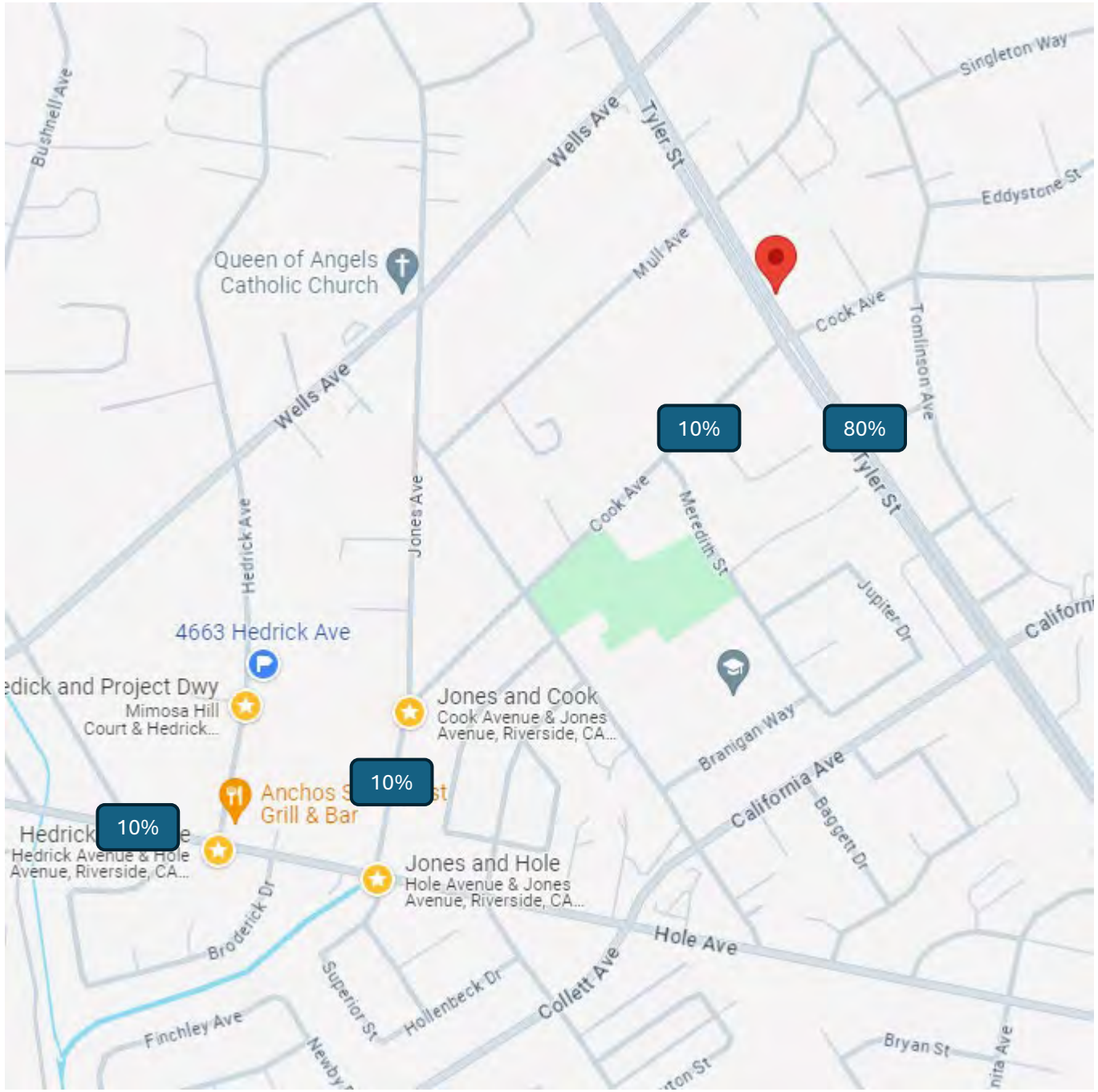
4920-4980 La Sierra Ave



11253 Pierce St

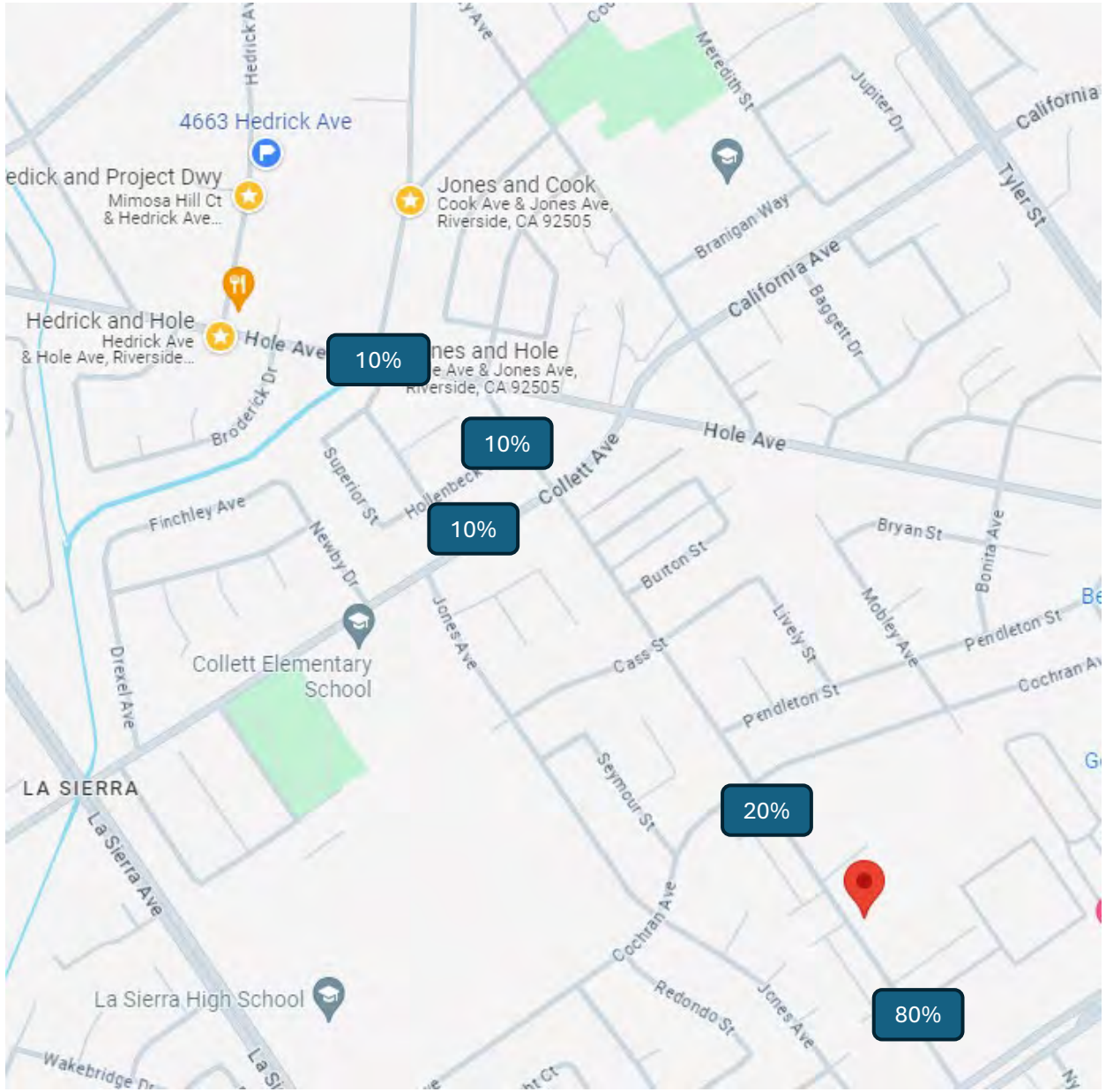


4631 Tyler St

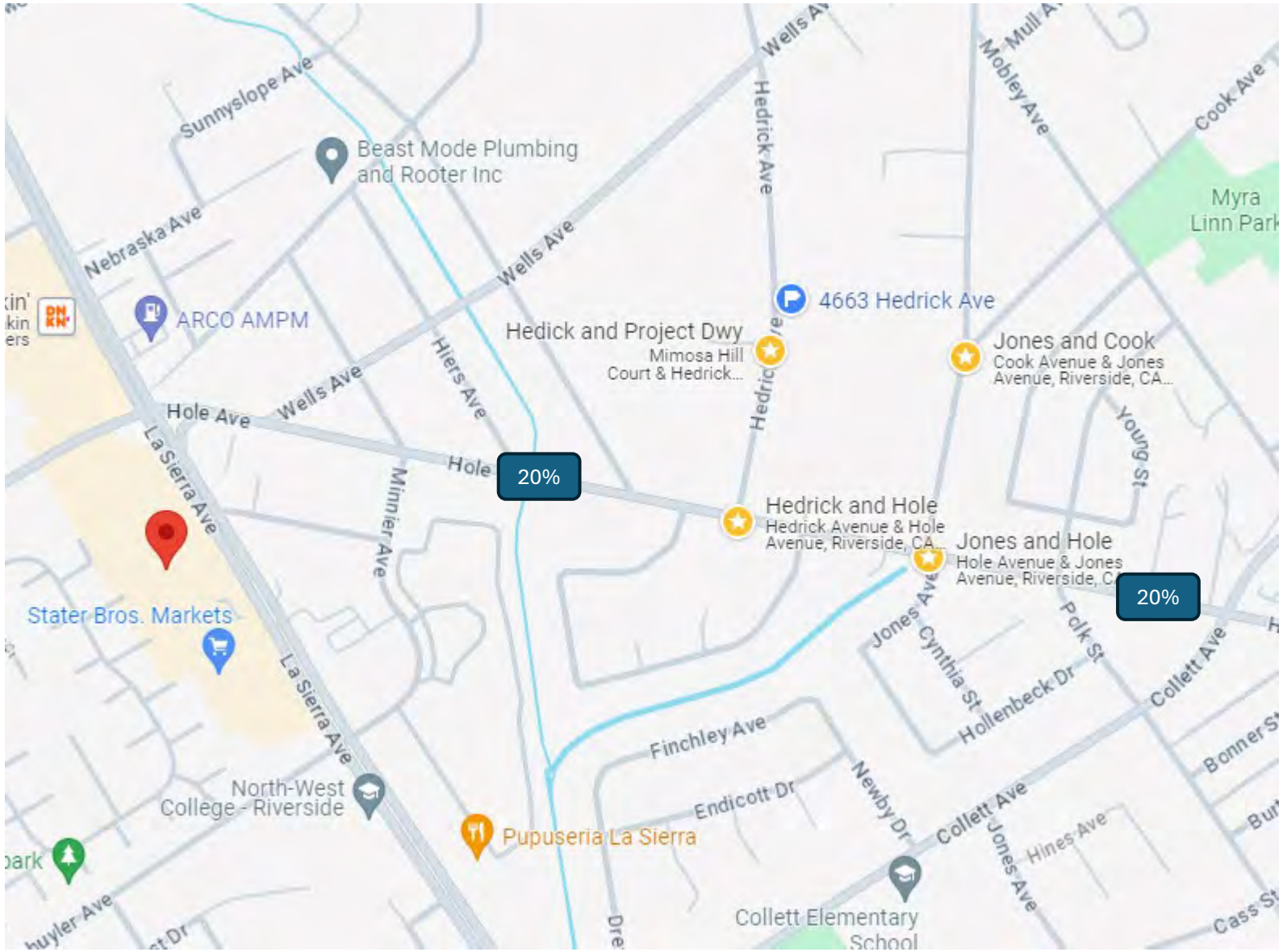


10750 Cochran Ave – No Trips

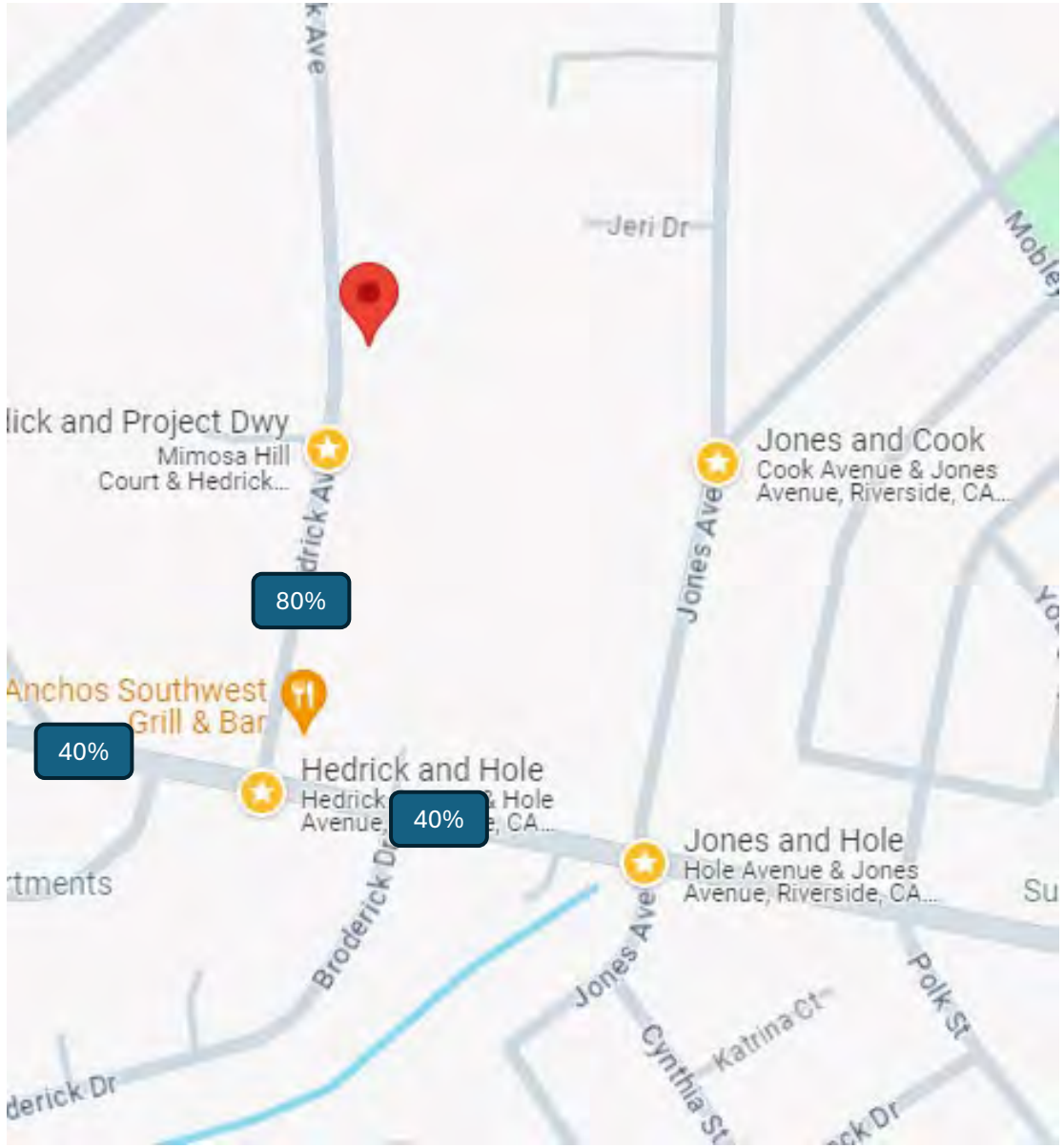
3907 Polk St
(57 DU Development)



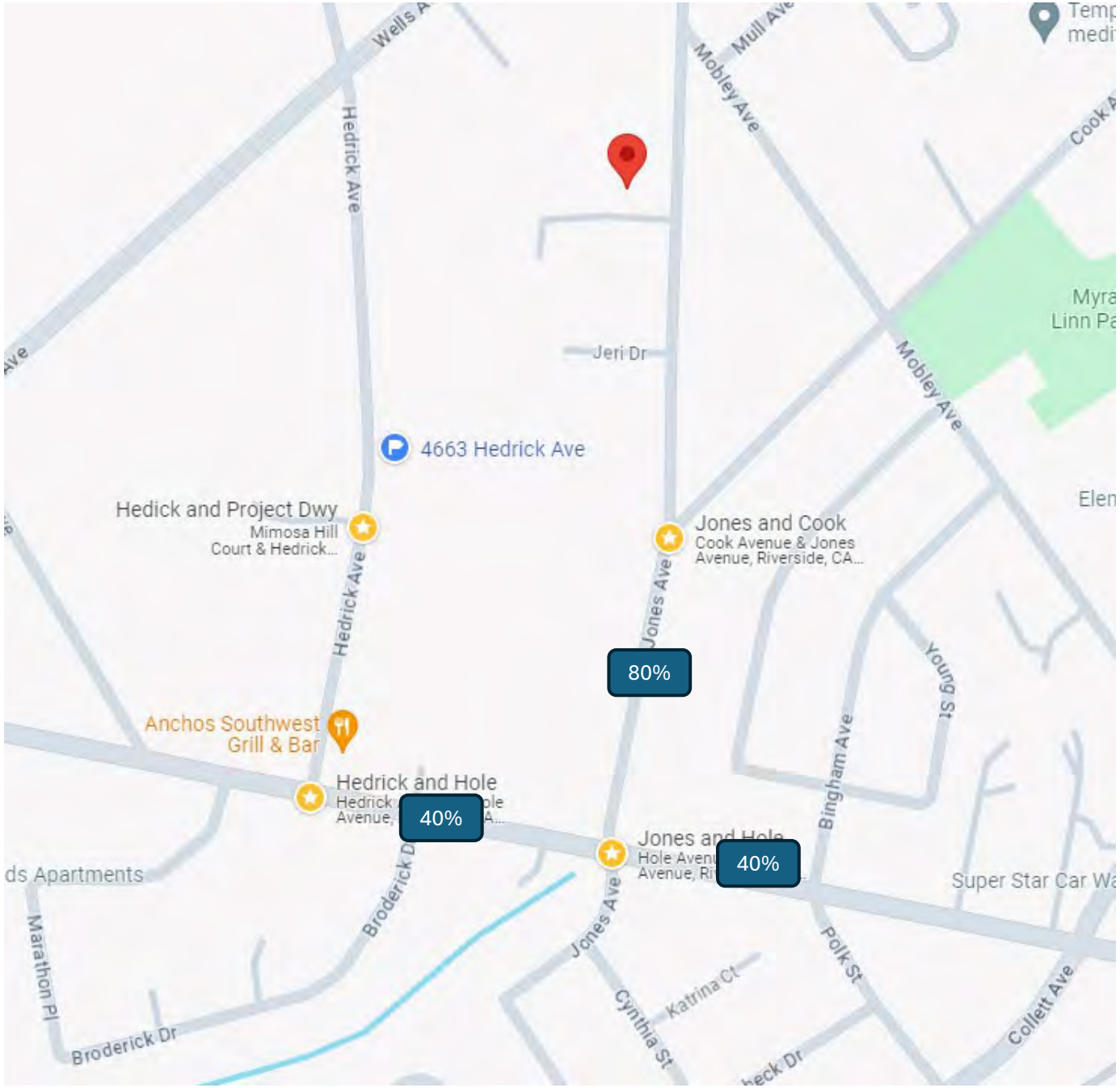
4790 La Sierra



4663 Hedrick Ave (90 Unit Project)

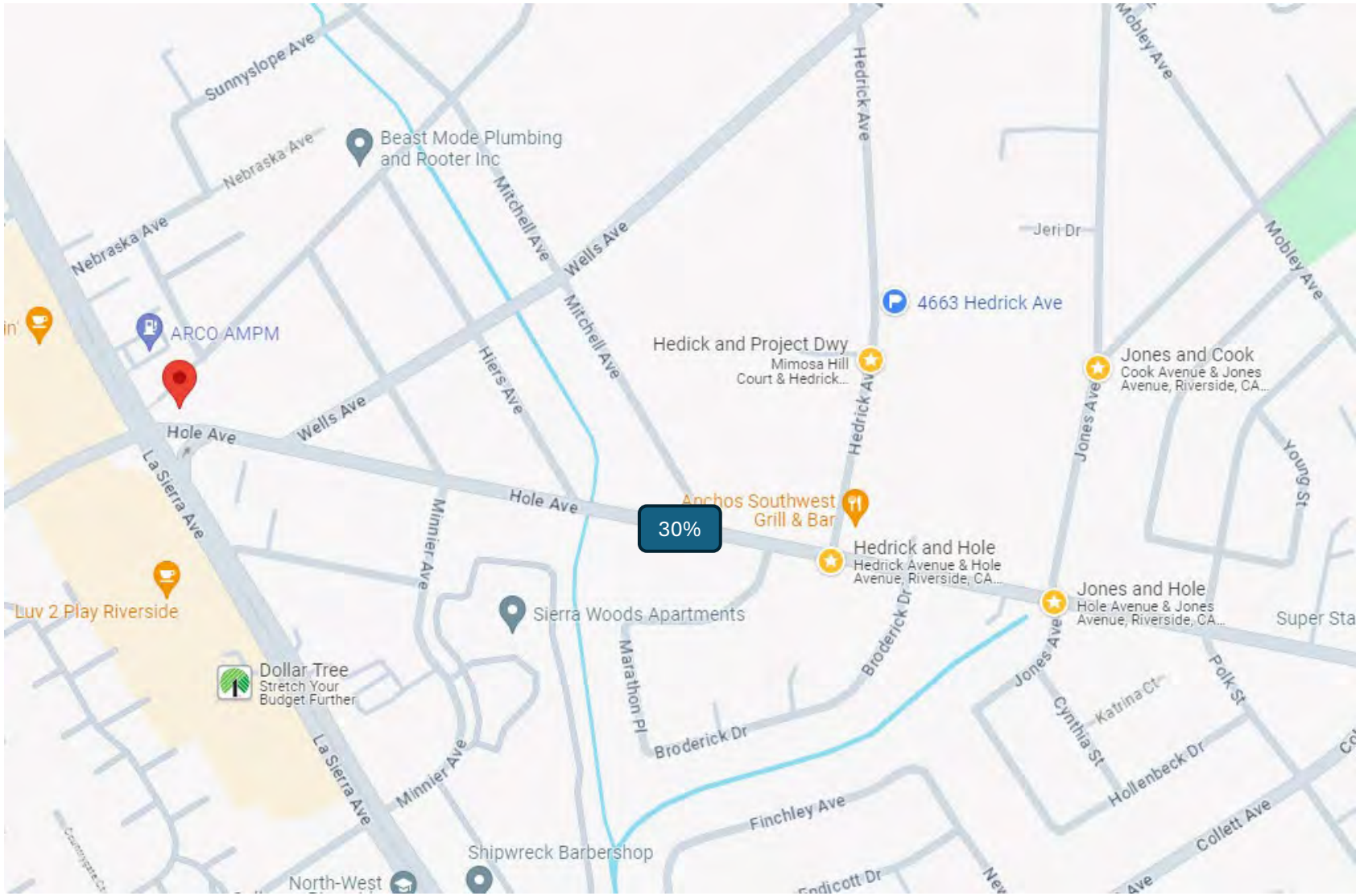


4698 Jones Ave

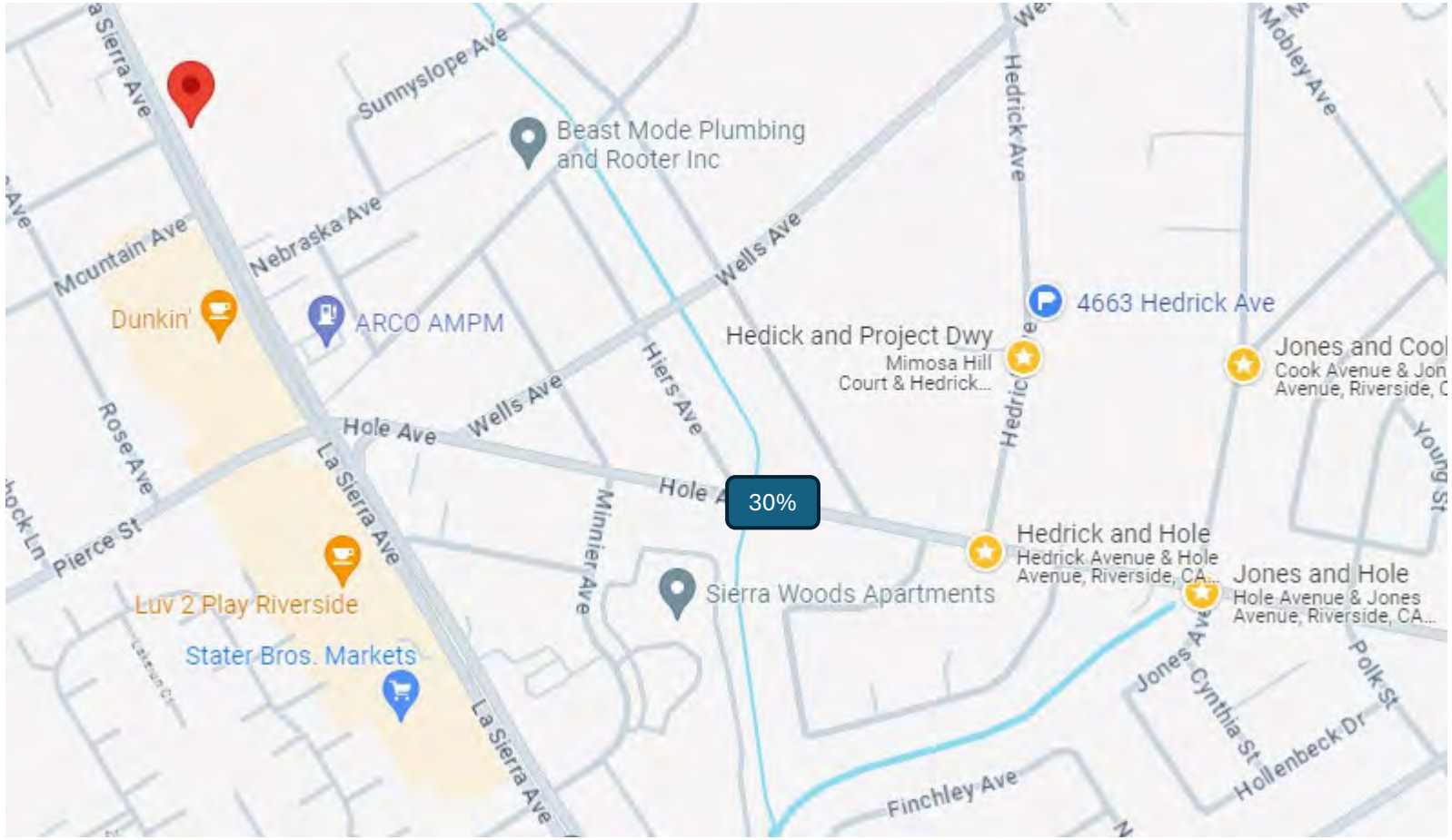


11159 Doverwood Dr (no trips)

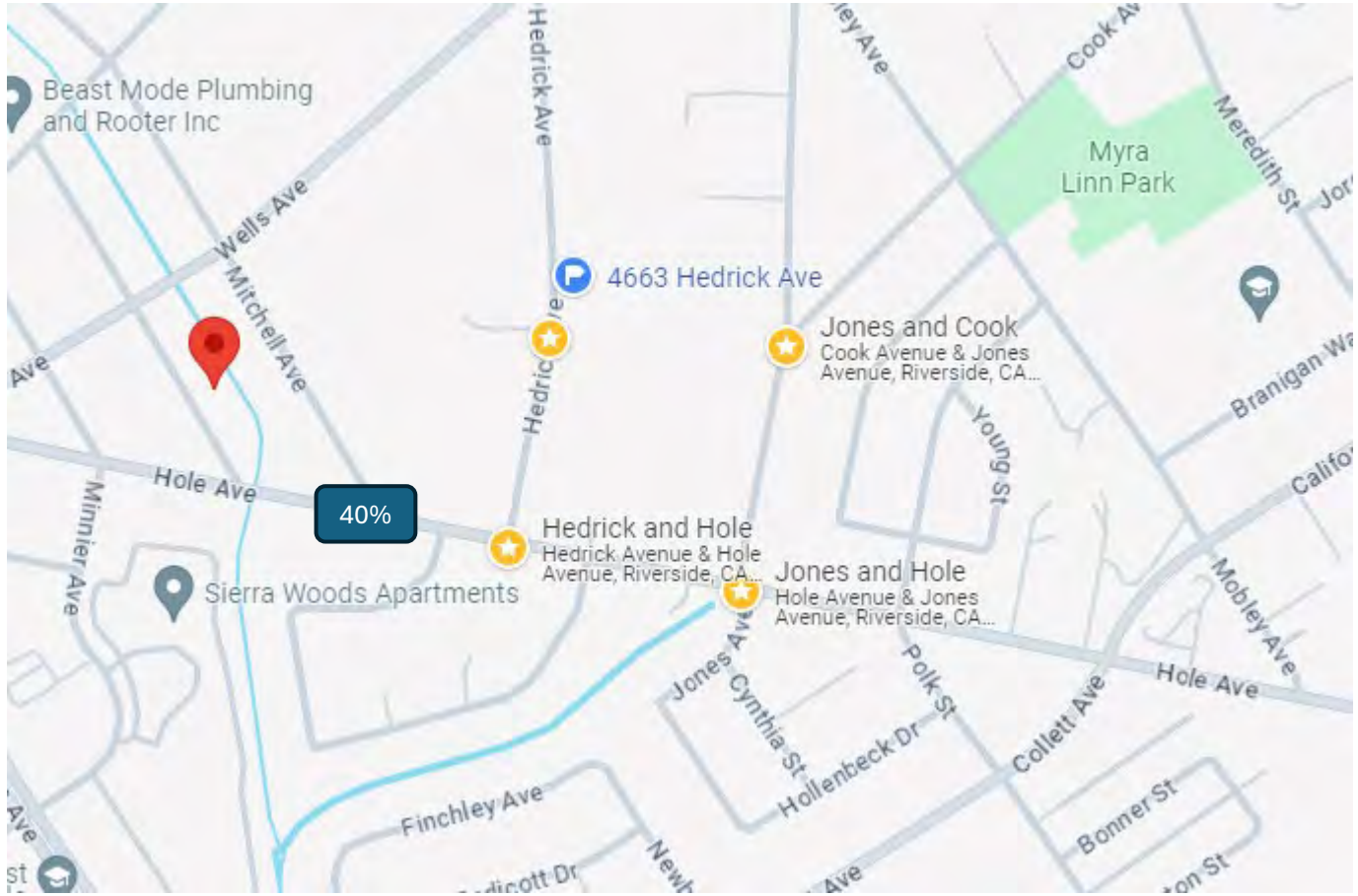
11099 Hole Ave



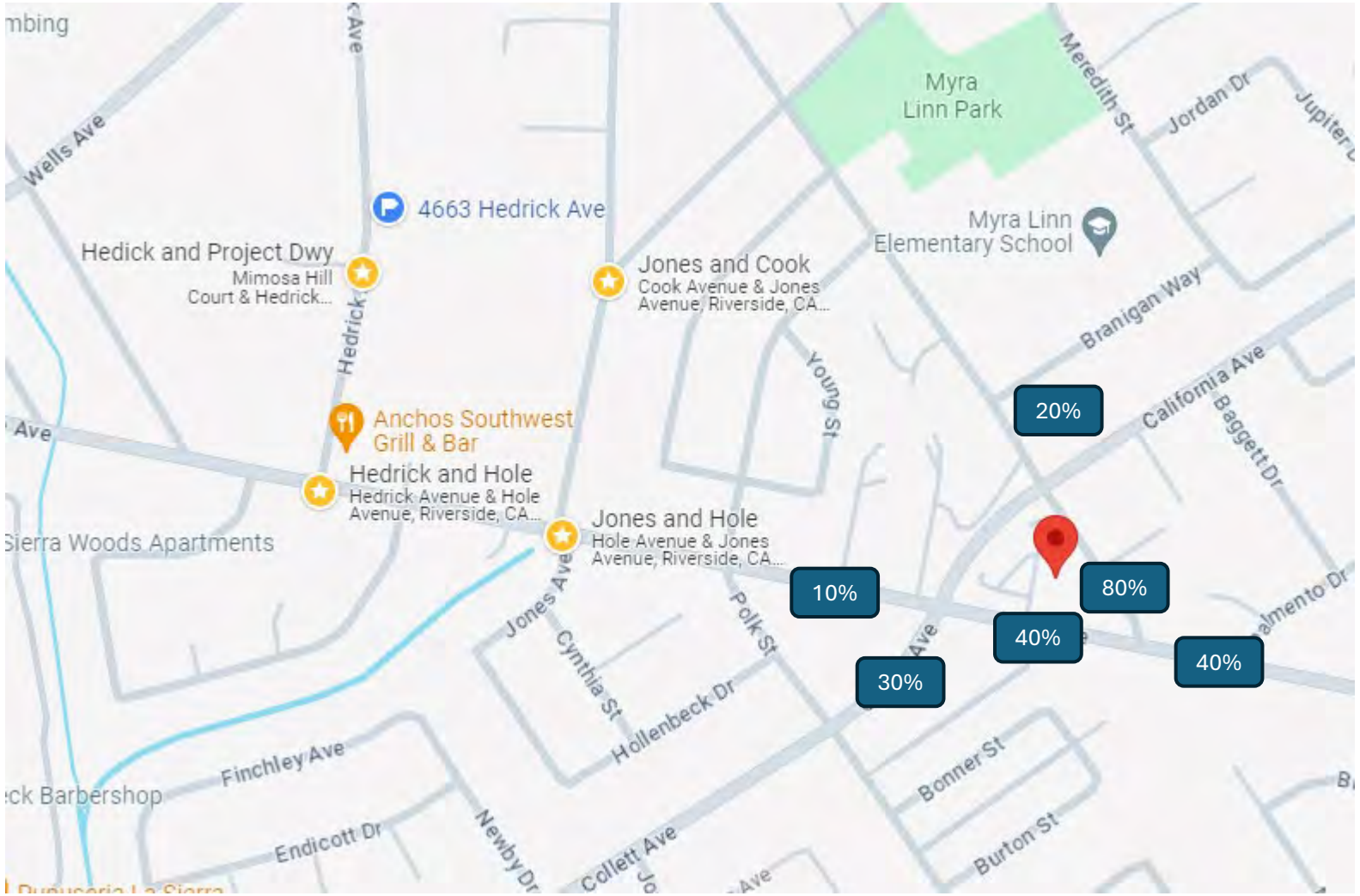
5033 La Sierra Avenue



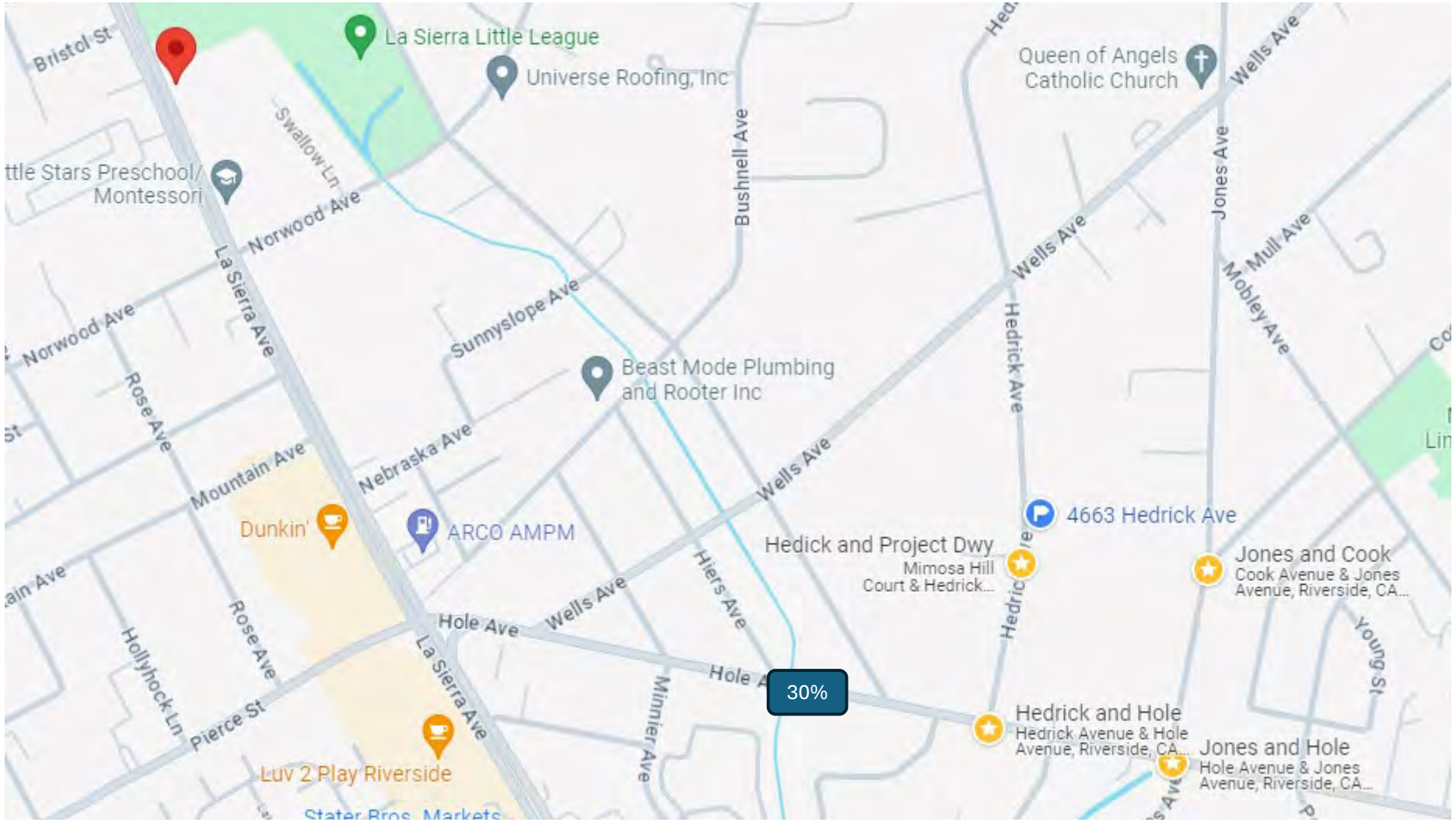
4745 Hiers Ave



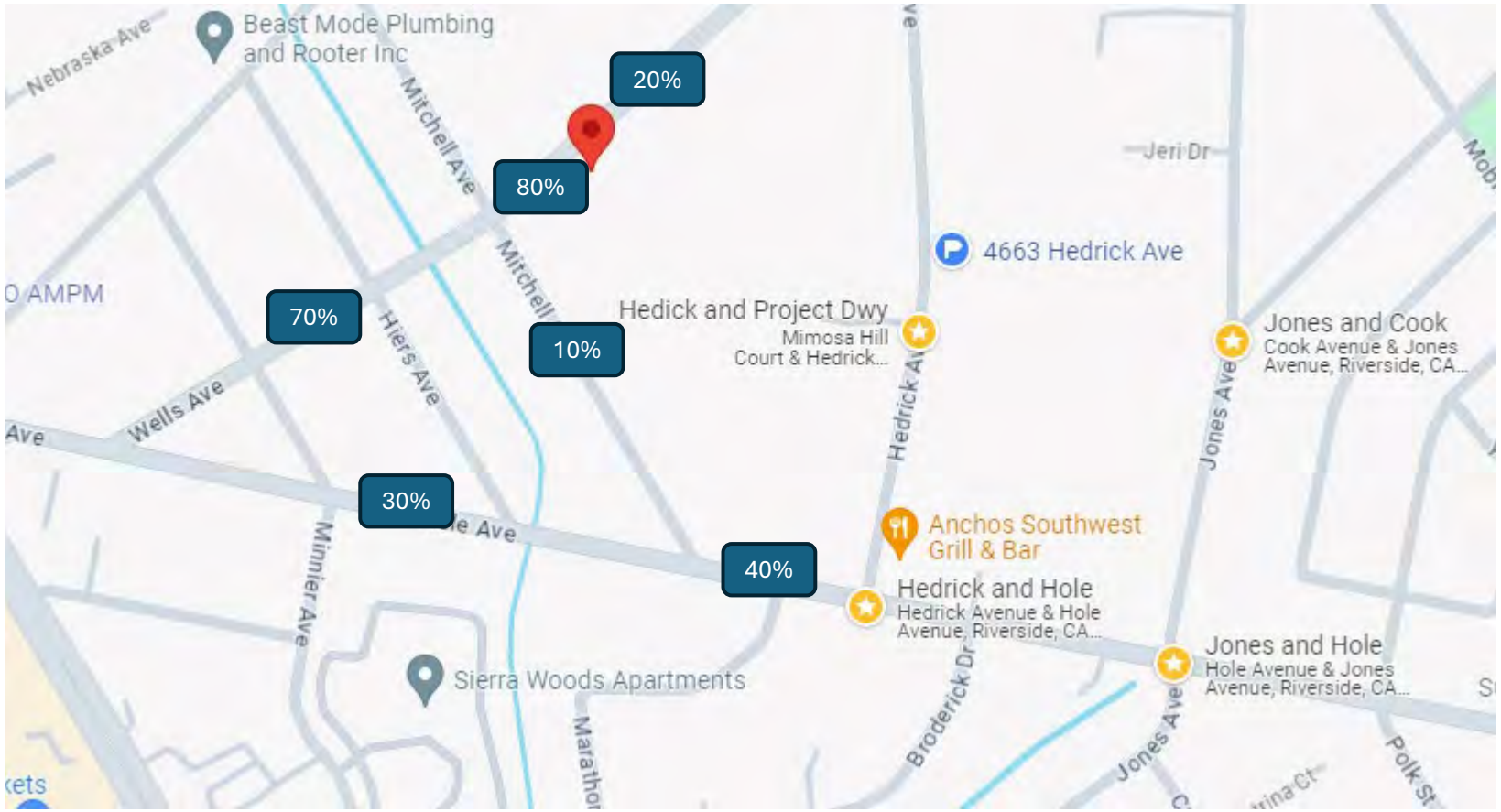
10525 Hole Ave



5189 La Sierra Ave

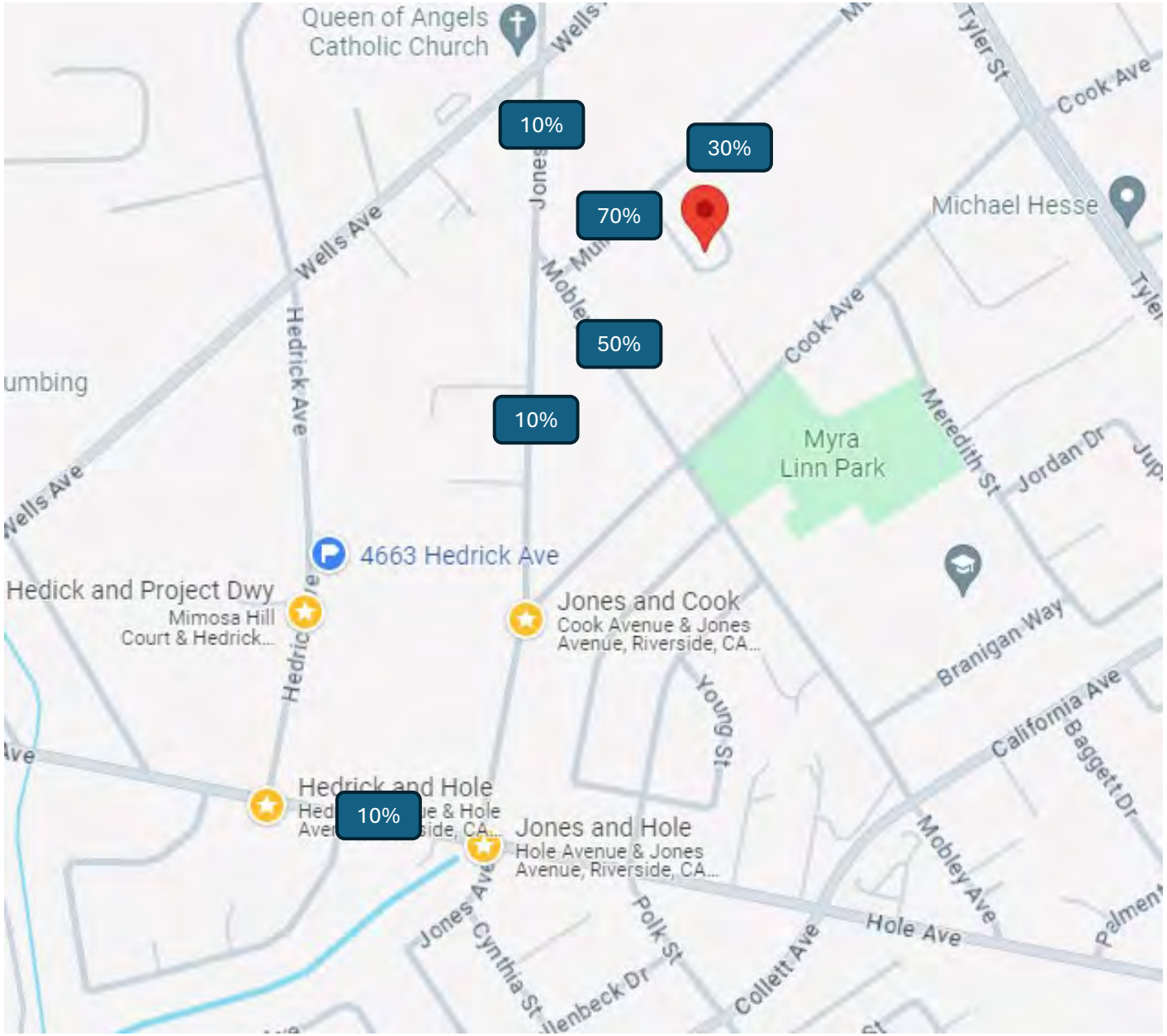


10762 Wells Ave



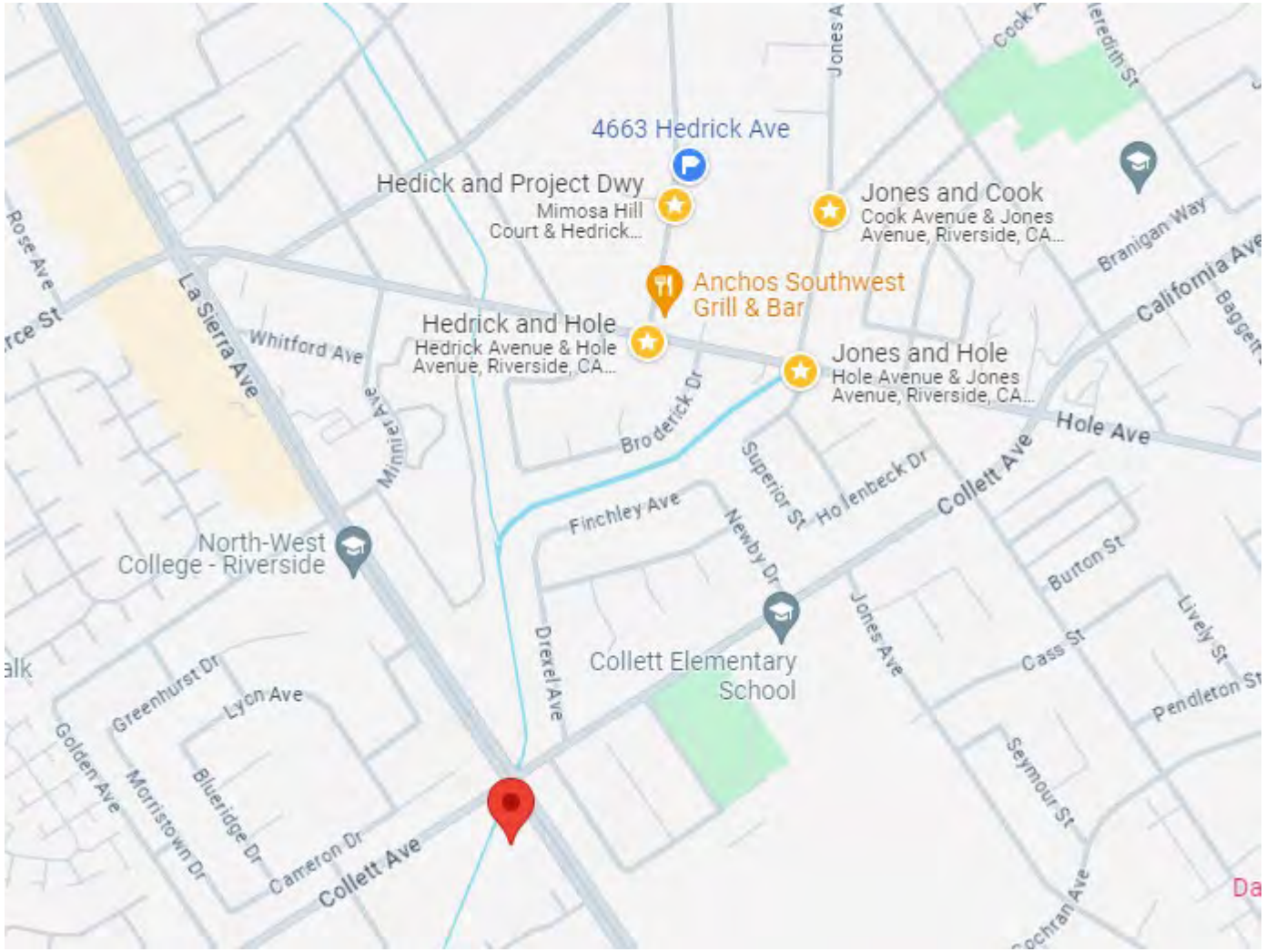
4824 Jones Ave – No trips generated

10450 Mull Ave

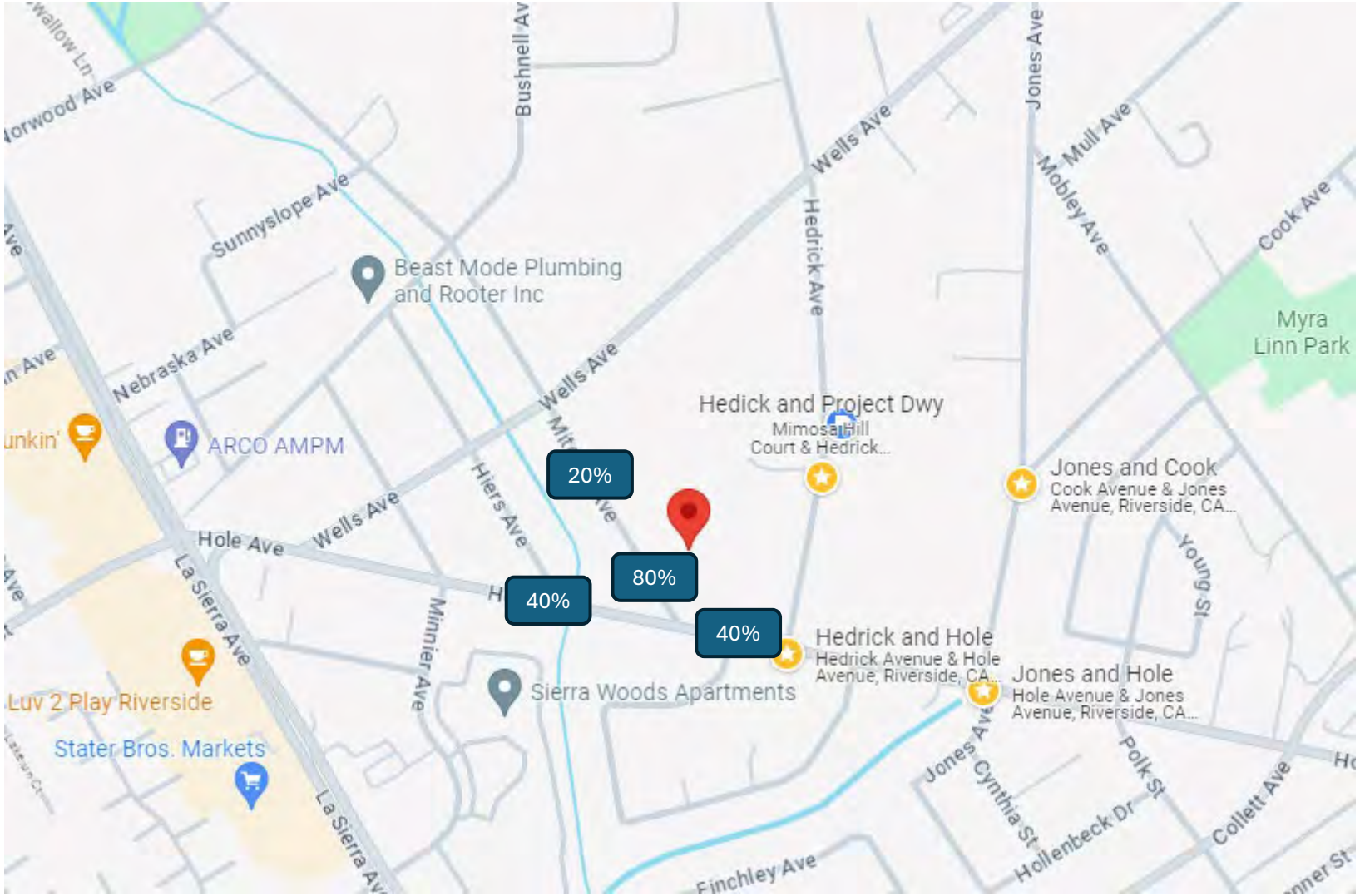


4350 La Sierra Ave

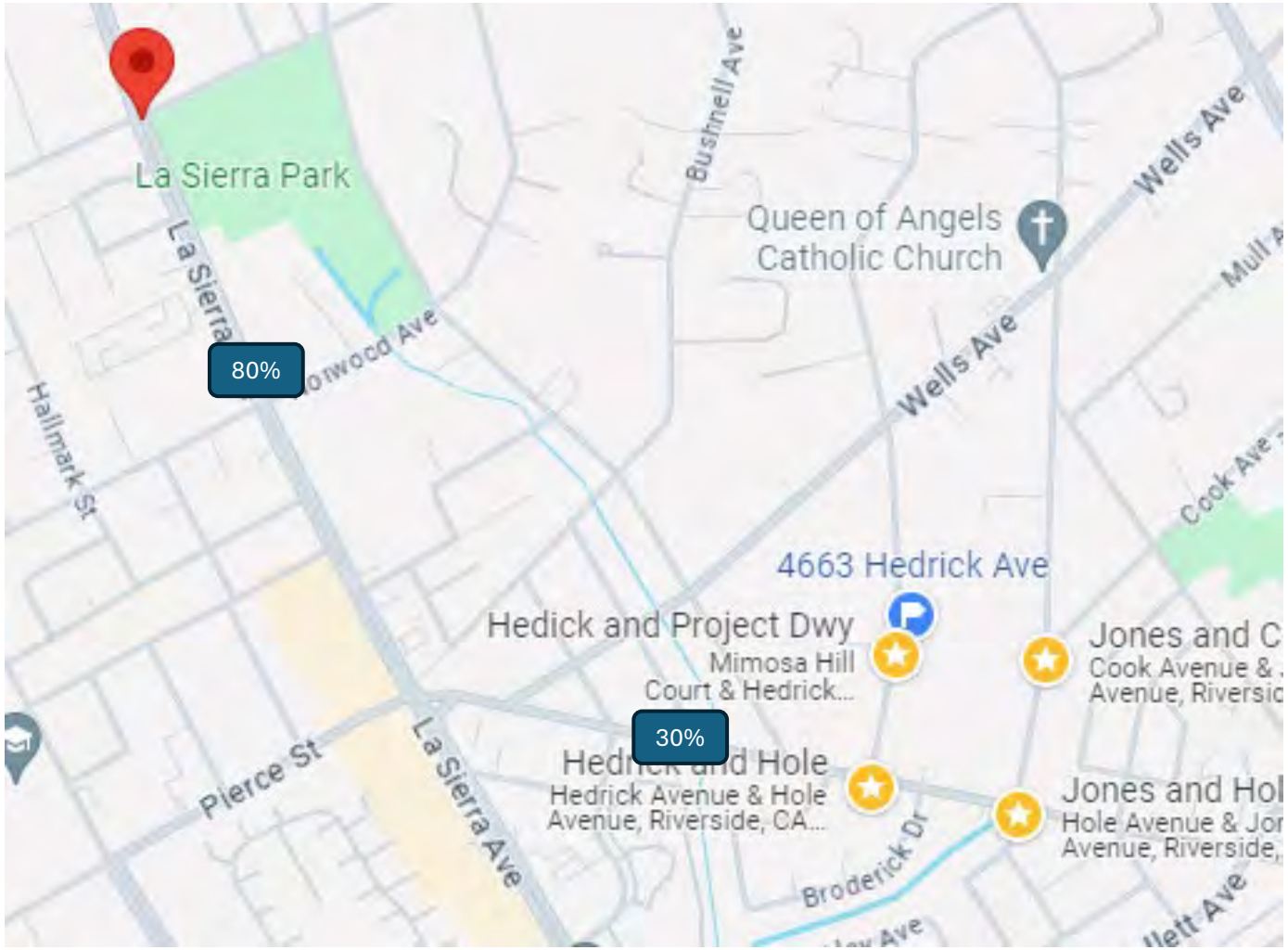
Based on replica and google maps routing, no trip percentage is routed through the project study area



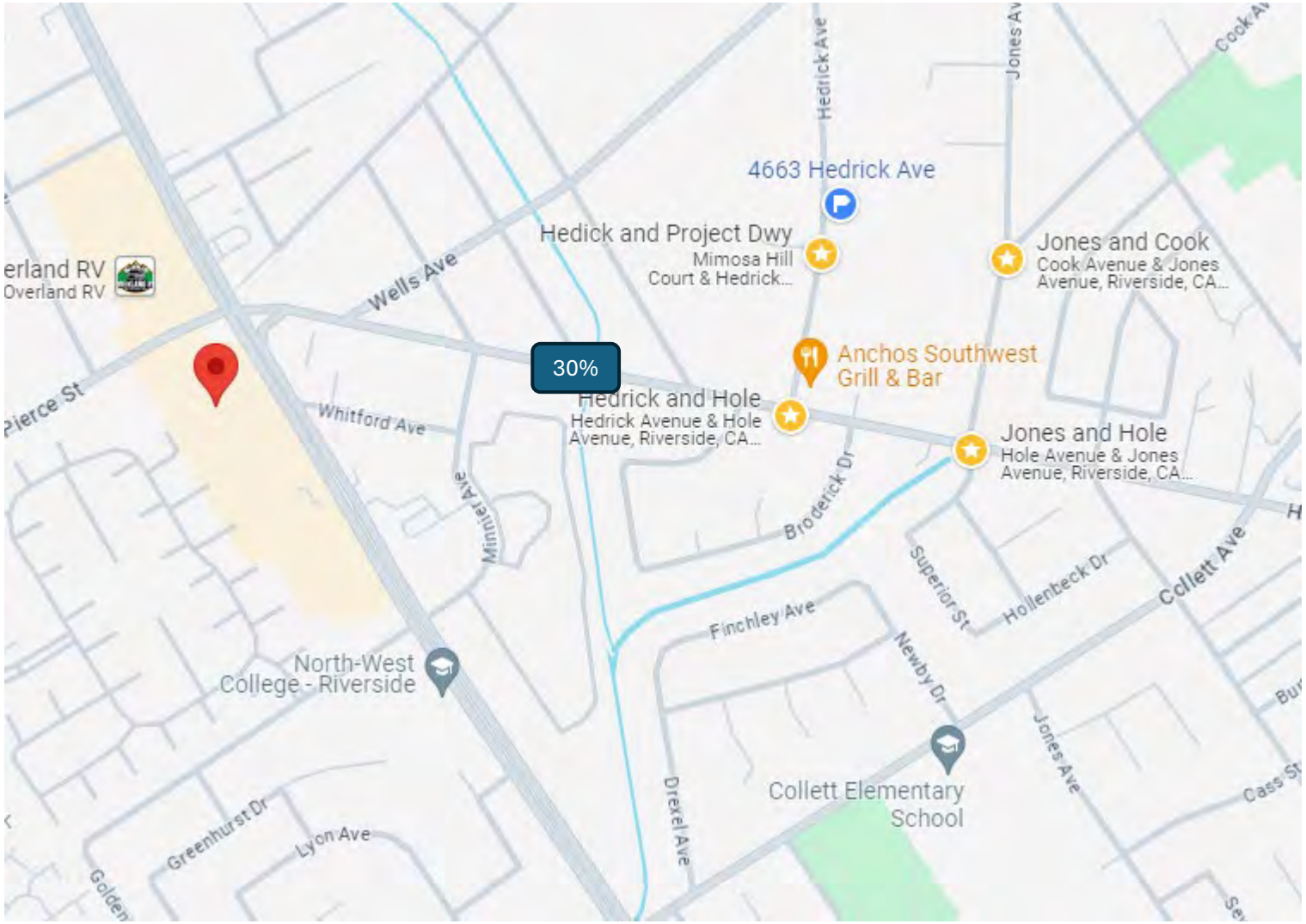
4682 Mitchell Ave



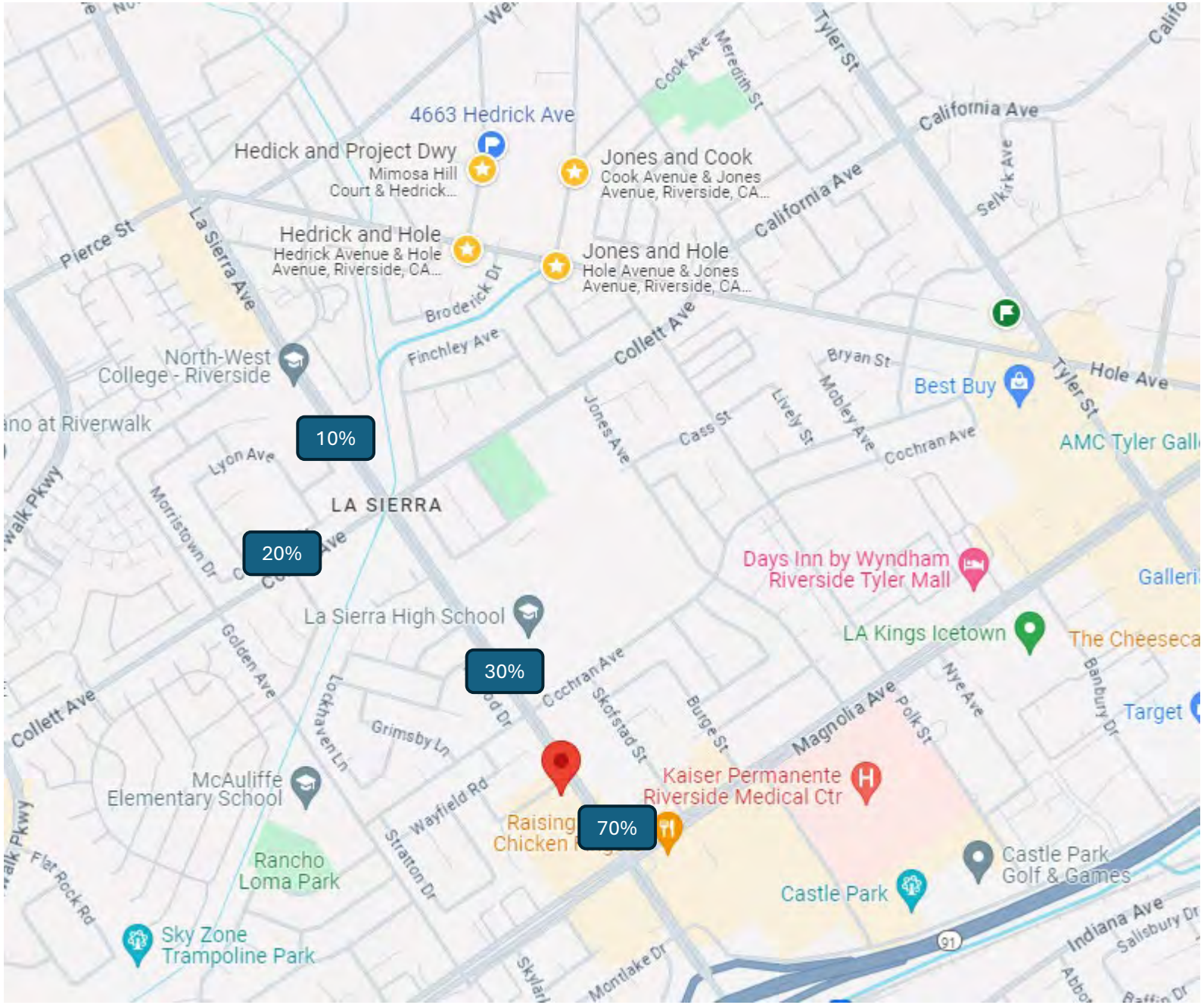
5301 La Sierra Ave



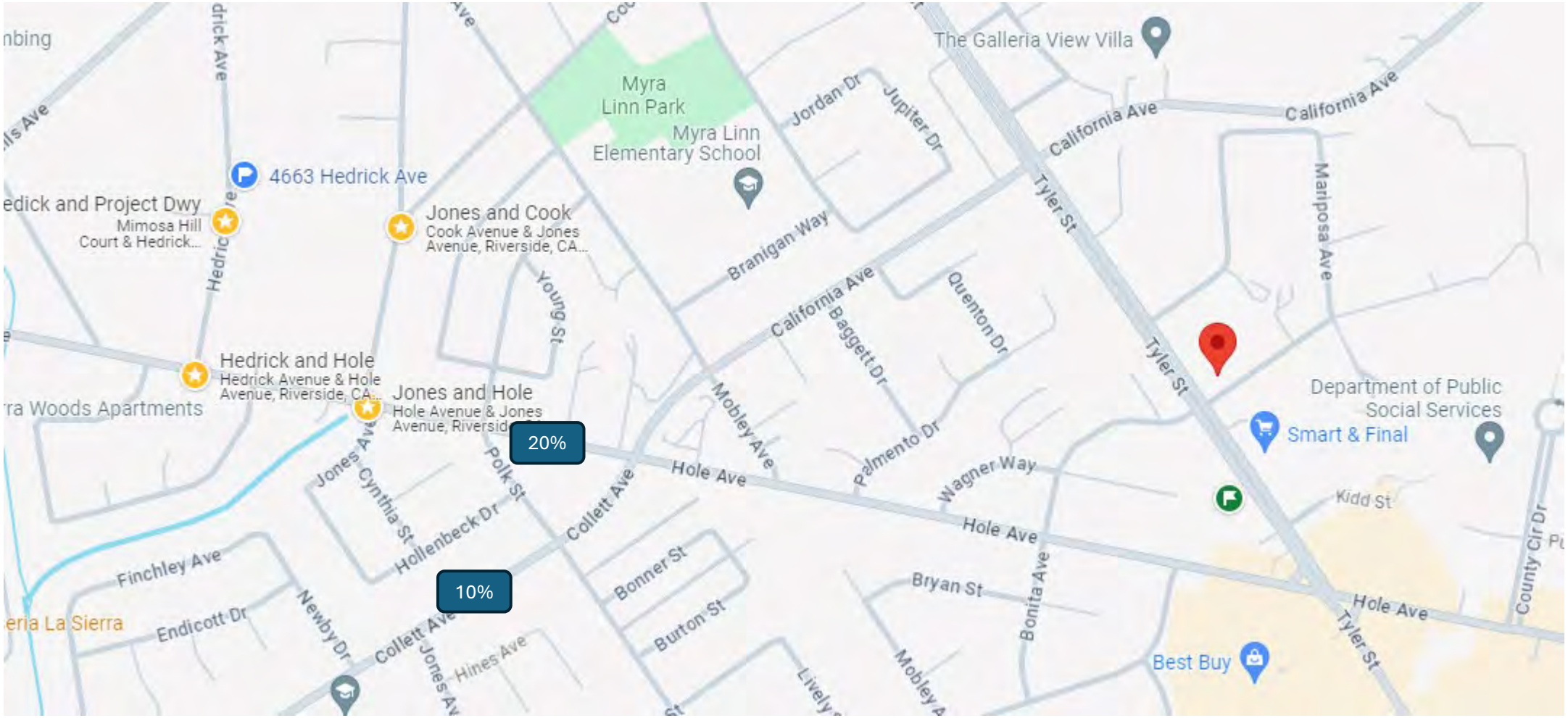
4820 La Sierra



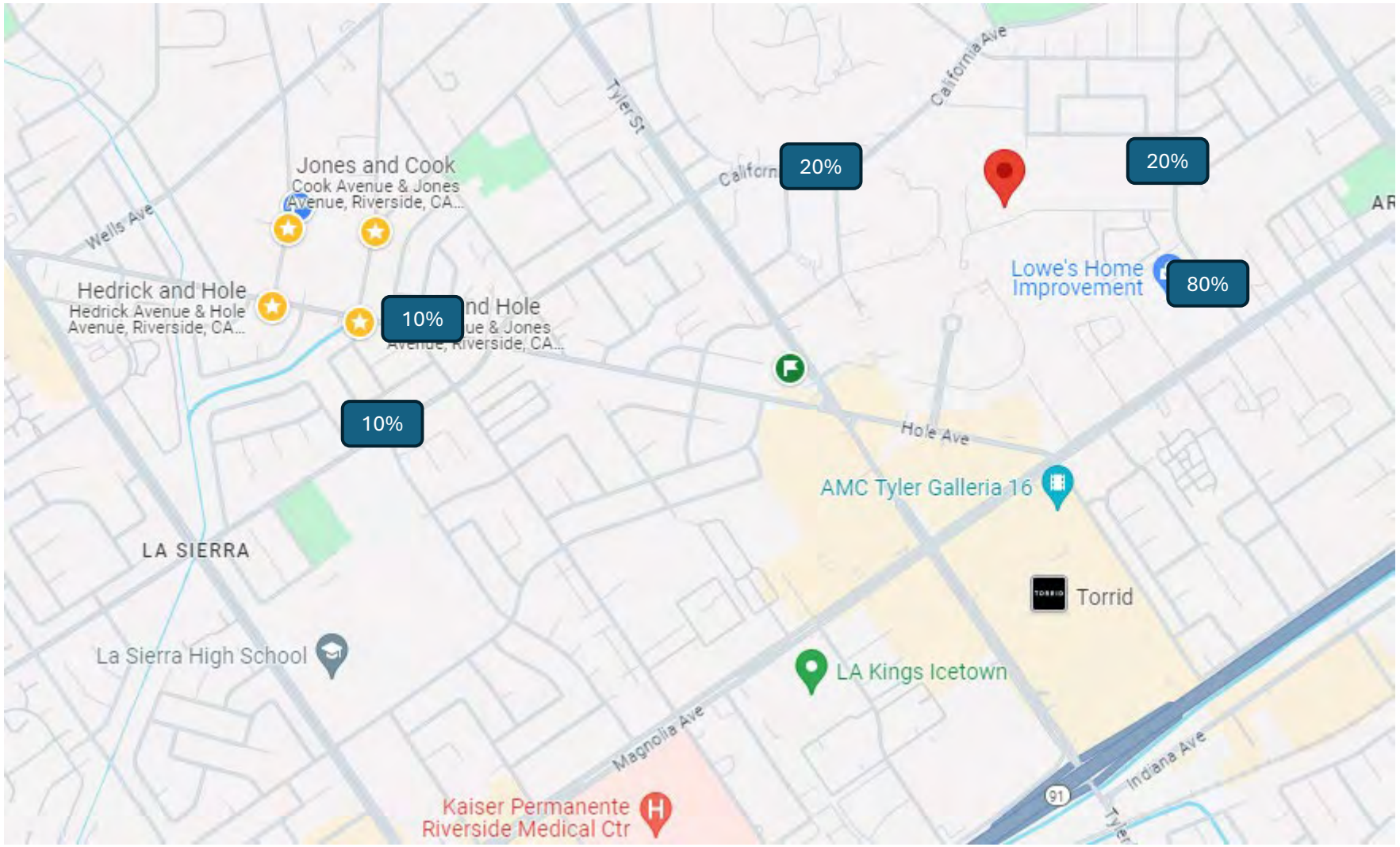
3856 La Sierra



4103 Tyler St



10000 County Farm Road



Appendix H - LOS Calculation Worksheets – 2027 Background without Project Conditions

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	31	542	532	23	43	31
Future Vol, veh/h	31	542	532	23	43	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	36	638	626	27	51	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	653	0	-	0	1031	327
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	923	-	-	-	227	666
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	650	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	923	-	-	-	218	666
Mov Cap-2 Maneuver	-	-	-	-	342	-
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	650	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	923	-	-	-	430
HCM Lane V/C Ratio	0.04	-	-	-	0.202
HCM Control Delay (s)	9.1	-	-	-	15.5
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	539	0	5	510	18	5	0	11	55	1	68
Future Volume (veh/h)	42	539	0	5	510	18	5	0	11	55	1	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	52	665	0	6	630	22	6	0	14	68	1	84
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	135	1279	0	20	1033	36	17	0	40	108	2	134
Arrive On Green	0.08	0.36	0.00	0.01	0.30	0.30	0.03	0.00	0.03	0.15	0.15	0.15
Sat Flow, veh/h	1767	3618	0	1767	3472	121	487	0	1135	734	11	907
Grp Volume(v), veh/h	52	665	0	6	320	332	20	0	0	153	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1767	1763	1830	1622	0	0	1652	0	0
Q Serve(g_s), s	1.1	6.0	0.0	0.1	6.3	6.3	0.5	0.0	0.0	3.5	0.0	0.0
Cycle Q Clear(g_c), s	1.1	6.0	0.0	0.1	6.3	6.3	0.5	0.0	0.0	3.5	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.07	0.30		0.70	0.44		0.55
Lane Grp Cap(c), veh/h	135	1279	0	20	525	545	56	0	0	244	0	0
V/C Ratio(X)	0.38	0.52	0.00	0.30	0.61	0.61	0.35	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	479	2520	0	479	1260	1308	879	0	0	1221	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.8	10.2	0.0	19.9	12.2	12.2	19.1	0.0	0.0	16.3	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.3	0.0	8.2	1.1	1.1	3.7	0.0	0.0	2.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.6	0.0	0.1	2.0	2.0	0.2	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.6	10.5	0.0	28.1	13.4	13.3	22.9	0.0	0.0	18.9	0.0	0.0
LnGrp LOS	B	B	A	C	B	B	C	A	A	B	A	A
Approach Vol, veh/h		717			658			20			153	
Approach Delay, s/veh		11.1			13.5			22.9			18.9	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	19.2		5.9	7.6	16.6		10.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.0	29.0		22.0	11.0	29.0		30.0
Max Q Clear Time (g_c+I1), s	2.1	8.0		2.5	3.1	8.3		5.5
Green Ext Time (p_c), s	0.0	4.2		0.0	0.0	3.7		0.9

Intersection Summary		
HCM 6th Ctrl Delay		13.1
HCM 6th LOS		B

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	28	0	3	4	28	24	8	73	1
Future Vol, veh/h	0	0	0	28	0	3	4	28	24	8	73	1
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	56	0	6	8	56	48	16	146	2
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	0	8.7	7.6	8.3
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	7%	0%	100%	0%	10%
Vol Thru, %	50%	100%	0%	0%	89%
Vol Right, %	43%	0%	0%	100%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	0	28	3	82
LT Vol	4	0	28	0	8
Through Vol	28	0	0	0	73
RT Vol	24	0	0	3	1
Lane Flow Rate	112	0	56	6	164
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.126	0	0.088	0.007	0.194
Departure Headway (Hd)	4.053	4.742	5.65	4.444	4.257
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	888	0	636	807	848
Service Time	2.061	2.76	3.365	2.159	2.257
HCM Lane V/C Ratio	0.126	0	0.088	0.007	0.193
HCM Control Delay	7.6	7.8	8.9	7.2	8.3
HCM Lane LOS	A	N	A	A	A
HCM 95th-tile Q	0.4	0	0.3	0	0.7

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	54	0	0	74
Future Vol, veh/h	0	0	54	0	0	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	59	0	0	80

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	139	59	0	0	59	0
Stage 1	59	-	-	-	-	-
Stage 2	80	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	852	1004	-	-	1538	-
Stage 1	961	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	852	1004	-	-	1538	-
Mov Cap-2 Maneuver	852	-	-	-	-	-
Stage 1	961	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1538	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	51	668	736	25	24	25
Future Vol, veh/h	51	668	736	25	24	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	60	786	866	29	28	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	895	0	-	0	1394	448
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	513	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	748	-	-	-	131	555
Stage 1	-	-	-	-	363	-
Stage 2	-	-	-	-	563	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	748	-	-	-	121	555
Mov Cap-2 Maneuver	-	-	-	-	242	-
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	563	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	17.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	748	-	-	-	340
HCM Lane V/C Ratio	0.08	-	-	-	0.17
HCM Control Delay (s)	10.2	-	-	-	17.7
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	649	8	4	777	42	5	6	7	40	10	36
Future Volume (veh/h)	53	649	8	4	777	42	5	6	7	40	10	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	60	738	9	5	883	48	6	7	8	45	11	41
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	144	1602	20	17	1279	70	17	20	23	89	22	81
Arrive On Green	0.08	0.45	0.45	0.01	0.38	0.38	0.04	0.04	0.04	0.11	0.11	0.11
Sat Flow, veh/h	1767	3567	43	1767	3394	185	486	567	648	777	190	708
Grp Volume(v), veh/h	60	365	382	5	459	472	21	0	0	97	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1848	1767	1763	1816	1701	0	0	1675	0	0
Q Serve(g_s), s	1.5	6.6	6.6	0.1	10.1	10.1	0.6	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	1.5	6.6	6.6	0.1	10.1	10.1	0.6	0.0	0.0	2.5	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.10	0.29		0.38	0.46		0.42
Lane Grp Cap(c), veh/h	144	792	830	17	664	685	61	0	0	191	0	0
V/C Ratio(X)	0.42	0.46	0.46	0.30	0.69	0.69	0.34	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	423	1112	1166	423	1112	1146	814	0	0	1093	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.1	8.8	8.8	22.6	12.1	12.1	21.6	0.0	0.0	19.1	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.4	0.4	9.7	1.3	1.3	3.3	0.0	0.0	2.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.8	1.9	0.1	3.1	3.2	0.3	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	9.2	9.2	32.3	13.3	13.3	25.0	0.0	0.0	21.2	0.0	0.0
LnGrp LOS	C	A	A	C	B	B	C	A	A	C	A	A
Approach Vol, veh/h		807			936			21			97	
Approach Delay, s/veh		10.2			13.4			25.0			21.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	25.1		6.1	8.2	21.8		9.7
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.0	29.0		22.0	11.0	29.0		30.0
Max Q Clear Time (g_c+I1), s	2.1	8.6		2.6	3.5	12.1		4.5
Green Ext Time (p_c), s	0.0	4.3		0.0	0.1	5.2		0.5

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	20	0	8	14	53	26	4	56	0
Future Vol, veh/h	0	0	0	20	0	8	14	53	26	4	56	0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	30	0	12	21	79	39	6	84	0
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	0	8.1	7.7	7.7
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	15%	0%	100%	0%	7%
Vol Thru, %	57%	100%	0%	0%	93%
Vol Right, %	28%	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	0	20	8	60
LT Vol	14	0	20	0	4
Through Vol	53	0	0	0	56
RT Vol	26	0	0	8	0
Lane Flow Rate	139	0	30	12	90
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.152	0	0.045	0.014	0.103
Departure Headway (Hd)	3.955	4.599	5.444	4.241	4.142
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	898	0	650	830	857
Service Time	2.015	2.599	3.243	2.038	2.209
HCM Lane V/C Ratio	0.155	0	0.046	0.014	0.105
HCM Control Delay	7.7	7.6	8.5	7.1	7.7
HCM Lane LOS	A	N	A	A	A
HCM 95th-tile Q	0.5	0	0.1	0	0.3

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	79	0	0	48
Future Vol, veh/h	0	0	79	0	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	86	0	0	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	138	86	0	0	86	0
Stage 1	86	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	853	970	-	-	1504	-
Stage 1	935	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	853	970	-	-	1504	-
Mov Cap-2 Maneuver	853	-	-	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1504	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Appendix I - LOS Calculation Worksheets – 2027 Background with Project Conditions

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	542	532	23	43	44
Future Vol, veh/h	35	542	532	23	43	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	41	638	626	27	56	57

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	653	0	-	0	1041	327
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	401	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	923	-	-	-	224	666
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	642	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	923	-	-	-	214	666
Mov Cap-2 Maneuver	-	-	-	-	339	-
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	642	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	15.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	923	-	-	-	451
HCM Lane V/C Ratio	0.045	-	-	-	0.25
HCM Control Delay (s)	9.1	-	-	-	15.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	539	0	5	510	25	5	0	11	76	1	68
Future Volume (veh/h)	42	539	0	5	510	25	5	0	11	76	1	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	52	665	0	6	630	31	6	0	14	94	1	84
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	1280	0	20	1019	50	17	0	39	139	1	124
Arrive On Green	0.08	0.36	0.00	0.01	0.30	0.30	0.03	0.00	0.03	0.16	0.16	0.16
Sat Flow, veh/h	1767	3618	0	1767	3415	168	487	0	1135	876	9	783
Grp Volume(v), veh/h	52	665	0	6	325	336	20	0	0	179	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1767	1763	1820	1622	0	0	1668	0	0
Q Serve(g_s), s	1.2	6.2	0.0	0.1	6.6	6.6	0.5	0.0	0.0	4.2	0.0	0.0
Cycle Q Clear(g_c), s	1.2	6.2	0.0	0.1	6.6	6.6	0.5	0.0	0.0	4.2	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.09	0.30		0.70	0.53		0.47
Lane Grp Cap(c), veh/h	134	1280	0	20	526	543	56	0	0	265	0	0
V/C Ratio(X)	0.39	0.52	0.00	0.30	0.62	0.62	0.36	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	467	2455	0	467	1228	1267	857	0	0	1201	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.3	10.4	0.0	20.4	12.6	12.6	19.6	0.0	0.0	16.5	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.3	0.0	8.2	1.2	1.2	3.8	0.0	0.0	3.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.7	0.0	0.1	2.1	2.1	0.2	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	10.7	0.0	28.6	13.8	13.7	23.4	0.0	0.0	19.5	0.0	0.0
LnGrp LOS	C	B	A	C	B	B	C	A	A	B	A	A
Approach Vol, veh/h		717			667			20			179	
Approach Delay, s/veh		11.4			13.9			23.4			19.5	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	19.6		5.9	7.7	16.9		11.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.0	29.0		22.0	11.0	29.0		30.0
Max Q Clear Time (g_c+I1), s	2.1	8.2		2.5	3.2	8.6		6.2
Green Ext Time (p_c), s	0.0	4.2		0.0	0.0	3.7		1.1

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	4	21	28	1	3	11	28	24	8	73	2
Future Vol, veh/h	4	4	21	28	1	3	11	28	24	8	73	2
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	8	8	42	56	2	6	22	56	48	16	146	4
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	7.8	8.9	8	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	17%	14%	97%	0%	10%
Vol Thru, %	44%	14%	3%	0%	88%
Vol Right, %	38%	72%	0%	100%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	63	29	29	3	83
LT Vol	11	4	28	0	8
Through Vol	28	4	1	0	73
RT Vol	24	21	0	3	2
Lane Flow Rate	126	58	58	6	166
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.149	0.071	0.093	0.008	0.203
Departure Headway (Hd)	4.251	4.39	5.742	4.551	4.401
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	845	816	625	787	817
Service Time	2.27	2.416	3.467	2.276	2.42
HCM Lane V/C Ratio	0.149	0.071	0.093	0.008	0.203
HCM Control Delay	8	7.8	9.1	7.3	8.5
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.5	0.2	0.3	0	0.8

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	0	54	4	0	74
Future Vol, veh/h	13	0	54	4	0	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	14	0	59	4	0	80

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	141	61	0	0	63	0
Stage 1	61	-	-	-	-	-
Stage 2	80	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	850	1001	-	-	1533	-
Stage 1	959	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	850	1001	-	-	1533	-
Mov Cap-2 Maneuver	850	-	-	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	850	1533	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	-	-	9.3	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	64	668	736	25	24	32
Future Vol, veh/h	64	668	736	25	24	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	75	786	866	29	28	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	895	0	-	0	1424	448
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	543	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	748	-	-	-	125	555
Stage 1	-	-	-	-	363	-
Stage 2	-	-	-	-	543	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	748	-	-	-	113	555
Mov Cap-2 Maneuver	-	-	-	-	234	-
Stage 1	-	-	-	-	327	-
Stage 2	-	-	-	-	543	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	17.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	748	-	-	-	350
HCM Lane V/C Ratio	0.101	-	-	-	0.188
HCM Control Delay (s)	10.4	-	-	-	17.7
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	649	8	4	777	63	5	6	7	52	10	36
Future Volume (veh/h)	53	649	8	4	777	63	5	6	7	52	10	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	60	738	9	5	883	72	6	7	8	59	11	41
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	143	1617	20	17	1258	103	17	20	23	107	20	74
Arrive On Green	0.08	0.45	0.45	0.01	0.38	0.38	0.04	0.04	0.04	0.12	0.12	0.12
Sat Flow, veh/h	1767	3567	43	1767	3292	268	486	567	648	896	167	623
Grp Volume(v), veh/h	60	365	382	5	473	482	21	0	0	111	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1848	1767	1763	1798	1700	0	0	1686	0	0
Q Serve(g_s), s	1.5	6.7	6.7	0.1	10.7	10.7	0.6	0.0	0.0	2.9	0.0	0.0
Cycle Q Clear(g_c), s	1.5	6.7	6.7	0.1	10.7	10.7	0.6	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.15	0.29		0.38	0.53		0.37
Lane Grp Cap(c), veh/h	143	799	838	17	673	687	61	0	0	202	0	0
V/C Ratio(X)	0.42	0.46	0.46	0.30	0.70	0.70	0.35	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	412	1085	1137	412	1085	1106	794	0	0	1073	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.6	8.9	8.9	23.2	12.3	12.3	22.2	0.0	0.0	19.6	0.0	0.0
Incr Delay (d2), s/veh	2.0	0.4	0.4	9.8	1.3	1.3	3.3	0.0	0.0	2.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.8	1.9	0.1	3.3	3.4	0.3	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	9.3	9.3	32.9	13.6	13.6	25.5	0.0	0.0	21.9	0.0	0.0
LnGrp LOS	C	A	A	C	B	B	C	A	A	C	A	A
Approach Vol, veh/h		807			960			21			111	
Approach Delay, s/veh		10.3			13.7			25.5			21.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	25.9		6.2	8.3	22.5		10.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.0	29.0		22.0	11.0	29.0		30.0
Max Q Clear Time (g_c+I1), s	2.1	8.7		2.6	3.5	12.7		4.9
Green Ext Time (p_c), s	0.0	4.3		0.0	0.1	5.3		0.6

Intersection Summary		
HCM 6th Ctrl Delay		12.9
HCM 6th LOS		B

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	3	12	20	4	8	35	53	26	4	56	4
Future Vol, veh/h	3	3	12	20	4	8	35	53	26	4	56	4
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	4	4	18	30	6	12	52	79	39	6	84	6
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	7.5	8.3	8.2	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	31%	17%	83%	0%	6%
Vol Thru, %	46%	17%	17%	0%	88%
Vol Right, %	23%	67%	0%	100%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	114	18	24	8	64
LT Vol	35	3	20	0	4
Through Vol	53	3	4	0	56
RT Vol	26	12	0	8	4
Lane Flow Rate	170	27	36	12	96
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.193	0.032	0.056	0.015	0.114
Departure Headway (Hd)	4.077	4.333	5.578	4.455	4.285
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	866	830	645	807	841
Service Time	2.172	2.342	3.284	2.161	2.292
HCM Lane V/C Ratio	0.196	0.033	0.056	0.015	0.114
HCM Control Delay	8.2	7.5	8.6	7.2	7.8
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.7	0.1	0.2	0	0.4

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	0	79	13	0	48
Future Vol, veh/h	7	0	79	13	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	8	0	86	14	0	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	145	93	0	0	100	0
Stage 1	93	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	845	961	-	-	1486	-
Stage 1	928	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	845	961	-	-	1486	-
Mov Cap-2 Maneuver	845	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	845	1486	-
HCM Lane V/C Ratio	-	-	0.009	-	-
HCM Control Delay (s)	-	-	9.3	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Appendix J - RIVCOM Excerpts

	Existing ADT				Future ADT			
Name	N Leg	S Leg	E Leg	W Leg	N Leg	S Leg	E Leg	W Leg
AM								
Hedrick Ave & Hole Ave	820		11,604	10,784	1,024		13,586	12,562
Jones Ave & Hole Ave	4,890	10	16,355	14,133	5,035	11	21,096	16,973
Jones Ave & Project Driveway #1/Cook Ave	10	4,890	10		12	5,035	12	
Hedrick Ave & Project Driveway #2	820	820			1,024	1,024		
PM								
Hedrick Ave & Hole Ave	820		11,604	10,784	1,024		13,586	12,562
Jones Ave & Hole Ave	4,890	10	16,355	14,133	5,035	11	21,096	16,973
Jones Ave & Project Driveway #1/Cook Ave	10	4,890	10		12	5,035	12	
Hedrick Ave & Project Driveway #2	820	820			1,024	1,024		

Appendix K - LOS Calculation Worksheets – 2045 Cumulative without Project Conditions

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	80	590	580	80	60	50
Future Vol, veh/h	80	590	580	80	60	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	84	621	611	84	63	53

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	695	0	-	0	1132	348
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	479	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	890	-	-	-	195	645
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	586	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	890	-	-	-	177	645
Mov Cap-2 Maneuver	-	-	-	-	305	-
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	586	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	17.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	890	-	-	-	401
HCM Lane V/C Ratio	0.095	-	-	-	0.289
HCM Control Delay (s)	9.5	-	-	-	17.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	590	0	60	570	70	10	0	20	60	10	70
Future Volume (veh/h)	80	590	0	60	570	70	10	0	20	60	10	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	84	621	0	63	600	74	11	0	21	63	11	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	180	1113	0	151	942	116	29	0	55	98	17	116
Arrive On Green	0.10	0.32	0.00	0.09	0.30	0.30	0.05	0.00	0.05	0.14	0.14	0.14
Sat Flow, veh/h	1767	3618	0	1767	3149	387	560	0	1070	709	124	833
Grp Volume(v), veh/h	84	621	0	63	335	339	32	0	0	148	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1767	1763	1774	1630	0	0	1666	0	0
Q Serve(g_s), s	2.0	6.4	0.0	1.5	7.2	7.3	0.8	0.0	0.0	3.7	0.0	0.0
Cycle Q Clear(g_c), s	2.0	6.4	0.0	1.5	7.2	7.3	0.8	0.0	0.0	3.7	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.22	0.34		0.66	0.43		0.50
Lane Grp Cap(c), veh/h	180	1113	0	151	527	530	84	0	0	231	0	0
V/C Ratio(X)	0.47	0.56	0.00	0.42	0.64	0.64	0.38	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	441	2322	0	441	1161	1168	814	0	0	1135	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.6	12.5	0.0	19.1	13.4	13.4	20.2	0.0	0.0	17.9	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.4	0.0	1.8	1.3	1.3	2.8	0.0	0.0	2.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.0	0.0	0.6	2.3	2.4	0.4	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.5	13.0	0.0	20.9	14.6	14.7	23.0	0.0	0.0	20.9	0.0	0.0
LnGrp LOS	C	B	A	C	B	B	C	A	A	C	A	A
Approach Vol, veh/h		705			737			32			148	
Approach Delay, s/veh		13.9			15.2			23.0			20.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	18.4		6.8	9.0	17.7		10.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.0	29.0		22.0	11.0	29.0		30.0
Max Q Clear Time (g_c+I1), s	3.5	8.4		2.8	4.0	9.3		5.7
Green Ext Time (p_c), s	0.1	3.9		0.1	0.1	3.8		0.9

Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	40	0	10	10	30	30	20	90	10
Future Vol, veh/h	0	0	0	40	0	10	10	30	30	20	90	10
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	42	0	11	11	32	32	21	95	11
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	0	8.3	7.3	7.8
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	14%	0%	100%	0%	17%
Vol Thru, %	43%	100%	0%	0%	75%
Vol Right, %	43%	0%	0%	100%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	0	40	10	120
LT Vol	10	0	40	0	20
Through Vol	30	0	0	0	90
RT Vol	30	0	0	10	10
Lane Flow Rate	74	0	42	11	126
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.08	0	0.063	0.012	0.143
Departure Headway (Hd)	3.907	4.553	5.395	4.192	4.079
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	903	0	657	841	870
Service Time	1.99	2.553	3.183	1.979	2.148
HCM Lane V/C Ratio	0.082	0	0.064	0.013	0.145
HCM Control Delay	7.3	7.6	8.6	7	7.8
HCM Lane LOS	A	N	A	A	A
HCM 95th-tile Q	0.3	0	0.2	0	0.5

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	70	0	0	100
Future Vol, veh/h	0	0	70	0	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	74	0	0	105

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	179	74	0	0	74	0
Stage 1	74	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	808	985	-	-	1519	-
Stage 1	946	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	808	985	-	-	1519	-
Mov Cap-2 Maneuver	808	-	-	-	-	-
Stage 1	946	-	-	-	-	-
Stage 2	917	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1519	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	120	730	800	100	40	40
Future Vol, veh/h	120	730	800	100	40	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	126	768	842	105	42	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	947	0	-	0	1531	474
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	636	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	714	-	-	-	107	534
Stage 1	-	-	-	-	357	-
Stage 2	-	-	-	-	487	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	714	-	-	-	88	534
Mov Cap-2 Maneuver	-	-	-	-	204	-
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	487	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	22
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	714	-	-	-	295
HCM Lane V/C Ratio	0.177	-	-	-	0.285
HCM Control Delay (s)	11.1	-	-	-	22
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.6	-	-	-	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	710	60	90	870	120	10	10	10	50	20	40
Future Volume (veh/h)	100	710	60	90	870	120	10	10	10	50	20	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	105	747	63	95	916	126	11	11	11	53	21	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	183	1309	110	175	1220	168	29	29	29	88	35	70
Arrive On Green	0.10	0.40	0.40	0.10	0.39	0.39	0.05	0.05	0.05	0.11	0.11	0.11
Sat Flow, veh/h	1767	3291	277	1767	3101	426	570	570	570	774	307	613
Grp Volume(v), veh/h	105	400	410	95	521	521	33	0	0	116	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1806	1767	1763	1764	1710	0	0	1693	0	0
Q Serve(g_s), s	3.0	9.4	9.4	2.7	13.5	13.5	1.0	0.0	0.0	3.5	0.0	0.0
Cycle Q Clear(g_c), s	3.0	9.4	9.4	2.7	13.5	13.5	1.0	0.0	0.0	3.5	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.24	0.33		0.33	0.46		0.36
Lane Grp Cap(c), veh/h	183	701	718	175	694	694	87	0	0	192	0	0
V/C Ratio(X)	0.57	0.57	0.57	0.54	0.75	0.75	0.38	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	366	961	985	366	961	962	708	0	0	955	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.7	12.5	12.5	22.8	13.9	13.9	24.4	0.0	0.0	22.4	0.0	0.0
Incr Delay (d2), s/veh	2.8	0.7	0.7	2.6	2.2	2.2	2.7	0.0	0.0	3.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.0	3.1	1.1	4.6	4.6	0.4	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.5	13.2	13.2	25.4	16.0	16.0	27.1	0.0	0.0	25.4	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	C	A	A	C	A	A
Approach Vol, veh/h		915			1137			33			116	
Approach Delay, s/veh		14.6			16.8			27.1			25.4	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.8	25.7		7.2	10.0	25.4		10.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.0	29.0		22.0	11.0	29.0		30.0
Max Q Clear Time (g_c+I1), s	4.7	11.4		3.0	5.0	15.5		5.5
Green Ext Time (p_c), s	0.1	4.5		0.1	0.1	5.4		0.6

Intersection Summary		
HCM 6th Ctrl Delay		16.5
HCM 6th LOS		B

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	30	0	20	20	60	30	20	70	0
Future Vol, veh/h	0	0	0	30	0	20	20	60	30	20	70	0
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	32	0	21	21	63	32	21	74	0
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	0	7.9	7.7	7.8
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	18%	0%	100%	0%	22%
Vol Thru, %	55%	100%	0%	0%	78%
Vol Right, %	27%	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	110	0	30	20	90
LT Vol	20	0	30	0	20
Through Vol	60	0	0	0	70
RT Vol	30	0	0	20	0
Lane Flow Rate	116	0	32	21	95
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.128	0	0.047	0.025	0.11
Departure Headway (Hd)	3.986	4.578	5.414	4.21	4.174
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	889	0	654	836	850
Service Time	2.057	2.578	3.211	2.006	2.244
HCM Lane V/C Ratio	0.13	0	0.049	0.025	0.112
HCM Control Delay	7.7	7.6	8.5	7.1	7.8
HCM Lane LOS	A	N	A	A	A
HCM 95th-tile Q	0.4	0	0.1	0.1	0.4

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	100	0	0	60
Future Vol, veh/h	0	0	100	0	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	105	0	0	63

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	168	105	0	0	105	0
Stage 1	105	-	-	-	-	-
Stage 2	63	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	820	947	-	-	1480	-
Stage 1	917	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	820	947	-	-	1480	-
Mov Cap-2 Maneuver	820	-	-	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	957	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1480	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Appendix L - LOS Calculation Worksheets – 2045 Cumulative with Project Conditions

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	84	590	580	80	60	63
Future Vol, veh/h	84	590	580	80	60	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	88	621	611	84	73	76

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	695	0	-	0	1140	348
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	487	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	890	-	-	-	193	645
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	581	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	890	-	-	-	174	645
Mov Cap-2 Maneuver	-	-	-	-	302	-
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	581	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	18.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	890	-	-	-	415
HCM Lane V/C Ratio	0.099	-	-	-	0.359
HCM Control Delay (s)	9.5	-	-	-	18.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	590	0	60	570	77	10	0	20	81	10	70
Future Volume (veh/h)	80	590	0	60	570	77	10	0	20	81	10	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	84	621	0	63	600	81	11	0	21	85	11	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	179	1112	0	150	931	125	29	0	55	125	16	109
Arrive On Green	0.10	0.32	0.00	0.08	0.30	0.30	0.05	0.00	0.05	0.15	0.15	0.15
Sat Flow, veh/h	1767	3618	0	1767	3111	419	560	0	1070	839	109	731
Grp Volume(v), veh/h	84	621	0	63	339	342	32	0	0	170	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1767	1763	1767	1630	0	0	1679	0	0
Q Serve(g_s), s	2.0	6.6	0.0	1.5	7.5	7.6	0.9	0.0	0.0	4.3	0.0	0.0
Cycle Q Clear(g_c), s	2.0	6.6	0.0	1.5	7.5	7.6	0.9	0.0	0.0	4.3	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.24	0.34		0.66	0.50		0.44
Lane Grp Cap(c), veh/h	179	1112	0	150	527	529	84	0	0	250	0	0
V/C Ratio(X)	0.47	0.56	0.00	0.42	0.64	0.65	0.38	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	431	2269	0	431	1134	1137	796	0	0	1118	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.1	12.8	0.0	19.6	13.7	13.7	20.7	0.0	0.0	18.2	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.4	0.0	1.9	1.3	1.3	2.9	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.0	0.0	0.6	2.5	2.5	0.4	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	13.3	0.0	21.4	15.0	15.0	23.5	0.0	0.0	21.4	0.0	0.0
LnGrp LOS	C	B	A	C	B	B	C	A	A	C	A	A
Approach Vol, veh/h		705			744			32			170	
Approach Delay, s/veh		14.2			15.6			23.5			21.4	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	18.7		6.8	9.1	18.0		11.2
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.0	29.0		22.0	11.0	29.0		30.0
Max Q Clear Time (g_c+I1), s	3.5	8.6		2.9	4.0	9.6		6.3
Green Ext Time (p_c), s	0.1	3.9		0.1	0.1	3.8		1.0

Intersection Summary			
HCM 6th Ctrl Delay			15.7
HCM 6th LOS			B

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	4	21	40	1	10	17	30	30	20	90	11
Future Vol, veh/h	4	4	21	40	1	10	17	30	30	20	90	11
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	4	4	22	42	1	11	18	32	32	21	95	12
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	7.3	8.3	7.5	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	14%	98%	0%	17%
Vol Thru, %	39%	14%	2%	0%	74%
Vol Right, %	39%	72%	0%	100%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	77	29	41	10	121
LT Vol	17	4	40	0	20
Through Vol	30	4	1	0	90
RT Vol	30	21	0	10	11
Lane Flow Rate	81	31	43	11	127
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.092	0.035	0.066	0.013	0.146
Departure Headway (Hd)	4.102	4.171	5.521	4.328	4.134
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	878	863	652	831	853
Service Time	2.108	2.176	3.226	2.033	2.228
HCM Lane V/C Ratio	0.092	0.036	0.066	0.013	0.149
HCM Control Delay	7.5	7.3	8.6	7.1	7.9
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.2	0	0.5

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	0	70	4	0	100
Future Vol, veh/h	13	0	70	4	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	14	0	74	4	0	105

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	181	76	0	0	78	0
Stage 1	76	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	806	982	-	-	1514	-
Stage 1	944	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	806	982	-	-	1514	-
Mov Cap-2 Maneuver	806	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	917	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	806	1514	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	-	-	9.5	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	133	730	800	100	40	47
Future Vol, veh/h	133	730	800	100	40	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	140	768	842	105	42	49

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	947	0	-	0	1559	474
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	664	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	714	-	-	-	102	534
Stage 1	-	-	-	-	357	-
Stage 2	-	-	-	-	471	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	714	-	-	-	82	534
Mov Cap-2 Maneuver	-	-	-	-	197	-
Stage 1	-	-	-	-	287	-
Stage 2	-	-	-	-	471	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	22.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	714	-	-	-	299
HCM Lane V/C Ratio	0.196	-	-	-	0.306
HCM Control Delay (s)	11.3	-	-	-	22.3
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.7	-	-	-	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	710	60	90	870	141	10	10	10	62	20	40
Future Volume (veh/h)	100	710	60	90	870	141	10	10	10	62	20	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	105	747	63	95	916	148	11	11	11	65	21	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	181	1324	112	174	1204	195	29	29	29	100	32	65
Arrive On Green	0.10	0.40	0.40	0.10	0.40	0.40	0.05	0.05	0.05	0.12	0.12	0.12
Sat Flow, veh/h	1767	3291	277	1767	3025	489	570	570	570	863	279	558
Grp Volume(v), veh/h	105	400	410	95	534	530	33	0	0	128	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1806	1767	1763	1751	1710	0	0	1700	0	0
Q Serve(g_s), s	3.1	9.5	9.5	2.8	14.1	14.2	1.0	0.0	0.0	3.9	0.0	0.0
Cycle Q Clear(g_c), s	3.1	9.5	9.5	2.8	14.1	14.2	1.0	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.28	0.33		0.33	0.51		0.33
Lane Grp Cap(c), veh/h	181	709	727	174	702	697	87	0	0	197	0	0
V/C Ratio(X)	0.58	0.56	0.56	0.55	0.76	0.76	0.38	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	359	945	968	359	945	938	695	0	0	942	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.2	12.5	12.5	23.2	14.1	14.1	24.9	0.0	0.0	22.9	0.0	0.0
Incr Delay (d2), s/veh	2.9	0.7	0.7	2.7	2.5	2.6	2.7	0.0	0.0	3.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.1	3.1	1.1	4.9	4.8	0.5	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	13.2	13.2	25.9	16.6	16.6	27.6	0.0	0.0	26.4	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	C	A	A	C	A	A
Approach Vol, veh/h		915			1159			33			128	
Approach Delay, s/veh		14.7			17.4			27.6			26.4	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.8	26.3		7.2	10.1	26.0		10.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.0	29.0		22.0	11.0	29.0		30.0
Max Q Clear Time (g_c+I1), s	4.8	11.5		3.0	5.1	16.2		5.9
Green Ext Time (p_c), s	0.1	4.5		0.1	0.1	5.4		0.7

Intersection Summary		
HCM 6th Ctrl Delay		16.9
HCM 6th LOS		B

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	3	12	30	4	20	41	60	30	20	70	4
Future Vol, veh/h	3	3	12	30	4	20	41	60	30	20	70	4
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	3	13	32	4	21	43	63	32	21	74	4
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	7.4	8.1	7.9	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	31%	17%	88%	0%	21%
Vol Thru, %	46%	17%	12%	0%	74%
Vol Right, %	23%	67%	0%	100%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	131	18	34	20	94
LT Vol	41	3	30	0	20
Through Vol	60	3	4	0	70
RT Vol	30	12	0	20	4
Lane Flow Rate	138	19	36	21	99
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.156	0.023	0.055	0.026	0.116
Departure Headway (Hd)	4.082	4.282	5.534	4.387	4.204
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	865	841	651	821	838
Service Time	2.176	2.283	3.235	2.088	2.303
HCM Lane V/C Ratio	0.16	0.023	0.055	0.026	0.118
HCM Control Delay	7.9	7.4	8.6	7.2	7.9
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.2	0.1	0.4

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	0	100	13	0	60
Future Vol, veh/h	7	0	100	13	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	7	0	105	14	0	63

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	175	112	0	0	119	0
Stage 1	112	-	-	-	-	-
Stage 2	63	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	813	938	-	-	1463	-
Stage 1	910	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	813	938	-	-	1463	-
Mov Cap-2 Maneuver	813	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	957	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	813	1463	-
HCM Lane V/C Ratio	-	-	0.009	-	-
HCM Control Delay (s)	-	-	9.5	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Appendix M - Traffic Signal Warrants

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE June 12, 2024

8			
DIST	CO	RTE	PM

CALC _____ DATE _____
CHK _____ DATE _____

Major St: HedrickAvenue
Minor St: Project Driveway

Critical Approach Speed _____ mph
Critical Approach Speed _____ mph

Speed limit or critical speed on major street traffic > 40 mph..... ☐
or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)

☒ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume **SATISFIED YES ☐ NO ☒**
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume **100% SATISFIED YES ☐ NO ☒**
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More		0800	1200	1400	1500	1600	1700	1800	1900 Hour
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	60	70	75	105	95	82	87	71
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	17	17	20	20	20	20	20	20

Condition B - Interruption of Continuous Traffic **100% SATISFIED YES ☐ NO ☒**
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More		0800	1200	1400	1500	1600	1700	1800	1900 Hour
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	60	70	75	105	95	82	87	71
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	17	17	20	20	20	20	20	20

Combination of Conditions A & B **SATISFIED YES ☐ NO ☒**

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	1500	1600	1700	1800 Hour
Both Approaches - Major Street	X		105	95	82	87
Higher Approach - Minor Street	X		20	20	20	20

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☒
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☐**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☐

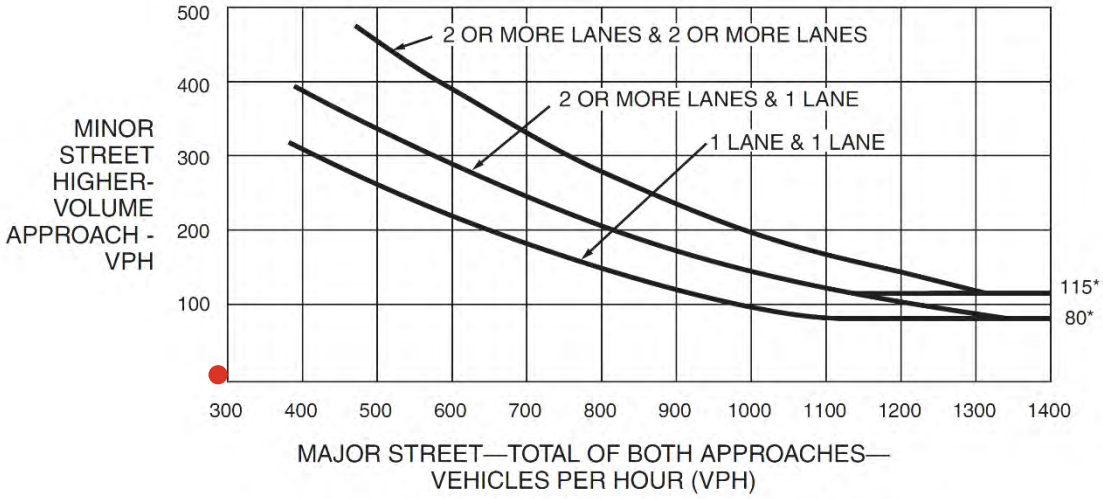
PART B **SATISFIED YES ☐ NO ☐**

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street			
Higher Approach - Minor Street			

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

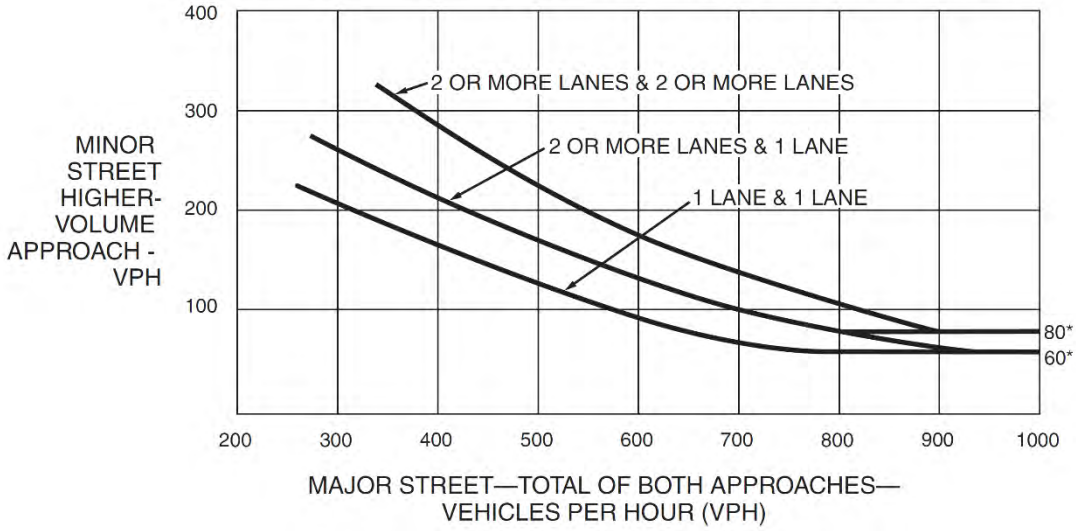
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE June 12, 2024

8			
DIST	CO	RTE	PM

CALC _____ DATE _____
CHK _____ DATE _____

Major St: Hole Avenue — Critical Approach Speed _____ mph
Minor St: Hedrick Avenue — Critical Approach Speed _____ mph

Speed limit or critical speed on major street traffic > 40 mph..... ☐ or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)
☒ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More		0700	1200	1300	1400	1500	1600	1700	1800 / Hour
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	872	980	833	1038	1199	1180	1141	1058
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	35	70	56	75	105	95	82	87

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More		0700	1200	1300	1400	1500	1600	1700	1800 / Hour
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	872	980	833	1038	1199	1180	1141	1058
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	35	70	56	75	105	95	82	87

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☒ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	1500	1600	1700	1800 Hour
Both Approaches - Major Street		X	1199	1180	1141	1058
Higher Approach - Minor Street	X		105	95	82	87

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☒	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☐**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☐

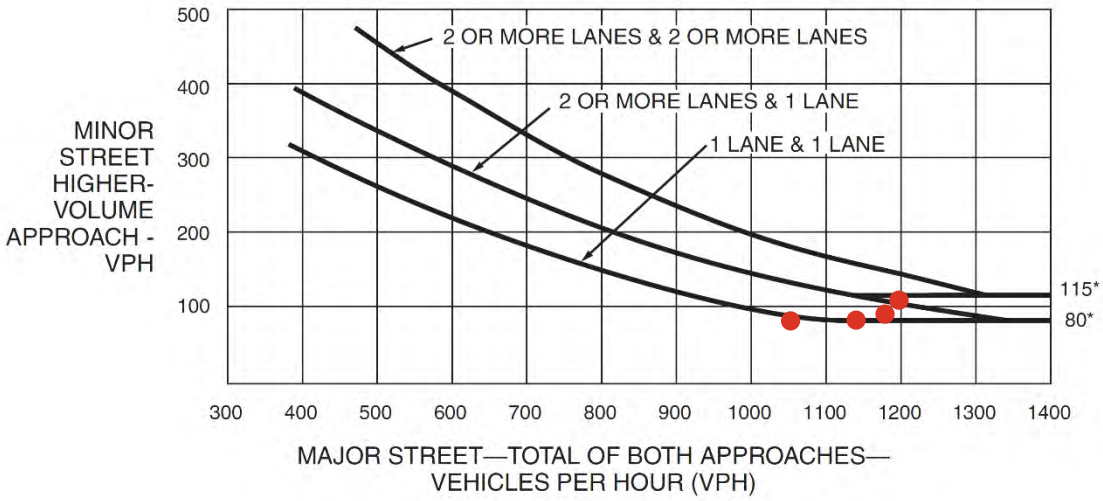
PART B **SATISFIED YES ☐ NO ☐**

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street			
Higher Approach - Minor Street			

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

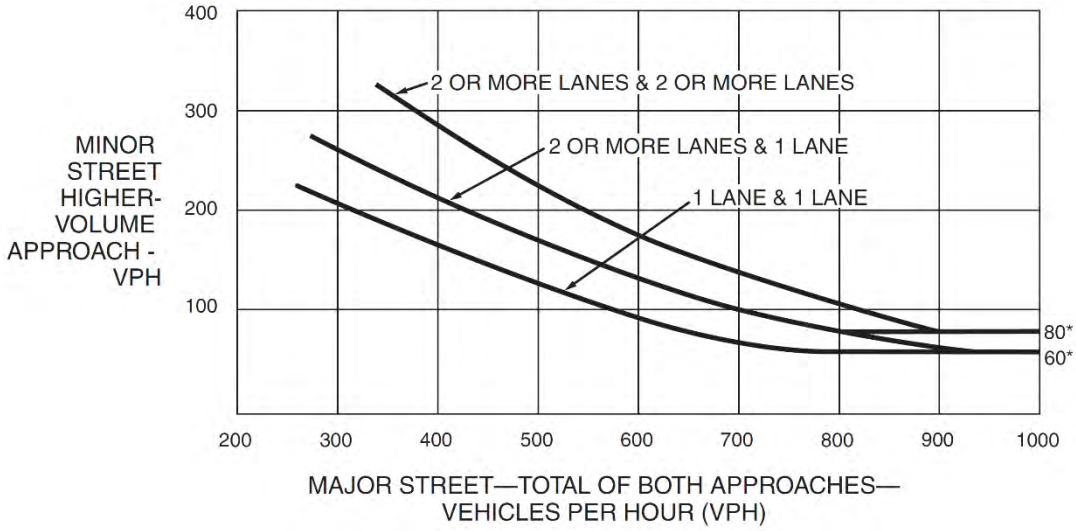
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE June 12, 2024

8			
DIST	CO	RTE	PM

CALC _____ DATE _____
CHK _____ DATE _____

Major St: Jones Avenue — Critical Approach Speed _____ mph
Minor St: Cook Avenue — Critical Approach Speed _____ mph

Speed limit or critical speed on major street traffic > 40 mph..... ☐
or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)

☒ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More		0700	1400	1500	1600	1700	1800	1900	2000 Hour
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	104	130	128	153	137	120	110	107
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	64	59	59	59	59	59	59	59

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More		0700	1400	1500	1600	1700	1800	1900	2000 Hour
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	104	130	128	153	137	120	110	107
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	64	59	59	59	59	59	59	59

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	1400	1500	1600	1700 Hour
Both Approaches - Major Street	X		130	128	153	137
Higher Approach - Minor Street	X		59	59	59	59

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☒
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☐**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☐

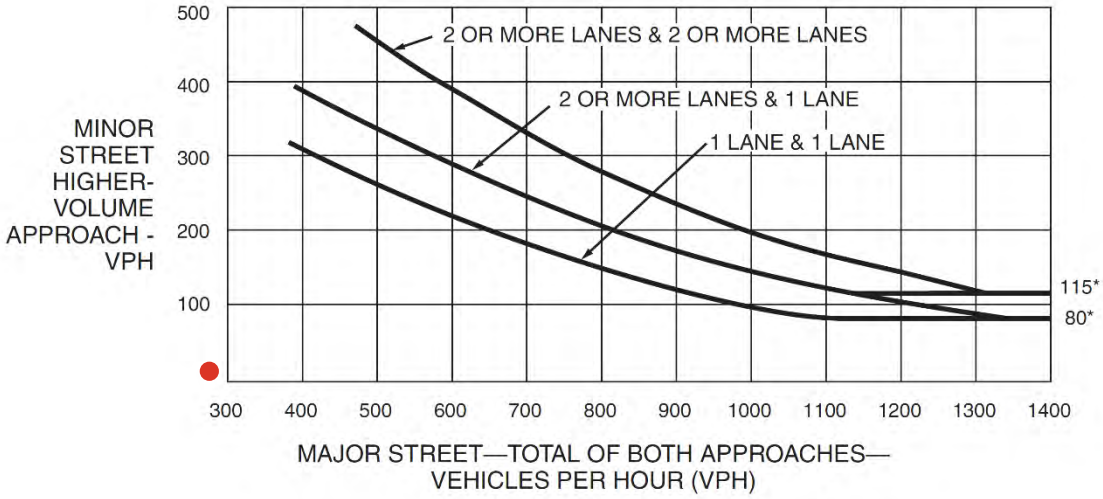
PART B **SATISFIED YES ☐ NO ☐**

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street			
Higher Approach - Minor Street			

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

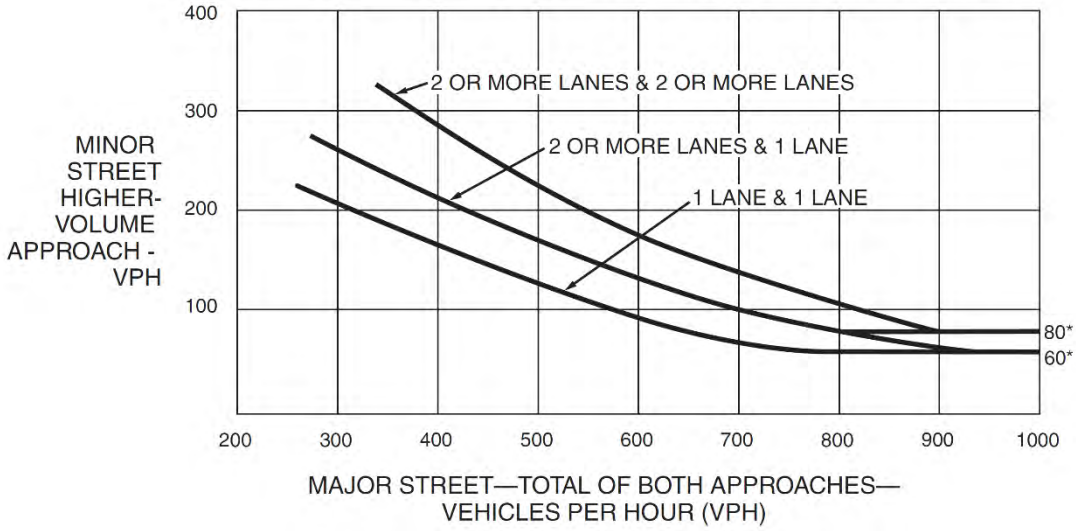
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.