Appendix S

Traffic Analysis

URBAN | CROSSROADS

OLC3 (DPR22-00006, TPM22-05048, SPA22-05047)

TRAFFIC ANALYSIS

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Reference Number	Agency	Date
14428-06 TA Report	City of Perris	May 19, 2023

TABLE OF CONTENTS

APPENDICES

LIST OF EXHIBITS

LIST OF TABLES

LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
CA MUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CMP	Congestion Management Program
DIF	Development Impact Fee
E+P	Existing Plus Project
EAC	Existing Plus Ambient Growth Plus Cumulative
EAPC	Existing Plus Ambient Growth Plus Cumulative Plus Project
EIR	Environmental Impact Report
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
NCHRP	National Cooperative Highway Research Program
NPRBBD	North Perris Road and Bridge Benefit District
PCE	Passenger Car Equivalent
PHF	Peak Hour Factor
Project	OLC3
PVCC SP	Perris Valley Commerce Center Specific Plan
RCTC	Riverside County Transportation Commission
RIVCOM	Riverside County Transportation Analysis Model
RTA	Riverside Transit Agency
TA	Traffic Analysis
TUMF	Transportation Uniform Mitigation Fee
v/c	Volume to Capacity
VMT	Vehicles Miles Traveled
vphgpl	Vehicles per Hour Green per Lane
WRCOG	Western Riverside Council of Governments

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1 INTRODUCTION

This report presents the results of the Traffic Analysis (TA) for OLC3 (Project), which is located on the southeast corner of Perris Boulevard and Perry Street within the City of Perris' *Perris Valley Commerce Center Specific Plan* (PVCC SP), as shown on Exhibit 1-1.

The purpose of this traffic analysis is to evaluate the potential deficiencies related to traffic and circulation system operations that may result from the development of the proposed Project, and to recommend improvements to mitigate potential deficiencies in order to achieve acceptable circulation system operational conditions. This report has been prepared in accordance with the approved Project Traffic Study Scoping agreement developed through consultation with City of Perris staff, which is provided in Appendix 1.1 of this report. The scoping agreement provides an outline of the Project study area, trip generation, trip distribution, and analysis methodology.

1.1 SUMMARY OF FINDINGS

The Project is to construct the following improvements as design features in conjunction with development of the site:

- Project to install a traffic signal at the intersection of Driveway 8 & Ramona Expressway (#21).
- Project should implement sidewalk, curb-and-gutter, and landscaping improvements on Ramona Expressway along the Project's frontage from the Project's western boundary to the Project's eastern boundary to accommodate the site access driveways.
- Project should implement sidewalk, curb-and-gutter, and landscaping improvements on Perris Boulevard along the Project's frontage from Perry Street to the Project's southern boundary to accommodate the site access driveways.
- Project should implement sidewalk, curb-and-gutter, and landscaping improvements on Perry Street along the Project's frontage from Perris Boulevard to the Project's eastern boundary to accommodate the site access driveways.

Additional details and intersection lane geometrics are provided in Section 1.6 *Recommendations* of this report.

1.2 PROJECT OVERVIEW

The Project is to consist of a 774,419 square feet of non-refrigerated High-Cube Fulfillment Center Warehouse use and up to 70,000 square feet of Retail and Restaurant uses (comprised of 30,825 square feet of Strip Retail Plaza use, 5,000 square feet of High Turnover (Sit-Down) Restaurant use, 23,775 square feet of Fast-Food Restaurant Without Drive-Through Window use in-line with the retail use, and 10,400 square feet of Fast-Food Restaurant With Drive-Through Window use). The Project is anticipated to be constructed in a single phase by the year 2024. A preliminary site plan is shown on Exhibit 1-2. It should be noted, the Project description for the retail portion of the site has been updated since the time this traffic study has been prepared. The updated Project description for the retail portion now consists of 39,825 square feet of retail use and 14,775 square feet of Fast-food Restaurant with Drive-Through Window use. The land uses evaluated within this traffic study generate more trips compared to the updated Project description. Therefore, the current traffic study analysis provides a more conservative analysis.

EXHIBIT 1-1: LOCATION MAP

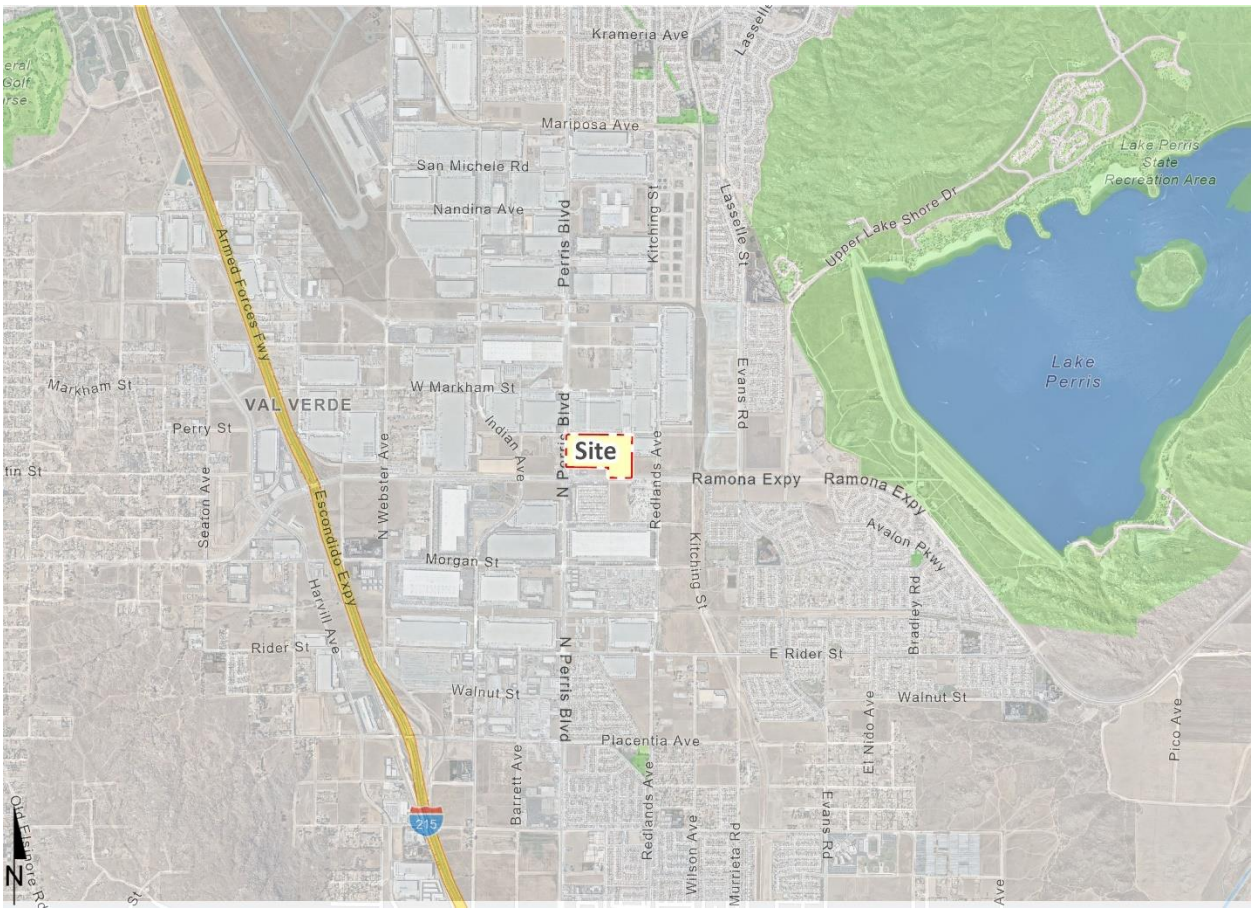


EXHIBIT 1-2: SITE MAP

The following describes the access proposed for the site:

- Driveway 1 on Perris Boulevard – passenger cars only with right-in/right-out only for future commercial component
- Driveway 2 on Perris Boulevard – passenger cars only with right-in/right-out only for future commercial component
- Driveway 3 on Perris Boulevard – passenger cars only with right-in/right-out only for warehouse component
- Driveway 4 on Perry Street – passenger cars only with right-in/right-out/left-in access only for warehouse component
- Driveway 5 on Perry Street – trucks only where trucks will be restricted to right-out/left-in access only (directing all trucks to and from Redlands Avenue to the east) for warehouse component
- Driveway 6 on Perry Street – trucks only where trucks will be restricted to right-out/left-in access only (directing all trucks to and from Redlands Avenue to the east) for warehouse component
- Driveway 7 on Ramona Expressway – passenger cars only with right-in/right-out only for future commercial component
- Driveway 8 on Ramona Expressway – passenger cars only with full access (future shared access with adjacent property) for future commercial component
- Driveway 9 on Perry Street – passenger car access only with full access

It should be noted, the proposed driveways are consistent with the driveway spacing requirements set forth in the PVCC SP. Regional access to the Project site is available from the I-215 Freeway via Ramona Expressway, Harley Knox Boulevard, and Placentia Avenue interchanges. In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) for the following ITE land use codes have been utilized (1):

- High-Cube Fulfillment Center Warehouse has been used to derive site specific trip generation estimates for the industrial component of the proposed Project. The ITE Trip Generation Manual has trip generation rates for high-cube fulfillment center use for both non-sort and sort facilities (ITE land use code 155). While there is sufficient data to support use of the trip generation rates for non-sort facilities, the sort facility rate appears to be unreliable because they are based on limited data (i.e., one to two surveyed sites). The proposed Project is speculative and whether a non-sort or sort facility end-user would occupy the buildings is not known at this time. Lastly, the ITE Trip Generation Manual recommends the use of local data sources where available. As such, the best available source for high-cube fulfillment center use would be the trip-generation statistics published in the High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019) which was commissioned by the Western Riverside Council of Governments (WRCOG) in support of the Transportation Uniform Mitigation Fee (TUMF) update in the County of Riverside. The WSP trip generation rates were published in January 2019 and are based on data collected at 11 local high-cube fulfillment center sites located throughout Southern California (specifically Riverside County and San Bernardino County). However, the WSP study does not include a split for inbound and outbound vehicles, as such, the inbound and outbound splits per the ITE Trip Generation Manual for Land Use Code 154 have been utilized. The truck percentages were further broken down by axle type per the WSP recommended truck mix: 2-4-Axle = 44.1%; 5+-Axle = 55.9%.
- Strip Retail Plaza (<40,000 SF) (ITE land use code 822)
- High Turnover (Sit-Down) Restaurant (ITE land use code 932)
- Fast-Food Restaurant Without Drive-Through Window (ITE land use code 933)

- Fast-Food Restaurant With Drive-Through Window (ITE land use code 934)

The proposed Project is anticipated to generate 9.266 two-way trip-ends per day in actual vehicles, with 1,035 actual AM peak hour trips and 723 actual PM peak hour trips. Passenger Car Equivalent (PCE) factors have been applied to Project truck trips, consistent with City of Perris guidance. For the purposes of the operations analysis, the PCE trip generation has been utilized. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

1.3 ANALYSIS SCENARIOS

For the purposes of this traffic study, potential deficiencies to traffic and circulation have been assessed for each of the following conditions:

- Existing (2022)
- Existing Plus Project (E+P)
- Existing Plus Ambient Growth Plus Cumulative (E+A+C) (2024)
- Existing Plus Ambient Growth Plus Project Plus Cumulative (E+A+P+C) (2024)
- Horizon Year (2045) Without Project
- Horizon Year (2045) With Project

1.3.1 EXISTING (2022) CONDITIONS

Information for Existing (2022) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared.

1.3.2 EXISTING PLUS PROJECT CONDITIONS

The E+P analysis determines any significant traffic operation and circulation system deficiencies that would occur on the existing roadway system in the scenario of the Project being placed upon Existing conditions.

1.3.3 EXISTING PLUS AMBIENT GROWTH PLUS CUMULATIVE & EXISTING PLUS AMBIENT GROWTH PLUS PROJECT PLUS CUMULATIVE (2024) CONDITIONS

The EAC and EAPC (2024) conditions analysis determines the potential circulation system deficiencies based on a comparison of the EAPC traffic conditions to EAC traffic conditions. The roadway network is similar to Existing conditions except for new connections/driveways to be constructed by the Project. To account for background traffic growth, an ambient growth factor from Existing (2022) conditions of 6.09% (3 percent per year, compounded over 2 years) is included for both EAC and EAPC (2024) traffic conditions. The assumed ambient growth factor is based on the requirements per the City of Perris and is consistent with other recently completed traffic studies in the area. The EAPC analysis is intended to identify "Opening Year" deficiencies associated with the development of the proposed Project based on the expected background growth within the study area.

Conservatively, this TA estimates the area ambient traffic growth and then adds traffic generated by other known or probable related projects. These related projects are at least in part already

accounted for in the assumed ambient growth rates; and some of these related projects may not be implemented and operational within the 2024 Opening Year time frame assumed for the Project. The resulting traffic growth utilized in this traffic study (ambient growth factor plus traffic generated by related projects) would therefore tend to overstate rather than understate background cumulative traffic deficiencies under 2024 conditions.

1.3.4 HORIZON YEAR (2045) CONDITIONS

Traffic projections for Horizon Year (2045) conditions were derived from the County of Riverside refined version of the Riverside County Transportation Analysis Model (RIVCOM) using accepted procedures for model forecast refinement and smoothing. The Horizon Year conditions analysis has been utilized to determine if improvements funded through regional transportation mitigation fee programs, such as the Western Riverside Council of Governments (WRCOG) Transportation Uniform Mitigation Fee (TUMF) program, can accommodate the long-range cumulative traffic at the target Level of Service (LOS) identified in the City of Perris (lead agency) General Plan. (2) Each of these regional transportation fee programs are discussed in more detail in Section 8 *Local and Regional Funding Mechanisms*.

1.4 STUDY AREA

To ensure that this TA satisfies the City of Perris' traffic study requirements, Urban Crossroads, Inc. prepared a Project traffic study scoping package for review by City of Perris staff prior to the preparation of this report. This agreement provides an outline of the Project study area, trip generation, trip distribution, and analysis methodology. The agreement approved by the City is included in Appendix 1.1 of this TA.

The 27 study area intersections shown on Exhibit 1-3 and listed in Table 1-1 were selected for evaluation in this TA based on consultation with City of Perris staff. At a minimum, the study area includes intersections where the Project is anticipated to contribute 50 or more peak hour trips per guidance from the City of Perris during the scoping process. (3) The "50 peak hour trip" criteria represent a minimum number of trips at which a typical intersection would have the potential to be substantively affected by a given development proposal. The 50 peak hour trip criterion is a traffic engineering rule of thumb that is accepted and widely used within Riverside County and the City of Perris for estimating a potential area of influence (i.e., study area).

EXHIBIT 1-3: STUDY AREA

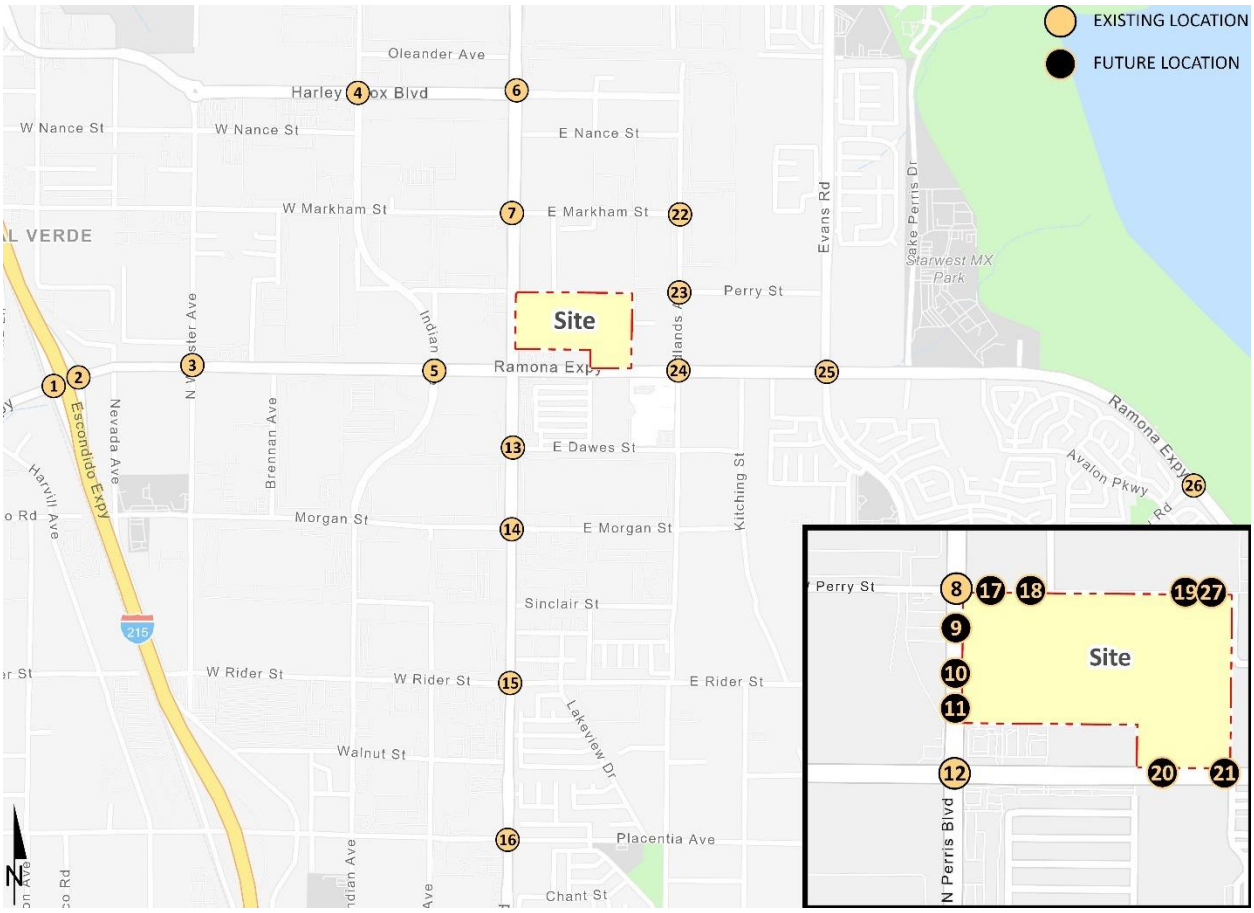


TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

#	Intersection	Jurisdiction	CMP Facility?
1	I-215 SB Ramps & Ramona Exwy.	County of Riverside, Perris, Caltrans	No
2	I-215 NB Ramps & Ramona Exwy.	County of Riverside, Perris, Caltrans	No
3	Webster Av. & Ramona Exwy.	Perris	No
4	Indian Av. & Harley Knox Bl.	Perris	No
5	Indian Av. & Ramona Exwy.	Perris	No
6	Perris Bl. & Harley Knox Bl.	Perris	No
7	Perris Bl. & Markham St.	Perris	No
8	Perris Bl. & Perry St.	Perris	No
9	Perris Bl. & Driveway 1	Perris	No
10	Perris Bl. & Driveway 2	Perris	No
11	Perris Bl. & Driveway 3	Perris	No
12	Perris Bl. & Ramona Exwy.	Perris	No
13	Perris Bl. & Dawes St.	Perris	No
14	Perris Bl. & Morgan St.	Perris	No
15	Perris Bl. & Rider St.	Perris	No
16	Perris Bl. & Placentia Av.	Perris	No
17	Driveway 4 & Perry St.	Perris	No
18	Driveway 5 & Perry St.	Perris	No
19	Driveway 6 & Perry St.	Perris	No
20	Driveway 7 & Ramona Exwy.	Perris	No
21	Driveway 8 & Ramona Exwy.	Perris	No
22	Redlands Av. & Markham St.	Perris	No
23	Redlands Av. & Perry St.	Perris	No
24	Redlands Av. & Ramona Exwy.	Perris	No
25	Evans Rd. & Ramona Exwy.	Perris	No
26	Ramona Exwy. & Bradley Rd.	Perris	No
27	Driveway 9 & Perry St.	Perris	No

The intent of a Congestion Management Program (CMP) is to more directly link land use, transportation, and air quality, thereby prompting reasonable growth management programs that will effectively utilize new transportation funds, alleviate traffic congestion and related deficiencies, and improve air quality. The County of Riverside CMP became effective with the passage of Proposition 111 in 1990 and most recently updated in 2019 as part of the Riverside County Long Range Transportation Study. The Riverside County Transportation Commission (RCTC) adopted the 2019 CMP for the County of Riverside in December 2019. (4) There are no study area intersections identified as a Riverside County CMP intersection.

1.5 DEFICIENCIES

This section provides a summary of deficiencies by analysis scenario. Section 2 *Methodologies* provides information on the methodologies used in the analysis and Section 3 *Area Conditions*, Section 5 *E+P Traffic Conditions*, Section 6 *EAC & EAPC (2024) Conditions*, and Section 7 *Horizon Year (2045) Conditions* includes the detailed analysis. A summary of LOS results for all analysis scenarios is presented in Table 1-2.

1.5.1 EXISTING (2022) CONDITIONS

The study area intersections are currently operating at an acceptable LOS during the peak hours under Existing (2022) traffic conditions.

1.5.2 E+P CONDITIONS

the study area intersections are anticipated to continue to operate at an acceptable LOS during the peak hours, consistent with Existing (2022) conditions.

1.5.3 EAC & EAPC (2024) CONDITIONS

The following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours EAC (2024) traffic conditions:

- I-215 SB Ramps & Ramona Expressway (#1) – LOS F PM peak hour only
- I-215 NB Ramps & Ramona Expressway (#2) – LOS F PM peak hour only
- Indian Avenue & Harley Knox Boulevard (#4) – LOS F PM peak hour only
- Indian Avenue & Ramona Expressway (#5) – LOS E PM peak hour only
- Perris Boulevard & Harley Knox Boulevard (#6) – LOS E PM peak hour only
- Perris Boulevard & Ramona Expressway (#12) – LOS E AM and PM peak hours
- Redlands Avenue & Ramona Expressway (#24) – LOS E AM peak hour; LOS F PM peak hour
- Evans Road & Ramona Expressway (#25) – LOS E PM peak hour only

There are no additional study area intersections anticipated to operate at an unacceptable LOS during the peak hours, in addition to the intersections identified under EAC (2024) traffic conditions. Although already deficient under EAC (2024) traffic conditions, the following intersections are now deficient during the AM peak hour under EAPC (2024) traffic conditions:

- I-215 SB Ramps & Ramona Expressway (#1) – LOS E AM peak hour; LOS F PM peak hour
- I-215 NB Ramps & Ramona Expressway (#2) – LOS E AM peak hour; LOS F PM peak hour

TABLE 1-2: SUMMARY OF LOS

#	Intersection	Existing AM	Existing PM	E+P AM	E+P PM	EAC (2024) AM	EAC (2024) PM	EAPC (2024) AM	EAPC (2024) PM	Horizon Year (2045) Without Project AM	Horizon Year (2045) Without Project PM	Horizon Year (2045) With Project AM	Horizon Year (2045) With Project PM
1	I-215 SB Ramps & Ramona Exwy.	A - D	A - D	A - D	A - D	A - D	F	E	F	F	F	F	F
2	I-215 NB Ramps & Ramona Exwy.	A - D	A - D	A - D	A - D	A - D	F	E	F	E	F	F	F
3	Webster Av. & Ramona Exwy.	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	F	F	F	F
4	Indian Av. & Harley Knox Bl.	A - D	A - D	A - D	A - D	A - D	F	A - D	F	F	F	F	F
5	Indian Av. & Ramona Exwy.	A - D	A - D	A - D	A - D	A - D	E	A - D	E	A - D	F	A - D	F
6	Perris Bl. & Harley Knox Bl.	A - D	A - D	A - D	A - D	A - D	E	A - D	E	A - D	E	A - D	E
7	Perris Bl. & Markham St.	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D
8	Perris Bl. & Perry St.	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D
9	Perris Bl. & Driveway 1	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D
10	Perris Bl. & Driveway 2	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D
11	Perris Bl. & Driveway 3	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D
12	Perris Bl. & Ramona Exwy.	A - D	A - D	A - D	A - D	E	E	E	E	E	E	E	F
13	Perris Bl. & Dawes St.	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D
14	Perris Bl. & Morgan St.	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D
15	Perris Bl. & Rider St.	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D
16	Perris Bl. & Placentia Av.	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	E	A - D	E
17	Driveway 4 & Perry St.	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D
18	Driveway 5 & Perry St.	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D
19	Driveway 6 & Perry St.	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D
20	Driveway 7 & Ramona Exwy.	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D
21	Driveway 8 & Ramona Exwy.	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D
22	Redlands Av. & Markham St.	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D
23	Redlands Av. & Perry St.	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D
24	Redlands Av. & Ramona Exwy.	A - D	A - D	A - D	A - D	E	F	F	F	F	F	F	F
25	Evans Rd. & Ramona Exwy.	A - D	A - D	A - D	A - D	A - D	E	A - D	E	F	F	F	F
26	Ramona Exwy. & Bradley Rd.	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D	A - D
27	Driveway 9 & Perry St.	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D	N/A	N/A	A - D	A - D

= A - D = E = F

1.5.4 HORIZON YEAR (2045) CONDITIONS

The following study area intersections are anticipated to operate at an unacceptable LOS under Horizon Year (2045) Without Project traffic conditions:

- I-215 SB Ramps & Ramona Expressway (#1) – LOS F AM and PM peak hours
- I-215 NB Ramps & Ramona Expressway (#2) – LOS E AM peak hour; LOS F PM peak hour
- Webster Avenue & Ramona Expressway (#3) – LOS F AM and PM peak hours
- Indian Avenue & Harley Knox Boulevard (#4) – LOS F AM and PM peak hours
- Indian Avenue & Ramona Expressway (#5) – LOS F PM peak hour only
- Perris Boulevard & Harley Knox Boulevard (#6) – LOS E PM peak hour only
- Perris Boulevard & Ramona Expressway (#12) – LOS E AM and PM peak hours
- Perris Boulevard & Placentia Avenue (#16) – LOS E PM peak hour only
- Redlands Avenue & Ramona Expressway (#24) – LOS F AM and PM peak hours
- Evans Road & Ramona Expressway (#25) – LOS F AM and PM peak hours

There are no additional study area intersections anticipated to operate at an unacceptable LOS during the peak hours with the addition of Project traffic, under Horizon Year (2045) With Project traffic conditions.

1.6 RECOMMENDATIONS

This section provides a summary of deficiencies and recommended improvements. The same study area intersection deficiencies occur without and with Project traffic for all analysis scenarios (see Table 1-2). As such, there are no direct project-related deficiencies, however, the Project would cumulatively contribute to each of the deficiencies identified in Table 1-2. Each project implementing within the PVCC SP is required to incorporate applicable mitigation from the PVCC Specific Plan Environmental Impact Report (EIR). The relevant traffic mitigation measures from the PVCC Specific Plan EIR are identified in Section 1.6.1.

1.6.1 PVCC SP EIR TRAFFIC MITIGATION MEASURES

MM Trans 1 Future implementing development projects shall construct on-site roadway improvements pursuant to the general alignments and right-of-way sections set forth in the PVCC Circulation Plan, except where said improvements have previously been constructed.

MM Trans 2 Sight distance at the project entrance roadway of each implementing development project shall be reviewed with respect to standard City of Perris sight distance standards at the time of preparation of final grading, landscape and street improvement plans.

MM Trans 3 Each implementing development project shall participate in the phased construction of off-site traffic signals through payment of that project's fair share of traffic signal mitigation fees and the cost of other off-site improvements through payment of fair share mitigation fees which include TUMF, Development Impact Fee (DIF), and the

NPRBBD (North Perris Road and Bridge Benefit District). The fees shall be collected and utilized as needed by the City of Perris to construct the improvements necessary to maintain the required level of service and build or improve roads to their build-out level.

MM Trans 4 Prior to the approval of individual implementing development projects, the Riverside Transit Agency (RTA) shall be contacted to determine if the RTA has plans for the future provision of bus routing in the project area that would require bus stops at the project access points. If the RTA has future plans for the establishment of a bus route that will serve the project area, road improvements adjacent to the project site shall be designed to accommodate future bus turnouts at locations established through consultation with the RTA. RTA shall be responsible for the construction and maintenance of the bus stop facilities. The area set aside for bus turnouts shall conform to RTA design standards, including the design of the contact between sidewalk and curb and gutter at bus stops and the use of ADA-compliant paths to the major building entrances in the project.

MM Trans 5 Bike racks shall be installed in all parking lots in compliance with City of Perris standards.

MM Trans 6 Each implementing development project that is located adjacent to the MWD Trail shall coordinate with the City of Perris Parks and Recreation Department to determine the development plan for the trail.

MM Trans 7 Implementing project-level traffic studies shall be required for all subsequent implementing development proposals within the boundaries of the PVCC as approved by the City of Perris Engineering Department. These subsequent traffic studies shall identify specific project deficiencies and needed roadway improvements to be constructed in conjunction with each implementing development project. All intersection spacing for individual tracts or maps shall conform to the minimum City intersection spacing standards. All turn pocket lengths shall conform at least to the minimum City turn pocket length standards. If any of the proposed improvements are found to be infeasible, the implementing development project applicant would be required to provide alternative feasible improvements to achieve levels of service satisfactory to the City.

MM Trans 8 Proposed mitigation measures resulting from project-level traffic studies shall be coordinated with the NPRBBD to ensure that they are in conformance with the ultimate improvements planned by the NPRBBD. The applicant shall be eligible to receive proportional credits against the NPRBBD for construction of project level mitigation that is included in the NPRBBD.

1.6.2 SITE ADJACENT AND SITE ACCESS RECOMMENDATIONS

The following recommendations are based on the minimum improvements needed to accommodate site access and maintain acceptable peak hour operations for the proposed Project. The site adjacent recommendations are shown on Exhibit 1-4. The site adjacent queuing analysis worksheets are provided in Appendix 1.2.

The existing lane configuration and traffic control should be maintained at the intersection of Perris Boulevard & Perry Street (#8).

Recommendation 1 – Perris Boulevard & Driveway 1 (#9) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the westbound approach (Project driveway).
- Project to construct a westbound right turn lane.

Recommendation 2 – Perris Boulevard & Driveway 2 (#10) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the westbound approach (Project driveway).
- Project to construct a westbound right turn lane.

Recommendation 3 – Perris Boulevard & Driveway 3 (#11) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the westbound approach (Project driveway).
- Project to construct a westbound right turn lane.

Recommendation 4 – Driveway 4 & Perry Street (#17) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the northbound approach (Project driveway).
- Project to construct a northbound right turn lane.

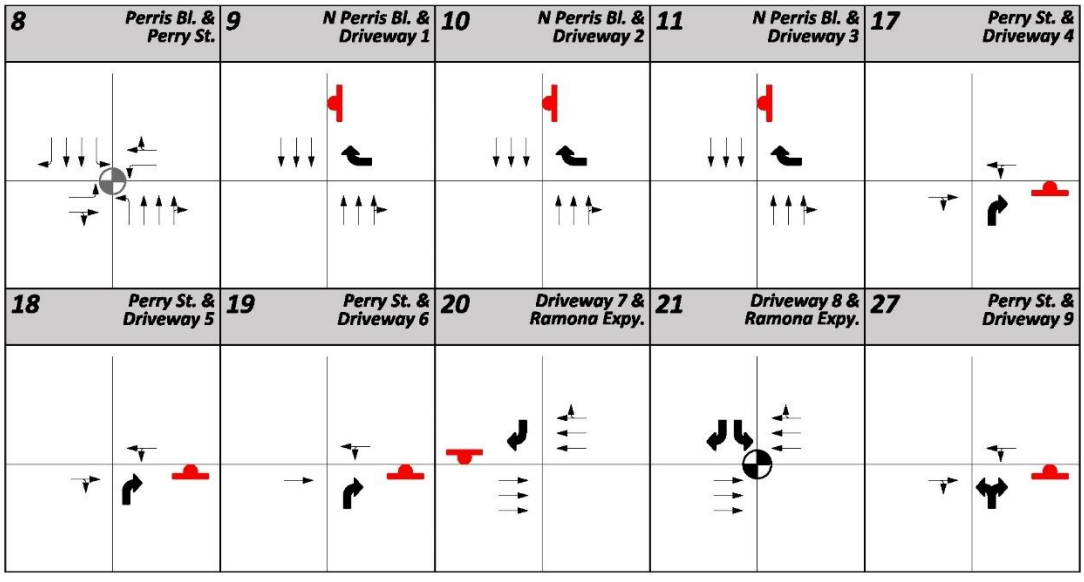
Recommendation 5 – Driveway 5 & Perry Street (#18) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the northbound approach (Project driveway).
- Project to construct a northbound right turn lane.

Recommendation 6 – Driveway 6 & Perry Street (#19) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the northbound approach (Project driveway).
- Project to construct a northbound right turn lane.

EXHIBIT 1-4: SITE ACCESS RECOMMENDATIONS



= New Traffic Signal
= Traffic Signal
= Stop Sign Improvement
= Lane Improvement
= Existing Lane
TWLTL = Two-way Left-turn Lane

Recommendation 7 – Driveway 7 & Ramona Expressway (#20) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the southbound approach (Project driveway).
- Project to construct a southbound right turn lane.

Recommendation 8 – Driveway 8 & Ramona Expressway (#21) – The following improvements are necessary to accommodate site access:

- Project to install a traffic signal.
- Project to construct a southbound left turn lane and right turn lane.
- Project to construct an eastbound left turn lane with a minimum of 200-feet of storage.

Recommendation 9 – Driveway 9 & Perry Street (#27) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the northbound approach (Project driveway).
- Project to construct a northbound shared left-right turn lane.

Recommendation 10 – Ramona Expressway is an east-west oriented roadway located along the Project's southern boundary. Ramona Expressway is currently constructed to its ultimate half-section pavement width as an Expressway (184-foot right-of-way) between the Project's western and eastern boundaries consistent with the PVCC SP and the City of Perris General Plan Circulation Element. However, the Project should implement sidewalk, curb-and-gutter, and landscaping improvements on Ramona Expressway along the Project's frontage from the Project's western boundary to the Project's eastern boundary to accommodate the site access driveways.

Recommendation 11 – Perris Boulevard is a north-south oriented roadway located along the Project's western boundary. Perris Boulevard is currently constructed at its ultimate half-section pavement width as an Arterial (128-foot right-of-way) between Perry Street and the Project's southern boundary consistent with the PVCC SP and the City of Perris General Plan Circulation Element. However, the Project should implement sidewalk, curb-and-gutter, and landscaping improvements on Perris Boulevard along the Project's frontage from Perry Street to the Project's southern boundary to accommodate the site access driveways.

Recommendation 12 – Perry Street is an east-west oriented roadway located on the Project's northern boundary. Perry Street is currently constructed at its ultimate half-section pavement width as a Local roadway (60-foot right-of-way) between Perris Boulevard and the Project's eastern boundary consistent with the PVCC SP and the City of Perris General Plan Circulation Element. However, the Project should implement sidewalk, curb-and-gutter, and landscaping improvements on Perry Street along the Project's frontage from Perris Boulevard to the Project's eastern boundary to accommodate the site access driveways.

On-site traffic signing and striping should be implemented agreeable with the provisions of the California Manual on Uniform Traffic Control Devices (CA MUTCD) and in conjunction with detailed construction plans for the Project site.

Sight distance at each project access point should be reviewed with respect to standard California Department of Transportation (Caltrans) and City of Perris sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

1.6.3 OFF-SITE RECOMMENDATIONS

A summary of the off-site intersection improvements is provided in Table 1-3. These recommended improvements are consistent with or less than the geometrics assumed in the City of Perris and County of Riverside General Plan Circulation Elements. Improvements found to be included in the WRCOG TUMF program, City of Perris's (lead agency) DIF program, or NPRBBD have been identified as such. The NPRBBD includes additional improvements to supplement the TUMF and DIF network. NPRBBD fees are inclusive of TUMF and DIF.

1.7 TRUCK ACCESS

Due to the typical wide turning radius of large trucks, a truck turning template has been overlaid on the site plan at each applicable Project driveway anticipated to be utilized by heavy trucks in order to determine appropriate curb radii and to verify that trucks will have sufficient space to execute turning maneuvers (see Exhibit 1-5). A WB-67 truck (53-foot trailer) has been utilized for the purposes of this analysis. As shown on Exhibit 1-5, both Driveway 5 and Driveway 6 on Perry Street should be modified to accommodate a 45-foot curb radius on the southeast corners to accommodate the egress turning radius of trucks. Also, both Driveway 5 and Driveway 6 should be widened to 60-feet.

1.8 VEHICLE MILES TRAVELED (VMT) ANALYSIS

The City of Perris adopted Transportation Impact Analysis Guidelines for CEQA (City Guidelines). (5) The City Guidelines include Vehicle Miles Traveled (VMT) thresholds that were recently reviewed and adopted by City Council on May 12, 2020. The VMT Scoping Form for Land Use Projects, provided by the City of Perris, has been completed and reviewed for accuracy. As shown in Appendix 1.1, based on the criteria set forth in the City of Perris guidelines, the Project screens out of additional VMT analysis. As such, no additional VMT modeling has been conducted for the proposed Project.

TABLE 1-3: SUMMARY OF IMPROVEMENTS BY ANALYSIS SCENARIO

#	Intersection Location	Jurisdiction	Analysis Scenario						Project Responsibility	Improvements in DIF[1,2]	Project Fair Share
			Existing (2022)	E+P	EAC (2024)	EAPC (2024)	Horizon Year (2045) Without Project	Horizon Year (2045) With Project			
1	I-215 SB Ramps & Ramona Exwy.	County of Riverside, Perris, Caltrans	None	None	Add 2nd SB left turn lane	Same	Same	Same	Fair Share	No	9.4%
					Add 3rd EB through lane	Same	Same	Same	Fees	Yes (TUMF)	
					Add EB right turn lane	Same	Same	Same	Fair Share	No	
					Add 2nd WB left turn lane	Same	Same	Same	Fees	Yes (TUMF)	
					Add 3rd WB through lane	Same	Same	Same	Fees	Yes (TUMF)	
2	I-215 NB Ramps & Ramona Exwy.	County of Riverside, Perris, Caltrans	None	None	Add 2nd EB left turn lane	Same	Same	Same	Fees	Yes (TUMF)	15.0%
					Add 3rd EB through lane	Same	Same	Same	Fees	Yes (TUMF)	
					Add 3rd WB through lane	Same	Same	Same	Fees	Yes (TUMF)	
					Add WB free-right turn lane	Same	Same	Same	Fair Share	No	
3	Webster Av. & Ramona Exwy.	Perris	None	None	None	None	Add SB right turn lane	Same	Fair Share	No	10.5%
							Add 2nd EB left turn lane	Same	Fair Share	No	
							Add 4th EB through lane	Same	Fair Share	No	
							Restripe the WB approach to provide one left turn lane, three through lanes, and one shared through-right turn lan	Same	Fair Share	No	
							Modify the traffic signal to implement overlap phasing for the SB right turn lane	Same	Fair Share	No	
4	Indian Av. & Harley Knox Bl.	Perris	None	None	Restripe the EB approach to provide dual left turn lanes, two through lanes, and a shared through-right turn lane	Same	Same	Same	Fair Share	No	3.2%
5	Indian Av. & Ramona Exwy.	Perris	None	None	Add 4th EB through lane	Same	Same	Same	Fair Share	No	22.7%
					Restripe the WB approach to provide one left turn lane, three through lanes, and one shared through-right turn lane	Same	Same	Same	Fair Share	No	
6	Perris Bl. & Harley Knox Bl.	Perris	None	None	Add 2nd EB left turn lane	Same	Same	Same	Fair Share	No	6.2%
12	Perris Bl. & Ramona Exwy.	Perris	None	None	Restripe the NB approach to provide one left turn lane, two through lanes, and one shared-through right turn lane	Same	Same	Same	Fees	Yes (TUMF)	32.9%
					Restripe the SB approach to provide one left turn lane, two through lanes, and one shared-through right turn lane	Same	Same	Same	Fair Share	No	
16	Perris Bl. & Placentia Av.	Perris	None	None	None	None	Add 3rd NB through lane	Same	Fees	Yes (TUMF)	5.5%
							Add NB right turn lane	Same	Fair Share	No	
							Add 3rd SB through lane	Same	Fees	Yes (TUMF)	
							Add SB right turn lane	Same	Fair Share	No	
24	Redlands Av. & Ramona Exwy.	Perris	None	None	Add 2nd SB left turn lane	Same	Same	Same	Fair Share	No	10.9%
					Add 4th EB through lane	Same	Same	Same	Fair Share	No	
					Add 4th WB through lane	Same	Same	Same	Fair Share	No	
							Add NB right turn lane	Same	Fair Share	No	
							Add 2nd EB left turn lane	Same	Fair Share	No	
							Add 2nd WB left turn lane	Same	Fair Share	No	
25	Evans Rd. & Ramona Exwy.	Perris	None	None	Add 3rd WB through lane	Same	Same	Same	Fair Share	No	8.7%

[1] Improvements included in regional/City DIF programs have been identified as such.

[2] Program improvements constructed by project may be eligible for fee credit. In lieu fee payment is at the discretion of the City.

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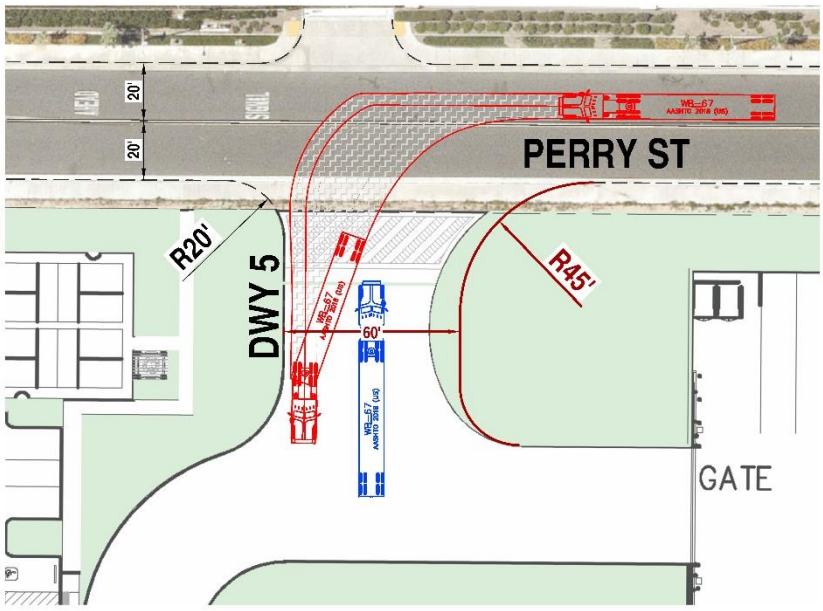
EXHIBIT 1-5: TRUCK ACCESS (PAGE 1 OF 2)

INBOUND WB-67 TRUCKS



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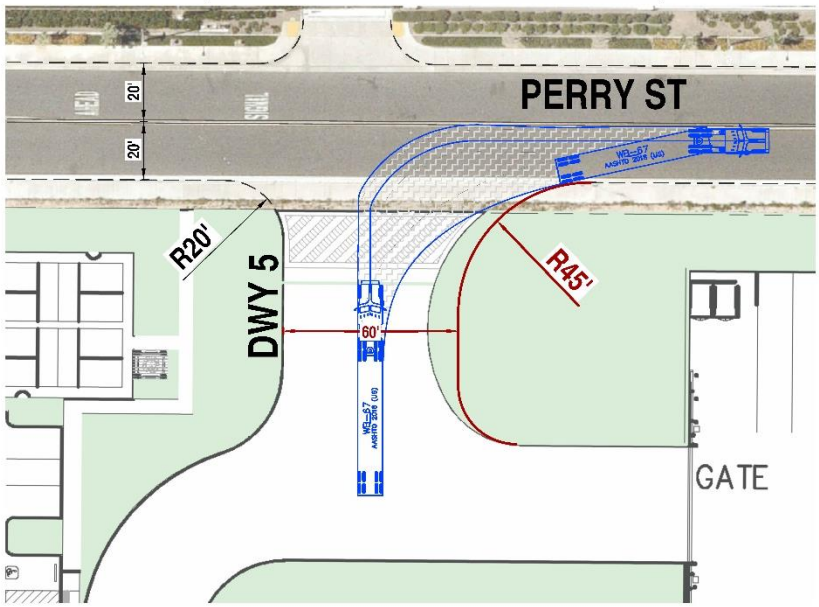


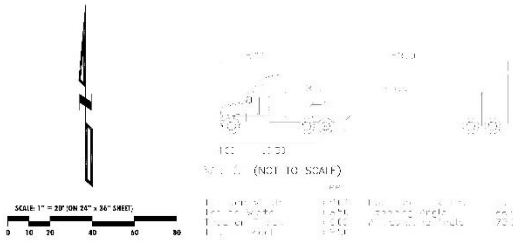
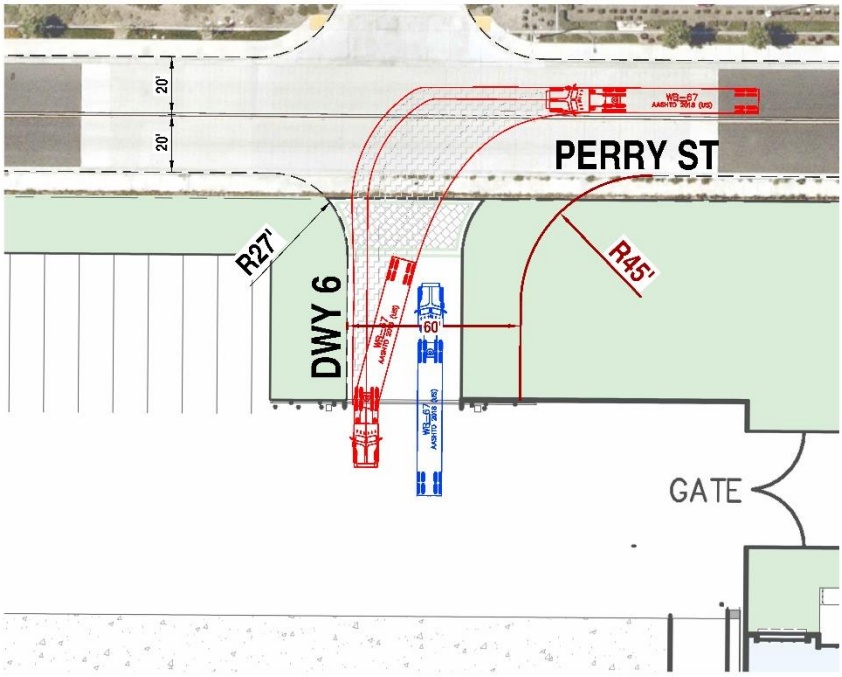
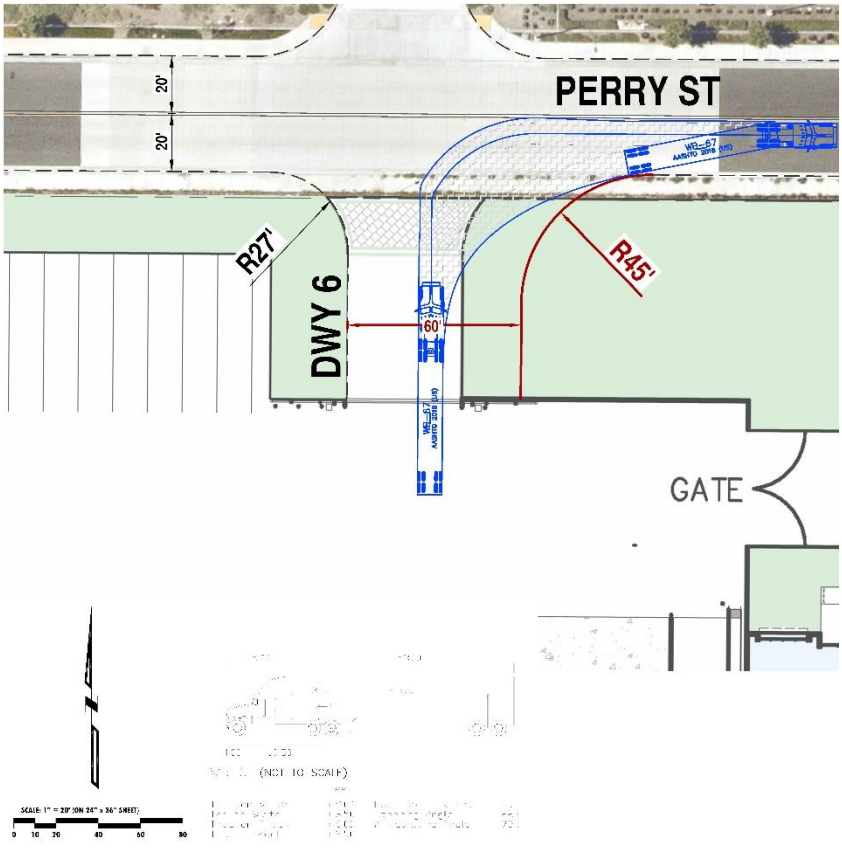


EXHIBIT 1-5: TRUCK ACCESS (PAGE 2 OF 2)

INBOUND WB-67 TRUCKS



OUTBOUND WB-67 TRUCKS



2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with guidance from the City of Perris and other studies recently conducted in the area.

2.1 LEVEL OF SERVICE

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors, such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

2.2 INTERSECTION CAPACITY ANALYSIS

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The 6th Edition Highway Capacity Manual (HCM) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (6) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

The City of Perris and County of Riverside require signalized intersection operations analysis based on the methodology described in the HCM. (6) Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections LOS is related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 2-1.

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0[1]
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F

Source: HCM, 6th Edition

[1] If V/C is greater than 1.0 then LOS is F per HCM.

Consistent with the Riverside County CMP, a saturation flow rate of 1900 vehicles per hour green per lane (vphgpl) has been utilized for all intersections for all scenarios.

The traffic modeling and signal timing optimization software package Synchro (Version 11) has been utilized to analyze signalized intersections. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Customary practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., PHF = [Hourly Volume] / [4 x Peak 15-minute Flow Rate]). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak

hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. (6)

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Perris requires the operations of unsignalized intersections be evaluated using the methodology described in the HCM. (6) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2). At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. Delay for the intersection is reported for the worst individual movement at a two-way stop-controlled intersection. For all-way stop controlled intersections, LOS is computed for the intersection as a whole (average delay).

TABLE 2-2: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0[1]
Little or no delays.	0 to 10.00	A
Short traffic delays.	10.01 to 15.00	B
Average traffic delays.	15.01 to 25.00	C
Long traffic delays.	25.01 to 35.00	D
Very long traffic delays.	35.01 to 50.00	E
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F

Source: HCM, 6th Edition

[1] If V/C is greater than 1.0 then LOS is F per HCM.

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or determine the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TA uses the signal warrant criteria presented in the latest edition of the Caltrans California Manual on Uniform Traffic Control Devices (CA MUTCD). (7)

The signal warrant criteria for Existing study area intersections are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (7) Specifically, this TA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing traffic conditions and for all future analysis scenarios for existing unsignalized intersections. Warrant 3 is appropriate to use for this TA because it provides specialized warrant criteria for intersections with rural characteristics. For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection. Urban warrants have been used as posted speed limits on the major roadways with unsignalized intersections are 40 miles per hour or below and rural warrants have been used where speeds exceed 40 miles per hour.

Future intersections that do not currently exist have been assessed regarding the potential need for new traffic signals based on future average daily traffic (ADT) volumes, using the Caltrans planning level ADT-based signal warrant analysis worksheets. Similarly, the speed limit has been used as the basis for determining the use of Urban and Rural warrants. Traffic signal warrant analyses were performed for the following study area intersection shown in Table 2-3:

TABLE 2-3: TRAFFIC SIGNAL WARRANT ANALYSIS LOCATIONS

#	Intersection
18	Driveway 5 & Perry St.
19	Driveway 6 & Perry St.
21	Driveway 8 & Ramona Exwy.
23	Redlands Av. & Perry St.

Driveways 1, 2, and 3 on Perris Boulevard, Driveway 4 and Driveway 9 on Perry Street, and Driveway 7 on Ramona Expressway have not been evaluated for traffic signal warrants since these driveways are proposed for restricted access or are not suitable locations for the installation of a traffic signal with respect to the locations of existing signals (right-in/right-out only).

The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 3 *Area Conditions* of this report. The traffic signal warrant analyses for future conditions are presented in Section 5 *E+P Traffic Conditions*, Section 6 *EAC & EAPC (2024) Conditions*, and Section 7 *Horizon Year (2045) Conditions* of this report. It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

2.4 OFF-RAMP QUEUING ANALYSIS

Consistent with Caltrans requirements, the 95th percentile queuing of vehicles has been assessed at the off-ramps to determine potential queuing deficiencies at the freeway ramp intersections at the I-215 Freeway at the Ramona Expressway interchange. Specifically, the off-ramp queuing analysis is utilized to identify any potential queuing and "spill back" onto the I-215 Freeway mainline from the off-ramps.

The traffic progression analysis tool and HCM intersection analysis program, Synchro, has been used to assess the potential deficiencies/needs of the intersections with traffic added from the proposed Project. Storage (turn-pocket) length recommendations at the ramps have been based upon the 95th percentile queue resulting from the Synchro progression analysis. The footnote from the Synchro output sheets indicates if the 95th percentile cycle exceeds capacity. Traffic is simulated for two complete cycles of the 95th percentile traffic in Synchro in order to account for the effects of spillover between cycles. In practice, the 95th percentile queue shown will rarely be exceeded and the queues shown with the footnote are acceptable for the design of storage bays. The 95th percentile queue is

derived from the average queue plus 1.65 standard deviations. The 95th percentile queue is not necessarily ever observed it is simply based on statistical calculations.

2.5 MINIMUM ACCEPTABLE LEVELS OF SERVICE (LOS)

Minimum Acceptable LOS and associated definitions of intersection deficiencies has been obtained from each of the applicable surrounding jurisdictions.

2.5.1 CITY OF PERRIS

The definition of an intersection deficiency has been obtained from the City of Perris' General Plan. LOS D along all City maintained roads (including intersections) and LOS D along I-215 and SR-74 (including intersections with local streets and roads). An exception to the local road standard is LOS E at intersections of any Arterials and Expressways with SR-74, the Ramona-Cajalco Expressway, or at I-215 Freeway ramps. (8) For the purposes of this traffic analysis, LOS D will be considered the acceptable threshold for all intersections within the study area.

LOS E may be allowed within the boundaries of the Downtown Specific Plan Area to the extent that it would support transit-oriented development and walkable communities. Increased congestion in this area will facilitate an increase in transit ridership and encourage development of a complementary mix of land uses within a comfortable walking distance from light rail stations.

2.5.2 COUNTY OF RIVERSIDE

The definition of an intersection deficiency has been obtained from the County of Riverside General Plan. Riverside County General Plan Policy C 2.1 states that the County will maintain the following County-wide target LOS:

The following minimum target levels of service have been designated for the review of development proposals in the unincorporated areas of Riverside County with respect to transportation impacts on roadways designated in the Riverside County Circulation Plan which are currently County maintained, or are intended to be accepted into the County maintained roadway system:

- *LOS C shall apply to all development proposals in any area of the Riverside County not located within the boundaries of an Area Plan, as well as those areas located within the following Area Plans: REMAP, Eastern Coachella Valley, Desert Center, Palo Verde Valley, and those non-Community Development areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.*
- *LOS D shall apply to all development proposals located within any of the following Area Plans: Eastvale, Jurupa, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Menifee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, Western Coachella Valley and those Community Development Areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.*
- *LOS E may be allowed by the Board of Supervisors within designated areas where transit-oriented development and walkable communities are proposed.*

The applicable minimum LOS utilized for the purposes of this analysis is LOS D per the County-wide target LOS for projects located within the Lakeview Nuevo Area Plan. (3)

2.5.3 CALTRANS

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State Highway System facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. (9) If an existing State highway facility is operating at less than this target LOS, the existing LOS should be maintained. In general, the region-wide goal for an acceptable LOS on all freeways and intersections is LOS D. Consistent with the City of Perris and County of Riverside, LOS threshold of LOS D will be used as the target LOS.

2.6 DEFICIENCY CRITERIA

This section outlines the methodology used in this analysis related to identifying circulation system deficiencies. The following deficiency criteria has been utilized for the City of Perris. To determine whether the addition of project-related traffic at a study intersection would result in a deficiency, the following will be utilized:

- A project-related deficiency is considered when a study intersection operates at an acceptable LOS for existing conditions (without the project) and the addition of 50 or more AM or PM peak hour project trips causes the intersection to operate at an unacceptable LOS for E+P traffic conditions.
- A cumulative deficiency is considered when a study intersection is forecast to operate at an unacceptable LOS with the addition of cumulative/background traffic and 50 or more AM or PM peak hour project trips.

2.7 PROJECT FAIR SHARE CALCULATION METHODOLOGY

Improvements found to be included in the County TUMF and/or City DIF programs will be identified as such. For improvements that do not appear to be in either of the pre-existing fee programs, a fair share contribution based on the Project's proportional share may be imposed in order to address the Project's share of deficiencies in lieu of construction. It should be noted that fair share calculations are for informational purposes only and the County Traffic Engineer will determine the appropriate improvements to be implemented by a project (to be identified in the conditions of approval). The Project's fair share cost of improvements would be determined based on the following equation, which is the ratio of Project traffic to new traffic, where new traffic is total future traffic less existing baseline traffic:

Project Fair Share % = Project Traffic / (2045 Total Traffic – Existing (2022) Traffic)

3 AREA CONDITIONS

This section provides a summary of the existing circulation network, the City of Perris General Plan Circulation Network, and a review of existing peak hour intersection operations, traffic signal warrant, and off-ramp queuing analyses.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the agreement with City of Perris staff (Appendix 1.1), the study area includes a total of 16 existing and future intersections as shown previously on Exhibit 1-2. Exhibit 3-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 CITY OF PERRIS GENERAL PLAN AND PVCC SP CIRCULATION ELEMENT

As noted previously, the Project site is located within PVCC SP in the City of Perris. Exhibit 3-2 shows the City of Perris General Plan Circulation Element and Exhibit 3-3 illustrates the City of Perris General Plan roadway cross-sections. Exhibit 3-4 illustrates the PVCC SP Circulation Plan and Exhibit 3-5 shows the corresponding PVCC SP roadway cross-sections.

Expressways can accommodate six-to-eight travel lines with 184-foot right-of-way. These facilities primarily serve through traffic to which access from abutting property shall be kept at a minimum. The following roadway is classified as an Expressway within the study area:

- Ramona Expressway

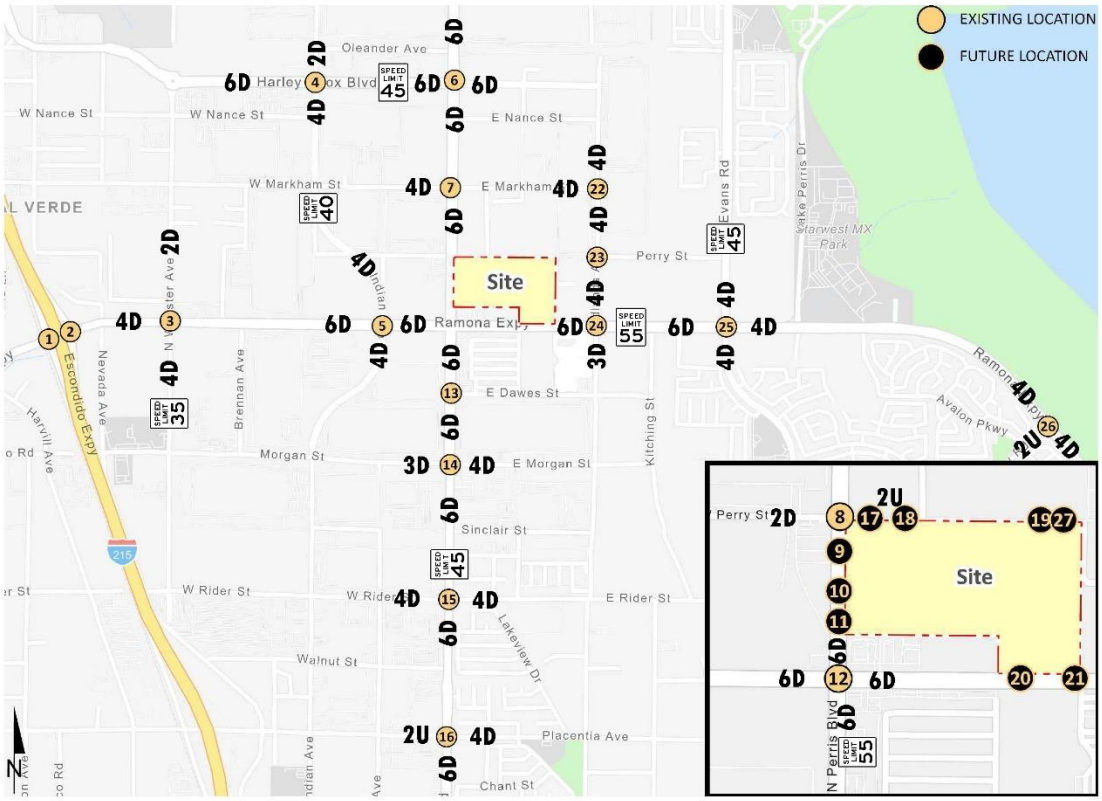
Primary Arterials can accommodate six travel lanes with a 128-foot right-of-way. These facilities serve property zoned for major industrial and commercial uses, or to serve through traffic. The following roadways are classified as a Primary Arterials within the study area:

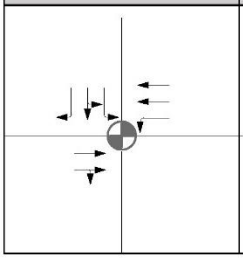
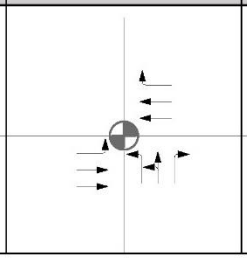
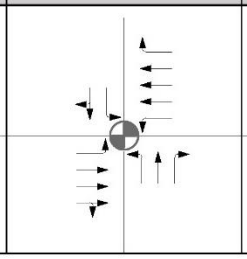
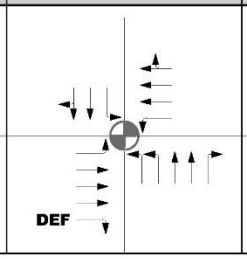
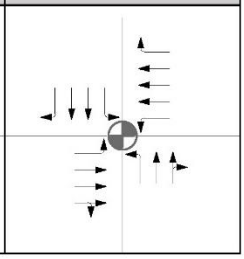
- Harley Knox Boulevard
- Perris Boulevard

Secondary Arterials can accommodate four travel laves with a 64-foot to 70-foot curb-to-curb width. These facilities provide access to residential land use, or commercial and industrial land use in the form of a cul-de-sac. The following roadway is classified as a Secondary Arterial within the study area:

- Morgan Street
- Indian Avenue
- Rider Street
- Redlands Avenue
- Webster Avenue

EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS (PAGE 1 OF 2)



1 1-215 SB Ramps & Ramona Exwy.	2 1-215 NB Ramps & Ramona Exwy.	3 Webster Av. & Ramona Exwy.	4 Indian Av. & Harley Knox Bl.	5 Indian Av. & Ramona Exwy.
				

= *Traffic Signal*
= *Stop Sign*
4 = *Number of Lanes*
D = *Divided*
U = *Undivided*
DEF = *Defacto Right Turn*
RTO = *Right Turn Overlap*
= *Speed Limit (MPH)*

EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS (PAGE 2 OF 2)

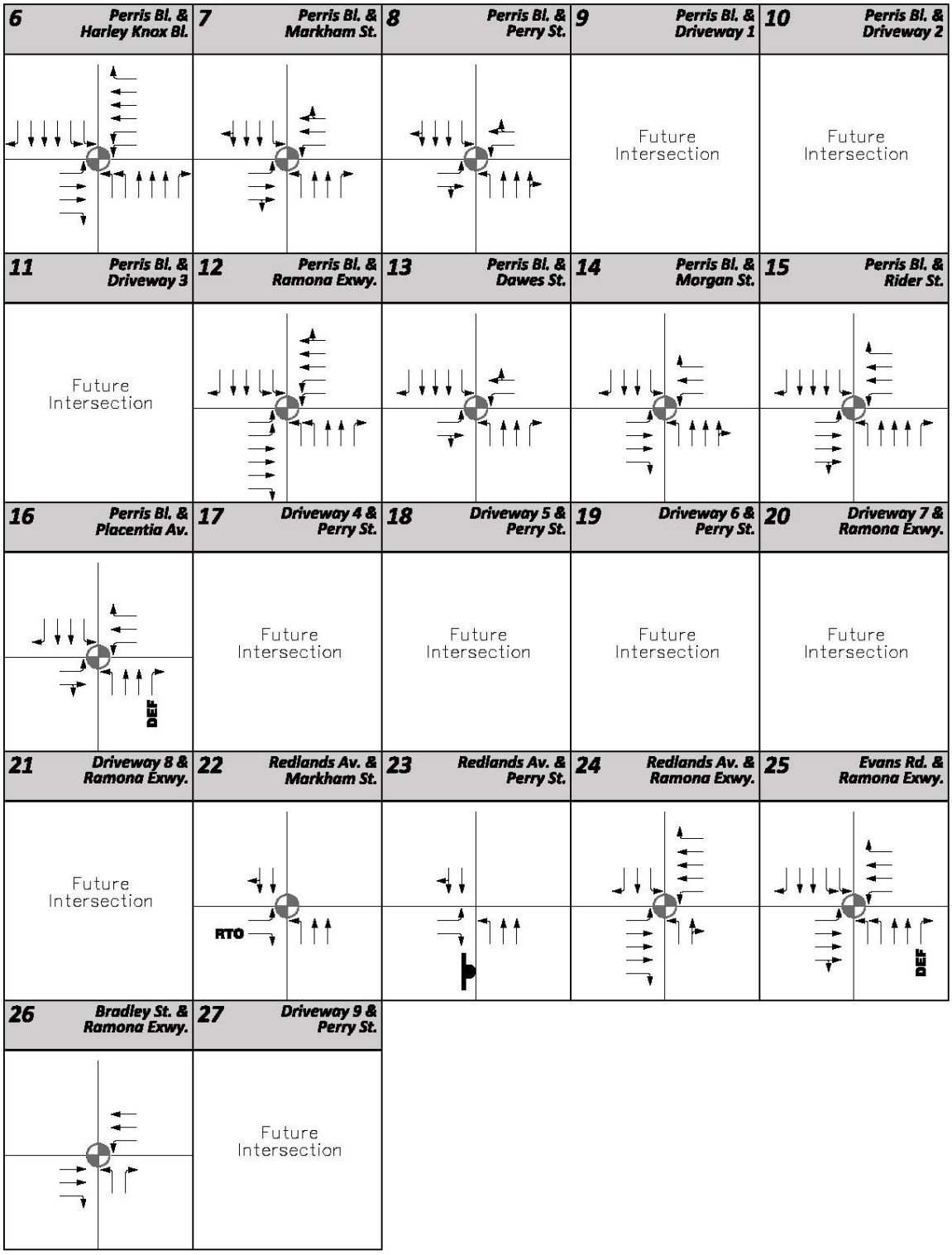


EXHIBIT 3-2: CITY OF PERRIS GENERAL PLAN CIRCULATION ELEMENT

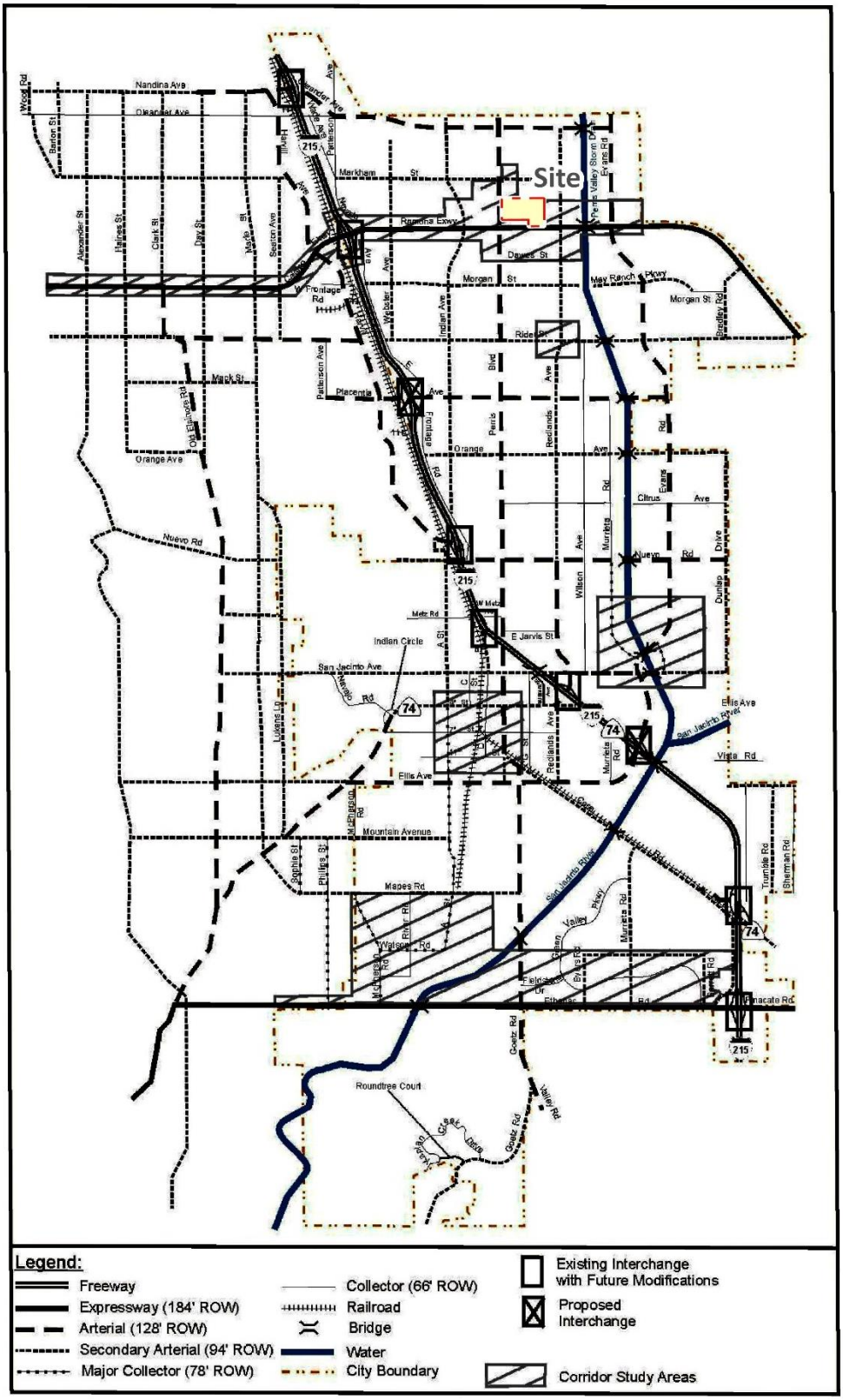
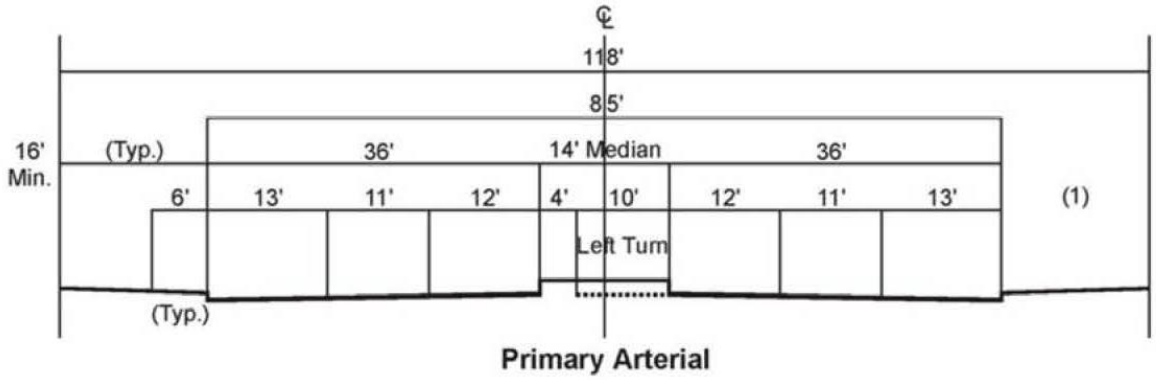
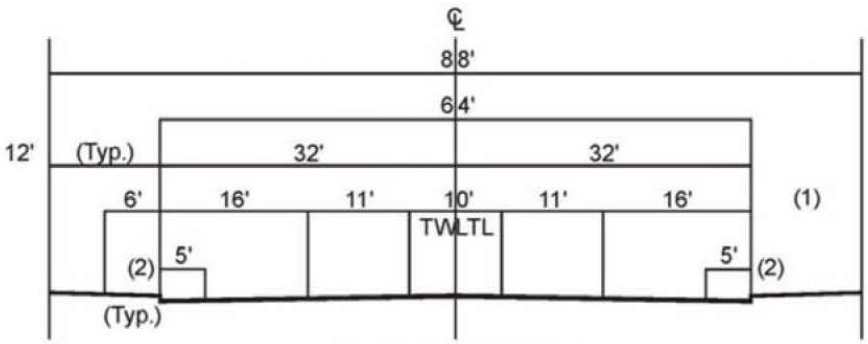


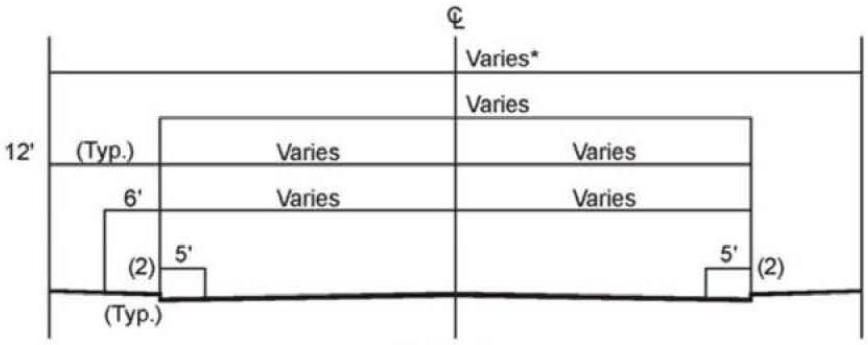
EXHIBIT 3-3: CITY OF PERRIS GENERAL PLAN ROADWAY CROSS-SECTIONS



Primary Arterial



Secondary Arterial



Collector

Legend

(1) No stopping any time both sides.

(2) Bike lane where designated.

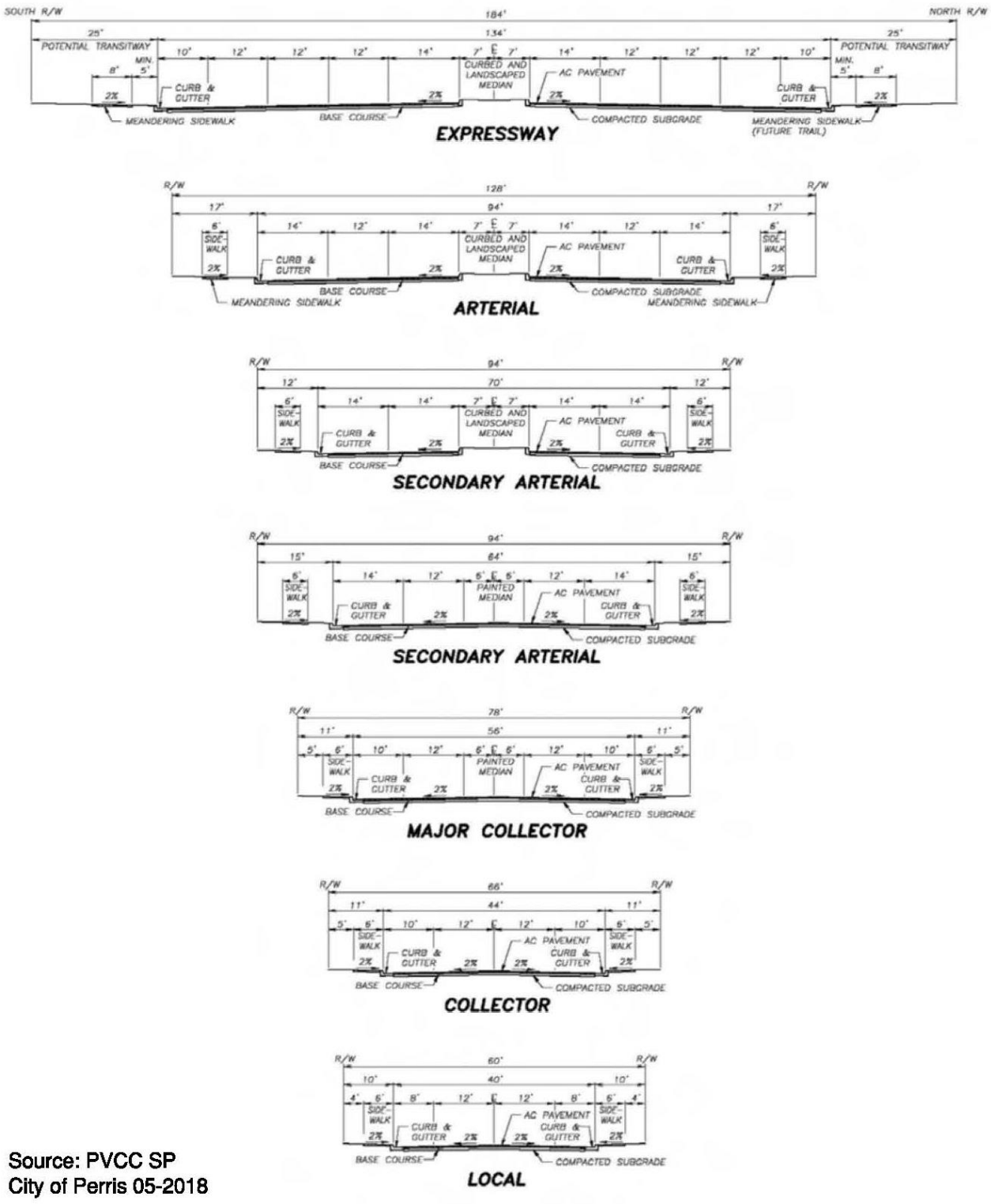
* The width of the collector street can range from 40 feet to 64 feet curb-to-curb.

TWLTL = Two Way Left Turn Lane

Source: City of Perris General Plan 8-2008

EXHIBIT 3-4: PVCC SP CIRCULATION ELEMENT

EXHIBIT 3-5: PVCC SP ROADWAY CROSS-SECTIONS



Source: PVCC SP
City of Perris 05-2018

Collectors can accommodate two travel laves with a 78-foot right-of-way. These facilities provide access to residential land use, or commercial and industrial land use in the form of a cul-de-sac. The following roadway is classified as a collector within the study area:

- Dawes Street

3.2 COUNTY OF RIVERSIDE GENERAL PLAN CIRCULATION ELEMENT

Exhibit 3-6 shows the Mead Valley Area Plan Circulation Element and Exhibit 3-7 shows the Riverside County General Plan roadway cross-sections.

3.3 BICYCLE & PEDESTRIAN FACILITIES

In an effort to promote alternative modes of transportation, the City of Perris and PVCC SP also include a trails and bikeway system. The City of Perris bicycle facilities are shown on Exhibit 3-8 and the PVCC SP bicycle and trail facilities are shown on Exhibit 3-9, which show the proposed trails connected with major features within the City. There is a proposed separated Class IV bikeway along Ramona Expressway and a proposed buffered bike Class IIB bike lane along Perris Boulevard in the vicinity of the Project.

Existing pedestrian facilities within the study area are shown on Exhibit 3-10. As shown on Exhibit 3-10, there are limited pedestrian facilities in the vicinity of the Project site. Field observations and traffic counts conducted in August 2022 indicate light pedestrian and bicycle activity within the study area associated with the adjacent commercial uses.

3.4 TRANSIT SERVICE

The study area within the City of Perris is currently served by RTA, a public transit agency serving various jurisdictions within Riverside County. Based on a review of the existing transit routes within the vicinity of the proposed Project, RTA Routes 19 and 27 run along Ramona Expressway and Perris Boulevard and could potentially serve the Project site. Transit service is reviewed and updated by RTA periodically to address ridership, budget and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate. As such, it is recommended that the applicant work in conjunction with RTA to potentially provide bus service to the site. The PVCC SP transit routes are shown on Exhibit 3-11. Existing transit routes in the vicinity of the study area are illustrated on Exhibit 3-12.

3.3 TRUCK ROUTES

The City of Perris designated truck route map is shown on Exhibit 3-13. Redlands Avenue and Harley Knox Boulevard are identified as designated truck routes. The PVCC SP truck routes are shown previously on Exhibit 3-4. The truck routes identified within the study area on Exhibit 3-13 are consistent with those identified on Exhibit 3-4. These designated truck route maps have been utilized to route truck traffic from the Project and future cumulative development projects throughout the study area.

EXHIBIT 3-6: MEAD VALLEY AREA PLAN CIRCULATION ELEMENT

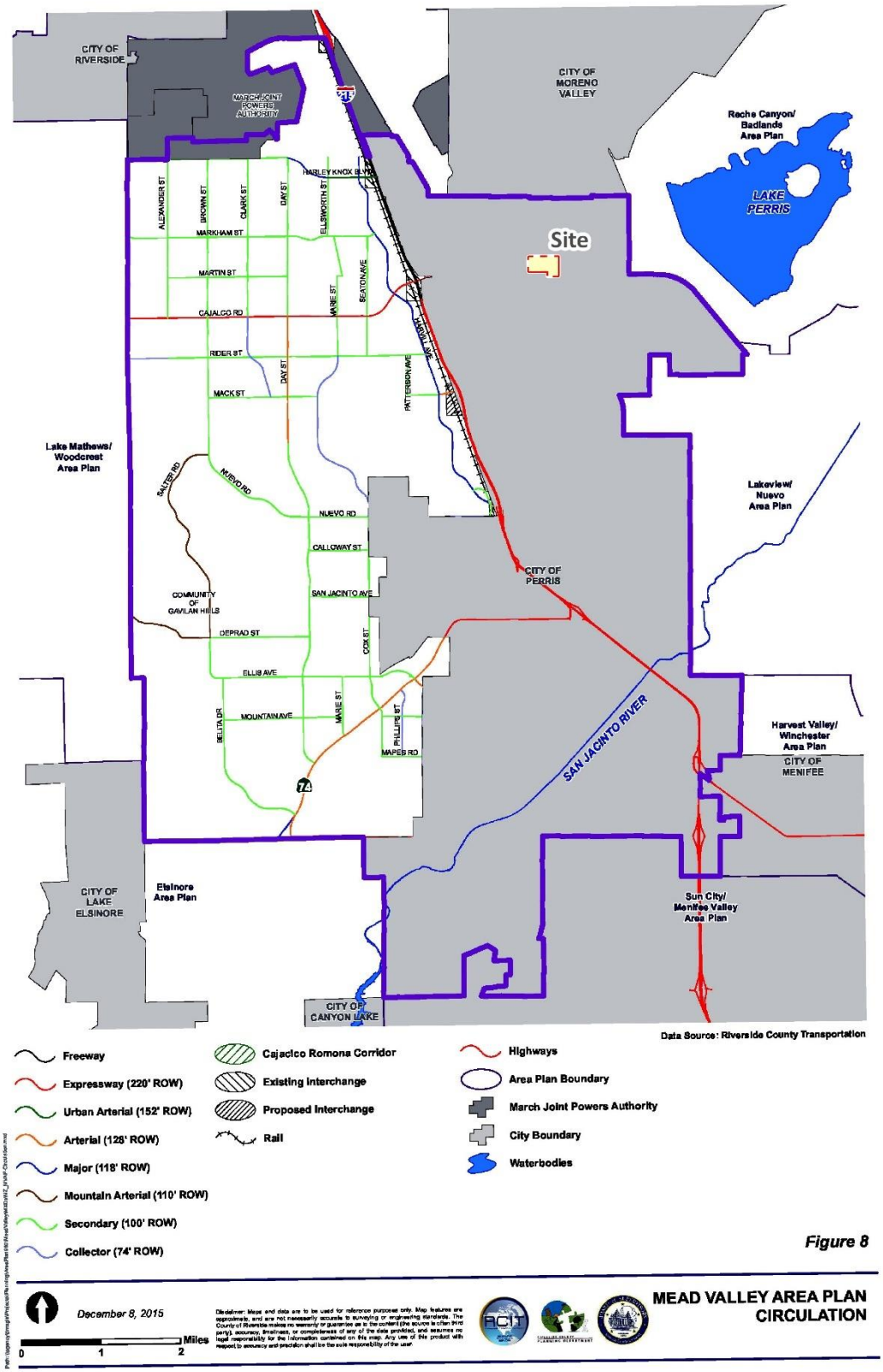
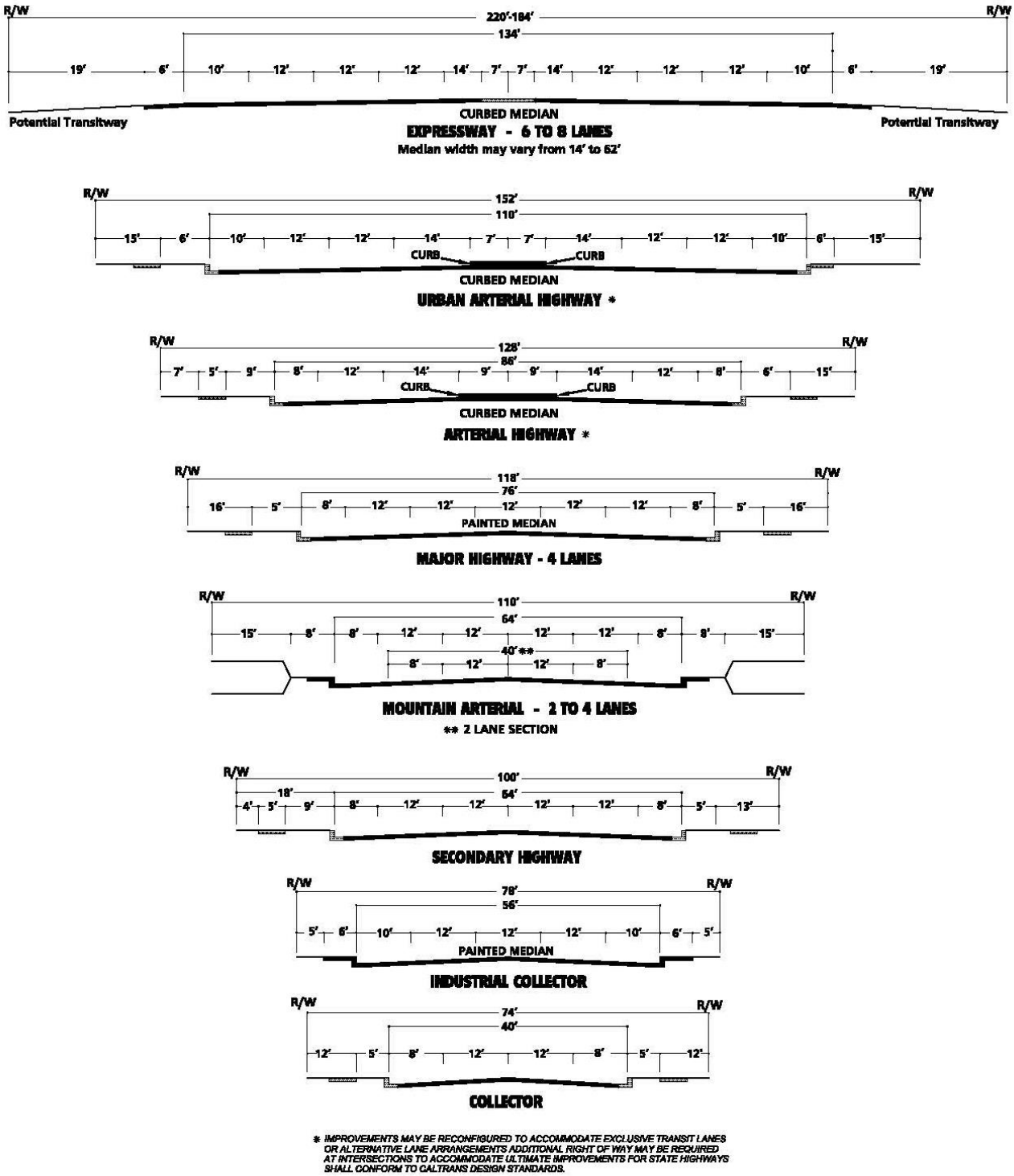


EXHIBIT 3-7: COUNTY OF RIVERSIDE GENERAL PLAN ROADWAY CROSS-SECTIONS



* IMPROVEMENTS MAY BE RECONFIGURED TO ACCOMMODATE EXCLUSIVE TRANSIT LANES OR ALTERNATIVE LANE ARRANGEMENTS ADDITIONAL RIGHT OF WAY MAY BE REQUIRED AT INTERSECTIONS TO ACCOMMODATE ULTIMATE IMPROVEMENTS FOR STATE HIGHWAYS SHALL CONFORM TO CALTRANS DESIGN STANDARDS.

NOT TO SCALE

SOURCE: COUNTY OF RIVERSIDE July 7, 2020

EXHIBIT 3-8: CITY OF PERRIS GENERAL PLAN BICYCLE FACILITIES

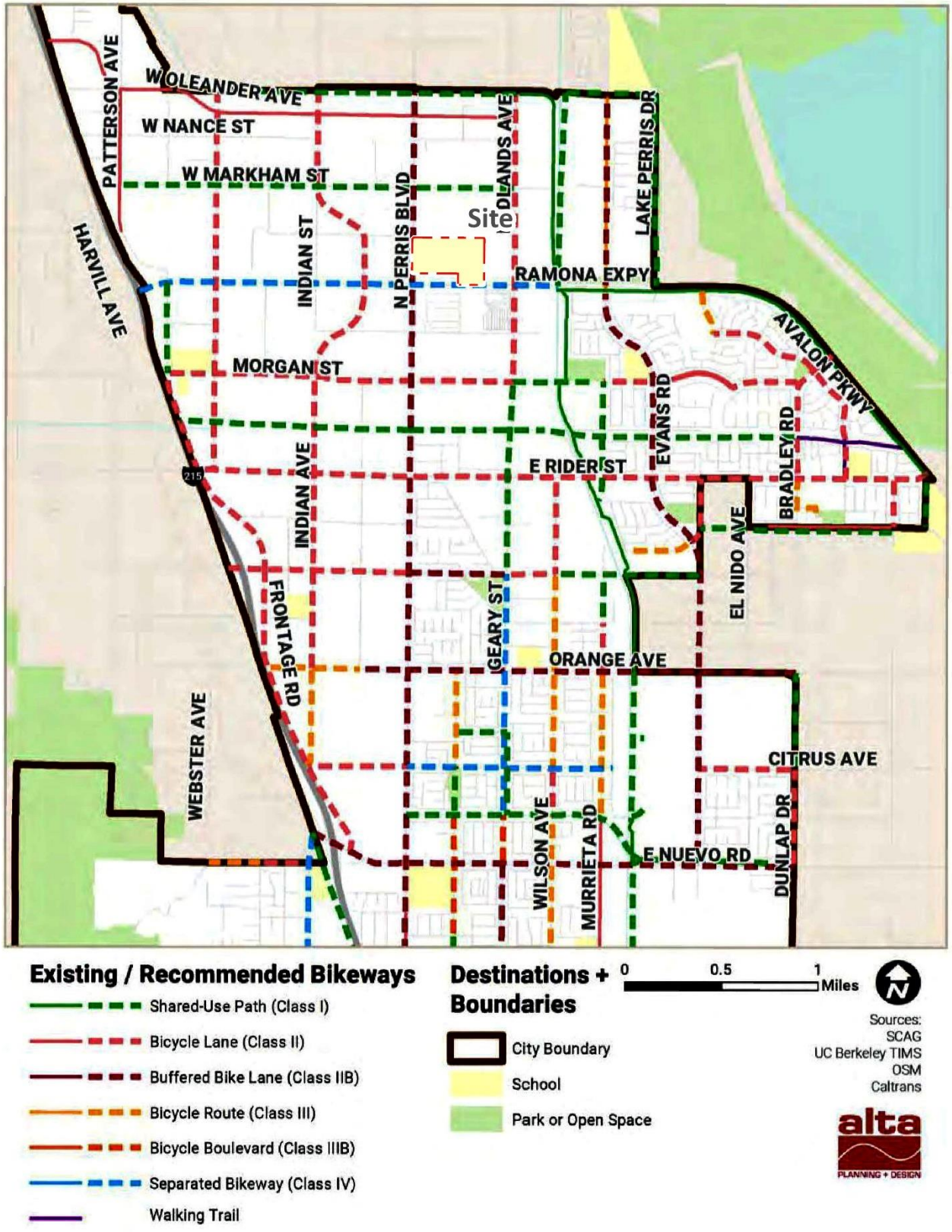


EXHIBIT 3-9: PVCC SP BICYCLE AND TRAIL FACILITIES

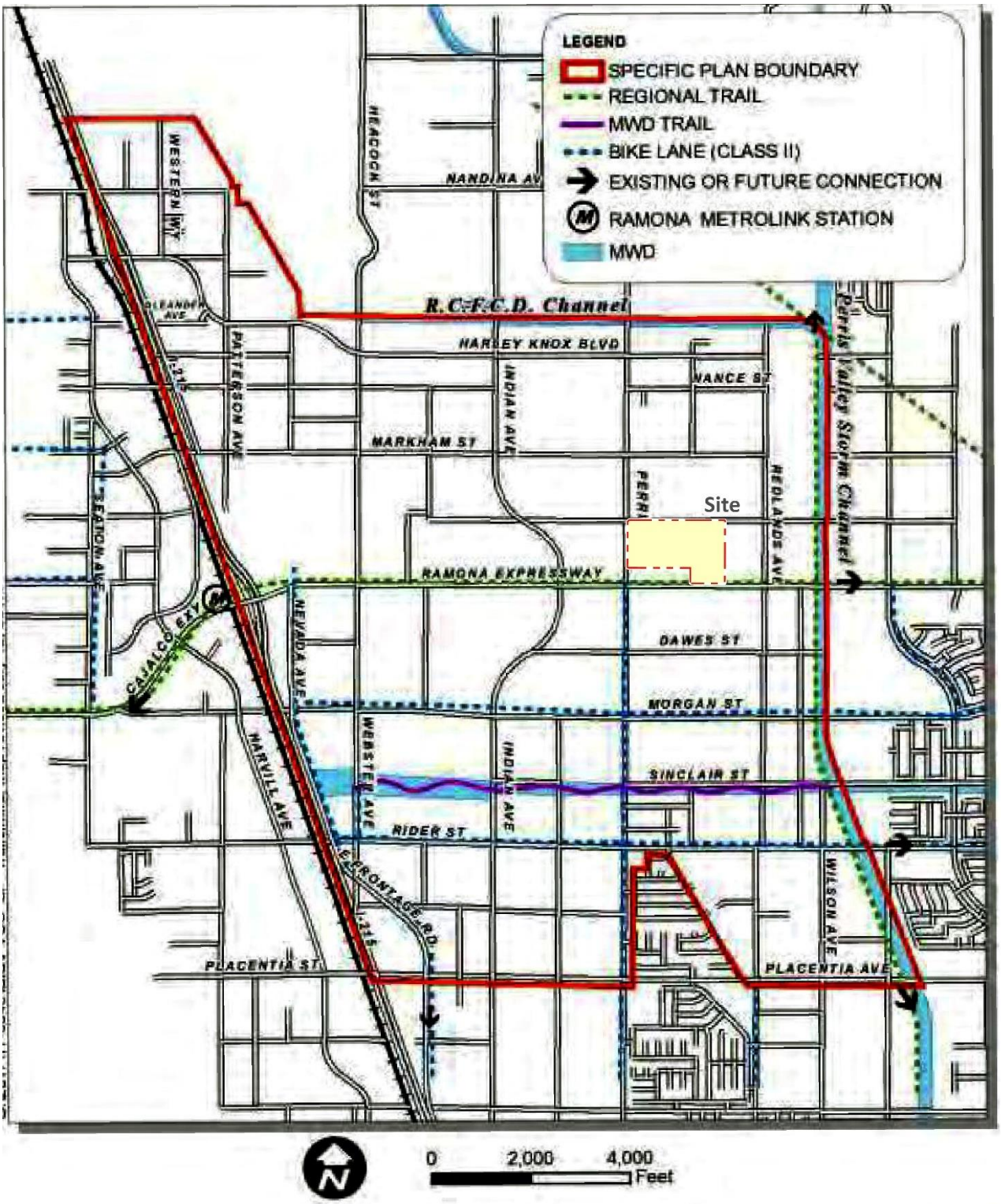


EXHIBIT 3-10: EXISTING PEDESTRIAN FACILITIES

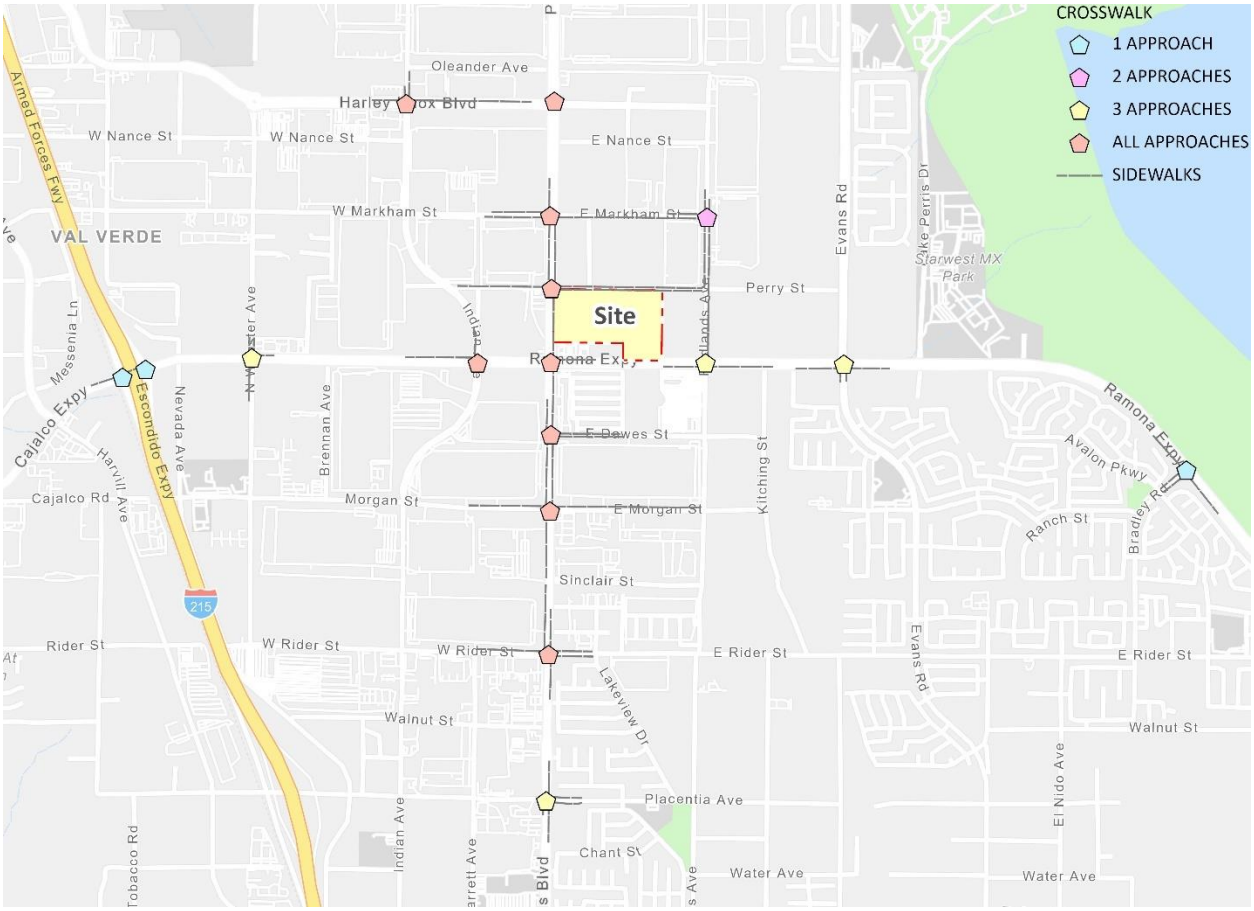


EXHIBIT 3-11: PVCC SP TRANSIT FACILITIES

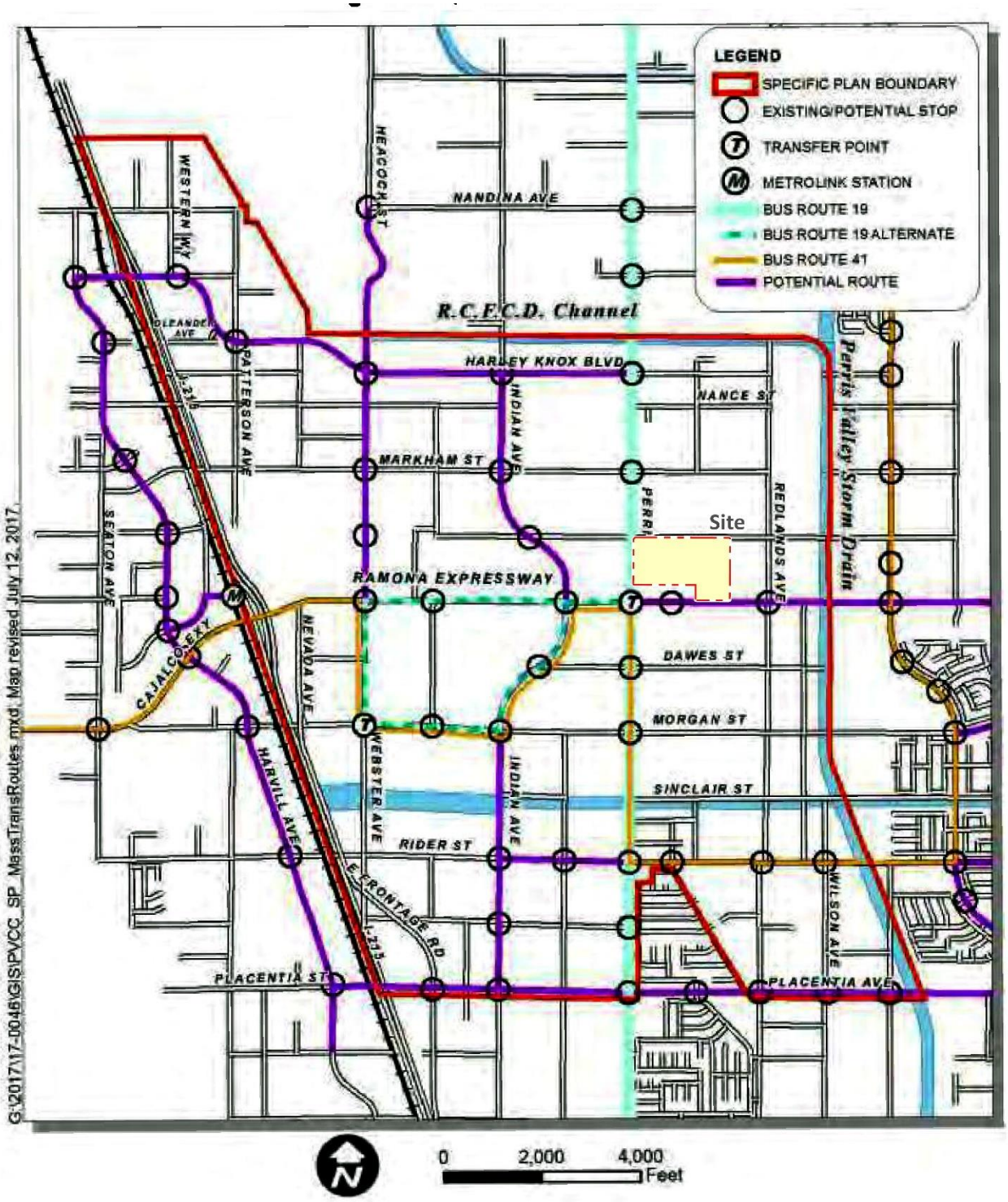


EXHIBIT 3-12: EXISTING TRANSIT ROUTES

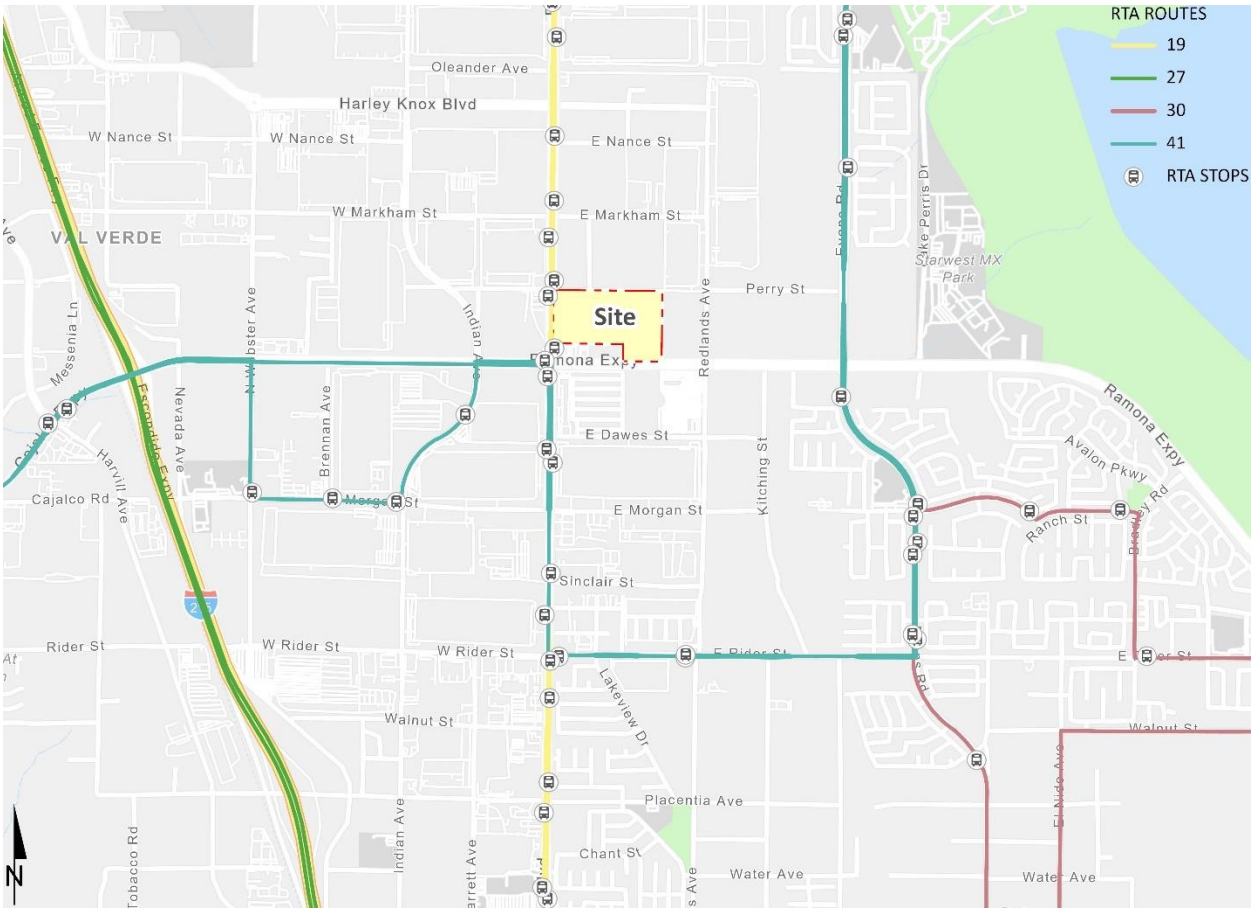
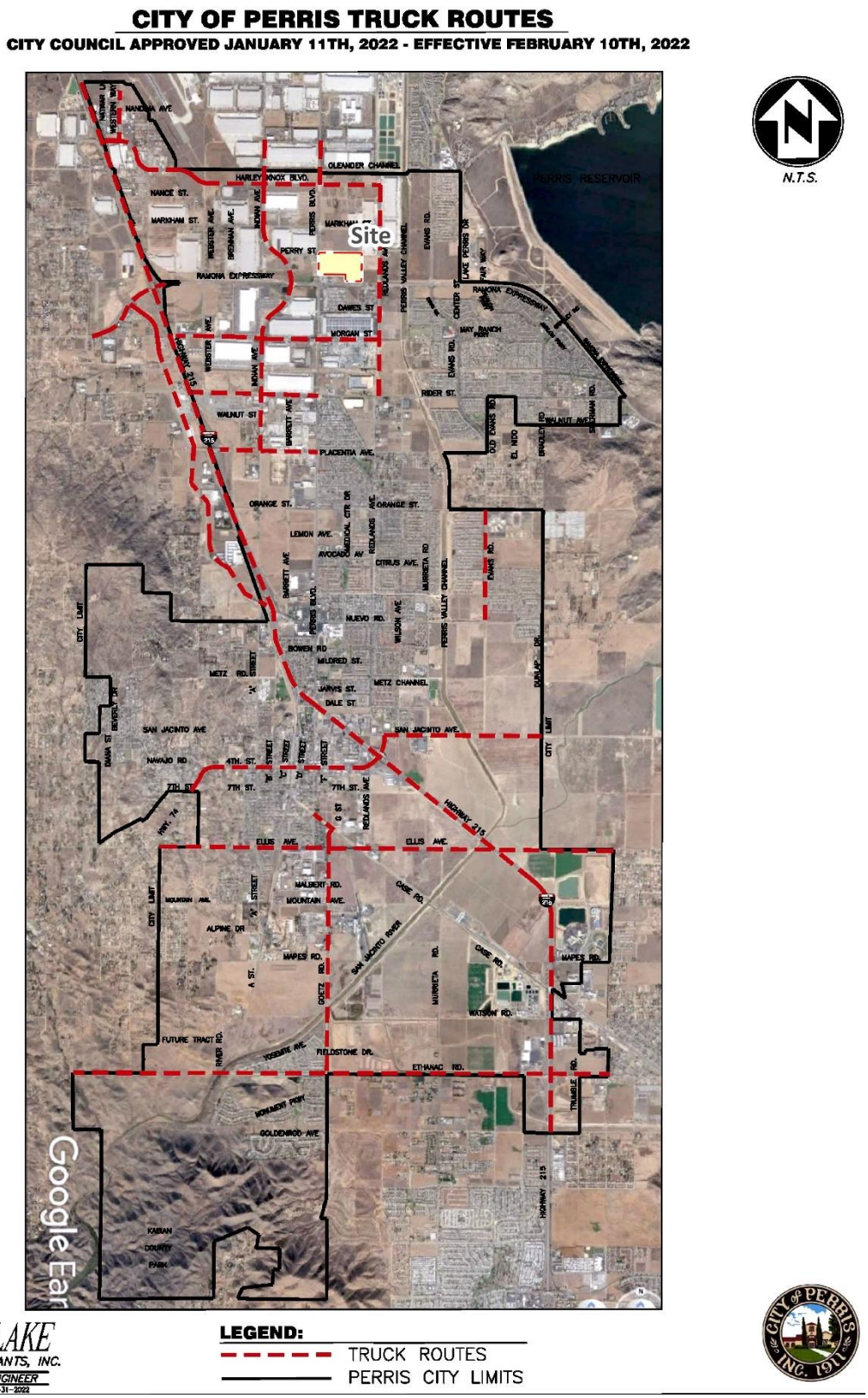


EXHIBIT 3-13: CITY OF PERRIS TRUCK ROUTES



3.5 EXISTING (2022) TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in June and August 2022. The following peak hours were selected for analysis:

- Weekday AM Peak Hour (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 6:00 PM)

The 2022 weekday AM and weekday PM peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes and near-by schools were in session and operating on normal schedules. As such, no additional adjustments were made to the traffic counts to establish the baseline condition. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1.

Existing weekday ADT volumes are shown on Exhibit 3-14. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

Weekday PM Peak Hour (Approach Volume + Exit Volume) x 14.45 = Leg Volume

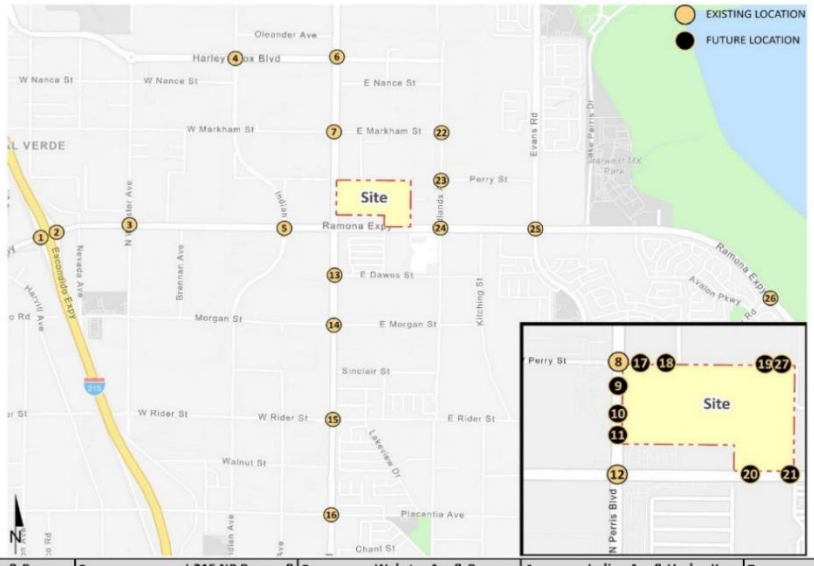
A comparison of the PM peak hour and daily traffic volumes of various roadway segments within the study area indicated that the peak-to-daily relationship is approximately 6.92 percent. As such, the above equation utilizing a factor of 14.45 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 6.92 percent (i.e., 1/0.0692 = 14.45) and was assumed to sufficiently estimate ADT volumes for planning-level analyses. Existing weekday and weekend peak hour intersection volumes, in actual vehicles, are also shown on Exhibit 3-14.

To represent the effect large trucks, buses, and recreational vehicles have on traffic flow, all trucks were converted into passenger car equivalent (PCE). By their size alone, these vehicles occupy the same space as two or more passenger cars. In addition, the time it takes for them to accelerate and slow-down is also much longer than for passenger cars and varies depending on the type of vehicle and number of axles. For this analysis, the following PCE factors have been used to estimate each turning movement: 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for 4+-axle trucks. These factors are consistent with the values recommended for use in the City of Perris. Actual and PCE volumes used for all analysis scenarios are included in Appendix 3.1.

3.6 INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized in Table 3-1, which indicates that the study area intersections are currently operating at an acceptable LOS during the peak hours under Existing (2022) traffic conditions. The intersection operations analysis worksheets are included in Appendix 3.2 of this TA.

EXHIBIT 3-14: EXISTING (2022) TRAFFIC VOLUMES (PAGE 1 OF 2)



1 I-215 SB Ramps & Ramona Exwy.	2 I-215 NB Ramps & Ramona Exwy.	3 Webster Av. & Ramona Exwy.	4 Indian Av. & Harley Knox Bl.	5 Indian Av. & Ramona Exwy.
12,350 / 37,400	9,300 / 43,250	6,900 / 35,450	15,200 / 10,850	5,800 / 34,000
135(122) ↳ 0(2) ↓ 469(732) ↰	← 526(505) ← 604(815) ↰	68(133) ↳ 22(45) ↓ 33(73) ↰	101(329) ↳ 66(224) ↓ 18(78) ↰	33(47) ↳ 50(123) ↓ 6(42) ↰
← 739(805) ↰ 128(334)	125(136) ↳ 907(1315) →	← 44(44) ← 1033(1106) ↰ 19(11)	← 59(33) ← 543(336) ↰ 13(12)	← 40(42) ← 1105(921) ↰ 31(53)
563(719) → 292(322) ↘	↰ ↑ ↱ 263(324) 6(2) 422(360)	188(154) ↳ 938(1204) → 71(33) ↘	247(206) ↳ 201(278) → 42(28) ↘	79(64) ↳ 724(1239) → 55(58) ↘
		↰ ↑ ↱ 51(125) 43(27) 12(14)	↰ 5/(53) ↑ 177(183) ↱ 12(14)	↰ 50(96) ↑ 49(83) ↱ 15(55)
28,450 / 9,500	37,400 / 9,900	39,800 / 3,700	17,750 / 7,450	35,050 / 6,750

6 Perris Bl. & Harley Knox Bl.	7 Perris Bl. & Markham St.	8 Perris Bl. & Perry St.	9 Perris Bl. & Driveway 1	10 Perris Bl. & Driveway 2
32,500 / 7,150	22,850 / 2,400	23,350 / 350	23,600	23,600
206(236) ↳ 468(896) ↓ 62(168) ↰	51(33) ↳ 542(827) ↓ 34(17) ↰	9(7) ↳ 436(940) ↓ 6(3) ↰	449(968) ↓	449(968) ↓
← 177(95) ← 299(77) ↰ 3(11)	← 8(25) ← 46(42) ↰ 9(17)	← 6(7) ← 2(2) ↰ 4(7)		
148(185) ↳ 42(139) → 23(56) ↘	15(53) ↳ 21(46) → 26(61) ↘	1(4) ↳ 1(1) → 9(21) ↘	↑ 981(666)	
↰ ↑ ↱ 121(39) 783(669) 11(4)	↰ ↑ ↱ 42(24) 1012(625) 56(19)	↰ ↑ ↱ 9(8) 958(655) 14(3)		
10,600 / 24,250	3,750 / 22,750	600 / 23,600	23,600	23,600

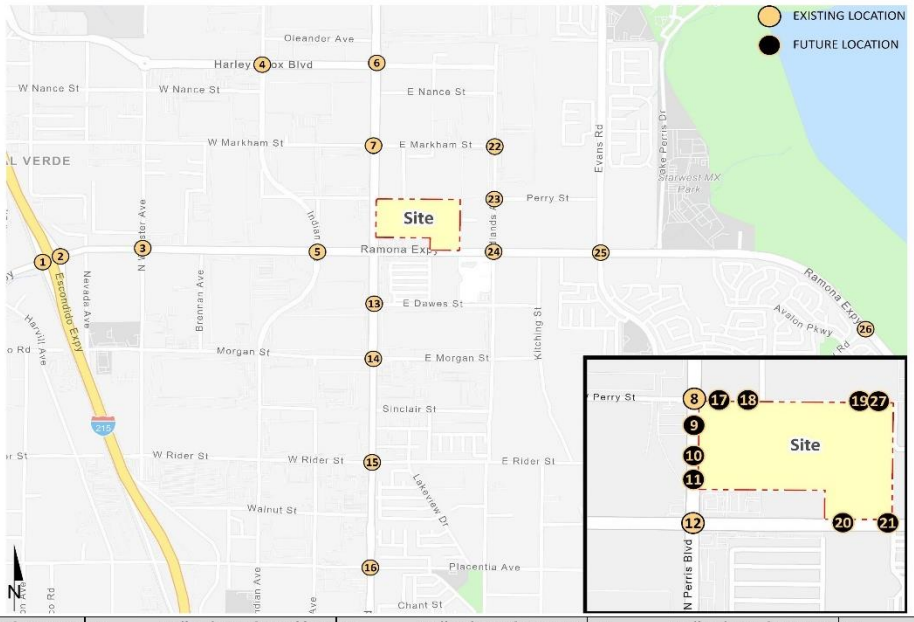
11 Perris Bl. & Driveway 3	12 Perris Bl. & Ramona Exwy.	13 Perris Bl. & Dawes St.	14 Perris Bl. & Morgan St.	15 Perris Bl. & Rider St.
23,600	25,400 / 32,500	21,500 / 1,550	20,350 / 1,550	20,100 / 9,750
449(968) ↓	119(163) ↳ 327(596) ↓ 98(258) ↰	395(819) ↓ 11(22) ↰	44(11) ↳ 462(737) ↓ 16(14) ↰	20(15) ↳ 239(682) ↓ 27(73) ↰
↑ 981(666)	← 170(113) ← 864(686) ↰ 109(134)	← 22(19) ↰ 23(36)	← 15(23) ← 44(18) ↰ 7(12)	← 130(91) ← 70(77) ↰ 93(116)
23,600	288(272) ↳ 544(965) → 88(182) ↘	1(0) →	21(18) ↳ 19(28) → 21(21) ↘	12(41) ↳ 27(167) → 20(65) ↘
	↰ ↑ ↱ 216(193) 845(403) 66(93)	↰ ↑ ↱ 2(2) 826(629) 9(30)	↰ ↑ ↱ 43(22) 891(605) 9(13)	↰ ↑ ↱ 24(17) 634(488) 48(150)
35,550 / 23,150	Nominal / 21,900	1,700 / 20,350	5,500 / 21,950	

16 Perris Bl. & Placentia Av.	17 Driveway 4 & Perry St.	18 Driveway 5 & Perry St.	19 Driveway 6 & Perry St.	20 Driveway 7 & Ramona Exwy.
28,150 / 6,500	350	350	350	33,400
30(8) ↳ 505(979) ↓ 31(140) ↰	← 12(16)	← 12(16)	← 12(16)	← 1048(910)
← 124(104) ← 117(26) ↰ 32(48)				
14(22) ↳ 62(59) → 11(23) ↘	21(7) →	21(7) →	21(7) →	626(1402) →
↰ ↑ ↱ 35(8) 773(695) 27(73)				
2,100 / 26,400	350	350	350	33,400

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 3-14: EXISTING (2022) TRAFFIC VOLUMES (PAGE 2 OF 2)



21 Driveway 8 & Ramona Exwy.

		33,400
	← 1048(910)	
626(1402) →		
33,400		

22 Redlands Av. & Markham St.

			7,500
	↲ 6(8) ← 84(337)		
	5(5) ↴	↰ ↑	
	22(51) ↴	61(37) ↰	549(169) ↑
			8,600

1,450

23 Redlands Av. & Perry St.

			8,400
	↲ 5(4) ↓ 100(396)		
	3(2) ↴	↰	↑
	9(12) ↴	13(3)	541(180)
			8,550

300

24 Redlands Av. & Ramona Exwy.

			8,550
	↲ 9(20) ↓ 27(82) ↳ 73(306)		
			39,950
		↰ 392(133)	
	↰ 55(77)	← 1014(857)	
	16(17) ↳	↰	↑ ↱
	581(1326) →	25(33)	146(33) 80(67)
	29(59) ↴		
			5,050

34,200

25 Evans Rd. & Ramona Exwy.

			25,150
	↲ 300(325) ↓ 153(432) ↳ 128(236)		
			27,750
		↱ 202(123)	
	↰ 6(21)	← 843(553)	
	315(368) ↳	↰	↑ ↱
	332(972) →	301(202)	382(255) 18(14)
	46(174) ↴		
			15,850

37,500

26 Ramona Exwy. & Bradley Rd.

			19,800
	← 718(514)		
	↰ 11(26)		
	↰	↱	
447(810) →	137(87)	17(19)	
48(169) ↴			
			4,350

22,850

27 Driveway 9 & Perry St.

			2,700
	↲ 227(127) ↓ 227(127) ↳ 227(127)		
			2,700
		↰ 227(127)	
	← 227(127)		
	↰ 227(127)		
	227(127) ↳	↰	↑ ↱
	227(127) →	227(127)	227(127)
	227(127) ↴		
			2,700

2,700

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

TABLE 3-1: INTERSECTION ANALYSIS FOR EXISTING (2022) CONDITIONS

#	Intersection	Traffic Control[2]	Delay[1] (secs.) AM	Delay[1] (secs.) PM	Level of Service AM	Level of Service PM
1	I-215 SB Ramps & Ramona Exwy.	TS	26.0	36.2	C	D
2	I-215 NB Ramps & Ramona Exwy.	TS	20.2	17.2	C	B
3	Webster Av. & Ramona Exwy.	TS	18.7	20.5	B	C
4	Indian Av. & Harley Knox Bl.	TS	22.1	26.1	C	C
5	Indian Av. & Ramona Exwy.	TS	18.7	21.9	B	C
6	Perris Bl. & Harley Knox Bl.	TS	21.7	29.5	C	C
7	Perris Bl. & Markham St.	TS	14.1	15.9	B	B
8	Perris Bl. & Perry St.	TS	8.0	8.7	A	A
9	Perris Bl. & Driveway 1		Future Intersection			
10	Perris Bl. & Driveway 2		Future Intersection			
11	Perris Bl. & Driveway 3		Future Intersection			
12	Perris Bl. & Ramona Exwy.	TS	44.5	42.5	D	D
13	Perris Bl. & Dawes St.	TS	8.6	8.0	A	A
14	Perris Bl. & Morgan St.	TS	13.3	12.8	B	B
15	Perris Bl. & Rider St.	TS	16.5	17.5	B	B
16	Perris Bl. & Placentia Av.	TS	15.4	16.5	B	B
17	Driveway 4 & Perry St.		Future Intersection			
18	Driveway 5 & Perry St.		Future Intersection			
19	Driveway 6 & Perry St.		Future Intersection			
20	Driveway 7 & Ramona Exwy.		Future Intersection			
21	Driveway 8 & Ramona Exwy.		Future Intersection			
22	Redlands Av. & Markham St.	TS	4.6	6.8	A	A
23	Redlands Av. & Perry St.	CSS	11.2	13.0	B	B
24	Redlands Av. & Ramona Exwy.	TS	16.1	26.1	B	C
25	Evans Rd. & Ramona Exwy.	TS	24.1	21.3	C	C
26	Ramona Exwy. & Bradley Rd.	TS	7.1	7.1	A	A
27	Driveway 9 & Perry St.		Future Intersection			

1 Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay

2 TS = Traffic Signal; CSS = Cross-street Stop

3.7 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. There are no unsignalized study area intersections that currently meet a traffic signal warrant under Existing (2022) traffic conditions. Existing conditions traffic signal warrant analysis worksheets are provided in Appendix 3.3.

3.8 OFF-RAMP QUEUING ANALYSIS

A queuing analysis was performed for the off-ramps at the I-215 Freeway at the Ramona Expressway interchange to assess vehicle queues for the off ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-215 Freeway mainline. Queuing analysis findings are presented in Table 3-2. It is important to note that off-ramp lengths are consistent with the measured distance between the intersection and the freeway mainline. As shown in Table 3-2, there are no movements that are currently experiencing queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. Worksheets for Existing (2022) traffic conditions off-ramp queuing analysis are provided in Appendix 3.4.

TABLE 3-2: PEAK HOUR OFF-RAMP QUEUING SUMMARY FOR EXISTING (2022) CONDITIONS

Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet)[3]		Acceptable? [1]	
			AM Peak Hour	PM Peak Hour	AM	PM
I-215 SB Ramps & Ramona Exwy. (#1)	SBL	530	311	494 [2]	Yes	Yes
	SBT	1,100	312	500 [2]	Yes	Yes
	SBR	530	65	53	Yes	Yes
I-215 NB Ramps & Ramona Exwy. (#2)	NBL	520	137	161	Yes	Yes
	NBL/T	1,120	136	164	Yes	Yes
	NBR	520	381	139	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.
[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

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4 PROJECTED FUTURE TRAFFIC

This section presents the traffic volumes estimated to be generated by the Project, as well as the Project's trip assignment onto the study area roadway network. A preliminary site plan for the proposed Project is shown previously on Exhibit 1-2. The Project is to consist of a 774,419 square feet of non-refrigerated High-Cube Fulfillment Center Warehouse use and up to 70,000 square feet of Retail and Restaurant uses (comprised of 30,825 square feet of Strip Retail Plaza use, 5,000 square feet of High Turnover (Sit-Down) Restaurant use, 23,775 square feet of Fast-Food Restaurant Without Drive-Through Window use inline with the retail use, and 10,400 square feet of Fast-Food Restaurant With Drive-Through Window use). The Project is anticipated to be constructed in one phase by the year 2024.

It should be noted, the Project description for the retail portion of the site has been updated since the time this traffic study has been prepared. The updated Project description for the retail portion now consists of 39,825 square feet of retail use and 14,775 square feet of Fast-food Restaurant with Drive-Through Window use. The land uses evaluated within this traffic study generate more trips compared to the updated Project description. Therefore, the current traffic study analysis provides a more conservative analysis.

The following describes the access proposed for the site:

- Driveway 1 on Perris Boulevard – passenger cars only with right-in/right-out only for future commercial component
- Driveway 2 on Perris Boulevard – passenger cars only with right-in/right-out only for future commercial component
- Driveway 3 on Perris Boulevard – passenger cars only with right-in/right-out only for warehouse component
- Driveway 4 on Perry Street – passenger cars only with right-in/right-out/left-in access only for warehouse component
- Driveway 5 on Perry Street – trucks only where trucks will be restricted to right-out/left-in access only (directing all trucks to and from Redlands Avenue to the east) for warehouse component
- Driveway 6 on Perry Street – trucks only where trucks will be restricted to right-out/left-in access only (directing all trucks to and from Redlands Avenue to the east) for warehouse component
- Driveway 7 on Ramona Expressway – passenger cars only with right-in/right-out only for future commercial component
- Driveway 8 on Ramona Expressway – passenger cars only with full access (future shared access with adjacent property) for future commercial component
- Driveway 9 on Perry Street – passenger cars with full access

It should be noted, the proposed driveways are consistent with the driveway spacing requirements set forth in the PVCC SP. Regional access to the Project site is available from the I-215 Freeway via Ramona Expressway, Harley Knox Boulevard, and Placentia Avenue interchanges.

4.1 PROJECT TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development.

In order to develop the traffic characteristics of the proposed Project, trip-generation statistics published in the ITE Trip Generation Manual (11th Edition, 2021) was used to estimate the trip generation. (1)

For purposes of this analysis, the following land use code and vehicle mix has been utilized for each building:

- High-Cube Fulfillment Center Warehouse has been used to derive site specific trip generation estimates for the industrial component of the proposed Project. The ITE Trip Generation Manual has trip generation rates for high-cube fulfillment center use for both non-sort and sort facilities (ITE land use code 155). While there is sufficient data to support use of the trip generation rates for non-sort facilities, the sort facility rate appears to be unreliable because they are based on limited data (i.e., one to two surveyed sites). The proposed Project is speculative and whether a non-sort or sort facility end-user would occupy the buildings is not known at this time. Lastly, the ITE Trip Generation Manual recommends the use of local data sources where available. As such, the best available source for high-cube fulfillment center use would be the trip-generation statistics published in the High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019) which was commissioned by the WRCOG in support of the TUMF update in the County of Riverside. The WSP trip generation rates were published in January 2019 and are based on data collected at 11 local high-cube fulfillment center sites located throughout Southern California (specifically Riverside County and San Bernardino County). However, the WSP study does not include a split for inbound and outbound vehicles, as such, the inbound and outbound splits per the ITE Trip Generation Manual for Land Use Code 154 have been utilized. The truck percentages were further broken down by axle type per the WSP recommended truck mix: 2-4-Axle = 44.1%; 5+-Axle = 55.9%.
- Strip Retail Plaza (<40,000 SF) (ITE land use code 822)
- High Turnover (Sit-Down) Restaurant (ITE land use code 932)
- Fast-Food Restaurant without Drive-Through Window (ITE land use code 933)
- Fast-Food Restaurant with Drive-Through Window (ITE land use code 934)

Refinements to the raw trip generation estimates have been made to provide a more detailed breakdown of trips between passenger cars and trucks. Trip generation for heavy trucks was further broken down by truck type (or axle type). The total truck percentage is comprised of 3 different truck types: 2-axle, 3-axle, and 4+-axle trucks. PCE factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles). PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE factors are consistent with the recommended PCE factors in County's Guidelines.

As the Project is proposed to include retail and restaurant uses, pass-by percentages have been obtained from the latest ITE Trip Generation Manual (2021). (1) Pass-by trips are associated with existing traffic on the roadway network that might visit a use on-site on their way to their primary

destination. Internal capture is a percentage reduction that can be applied to the trip generation estimates for individual land uses to account for trips internal to the site. In other words, trips may be made between individual retail and restaurant uses on-site and can be made either by walking or using internal roadways without using external streets. An internal capture reduction was applied to recognize the interactions that would occur between the various complementary land uses proposed as part of the Project. The internal capture is based on the National Cooperative Highway Research Program's (NCHRP Report 684) internal capture trip capture estimation tool.

The Project trip generation rates are provided in Table 4-1. Trip generation summary for the Project in actual vehicles is shown in Table 4-2. As shown in Table 4-2, the Project is anticipated to generate a total of 9,266 two-way trips per day with 1,035 AM peak hour trips and 723 PM peak hour trips (actual vehicles). The trip generation summary for the Project in PCE is also shown in Table 4-2. For the purposes of the peak hour intersection operations analyses, the PCE trip generation has been utilized.

TABLE 4-1: PROJECT TRIP GENERATION RATES

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicle Trip Generation Rates									
High-Cube Fulfillment Center Warehouse	TSF	--[3]	0.089	0.033	0.122	0.050	0.115	0.165	2.129
Passenger Cars (AM = 84.4%, PM = 87.3%, Daily = 82.2%)			0.079	0.024	0.103	0.040	0.104	0.144	1.750
2-4 Axle Trucks (AM = 6.6%, PM = 6.7%, Daily = 7.6%)			0.004	0.004	0.008	0.005	0.006	0.011	0.162
5+-Axle Trucks (AM = 9.0%, PM = 6.0%, Daily = 10.2%)			0.005	0.006	0.011	0.005	0.005	0.010	0.217
Strip Retail Plaza (<40,000 SF)	TSF	822	1.42	0.94	2.36	3.30	3.29	6.59	54.45
High Turnover (Sit-Down) Restaurant	TSF	932	5.26	4.31	9.57	5.52	3.53	9.05	107.20
Fast Food w/o Drive Thru	TSF	933	25.04	18.14	43.18	16.61	16.60	33.21	450.49
Fast Food w/ Drive Thru	TSF	934	22.75	21.86	44.61	17.18	15.85	33.03	467.48
Passenger Car Equivalent (PCE) Trip Generation Rates[4]									
High-Cube Fulfillment Center Warehouse	TSF	--[3]	0.089	0.033	0.122	0.050	0.115	0.165	2.129
Passenger Cars			0.079	0.024	0.103	0.040	0.104	0.144	1.750
2-4 Axle Trucks (PCE = 2.0)			0.008	0.008	0.016	0.010	0.012	0.022	0.324
5+-Axle Trucks (PCE = 3.0)			0.016	0.017	0.033	0.014	0.016	0.030	0.651

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] TSF = thousand square feet

[3] Vehicle Mix Source: High Cube Warehouse Trip Generation Study, WSP, January 29, 2019.
Inbound and outbound split source: ITE Trip Generation Manual, Eleventh Edition (2021) for ITE Land Use Code 154.

[4] PCE factors: 2 and 3-axle = 2.0; 4+-axle = 3.0.

TABLE 4-2: PROJECT TRIP GENERATION SUMMARY

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
High-Cube Fulfillment	774.419	TSF							
Passenger Cars:			61	18	79	31	80	111	1,356
2-4 axle Trucks:			3	3	6	4	5	9	126
5+-axle Trucks:			4	4	8	4	4	8	168
Total Truck Trips (Actual Vehicles):			7	7	14	8	9	17	294
Total Industrial Trips (Actual Vehicles)[2]			68	25	93	39	89	128	1,650
Strip Retail	30.825	TSF	44	29	73	102	101	203	1,678
Internal Capture (NCHRP 684)			-4	-4	-8	-51	-29	-80	-662
Pass-by Reduction (PM/Daily = 40%)[3]			0	0	0	-20	-20	-41	-408
High-Turnover (Sit-Down) Restaurant	5.000	TSF	26	22	48	28	18	46	536
Internal Capture (NCHRP 684)			0	0	0	-1	-2	-3	-24
Pass-by Reduction (PM/Daily = 43%)[3]			0	0	0	-12	-12	-23	-222
Fast-Food Without Drive-Thru	23.775	TSF	595	431	1,027	395	395	790	10,710
Internal Capture (NCHRP 684)			-3	-3	-6	-19	-34	-53	-440
Pass-by Reduction (AM = 50%; PM/Daily = 55%)[3]			-214	-214	-428	-199	-199	-398	-5,650
Fast-Food With Drive-Thru	10.400	TSF	237	227	464	179	165	344	4,862
Internal Capture (NCHRP 684)			-1	-1	-2	-9	-15	-24	-198
Pass-by Reduction (AM = 50%; PM/Daily = 55%)[3]			-113	-113	-226	-83	-83	-166	-2,566
Total Retail Trips			567	374	942	310	285	595	7,616
Industrial Cars			61	18	79	31	80	111	1,356
Retail Cars			567	374	942	310	285	595	7,616
Industrial Trucks (Actual Vehicles)			7	7	14	8	9	17	294
Total Project Trips (Actual Vehicles)[2]			**635**	**399**	**1,035**	**349**	**374**	**723**	**9,266**
Passenger Car Equivalent (PCE):									
High-Cube Fulfillment	774.419	TSF							
Passenger Cars:			61	18	79	31	80	111	1,356
2-4 axle Trucks (PCE = 2.0):			6	6	12	8	9	17	252
5+-axle Trucks (PCE = 3.0):			13	13	26	11	12	23	504
Total Truck Trips (PCE):			19	19	38	19	21	40	756
Total Industrial Trips (PCE)[2]			80	37	117	50	101	151	2,112
Industrial Cars			61	18	79	31	80	111	1,356
Retail Cars			567	374	942	310	285	595	7,616
Industrial Trucks (PCE)			19	19	38	19	21	40	756
Total Project Trips (PCE)[2]			**647**	**411**	**1,059**	**360**	**386**	**746**	**9,728**

[1] TSF = thousand square feet

[2] Total Trips = Passenger Cars + Truck Trips.

[3] Pass-by trip reduction source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

4.2 PROJECT TRIP DISTRIBUTION

The Project trip distribution and assignment process represents the directional orientation of traffic to and from the Project site. The trip distribution pattern is heavily influenced by the geographical location of the site, the location of surrounding uses, and the proximity to the regional freeway system.

Passenger car distribution patterns are based on existing and planned land uses and roadway infrastructure in the area. Truck distribution patterns are based on City truck routes, proximity to the freeway system, and the Project Applicant's input on percentage of traffic oriented to the Port of Long Beach or other destination. As such, Project truck traffic is anticipated to access Perry Street (via Driveway 5 and Driveway 9) then to Redlands Avenue to head northbound to the Harley Knox Boulevard interchange (note Ramona Expressway and Perris Boulevard are not a truck route within the City). The industrial passenger car and truck trip distributions are illustrated on Exhibits 4-1 and 4-2, respectively. The retail trip distribution is illustrated on Exhibit 4-3.

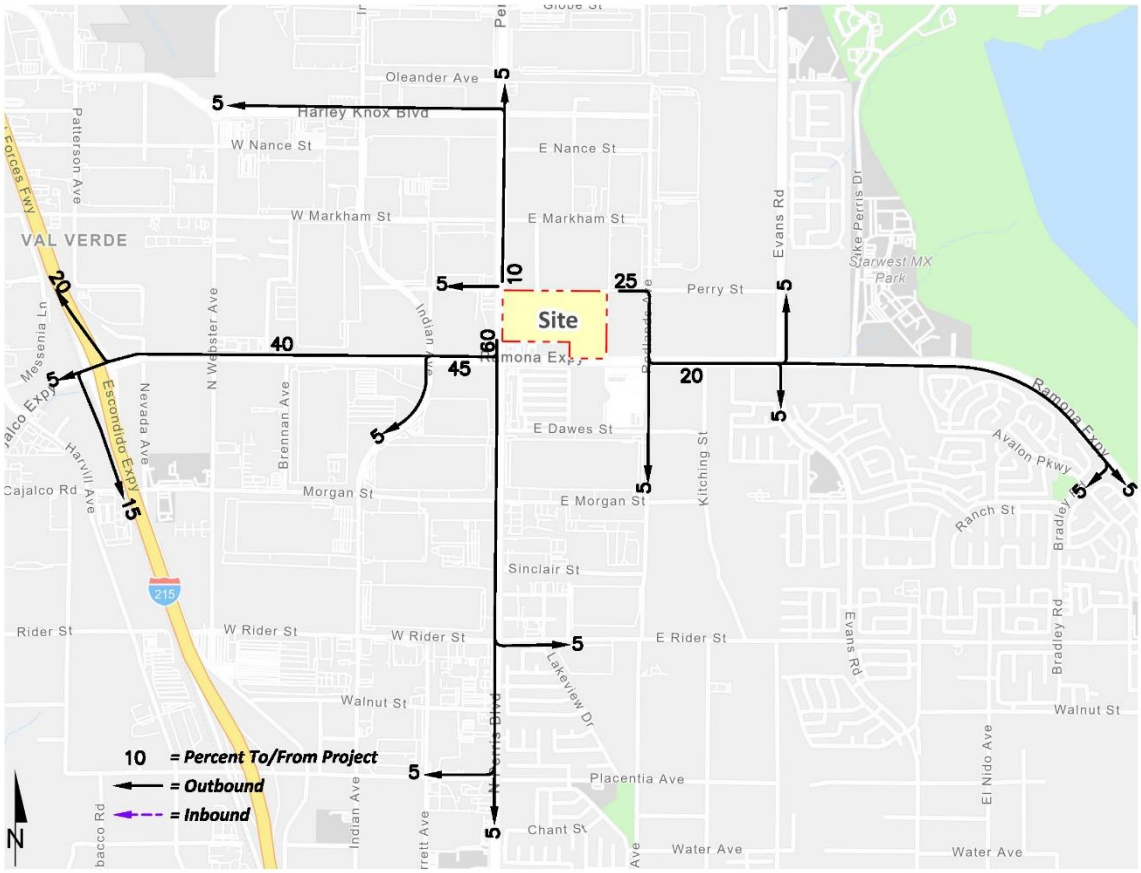
4.3 MODAL SPLIT

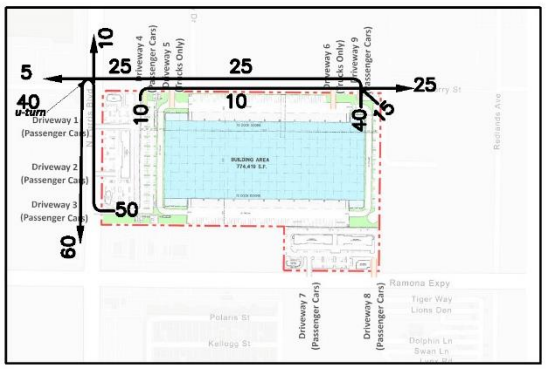
The potential for Project trips to be reduced by the use of public transit, walking or bicycling have not been included as part of the Project's estimated trip generation. Essentially, the Project's traffic projections are "conservative" in that these alternative travel modes would reduce the forecasted traffic volumes.

4.4 PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, Project weekday ADT and weekday peak hour intersection turning movement volumes, in actual vehicles, are shown on Exhibit 4-4.

EXHIBIT 4-1: PROJECT (INDUSTRIAL PASSENGER CAR) TRIP DISTRIBUTION





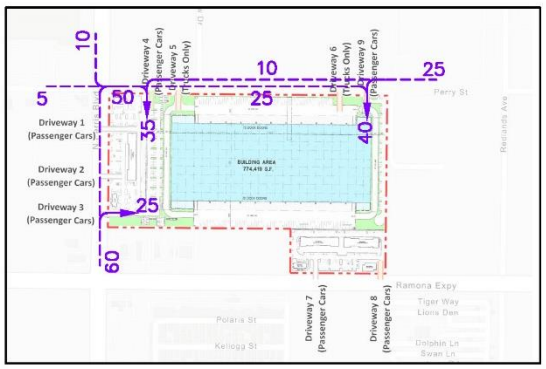


EXHIBIT 4-2: PROJECT (INDUSTRIAL TRUCK) TRIP DISTRIBUTION

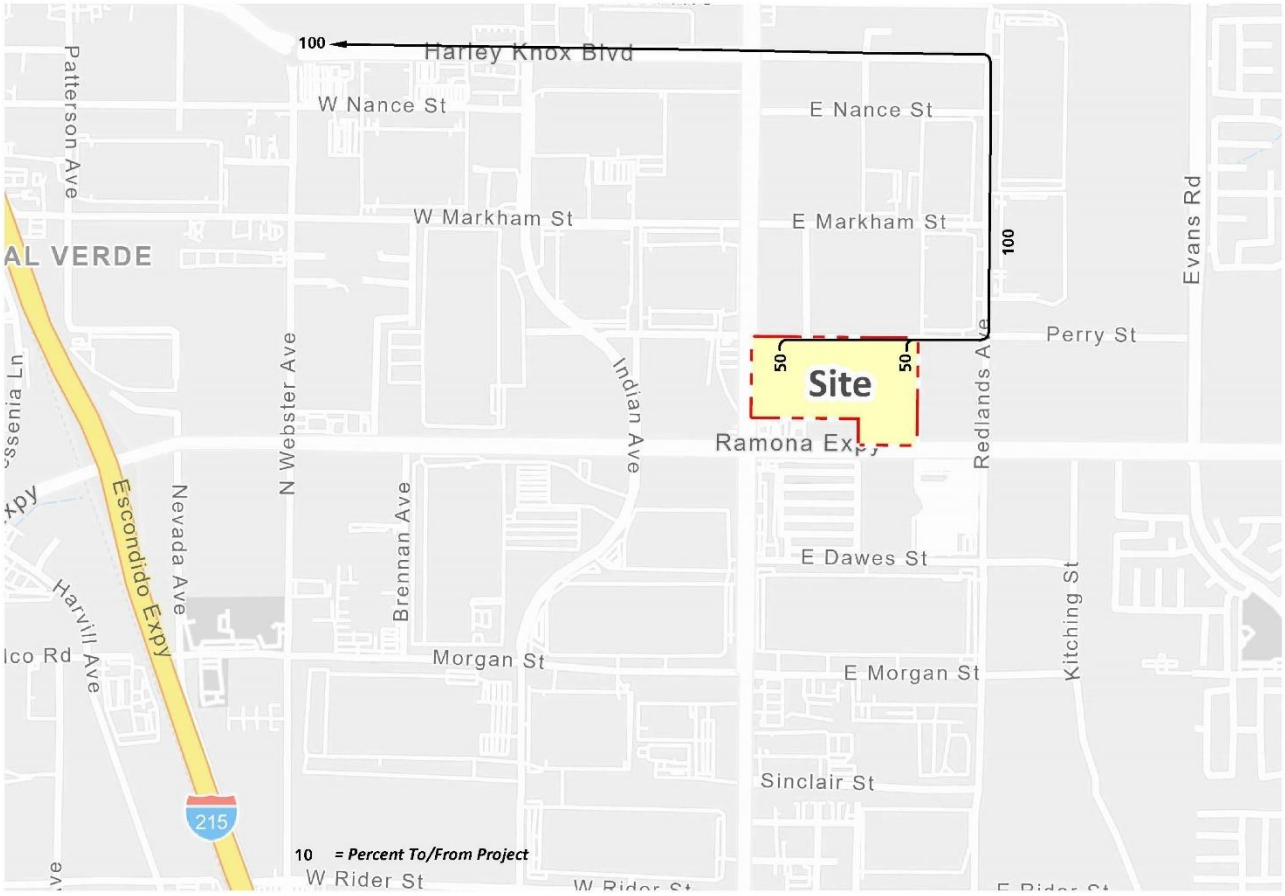
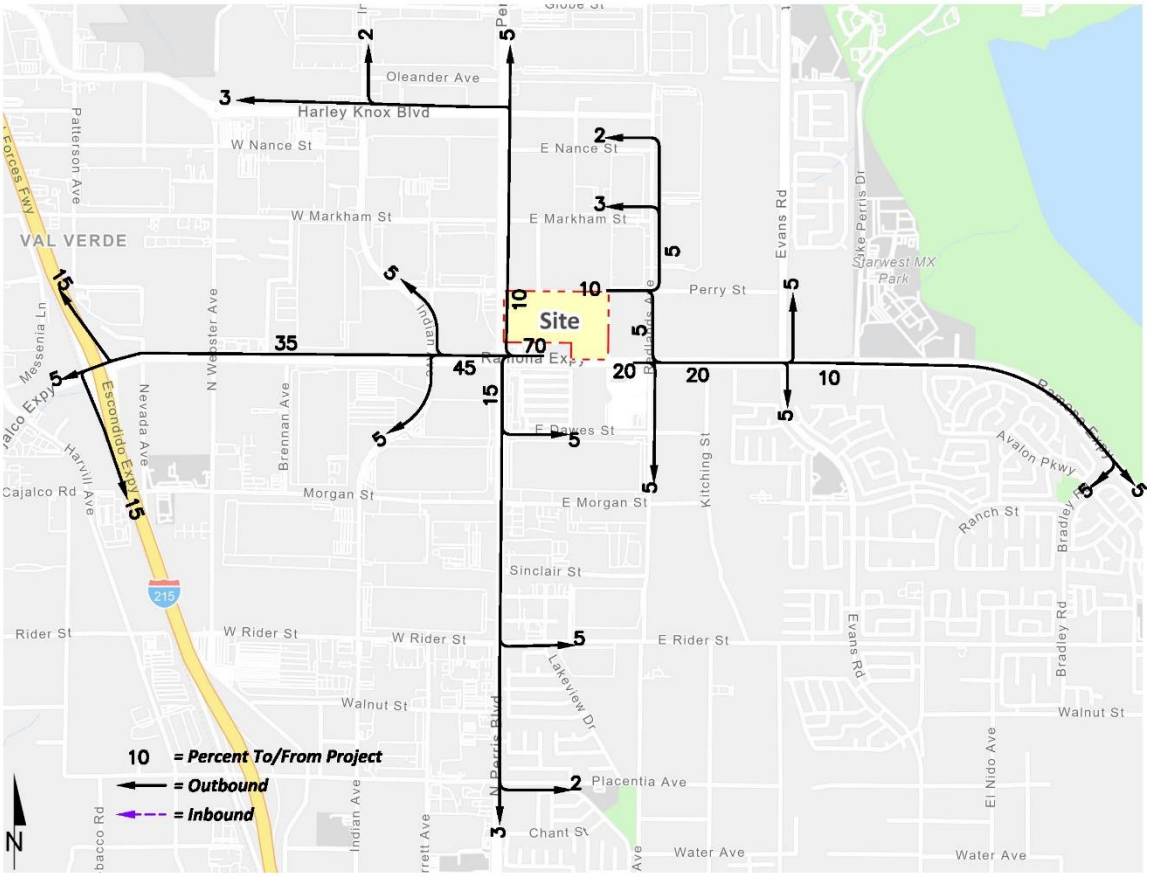
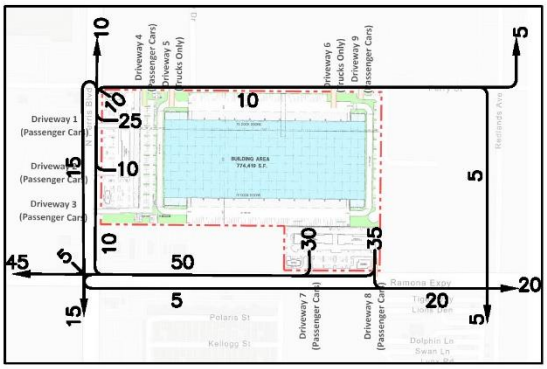


EXHIBIT 4-3: PROJECT (RETAIL) TRIP DISTRIBUTION





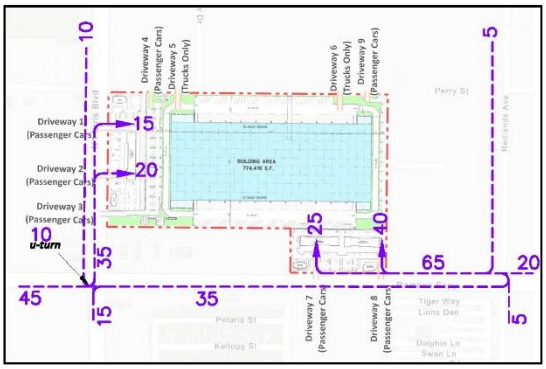
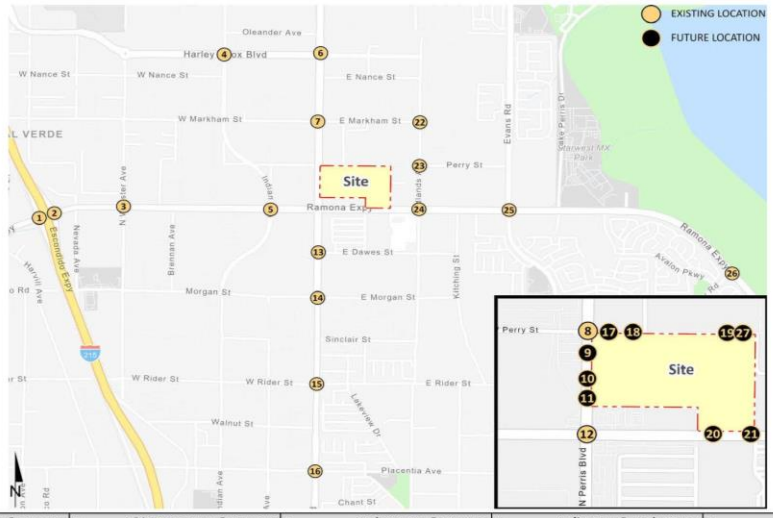


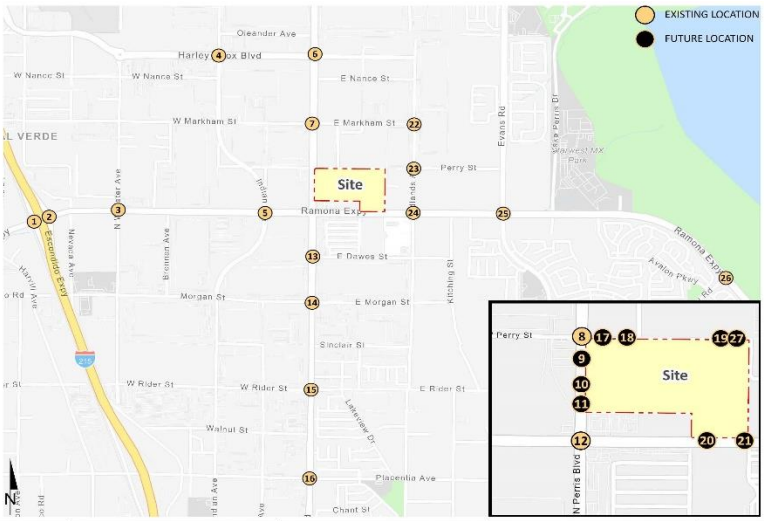
EXHIBIT 4-4: PROJECT ONLY TRAFFIC VOLUMES (PAGE 1 OF 2)

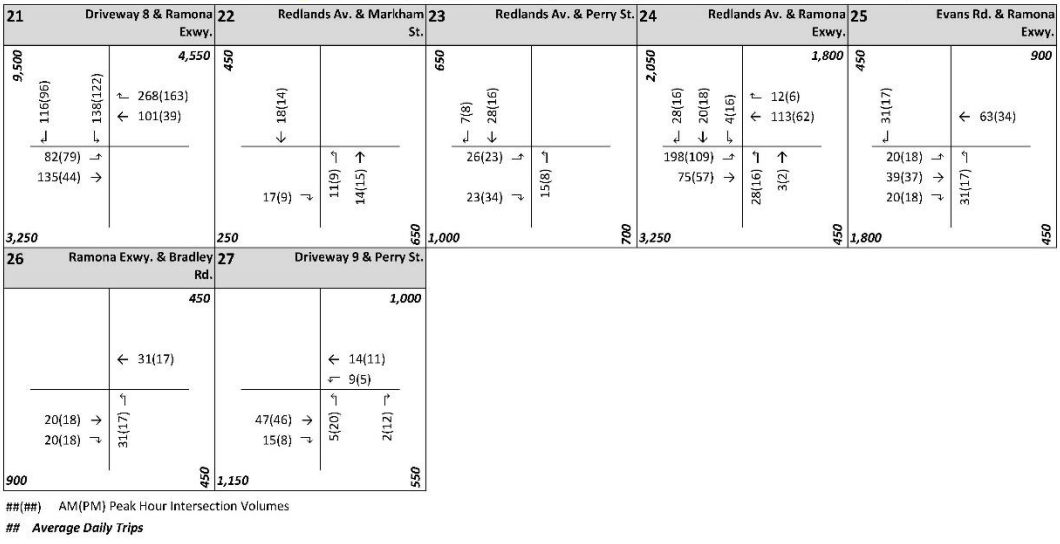


1 I-215 SB Ramps & Ramona Exwy.	2 I-215 NB Ramps & Ramona Exwy.	3 Webster Av. & Ramona Exwy.	4 Indian Av. & Harley Knox Bl.	5 Indian Av. & Ramona Exwy.
700 / 1,850 97(53) ↲ ← 20(18) ↰ 59(55) 31(17) → 450 / 650	700 / 3,200 ← 60(59) ← 78(73) ↱ 129(70) → 94(51) ↱ 1,850 / 650	3,200 ← 138(132) 223(121) → 3,200	150 / 750 11(6) ↲ ← 7(6) ← 19(22) 27(19) → 600	400 / 4,050 28(16) ↲ ← 19(14) ← 138(132) ↰ 20(18) 223(121) → 31(17) ↱ 3,200 / 450
6 Perris Bl. & Harley Knox Bl.	**7 Perris Bl. & Markham St.**	**8 Perris Bl. & Perry St.**	**9 Perris Bl. & Driveway 1**	**10 Perris Bl. & Driveway 2**
450 / 300 31(17) ↲ ← 7(9) 7(8) → 31(17) ↴ 20(18) ↰ 20(18) → 750 / 900	900 63(34) ← ↱ 39(37) → 900 / 900	900 / 900 57(31) ← 6(3) ↰ ↱ 5(20) 3(2) → 227(233) ↰ 39(37) → 59(39) ↱ 3,100 / 4,650	7,700 / 2,900 288(280) ← ← 136(114) 190(193) → 127(90) ↱ 7,300	7,300 / 2,850 288(280) ← ← 117(100) 193(133) ↱ 7,700
11 Perris Bl. & Driveway 3	**12 Perris Bl. & Ramona Exwy.**	**13 Perris Bl. & Dawes St.**	**14 Perris Bl. & Morgan St.**	**15 Perris Bl. & Rider St.**
7,700 / 1,850 288(280) ← ← 51(83) 342(233) → 57(51) ↱ 7,500	7,150 / 3,800 109(129) ↲ 21(26) ← 157(124) ↳ ← 82(79) ← 68(35) ↰ 37(29) 166(124) ↳ 116(30) → 94(51) → 4,050 / 1,350	1,350 / 400 40(41) ← 19(14) ↰ ← 28(16) 66(36) → 950	950 40(41) ← 66(36) → 950	950 / 450 21(22) ← 20(18) ↲ ← 31(17) 34(19) → 500
16 Perris Bl. & Placentia Av.	**17 Driveway 4 & Perry St.**	**18 Driveway 5 & Perry St.**	**19 Driveway 6 & Perry St.**	**20 Driveway 7 & Ramona Exwy.**
500 / 150 1(4) ↲ 12(13) ← 7(6) ↲ ← 11(6) 3(2) ↳ 20(11) → Nominal / 300	850 ← 5(20) ↰ 6(3) 53(36) → 15(8) ↴ 2(8) ↱ 900 / 300	1,000 ← 11(23) ↰ 4(4) 54(44) → 4(5) ↱ 850 / 150	1,150 ← 15(27) ↰ 4(4) 58(49) → 4(5) ↱ 1,000 / 150	4,300 / 3,250 153(125) ↲ ← 183(117) ← 34(18) 217(123) → 3,450

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 4-4: PROJECT ONLY TRAFFIC VOLUMES (PAGE 1 OF 2)





4.5 BACKGROUND TRAFFIC

Future year traffic forecasts have been based upon background (ambient) growth at 3% per year, compounded annually, for 2024 traffic conditions. The total ambient growth is 6.09% for 2024 traffic conditions. The ambient growth factor is intended to approximate regional traffic growth. This ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in conjunction with traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies. 2024 traffic volumes are provided in Section 6 of this report. The traffic generated by the proposed Project was then manually added to the base volume to determine With Project forecasts.

4.6 CUMULATIVE DEVELOPMENT TRAFFIC

A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the City of Perris and the nearby agency of the County of Riverside. The cumulative projects listed are those that would generate traffic and would contribute traffic to study area intersections. Exhibit 4-5 illustrates the cumulative development location map. A summary of cumulative development projects and their proposed land uses are shown in Table 4-3. If applicable, the traffic generated by individual cumulative projects was manually added to the Without Project forecasts to ensure that traffic generated by the listed cumulative development projects in Table 4-3 are reflected as part of the background traffic. In an effort to conduct a conservative analysis, the cumulative projects are added in conjunction with the ambient growth identified in Section 4.5 *Background Traffic*. The Cumulative Only ADT and peak hour intersection turning movement volumes, in actual vehicles, are shown on Exhibit 4-6.

4.7 NEAR-TERM TRAFFIC CONDITIONS

The "buildup" approach combines existing traffic counts with a background ambient growth factor to forecast EAC (2024) and EAPC (2024) traffic conditions. An ambient growth factor accounts for background (area-wide) traffic increases that occur over time up to the year 2024 from the year 2022. Traffic volumes generated by the Project are then added to assess the near-term traffic conditions. The 2024 roadway networks are similar to the Existing conditions roadway network, with the exception of future driveways proposed to be developed by the Project.

EXHIBIT 4-5: CUMULATIVE DEVELOPMENT LOCATION MAP

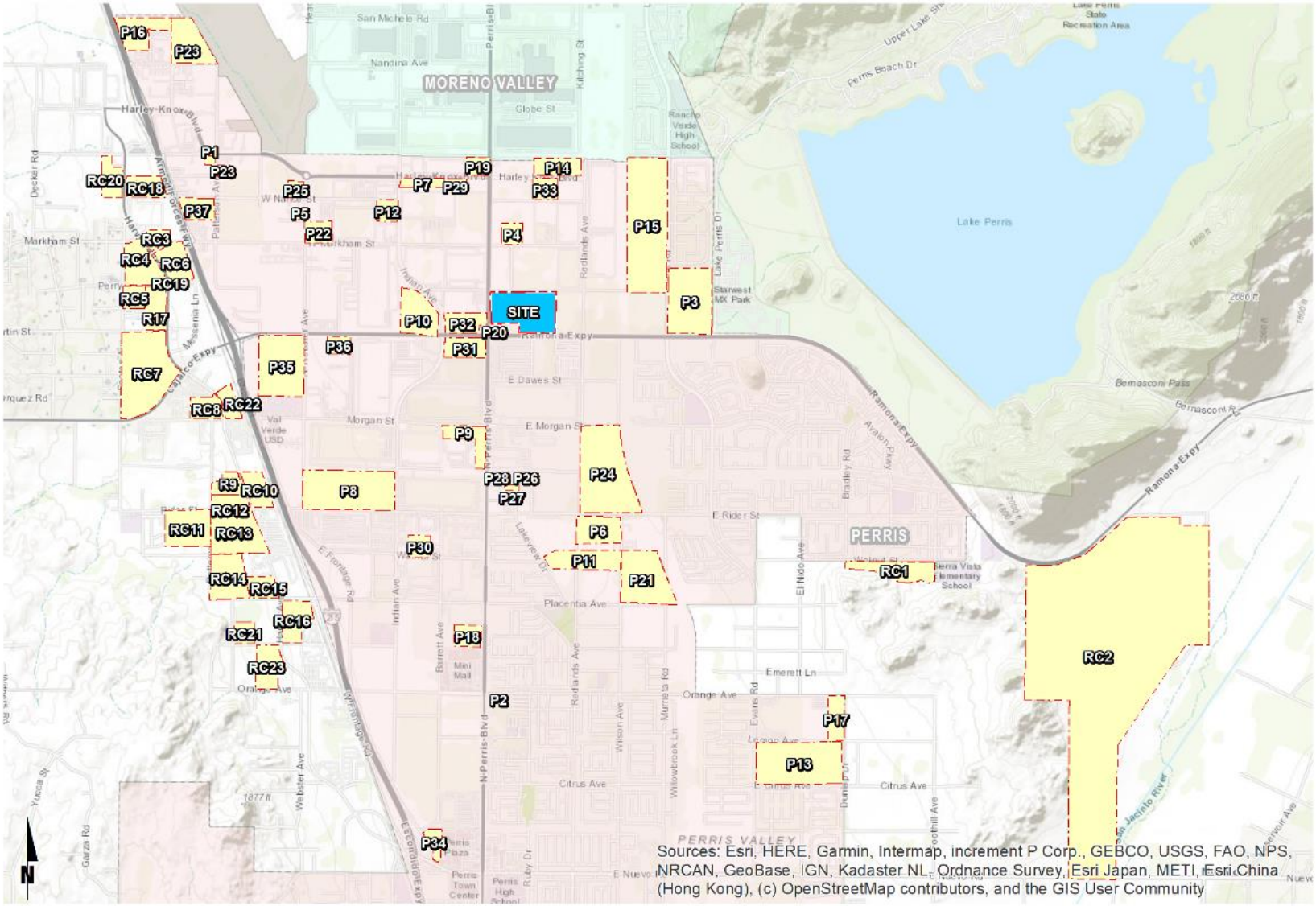
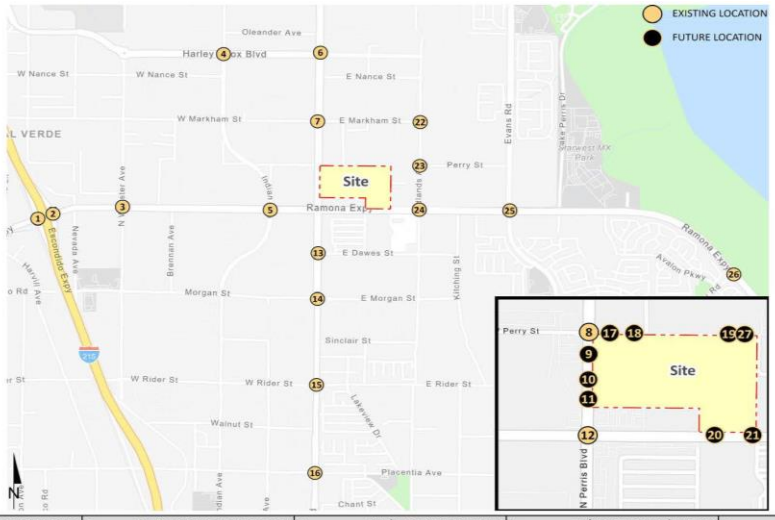


EXHIBIT 4-6: CUMULATIVE ONLY TRAFFIC VOLUMES (PAGE 1 OF 2)



1 I-215 SB Ramps & Ramona Exwy.	2 I-215 NB Ramps & Ramona Exwy.	3 Webster Av. & Ramona Exwy.	4 Indian Av. & Harley Knox Bl.	5 Indian Av. & Ramona Exwy.
30,800 / 14,700	19,000 / 41,950	1,050 / 60,200	4,200 / 7,750	1,650 / 58,100
195(74) ← 458(342) → 250(155) ↑ 84(180) ←	195(483) ↑ 143(205) ←	8(0) ← 15(6) → 3(13) ↑ 325(769) ← 10(0) ↑	71(314) ← 8(32) → 2(3) ↓ 1(3) ↑ 136(272) ← 48(28) ↑	103(128) ← 18(7) → 23(116) ↓ 57(127) ↑ 230(485) ←
95(265) → 61(202) ↓	58(195) ↓ 496(415) → 191(80) ↑ 71(67) ↑	25(0) ↓ 521(294) → 21(67) ↓ 6(52) ↑ 3(0) ↑	289(89) ↓ 265(169) → 64(39) ↓ 30(65) ↑ 29(5) → 23(53) ↑	160(308) ↓ 421(350) → 15(12) ↓ 15(40) ↑ 6(122) →
24,750 / 3,850	41,200 / 3,450	60,450 / 700	11,600 / 2,400	60,150 / 1,300

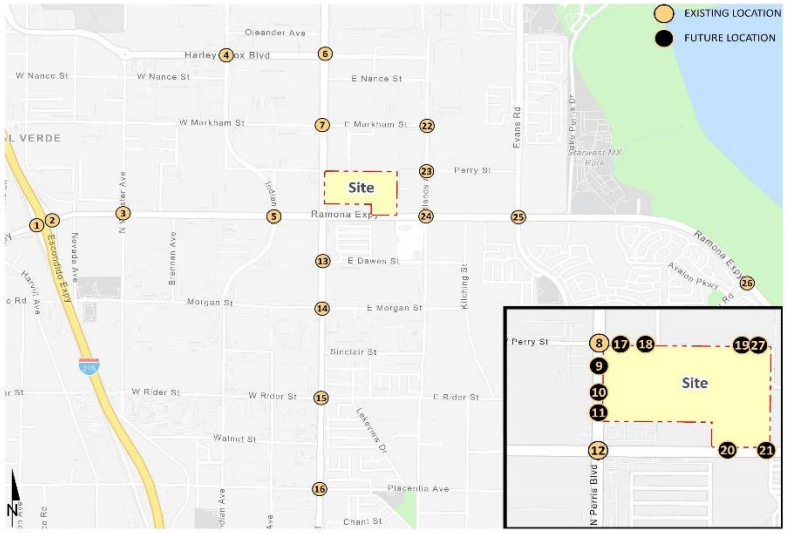
6 Perris Bl. & Harley Knox Bl.	7 Perris Bl. & Markham St.	8 Perris Bl. & Perry St.	9 Perris Bl. & Driveway 1	10 Perris Bl. & Driveway 2
4,050 / 7,350	2,550 / 200	2,800	2,800	2,800
48(20) ← 76(125) ↓ 28(34) ↑ 21(41) ← 97(278) ← 2(5) ↑	108(92) ← 5(5) ↓ 5(5) ↑ 8(8) ←	119(102) ←	119(102) ←	119(102) ←
19(52) → 347(124) → 18(26) ↓ 22(20) ↑ 85(116) ↑ 5(2) ↑	3(2) ↓ 1(3) ↑ 69(141) ↑ 6(10) ↑	76(154) →	76(154) →	
7,750 / 2,950	Nominal / 2,800	2,800	2,800	2,800

11 Perris Bl. & Driveway 3	12 Perris Bl. & Ramona Exwy.	13 Perris Bl. & Dawes St.	14 Perris Bl. & Morgan St.	15 Perris Bl. & Rider St.
2,800	2,750 / 57,550	3,900	3,900 / 1,550	3,900 / 400
119(102) ←	15(7) ← 41(50) ↓ 62(43) ← 30(75) ← 226(506) ← 25(15) ↑	159(177) ←	134(164) ← 25(13) ↓ 7(32) ← 20(67) ←	5(3) ← 49(65) ↓ 80(96) ← 77(118) ← 10(6) ← 29(88) ↑
76(154) →	5(18) ↓ 360(363) → 80(85) ↓ 65(114) ↑ 41(61) ↑ 11(25) ↑	119(239) →	72(25) → 112(207) →	2(7) ↓ 4(12) → 2(7) ↓ 5(3) ↑ 34(82) ↑ 67(56) ↑
2,800	58,450 / 3,900	3,900	1,550 / 3,900	4,300

16 Perris Bl. & Placentia Av.	17 Driveway 4 & Perry St.	18 Driveway 5 & Perry St.	19 Driveway 6 & Perry St.	20 Driveway 7 & Ramona Exwy.
2,600 / 2,550				57,200
3(14) ↓ 74(133) ← 100(79) ← 16(32) ↑				
11(5) ↓ 44(114) → 65(129) ↓ 41(145) ↑ 84(130) ↑ 10(36) ↑				
4,800 / 5,700				57,200

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 4-6: CUMULATIVE ONLY TRAFFIC VOLUMES (PAGE 2 OF 2)



21 Driveway 8 & Ramona Exwy.		22 Redlands Av. & Markham St.		23 Redlands Av. & Perry St.		24 Redlands Av. & Ramona Exwy.		25 Evans Rd. & Ramona Exwy.	
	57,200	***7,100***		***7,100***		***7,100***	***60,900***	***13,300***	***62,900***
	← 409(661)	↲ 72(20) ↓ 184(70)		← 251(162)		↲ 40(59) ↓ 87(32) ↳ 124(71)	↰ 58(120) ← 342(545) ↰ 50(83)	↳ 78(43)	← 23(94) ← 450(748)
522(568) →		17(79) →	↱ →		→ 130(244)	47(46) →	↱ → ↱	647(623) →	
		10(50) ↴	54(13) → 53(166)			438(492) →	27(57) → 25(78) 85(61)		
						37(30) ↴			
57,200			***7,100***		***7,100***	***57,200***	***5,800***	***59,600***	***31,900***

26 Ramona Exwy. & Bradley Rd.		27 Driveway 9 & Perry St.	
	71,300		
	← 180(686)		
611(300) →			
62,900			

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

TABLE 4-3: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

No.	Project Name / Case Number	Jurisdiction	Land Use	Quantity	Units[1]	Location
P1	Canyon Steel (CS)	Perris	Industrial	25.000	TSF	NWC OF PATTERSON AVE. & CALFORNIA AVE.
P2	Tract 32497	Perris	Single Family Detached	131	DU	SWC OF MEDICAL CENTER DR. & ORANGE AVE.
P3	Stratford Ranch East / TTM 38071	Perris	Single Family Detached	197	DU	NEC OF EVANS RD. & RAMONA EXWY.
	APN 302200005	Perris	Single Family Detached	19	DU	NEC OF EVANS RD. & RAMONA EXWY.
P4	Perris Truck Yard	Perris	Truck Yard	9.5	AC	NORTH OF MARKHAM ST. & EAST OF PERRIS BL.
P5	Marijuana Manufacturing (MM)	Perris	Industrial	1.000	TSF	NWC OF WEBSTER AVE. & WASHINGTON ST.
	Holistic Inc.	Perris	Cultivation	5.000	TSF	872 WASHINGTON AVE.
P6	First Indus (Goodwin)	Perris	High-Cube Warehouse	338.000	TSF	SEC OF REDLANDS AVE. & RIDER ST.
P7	Kwasizur Industrial	Perris	Warehousing	138.000	TSF	SEC OF INDIAN AVE. & HARLEY KNOX BL.
P8	Rados / DPR 07-0119	Perris	High-Cube Warehouse	1,200.000	TSF	NWC OF INDIAN AVE. & RIDER ST.
P9	Patriot Industrial	Perris	Warehousing	286.000	TSF	SWC OF PERRIS BL. & MORGAN ST.
P10	Indian/Ramona Warehouse / DPR 18-00002	Perris	High-Cube Warehouse	428.730	TSF	NORTH OF RAMONA EXWY. WEST OF INDIAN AVE.
P11	Lakecreek East and West	Perris	High-Cube Warehouse	556.000	TSF	SOUTH OF RIDER ST. & EITHER SIDE OF REDLANDS AVE.
P12	Westcoast Textile / DPR 16-00001	Perris	Warehousing	180.000	TSF	SWC OF INDIAN ST. & NANCE ST.
P13	Tract 31659	Perris	Single Family Detached	161	DU	NEC OF EVANS RD. & CITRUS AVE.
	Tract 32041	Perris	Single Family Detached	122	DU	NWC OF DUNLAP RD. & CITRUS AVE.
P14	Harley Knox Commerce Park / DPR 16-004	Perris	High-Cube Warehouse	386.278	TSF	NWC OF HARLEY KNOX BLVD. & REDLANDS AVE.
P15	Stratford Ranch West / TTM 36648	Perris	Single Family Detached	90	DU	WEST OF EVANS RD. AT MARKHAM ST.
P16	First March Logistics	Perris	Warehousing	589.971	TSF	NWC OF NATWAR LN & NANDINA AVE.
P17	Citrus Court / TTM 37038	Perris	Single Family Detached	111	DU	SWC OF DUNLAP RD. & ORANGE AVE.
P18	Weinerschnitzel / CUP 17-05083	Perris	Fast-Food Restaurant	2.000	TSF	WEST OF PERRIS BL., SOUTH OF PLACENTIA AVE.
P19	March Plaza / CUP16-05165	Perris	Commercial Retail	47.253	TSF	NWC OF PERRIS BL. AND HARLEY KNOX BL.
P20	Cali Express Carwash / CUP 16-05258	Perris	Automated Car Wash	5.600	TSF	NWC OF PERRIS BL. AND RAMONA EXWY.
P21	Wilson Industrial / DPR 19-00007	Perris	High-Cube Warehouse	303.000	TSF	SEC OF WILSON AVE. AND RIDER ST.
P22	Integra Expansion / MMOD 17-05075	Perris	High-Cube Warehouse	273.000	TSF	NCE OF MARKHAM ST. AND WEBSTER AVE.
P23	Duke - Patterson at Nance	Perris	High-Cube Warehouse	580.000	TSF	NEC OF PATTERSON AVE. & NANCE ST.
P24	Rider 2/4	Perris	High-Cube Warehouse	1,373.449	TSF	NEC OF REDLANDS AVE. AND RIDER ST.
P25	AAA	Perris	Industrial	2.000	TSF	SEC OF HARLEY KNOX BL. & WEBSTER AVE.
P26	Pulliam Indus	Perris	Industrial	16.000	TSF	LOTS 10 & 12 ON COMMERCE DR., E OF PERRIS
P27	Burge Indus 1	Perris	Industrial	18.000	TSF	E OF PERRIS BL. & N OF COMMERCE DR.
P28	Burge Indus 2	Perris	Industrial	19.000	TSF	E OF PERRIS BL. & S OF COMMERCE DR.
P29	Nance Industrial	Perris	Warehousing	156.000	TSF	BETWEEN HARLEY KNOX BL. & NANCE ST.
P30	Dedeaux Walnut Warehouse	Perris	Industrial	205.830	TSF	N SIDE OF WALNUT AVE. BTW INDIAN AVE. & BARRETT AVE.
P31	Perris and Ramona Warehouse	Perris	Industrial	347.938	TSF	S SIDE OF RAMONA EXWY. BTW INDIAN AVE. & PERRIS BLVD.
P32	JM Realty Perris and Indian	Perris	Warehouse	232.575	TSF	N SIDE OF RAMONA EXWY. BTW INDIAN AVE. & PERRIS BLVD.
			Hotel	125	Room	
P33	Harley Knox Commerce Center	Perris	Warehousing	156.780	TSF	S SIDE OF HARLEY KNOX BL. AND W OF REDLANDS AVE.
P34	Perris Plaza (Buildout)	Perris	Shopping Center	173.000	TSF	NEC OF NEEVO RD. & FRONTAGE RD.
P35	Ramona Gateway Commerce Center	Perris	High-Cube Fulfillment	902.713	TSF	SWC OF WEBSTER AVE. & RAMONA EXWY.
			High-Cube Cold Storage	47.511	TSF	
			Fast-Food Restaurant w/ DT	16.500	TSF	
			Fast-Food Restaurant w/o DT	10.200	TSF	
			Coffee Shop w/ DT	2.400	TSF	
			Automated Car Wash	1	Tunnel	
			Gas Station w/ Market	16	VFP	
P36	Ramona & Brennan	Perris	Warehousing	162.871	TSF	SWC OF BRENNAN AVE. & RAMONA EXWY.
P37	Patterson Commerce Center	Perris	High-Cube Fulfillment	224.247	TSF	SWC OF PATTERSON AVE. & NANCE ST.
			High-Cube Cold Storage	39.573	TSF	

No.	Project Name / Case Number	Jurisdiction	Land Use	Quantity	Units[1]	Location
RC1	McCanna Hills / TTM 33978	Riv. Co.	Single Family Detached	63	DU	SWC OF SHERMAN AVE. & WALNUT AVE.
RC2	Stoneridge	Riv. Co.	High-Cube Cold Storage	1695.355	TSF	NORTH OF NUEVO RD., SOUTH OF RAMONA EXWY., EAST OF
			High-Cube Fulfillment	2966.872	TSF	
			High-Cube Warehouse	2966.872	TSF	
			Manufacturing	847.678	TSF	
			Warehouse	427.759	TSF	
			Industrial Park	641.639	TSF	
			Free-Standing Discount Superst(	100.000	TSF	
			Commercial Retail	21.968	TSF	
RC3	Majestic Freeway Business Center - Building 12	Riv. Co.	Warehousing	154.751	TSF	NEC OF HARVILL AVE. & COMMERCE CENTER DR.
RC4	Majestic Freeway Business Center - Building 15	Riv. Co.	Warehousing	90.279	TSF	NWC OF HARVILL AVE. & COMMERCE CENTER DR.
RC5	PPT180025: Seaton Commerce Center	Riv. Co.	High-Cube Warehouse	210.800	TSF	SEC OF SEATON AVE. & PERRY ST.
RC6	Majestic Freeway Business Center - Building 11	Riv. Co.	High-Cube Warehouse	391.045	TSF	NEC OF HARVILL AVE. & PERRY ST.
RC7	Majestic Freeway Business Center - Buildings 1, 3 &	Riv. Co.	Warehousing	48.930	TSF	NWC OF HARVILL AVE. & CAJALCO RD.
			High-Cube Warehouse	1195.740	TSF	
RC8	Val Verde Logistics Center	Riv. Co.	High-Cube Warehouse	280.308	TSF	NWC OF HARVILL AVE. & OLD CAJALCO RD.
RC9	Dedeaux Truck Terminal	Riv. Co.	Truck Terminal	55.700	TSF	NORTH OF RIDER ST., WEST OF HARVILL AVE.
RC10	Harvill & Rider Warehouse	Riv. Co.	High-Cube Warehouse	284.746	TSF	NORTH OF RIDER ST., EAST OF HARVILL AVE.
			General Light Industrial	50.249	TSF	
RC11	PP26293	Riv. Co.	High-Cube Warehouse	612.481	TSF	SWC OF PATTERSON AVE. & RIDER ST.
RC12	PPT180023: Rider Commerce Center	Riv. Co.	Warehousing	204.330	TSF	NEC OF PATTERSON AVE. & RIDER ST.
RC13	PP26173	Riv. Co.	High-Cube Warehouse	423.665	TSF	SWC OF HARVILL AVE. & RIDER ST.
RC14	Barker Logistics	Riv. Co.	High-Cube Warehouse	699.630	TSF	SWC OF PATTERSON AVE. & PLACENTIA ST.
RC15	Placentia Truck Trailer Parking Lot	Riv. Co.	High-Cube Warehouse	335	Space	NWC OF HARVILL AVE. & PLACENTIA AVE.
RC16	PP26241	Riv. Co.	Warehousing	23.600	TSF	SEC OF HARVILL AVE. & PLACENTIA ST.
RC17	Majestic Freeway Business Center - Building 13	Riv. Co.	High-Cube Warehouse	322.997	TSF	SWC OF HARVILL AVE. & PERRY ST.
RC18	Majestic Freeway Business Center - Building 14A/B	Riv. Co.	Warehousing	354.583	TSF	SWC OF HARVILL AVE. & COMMERCE CENTER DR.
RC19	Majestic Freeway Business Center - Building 17	Riv. Co.	High-Cube Warehouse	268.955	TSF	NEC OF HARVILL AVE. & AMERICA'S TIRE DR.
RC20	Majestic Freeway Business Center - Building 18	Riv. Co.	High-Cube Warehouse	317.760	TSF	SWC OF HARVILL AVE. & PEREGRINE WY.
RC21	Thrifty Oil	Riv. Co.	Warehousing	171.270	TSF	NEC OF TOBACCO RD. & WATER AV.
RC22	Harvill & Cajalco	Riv. Co.	General Light Industrial	99.770	TSF	NEC OF HARVILL AV. & CAJALCO RD.
			Trailer Yard/Storage	133	Spaces	
RC23	Harvill & Water	Riv. Co.	High-Cube Fulfillment	434.823	TSF	SWC OF HARVILL AV. & WATER AV.

[1] DU = Dwelling Units; TSF = Thousand Square Feet

The near-term traffic analysis includes the following traffic conditions, with the various traffic components:

- EAC (2024)
  - Existing 2022 counts
  - Ambient growth traffic (6.09%)
  - Cumulative Development traffic
- EAPC (2024)
  - Existing 2022 counts
  - Ambient growth traffic (6.09%)
  - Cumulative Development traffic
  - Project traffic

4.8 HORIZON YEAR TRAFFIC FORECASTS

Traffic projections for Horizon Year conditions were derived from the RIVCOM regional model using accepted procedures for model forecast refinement and smoothing. The traffic forecasts reflect the area-wide growth anticipated between Existing and Horizon Year traffic conditions. The base model year for the RIVCOM regional model is Year 2018 and the future year model is Year 2045.

In most instances the traffic model zone structure is not designed to provide accurate turning movements along arterial roadways unless refinement and reasonableness checking is performed. Therefore, the Horizon Year peak hour forecasts were refined using the model derived long-range forecasts, base (validation) year model forecasts, along with existing peak hour traffic count data collected at each analysis location.

The refined future peak hour approach and departure volumes obtained from these calculations are then entered into a spreadsheet program consistent with the National Cooperative Highway Research Program (NCHRP Report 765), along with initial estimates of turning movement proportions. A linear programming algorithm is used to calculate individual turning movements which match the known directional roadway segment forecast volumes computed in the previous step. This program computes a likely set of intersection turning movements from intersection approach counts and the initial turning proportions from each approach leg.

Typically, the model growth is prorated and is subsequently added to the existing (base validation) traffic volumes to represent Horizon Year traffic conditions. However, review of the resulting model growth indicates negative growth for some of the study area intersections. In conjunction with the addition of cumulative projects that are not consistent with the General Plan, additional growth has also been applied on a movement-by-movement basis, where applicable, to estimate reasonable Horizon Year forecasts. Horizon Year turning volumes were compared to EAC volumes in order to ensure a minimum growth as a part of the refinement process. The minimum growth includes any additional growth between EAC and Horizon Year traffic conditions that is not accounted for by the traffic generated by cumulative development projects and ambient growth rates assumed between Existing (2022) and Horizon Year traffic conditions. Future estimated peak hour traffic data was used for new intersections and intersections with an anticipated change in travel patterns to further refine the Horizon Year peak hour forecasts. The only instance when the EAC forecasts would not be used

to manually adjust the Horizon Year forecasts is if there are new proposed roadway connections/facilities that would explain the change in travel patterns within the study area.

The future Horizon Year Without Project peak hour turning movements were then reviewed by Urban Crossroads for reasonableness, and in some cases, were adjusted to achieve flow conservation, reasonable growth, and reasonable diversion between parallel routes. Flow conservation checks ensure that traffic flow between two closely spaced intersections, such as two freeway ramp locations, is verified in order to make certain that vehicles leaving one intersection are entering the adjacent intersection and that there is no unexplained loss of vehicles. The result of this traffic forecasting procedure is a series of traffic volumes which are suitable for traffic operations analysis. Post processing worksheets are provided in Appendix 4.1.

5 E+P TRAFFIC CONDITIONS

This section discusses the traffic forecasts for E+P conditions and the resulting intersection operations, traffic signal warrant, and off-ramp queuing analyses.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for E+P conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for E+P conditions (e.g., intersection and roadway improvements at the Project's frontage and driveways).

5.2 E+P TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2022) traffic volumes plus the addition of Project traffic. The weekday ADT volumes and peak hour volumes, in actual vehicles, which can be expected for E+P traffic conditions are shown on Exhibit 5-1.

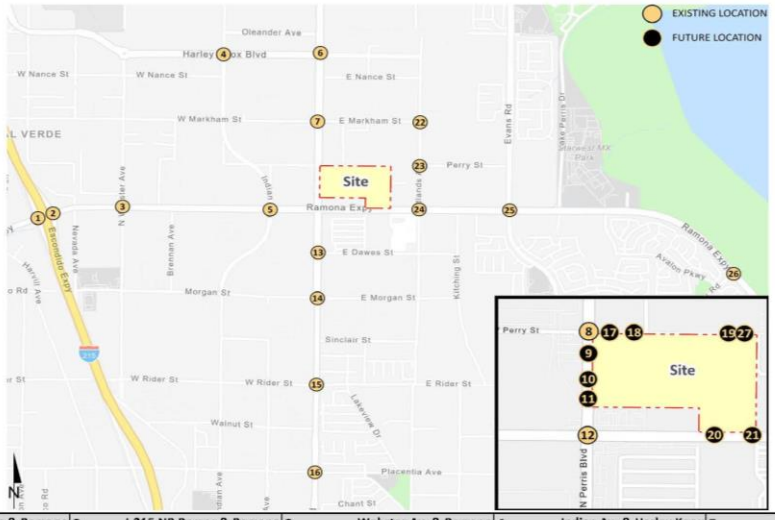
5.3 INTERSECTION OPERATIONS ANALYSIS

E+P peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TA. The intersection analysis results are summarized in Table 5-1 for E+P traffic conditions, which indicates the study area intersections are anticipated to continue to operate at an acceptable LOS during the peak hours, consistent with Existing (2022) conditions. The intersection operations analysis worksheets for E+P traffic conditions are included in Appendix 5.1 of this TA.

5.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

The traffic signal warrant analysis for E+P traffic conditions are based on the peak hour volumes or planning level ADT volume-based traffic signal warrants. The intersection of Driveway 8 & Ramona Expressway (#21) is anticipated to meet a traffic signal warrant under E+P traffic conditions (see Appendix 5.2). It should be noted, the Project will construct a traffic signal at this location as part of the Project design features as discussed in Section 1.6 *Recommendations*.

EXHIBIT 5-1: E+P TRAFFIC VOLUMES (PAGE 1 OF 2)



1 I-215 SB Ramps & Ramona Exwy.	2 I-215 NB Ramps & Ramona Exwy.	3 Webster Av. & Ramona Exwy.	4 Indian Av. & Harley Knox Bl.	5 Indian Av. & Ramona Exwy.
13,050 / 39,250	10,000 / 46,500	6,900 / 38,650	15,350 / 11,600	6,150 / 38,000
135(122) ← 0(2) ↓ 566(785) →	← 586(564) ← 682(888)	68(133) ← 22(45) ↓ 33(73) →	101(329) ← 66(224) ↓ 29(84) →	33(47) ← 50(123) ↓ 34(58) →
← 759(823) → 187(389) ↓		← 44(44) ← 1171(1238) → 19(11) ↓	← 66(39) ← 562(358) → 13(12) ↓	← 59(56) ← 1243(1053) → 51(71) ↓
594(736) →	125(136) →	188(154) →	247(206) →	79(64) →
292(322) →	1036(1385) →	1161(1325) →	228(297) →	947(1360) →
	263(324) 6(2) 516(411)	71(33) → 51(125) 43(27) 12(14)	42(28) → 57(53) 17/(183) 12(14)	55(58) → 50(96) 49(83) 46(72)
28,900 / 10,200	39,250 / 10,600	43,000 / 3,700	18,350 / 7,450	38,250 / 7,200

6 Perris Bl. & Harley Knox Bl.	7 Perris Bl. & Markham St.	8 Perris Bl. & Perry St.	9 Perris Bl. & Driveway 1	10 Perris Bl. & Driveway 2
32,950 / 7,450	23,750 / 2,400	24,250 / 1,200	31,300 / 2,900	30,900 / 2,850
206(236) ↓ 499(913) ← 62(168) →	51(33) ↓ 605(861) ← 34(17) →	9(7) ↓ 493(971) ← 12(6) →	737(1248) ↓	737(1248) ↓
← 177(95) ← 306(86) ↑ 3(11)	← 8(25) ← 46(42) ↑ 9(17)	← 6(7) ← 2(2) ↑ 9(27)	← 136(114)	← 117(100)
148(185) →	15(53) →	1(4) →		
49(147) →	21(46) →	4(3) →		
54(73) →	26(61) →	9(21) →		
141(57) 803(687) 11(4)	42(24) 1051(662) 56(19)	236(241) 997(692) 73(42)	117(859) 127(90)	193(133)
11,300 / 25,150	3,750 / 23,650	3,700 / 28,300	30,900	31,300

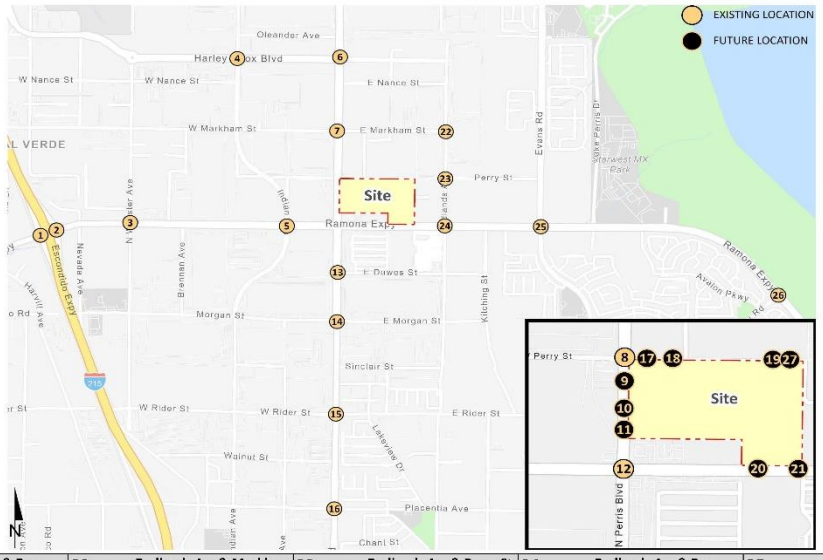
11 Perris Bl. & Driveway 3	12 Perris Bl. & Ramona Exwy.	13 Perris Bl. & Dawes St.	14 Perris Bl. & Morgan St.	15 Perris Bl. & Rider St.
31,300 / 1,850	32,550 / 36,300	22,850 / 1,950	21,300 / 1,550	21,050 / 10,200
737(1248) ↓	228(292) ↓ 348(622) ← 255(382) →	435(860) ↓ 30(36) →	44(11) ↓ 502(778) ← 16(14) →	20(15) ↓ 266(704) ← 47(91) →
← 51(83)	← 252(192) ← 932(721) ↑ 146(163)	← 50(35) ↑ 23(36)	← 15(23) ← 44(18) ↑ 7(12)	← 161(108) ← 70(77) ↑ 93(116)
	454(396) →	1(0) →	21(18) →	12(41) →
	660(995) →		19(28) →	27(167) →
	88(182) →		21(21) →	20(65) →
1323(899) 57(51)	216(193) 939(454) 66(93)	2(2) 892(665) 9(30)	43(22) 957(641) 9(13)	24(17) 668(507) 48(150)
31,150	39,600 / 24,500	Nominal / 22,850	1,700 / 21,350	5,500 / 22,450

16 Perris Bl. & Placentia Av.	17 Driveway 4 & Perry St.	18 Driveway 5 & Perry St.	19 Driveway 6 & Perry St.	20 Driveway 7 & Ramona Exwy.
28,650 / 6,650	1,200	1,350	1,500	4,300 / 36,650
31(12) ↓ 517(992) ← 38(146) →				153(125) ↓
← 135(110) ← 117(26) ↑ 32(48)	← 17(36) ← 6(3)	← 23(39) ← 4(4)	← 27(43) ← 4(4)	← 183(117) ← 1082(928)
17(24) →				
62(59) →				
11(23) →	74(43) →	75(51) →	79(56) →	843(1525) →
35(8) 793(706) 27(73)	15(8) 2(8)	4(5)	4(5)	
2,200 / 26,700	1,200 / 300	1,200 / 150	1,350 / 150	36,850

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 5-1: E+P TRAFFIC VOLUMES (PAGE 2 OF 2)



21 Driveway 8 & Ramona Exwy.

9,500 | 37,950
116(96) ↲ | 138(122) ↳ | ↱ 268(163) | ← 1149(949)
82(79) ↳
761(1446) →
36,650

22 Redlands Av. & Markham St.

7,950
6(8) ↲ | 102(351) ↓
5(5) ↳
39(60) ↲
1,700
↰ 72(46) | ↑ 563(184)
9,250

23 Redlands Av. & Perry St.

9,100
12(12) ↲ | 128(412) ↓
29(25) ↳
32(46) ↲
1,300
↰ 28(11) | ↑ 541(180)
9,250

24 Redlands Av. & Ramona Exwy.

10,600 | 41,750
37(36) ↲ | 47(100) ↓ | 77(322) ↱ | ↑ 404(139)
214(126) ↳ | ← 1127(919)
656(1383) → | ↰ 55(77)
29(59) ↲
37,450
↰ 53(49) | ↑ 149(35) | ↱ 80(67)
5,500

25 Evans Rd. & Ramona Exwy.

25,550 | 28,600
331(342) ↲ | 153(432) ↓ | 128(236) ↳ | ↱ 202(123)
335(386) ↳ | ← 906(587)
371(1009) → | ↰ 6(21)
66(192) ↲
39,250
↰ 332(219) | ↑ 382(255) | ↱ 18(14)
16,300

26 Ramona Exwy. & Bradley Rd.

20,250
← 749(531)
↰ 11(26)
↰ 168(104) | ↱ 17(19)
467(828) →
68(187) ↲
23,700
4,800

27 Driveway 9 & Perry St.

1,350
← 26(27)
↰ 9(5)
68(53) →
15(8) ↲
1,500
↰ 5(20) | ↱ 2(12)
550

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

TABLE 5-1: INTERSECTION ANALYSIS FOR E+P CONDITIONS

#	Intersection	Traffic Control[2]	Existing (2022) Delay[1] (secs.) AM	Existing (2022) Delay[1] (secs.) PM	Existing (2022) Level of Service AM	Existing (2022) Level of Service PM	E+P Delay[1] (secs.) AM	E+P Delay[1] (secs.) PM	E+P Level of Service AM	E+P Level of Service PM
1	I-215 SB Ramps & Ramona Exwy.	TS	26.0	36.2	C	D	28.6	42.3	C	D
2	I-215 NB Ramps & Ramona Exwy.	TS	20.2	17.2	C	B	24.8	19.0	C	B
3	Webster Av. & Ramona Exwy.	TS	18.7	20.5	B	C	18.9	20.9	B	C
4	Indian Av. & Harley Knox Bl.	TS	22.1	26.1	C	C	22.2	26.6	C	C
5	Indian Av. & Ramona Exwy.	TS	18.7	21.9	B	C	19.4	23.2	B	C
6	Perris Bl. & Harley Knox Bl.	TS	21.7	29.5	C	C	23.1	30.0	C	C
7	Perris Bl. & Markham St.	TS	14.1	15.9	B	B	14.1	15.9	B	B
8	Perris Bl. & Perry St.	TS	8.0	8.7	A	A	11.4	27.6	B	C
9	Perris Bl. & Driveway 1	**CSS**	Future Intersection				12.4	11.0	B	B
10	Perris Bl. & Driveway 2	**CSS**	Future Intersection				12.1	10.9	B	B
11	Perris Bl. & Driveway 3	**CSS**	Future Intersection				11.5	10.7	B	B
12	Perris Bl. & Ramona Exwy.	TS	44.5	42.5	D	D	47.7	47.3	D	D
13	Perris Bl. & Dawes St.	TS	8.6	8.0	A	A	10.4	8.6	B	A
14	Perris Bl. & Morgan St.	TS	13.3	12.8	B	B	13.3	12.8	B	B
15	Perris Bl. & Rider St.	TS	16.5	17.5	B	B	17.1	17.8	B	B
16	Perris Bl. & Placentia Av.	TS	15.4	16.5	B	B	15.6	16.7	B	B
17	Driveway 4 & Perry St.	**CSS**	Future Intersection				8.7	8.6	A	A
18	Driveway 5 & Perry St.	**CSS**	Future Intersection				8.7	8.6	A	A
19	Driveway 6 & Perry St.	**CSS**	Future Intersection				8.7	8.6	A	A
20	Driveway 7 & Ramona Exwy.	**CSS**	Future Intersection				12.0	11.4	B	B
21	Driveway 8 & Ramona Exwy.	**TS**	Future Intersection				12.4	8.9	B	A
22	Redlands Av. & Markham St.	TS	4.6	6.8	A	A	5.4	7.3	A	A
23	Redlands Av. & Perry St.	CSS	11.2	13.0	B	B	12.3	14.4	B	B
24	Redlands Av. & Ramona Exwy.	TS	16.1	26.1	B	C	33.6	33.9	C	C
25	Evans Rd. & Ramona Exwy.	TS	24.1	21.3	C	C	27.0	22.5	C	C
26	Ramona Exwy. & Bradley Rd.	TS	7.1	7.1	A	A	7.7	7.3	A	A
27	Driveway 9 & Perry St.	**CSS**	Future Intersection				9.3	9.2	A	A

1 Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane)

2 TS = Traffic Signal; CSS = Cross-street Stop; **CSS** = Improvement

5.5 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for E+P are presented in Table 5-2. As shown in Table 5-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows, consistent with Existing (2022) traffic conditions. Worksheets for E+P traffic conditions queuing analysis are provided in Appendix 5.3.

TABLE 5-2: PEAK HOUR OFF-RAMP QUEUING SUMMARY FOR E+P CONDITIONS

			Existing (2022)				E+P			
			95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
Intersection	Movement	Available Stacking Distance (Feet)	AM Peak	PM Peak	AM	PM	AM Peak	PM Peak	AM	PM
I-215 SB Ramps & Ramona Exwy. (#1)	SBL	530	311	494 [2]	Yes	Yes	368	541 [2,3]	Yes	Yes
	SBT	1,100	312	500 [2]	Yes	Yes	369	545 [2]	Yes	Yes
	SBR	530	65	53	Yes	Yes	70	57	Yes	Yes
I-215 NB Ramps & Ramona Exwy. (#2)	NBL	520	137	161	Yes	Yes	137	161	Yes	Yes
	NBL/T	1,120	136	164	Yes	Yes	136	164	Yes	Yes
	NBR	520	381	139	Yes	Yes	562 [2,3]	392 [2]	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the I-215 Freeway mainline.

5.6 DEFICIENCIES AND IMPROVEMENTS

Improvements needed to achieve acceptable LOS have been identified at intersections or off-ramps that are currently operating at a deficient LOS under E+P traffic conditions.

5.6.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

As shown previously in Table 5-1, all study area intersections are anticipated to continue to operate at an acceptable LOS during the peak hours under E+P traffic conditions. As such, no improvements have been identified.

5.6.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 5-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for E+P traffic conditions. As such, no improvements have been identified.

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6 EAC & EAPC (2024) TRAFFIC CONDITIONS

This section discusses the traffic forecasts for EAC and EAPC (2024) traffic conditions and the resulting intersection operations, traffic signal warrant, and off-ramp queuing analyses.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for EAC and EAPC (2024) Projects conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for EAPC (2024) conditions (e.g., intersection and roadway improvements at the Project's frontage and driveways).
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for both EAC and EAPC (2024) conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages).
- Although not evaluated, the I-215 Freeway/Placentia Avenue interchange is anticipated to be completed and operational for both EAC and EAPC (2024) conditions.

6.2 EAC AND EAPC (2024) TRAFFIC VOLUME FORECASTS

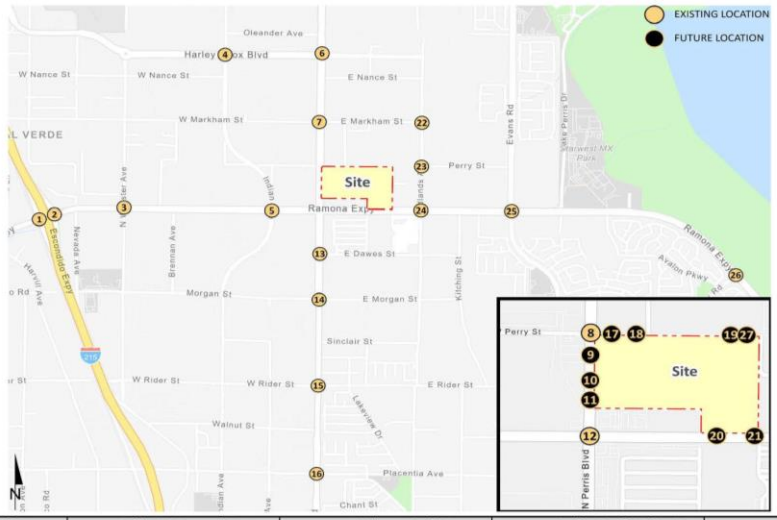
The EAC (2024) scenario includes Existing traffic volumes plus an ambient growth factor of 6.09% and the addition of traffic generated by cumulative development projects. The EAPC (2024) scenario includes Existing traffic volumes plus an ambient growth factor of 6.09%, the addition of traffic generated by cumulative development projects, and the addition of Project traffic. The weekday ADT and weekday peak hour intersection turning movement volumes, in actual vehicles, which can be expected for EAC and EAPC (2024) traffic conditions are shown on Exhibits 6-1 and 6-2, respectively.

6.3 INTERSECTION OPERATIONS ANALYSIS

EAC and EAPC (2024) peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TA. The intersection analysis results are summarized in Table 6-1 for EAC (2024) traffic conditions, which indicates that the following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours:

- I-215 SB Ramps & Ramona Expressway (#1) – LOS F PM peak hour only
- I-215 NB Ramps & Ramona Expressway (#2) – LOS F PM peak hour only
- Indian Avenue & Harley Knox Boulevard (#4) – LOS F PM peak hour only
- Indian Avenue & Ramona Expressway (#5) – LOS E PM peak hour only
- Perris Boulevard & Harley Knox Boulevard (#6) – LOS E PM peak hour only
- Perris Boulevard & Ramona Expressway (#12) – LOS E AM and PM peak hours
- Redlands Avenue & Ramona Expressway (#24) – LOS E AM peak hour; LOS F PM peak hour
- Evans Road & Ramona Expressway (#25) – LOS E PM peak hour only

EXHIBIT 6-1: EAC (2024) TRAFFIC VOLUMES (PAGE 1 OF 2)



1 I-215 SB Ramps & Ramona Exwy.	2 I-215 NB Ramps & Ramona Exwy.	3 Webster Av. & Ramona Exwy.	4 Indian Av. & Harley Knox Bl.	5 Indian Av. & Ramona Exwy.
43,900 / 54,400	28,850 / 87,900	8,300 / 97,750	20,350 / 19,250	7,800 / 94,150
338(203) ↳ 0(2) ↓ 956(1119) ↲	← 753(1019) ← 784(1070)	80(141) ↳ 23(48) ↓ 50(83) ↲	179(663) ↳ 78(269) ↓ 21(85) ↲	138(178) ↳ 71(137) ↓ 29(161) ↲
← 1034(1009) ↰ 220(534)	↰	← 50(60) ← 1421(1942) ↰ 30(12)	← 64(38) ← 712(628) ↰ 62(41)	← 99(172) ← 1402(1462) ↰ 33(56)
692(1028) → 371(544) ↴	191(339) ↴ 1458(1810) →	224(163) ↴ 1516(1571) → 96(102) ↴	551(307) ↴ 478(464) → 109(69) ↴	244(376) ↴ 1189(1664) → 73(74) ↴
	470(424) 6(2) 519(449)	60(185) 46(29) 16(15)	91(121) 217(199) 36(68)	68(142) 58(210) 16(58)
54,900 / 13,950	80,900 / 13,950	102,700 / 4,600	30,450 / 10,250	97,350 / 8,450

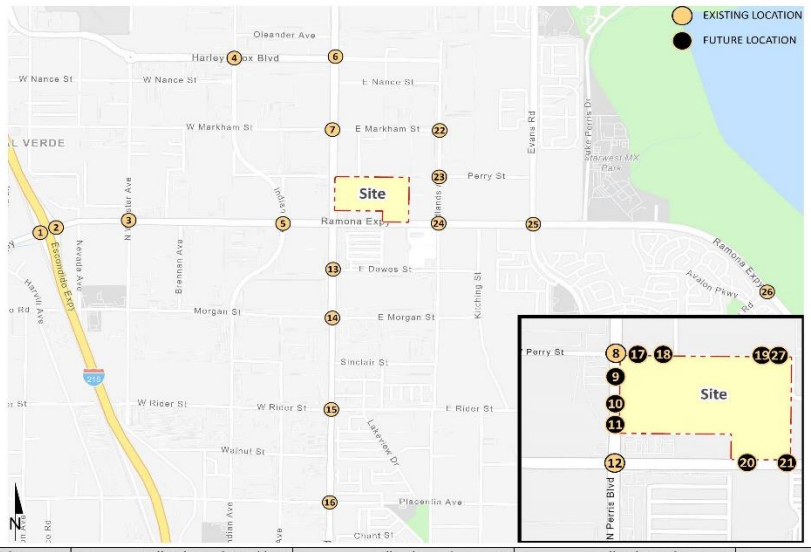
6 Perris Bl. & Harley Knox Bl.	7 Perris Bl. & Markham St.	8 Perris Bl. & Perry St.	9 Perris Bl. & Driveway 1	10 Perris Bl. & Driveway 2
38,500 / 14,900	26,750 / 2,750	27,550 / 350	27,800	27,800
26(270) ↳ 573(1076) ↓ 93(212) ↲	54(35) ↳ 683(969) ↓ 41(23) ↲	10(7) ↳ 582(1099) ↓ 6(3) ↲	595(1129) ↓	595(1129) ↓
← 209(142) ← 414(359) ↰ 5(16)	← 13(32) ← 49(45) ↰ 17(26)	← 6(7) ← 2(2) ↰ 4(7)		
176(248) ↳ 392(271) → 42(85) ↴	16(56) ↳ 22(49) → 31(67) ↴	1(4) ↳ 1(1) → 10(22) ↴	1117(861) →	
150(62) 916(826) 16(7)	46(28) 1142(804) 66(30)	10(8) 1092(849) 15(3)		
18,950 / 28,700	4,000 / 26,900	650 / 27,800	27,800	27,800

11 Perris Bl. & Driveway 3	12 Perris Bl. & Ramona Exwy.	13 Perris Bl. & Dawes St.	14 Perris Bl. & Morgan St.	15 Perris Bl. & Rider St.
27,800	29,750 / 92,000	26,750 / 1,650	25,500 / 3,200	25,200 / 10,750
595(1129) ↓	141(180) ↳ 388(682) ↓ 166(317) ↲	578(1046) ↓ 12(23) ↲	47(12) ↳ 624(946) ↓ 42(28) ↲	26(19) ↳ 303(789) ↓ 109(173) ↲
	← 210(195) ← 1143(1234) ↰ 141(157)	← 23(20) ↰ 24(38)	← 23(56) ← 67(86) ↰ 7(13)	← 215(215) ← 84(88) ↰ 128(211)
111(861) →	311(307) ↴ 937(1386) → 173(278) ↴	1(0) →	22(19) ↴ 92(55) → 22(22) ↴	15(50) ↴ 33(189) → 23(76) ↴
	294(319) 937(489) 81(124)	2(2) 995(906) 10(32)	46(23) 1057(849) 10(14)	30(21) 707(600) 118(215)
27,800	96,150 / 28,450	Nominal / 27,150	3,350 / 25,550	5,850 / 27,600

16 Perris Bl. & Placentia Av.	17 Driveway 4 & Perry St.	18 Driveway 5 & Perry St.	19 Driveway 6 & Perry St.	20 Driveway 7 & Ramona Exwy.
32,450 / 9,500	350	350	350	92,600
35(23) ↳ 609(1172) ↓ 33(149) ↲	← 13(17)	← 13(17)	← 13(17)	← 1112(965)
← 131(110) ← 224(107) ↰ 50(83)				
25(28) ↴ 110(177) → 77(153) ↴	22(7) →	22(7) →	22(7) →	664(1487) →
79(154) 904(867) 39(113)				
7,050 / 33,700	350	350	350	92,600

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 6-1: EAC (2024) TRAFFIC VOLUMES (PAGE 2 OF 2)

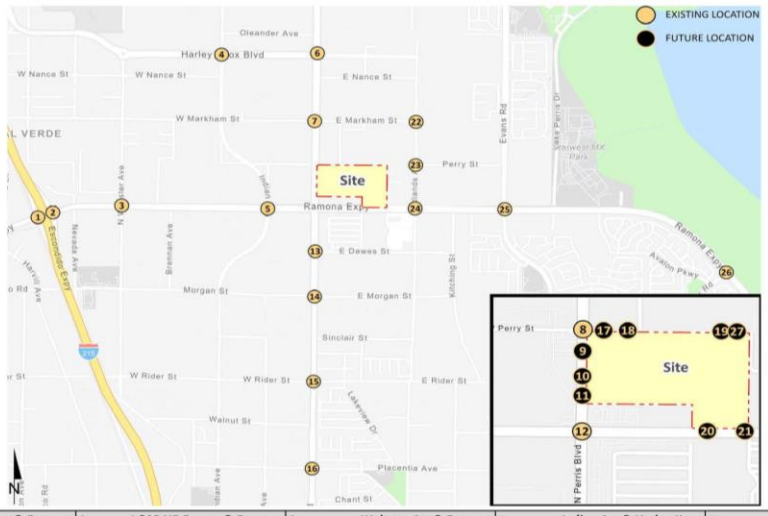


21 Driveway 8 & Ramona Exwy.			22 Redlands Av. & Markham St.			23 Redlands Av. & Perry St.			24 Redlands Av. & Ramona Exwy.			25 Evans Rd. & Ramona Exwy.		
		92,600			15,050			16,000			16,150			39,950		92,300
	← 1521(1626)			78(28) ↲ 273(428) ↓			5(4) ↲ 357(582) ↓			50(80) ↲ 116(119) ↓ 201(396) ↳		↰ 474(261)	↰ 318(345) ↓ 162(458) ↓ 214(293) ↳	↰ 237(224)
1186(2055) →			22(84) ↳	↰ ↑		3(2) ↳	↰ ↑		64(64) ↳	↰ ↑ ↱	103,300	← 1418(1454)	← 6(22)	
			33(104) ↴	119(52) ↑ 635(345)		10(13) ↴	14(3) ↑ 704(435)		1054(1899) →	54(92) ↑ 180(113) ↑ 170(132)		↰ 108(165)	334(390) →	↰ ↑ ↱
									68(93) ↴				999(1654) →	319(214) ↑ 405(271) ↑ 19(15)
													49(185) ↴	
92,600			1,550		16,200	300		16,150	93,500		11,200	99,350		48,750

26 Ramona Exwy. & Bradley Rd.			27 Driveway 9 & Perry St.		
		92,250			350
	← 942(1231)			← 13(17)	
	↰ 12(28)				
1085(1159) →	↰	↱			
51(179) ↴	145(92)	18(20)	22(7) →		
87,100		4,600	350		

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 6-2: EAPC (2024) TRAFFIC VOLUMES (PAGE 1 OF 2)



1 I-215 SB Ramps & Ramona Exwy.	2 I-215 NB Ramps & Ramona Exwy.	3 Webster Av. & Ramona Exwy.	4 Indian Av. & Harley Knox Bl.	5 Indian Av. & Ramona Exwy.
44,600 / 56,250	29,550 / 91,100	8,300 / 100,950	20,500 / 20,000	8,200 / 98,200
338(203) ↳ 0(2) ↓ 1053(1172) ↰	← 813(1078) ← 862(1143)	80(141) ↳ 23(48) ↓ 50(83) ↰	179(663) ↳ 78(269) ↓ 32(91) ↰	138(178) ↳ 71(137) ↓ 57(177) ↰
← 1054(1027) ↰ 279(589)	191(339) ↳	← 50(60) ← 1559(2074) ↰ 30(12)	← 71(44) ← 731(650) ↰ 62(41)	← 118(186) ← 1540(1594) ↰ 53(74)
723(1045) →	1587(1880) → ↰ ↑ ↱	224(163) ↳ ↰ ↑ ↱	551(307) ↳ ↰ ↑ ↱	244(376) ↳ ↰ ↑ ↱
371(544) ↴	470(424) 6(2) 613(500)	1739(1692) → 96(102) ↴ 60(185) 46(29) 16(15)	505(483) → 109(69) ↴ 91(121) 217(199) 36(68)	1412(1785) → 73(74) ↴ 68(142) 58(210) 47(75)
55,350 / 14,600	82,700 / 14,650	105,900 / 4,600	31,050 / 10,250	100,550 / 8,900

6 Perris Bl. & Harley Knox Bl.	7 Perris Bl. & Markham St.	8 Perris Bl. & Perry St.	9 Perris Bl. & Driveway 1	10 Perris Bl. & Driveway 2
38,950 / 15,200	27,650 / 2,750	28,450 / 1,250	35,500 / 2,900	35,150 / 2,850
267(270) ↳ 604(1093) ↓ 93(212) ↰	54(35) ↳ 746(1003) ↓ 41(23) ↰	10(7) ↳ 639(1130) ↓ 12(6) ↰	883(1409) ↓	883(1409) ↓
← 209(142) ← 421(368) ↰ 5(16)	← 13(32) ← 49(45) ↰ 17(26)	← 6(7) ← 2(2) ↰ 9(27)	← 136(114)	← 117(100)
176(248) ↳	16(56) ↳	1(4) ↳		
399(279) →	22(49) →	4(3) →	↰ ↑ ↱	↰
73(102) ↴	31(67) ↴	10(22) ↴	1307(1054) 127(90)	193(133)
170(80) 936(844) 16(7)	46(28) 1181(841) 66(30)	23(7)(241) 1131(886) 74(42)		
19,700 / 29,550	4,000 / 27,800	3,750 / 32,500	35,150	35,500

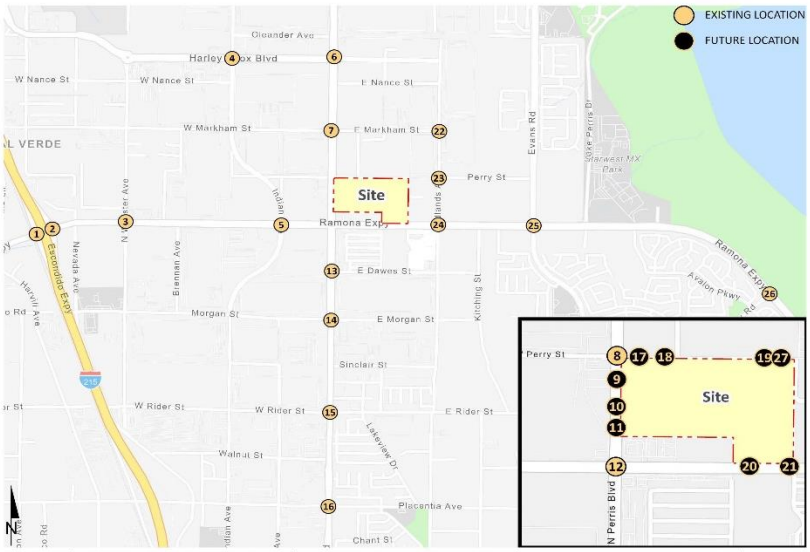
11 Perris Bl. & Driveway 3	12 Perris Bl. & Ramona Exwy.	13 Perris Bl. & Dawes St.	14 Perris Bl. & Morgan St.	15 Perris Bl. & Rider St.
35,500 / 1,850	36,900 / 95,800	28,100 / 2,000	26,450 / 3,200	26,200 / 11,200
883(1409) ↓	250(309) ↳ 409(708) ↓ 323(441) ↰	618(1087) ↓ 31(37) ↰	47(12) ↳ 664(987) ↓ 42(28) ↰	26(19) ↳ 324(811) ↓ 129(191) ↰
← 51(83)	← 292(274) ← 1211(1269) ↰ 178(186)	← 51(36) ↰ 24(38)	← 23(56) ← 67(86) ↰ 7(13)	← 246(232) ← 84(88) ↰ 128(211)
	477(431) ↳		22(19) ↳	15(50) ↳
	1053(1416) →	1(0) →	92(55) →	33(189) →
	173(278) ↴		22(22) ↴	23(76) ↴
1459(1094) 57(51)	294(319) 1031(540) 81(124)	2(2) 1061(942) 10(32)	46(23) 1123(885) 10(14)	30(21) 741(619) 118(215)
100,200 / 35,350	100,200 / 29,800	Nominal / 28,100	3,350 / 26,500	5,850 / 28,100

16 Perris Bl. & Placentia Av.	17 Driveway 4 & Perry St.	18 Driveway 5 & Perry St.	19 Driveway 6 & Perry St.	20 Driveway 7 & Ramona Exwy.
33,000 / 9,650	1,200	1,350	1,500	4,300 / 95,850
36(27) ↳ 621(1185) ↓ 40(155) ↰	← 18(37) ↰ 6(3)	← 24(40) ↰ 4(4)	← 28(44) ↰ 4(4)	153(125) ↳
← 142(116) ← 224(107) ↰ 50(83)				← 183(117) ← 1146(983)
28(30) ↳				
110(177) →	75(43) →	76(51) →	80(56) →	881(1610) →
77(153) ↴	15(8) ↴	↱	↱	
79(154) 924(878) 39(113)	2(8)	4(5)	4(5)	
7,150 / 34,000	1,250 / 300	1,200 / 150	1,350 / 150	96,050

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 6-2: EAPC (2024) TRAFFIC VOLUMES (PAGE 2 OF 2)



21 Driveway 8 & Ramona Exwy.			22 Redlands Av. & Markham St.			23 Redlands Av. & Perry St.			24 Redlands Av. & Ramona Exwy.			25 Evans Rd. & Ramona Exwy.		
		97,200									105,100			93,200
9,500	116(96) 138(122)	↱ 268(163) ← 1622(1665)	15,500	78(28) 291(442)		16,700	12(12) 385(598)		18,200	78(96) 136(137) 205(412)	↱ 486(267) ← 1531(1516) ↰ 108(165)	40,400	349(362) 162(458) 214(293)	↰ 237(224) ← 1407(1369) ↰ 6(22)
	82(79) ↳			22(84) ↳	↰ ↑		29(25) ↳	↰ ↑		262(173) ↳	↰ ↑ ↱		354(408) ↳	↰ ↑ ↱
	1321(2099) →			50(113) ↴	130(61) 649(360)		33(47) ↴	29(11) 704(435)		1129(1956) →	82(108) 183(115) 170(132)		1038(1691) →	350(231) 405(271) 19(15)
95,850			1,800		16,900	1,350		16,900	96,700		11,650	101,150		49,200

26 Ramona Exwy. & Bradley Rd.			27 Driveway 9 & Perry St.		
		92,700			1,350
		← 973(1248) ↰ 12(28)			← 27(28) ↰ 9(5)
		↰ ↱			↰ ↱
1105(1177) →	176(109)	18(20)	69(53) →	5(20)	2(12)
71(197) ↴			15(8) ↴		
88,000		5,050	1,500		550

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

TABLE 6-1: INTERSECTION ANALYSIS FOR EAC AND EAPC (2024) CONDITIONS

#	Intersection	Traffic Control[2]	EAC (2024) Delay[1] (secs.) AM	EAC (2024) Delay[1] (secs.) PM	EAC (2024) Level of Service AM	EAC (2024) Level of Service PM	EAPC (2024) Delay[1] (secs.) AM	EAPC (2024) Delay[1] (secs.) PM	EAPC (2024) Level of Service AM	EAPC (2024) Level of Service PM
1	I-215 SB Ramps & Ramona Exwy.	TS	46.7	**127.6**	D	**F**	**61.6**	**144.9**	**E**	**F**
2	I-215 NB Ramps & Ramona Exwy.	TS	46.4	**84.9**	D	**F**	**70.5**	**108.2**	**E**	**F**
3	Webster Av. & Ramona Exwy.	TS	24.3	32.2	C	C	25.6	38.2	C	D
4	Indian Av. & Harley Knox Bl.	TS	49.5	**109.6**	D	**F**	50.4	**110.8**	D	**F**
5	Indian Av. & Ramona Exwy.	TS	27.0	**67.2**	C	**E**	28.7	**71.9**	C	**E**
6	Perris Bl. & Harley Knox Bl.	TS	29.8	**57.1**	C	**E**	30.5	**58.4**	C	**E**
7	Perris Bl. & Markham St.	TS	14.7	16.4	B	B	14.7	16.4	B	B
8	Perris Bl. & Perry St.	TS	7.8	8.6	A	A	11.6	29.9	B	C
9	Perris Bl. & Driveway 1	**CSS**	Future Intersection				12.7	11.5	B	B
10	Perris Bl. & Driveway 2	**CSS**	Future Intersection				12.4	11.3	B	B
11	Perris Bl. & Driveway 3	**CSS**	Future Intersection				12.0	11.4	B	B
12	Perris Bl. & Ramona Exwy.	TS	**56.7**	**60.2**	**E**	**E**	**65.6**	**79.9**	**E**	**E**
13	Perris Bl. & Dawes St.	TS	8.4	7.9	A	A	10.4	8.6	B	A
14	Perris Bl. & Morgan St.	TS	15.4	15.1	B	B	15.4	15.2	B	B
15	Perris Bl. & Rider St.	TS	19.1	22.2	B	C	19.9	23.0	B	C
16	Perris Bl. & Placentia Av.	TS	17.9	43.9	B	D	18.3	44.4	B	D
17	Driveway 4 & Perry St.	**CSS**	Future Intersection				8.7	8.6	A	A
18	Driveway 5 & Perry St.	**CSS**	Future Intersection				8.7	8.6	A	A
19	Driveway 6 & Perry St.	**CSS**	Future Intersection				8.8	8.6	A	A
20	Driveway 7 & Ramona Exwy.	**CSS**	Future Intersection				12.3	11.4	B	B
21	Driveway 8 & Ramona Exwy.	**TS**	Future Intersection				10.5	8.0	B	A
22	Redlands Av. & Markham St.	TS	7.0	9.9	A	A	7.7	10.1	A	B
23	Redlands Av. & Perry St.	CSS	15.3	18.1	B	C	17.8	22.0	C	C
24	Redlands Av. & Ramona Exwy.	TS	**70.6**	**121.7**	**E**	**F**	**118.3**	**142.7**	**F**	**F**
25	Evans Rd. & Ramona Exwy.	TS	27.7	**63.2**	D	**E**	51.3	**72.9**	D	**E**
26	Ramona Exwy. & Bradley Rd.	TS	8.1	6.8	A	A	9.0	7.2	A	A
27	Driveway 9 & Perry St.	**CSS**	Future Intersection				9.3	9.2	A	A

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

1 Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane)

2 TS = Traffic Signal; CSS = Cross-street Stop; **CSS** = Improvement

The intersection analysis results are summarized in Table 6-1 for EAPC (2024), which indicates that there are no additional study area intersections anticipated to operate at an unacceptable LOS during the peak hours, in addition to the intersections identified under EAC (2024) traffic conditions. Although already deficient under EAC (2024) traffic conditions, the following intersections are now deficient during the AM peak hour under EAPC (2024) traffic conditions:

- I-215 SB Ramps & Ramona Expressway (#1) – LOS E AM peak hour; LOS F PM peak hour
- I-215 NB Ramps & Ramona Expressway (#2) – LOS E AM peak hour; LOS F PM peak hour

The intersection operations analysis worksheets for EAC and EAPC (2024) traffic conditions are included in Appendices 6.1 and 6.2, respectively.

6.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

The traffic signal warrant analysis for EAC and EAPC (2024) traffic conditions are based on the peak hour volumes or planning level ADT volume-based traffic signal warrants. There are no additional unsignalized study area intersections anticipated to meet a traffic signal warrant under EAC or EAPC (2024) traffic conditions, in addition to the intersection identified under E+P traffic conditions (see Appendices 6.3 and 6.4).

6.5 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for EAC and EAPC (2024) are presented in Table 6-2. As shown in Table 6-2, the following movement is anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under both EAC and EAPC (2024) traffic conditions:

- I-215 SB Ramps & Ramona Expressway (#1), SB left turn lane – PM peak hour only

Worksheets for EAC and EAPC (2024) traffic conditions queuing analyses are provided in Appendices 6.5 and 6.6, respectively.

TABLE 6-2: PEAK HOUR OFF-RAMP QUEUING SUMMARY FOR EAC AND EAPC (2024) CONDITIONS

Intersection	Movement	Available Stacking Distance (Feet)	EAC (2024) 95th Percentile Queue (Feet) AM Peak	EAC (2024) 95th Percentile Queue (Feet) PM Peak	EAC (2024) Acceptable? [1] AM	EAC (2024) Acceptable? [1] PM	EAPC (2024) 95th Percentile Queue (Feet) AM Peak	EAPC (2024) 95th Percentile Queue (Feet) PM Peak	EAPC (2024) Acceptable? [1] AM	EAPC (2024) Acceptable? [1] PM
I-215 SB Ramps & Ramona Exwy. (#1)	SBL	530	725 [2,3]	**835** [2]	Yes	**No**	809 [2,3]	**881** [2]	Yes	**No**
	SBT	1,100	725 [2]	837 [2]	Yes	Yes	809 [2]	883 [2]	Yes	Yes
	SBR	530	327	168	Yes	Yes	330	172	Yes	Yes
I-215 NB Ramps & Ramona Exwy. (#2)	NBL	520	231	207	Yes	Yes	231	207	Yes	Yes
	NBL/T	1,120	227	210	Yes	Yes	227	210	Yes	Yes
	NBR	520	569 [2,3]	475 [2]	Yes	Yes	725 [2,3]	562 [2]	Yes	Yes

* **BOLD** = Anticipated queue length does not meet the available stacking distance.

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the I-215 Freeway mainline.

6.6 DEFICIENCIES AND IMPROVEMENTS

Improvements needed to achieve acceptable LOS have been identified at intersections or off-ramps that are anticipated to operate at a deficient LOS under EAC and EAPC (2024) traffic conditions.

6.6.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

Improvement strategies have been recommended at intersections that have been identified as deficient under EAC and EAPC (2024) traffic conditions in an effort to achieve an acceptable LOS (i.e., LOS D or better). The effectiveness of the recommended improvement strategies to address EAC and EAPC (2024) traffic deficiencies are presented in Table 6-3. Worksheets for EAC and EAPC (2024), with improvements, intersection operations are provided in Appendices 6.7 and 6.8, respectively.

6.6.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

Improvement strategies have been recommended at study area off-ramps that have been identified as deficient under EAC and EAPC (2024) traffic conditions and are shown in Table 6-4. The improvements are consistent with the intersection improvements identified in Table 6-3. Worksheets for EAC and EAPC (2024) conditions, with improvements, off-ramp queuing analysis worksheets are provided in Appendices 6.9 and 6.10, respectively.

TABLE 6-3: INTERSECTION ANALYSIS FOR EAC AND EAPC (2024) CONDITIONS WITH IMPROVEMENTS

		Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
	Traffic	Northbound			Southbound			Eastbound			Westbound						
	Control[3]	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1 I-215 SB Ramps & Ramona Exwy.																	
EAC (2024):	TS	0	0	0	**2**	1	1	0	**3**	**1**	**2**	**3**	0	26.2	30.4	C	C
EAPC (2024):	TS	0	0	0	**2**	1	1	0	**3**	**1**	**2**	**3**	0	27.5	31.6	C	C
2 I-215 NB Ramps & Ramona Exwy.																	
EAC (2024):	TS	1	1	1	0	0	0	**2**	**3**	0	0	**3**	**1>>**	18.9	18.1	B	B
EAPC (2024):	TS	1	1	1	0	0	0	**2**	**3**	0	0	**3**	**1>>**	20.0	19.1	C	B
4 Indian Av. & Harley Knox Bl.																	
EAC (2024):	TS	2	2	1	1	2	0	**2**	3	**0**	1	3	0	26.3	44.2	C	D
EAPC (2024):	TS	2	2	1	1	2	0	**2**	3	**0**	1	3	0	26.8	45.4	C	D
5 Indian Av. & Ramona Exwy.																	
EAC (2024):	TS	1	2	0	1	2	1	1	**4**	0	1	**4**	**0**	23.9	48.0	C	D
EAPC (2024):	TS	1	2	0	1	2	1	1	**4**	0	1	**4**	**0**	24.8	51.1	C	D
6 Perris Bl. & Harley Knox Bl.																	
EAC (2024):	TS	2	3	1	2	3	1	**2**	2	1	2	3	1	21.5	33.3	C	C
EAPC (2024):	TS	2	3	1	2	3	1	**2**	2	1	2	3	1	21.6	34.6	C	C
12 Perris Bl. & Ramona Exwy.																	
EAC (2024):	TS	2	**3**	**0**	2	**3**	**0**	2	3	1	2	3	0	52.5	42.8	D	D
EAPC (2024):	TS	2	**3**	**0**	2	**3**	**0**	2	3	1	2	3	0	54.5	46.3	D	D
24 Redlands Av. & Ramona Exwy.																	
EAC (2024):	TS	1	1	0	**2**	1	1	1	**4**	1	1	**4**	1	51.1	45.6	D	D
EAPC (2024):	TS	1	1	0	**2**	1	1	1	**4**	1	1	**4**	1	54.6	52.5	D	D
25 Evans Rd. & Ramona Exwy.																	
EAC (2024):	TS	2	2	d	2	2	1	2	3	1	1	**3**	1	25.5	29.8	C	C
EAPC (2024):	TS	2	2	d	2	2	1	2	3	1	1	**3**	1	28.5	32.1	C	C

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; **1** = Improvement; >> = Free-Right Turn

[2] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal

TABLE 6-4: PEAK HOUR QUEUING SUMMARY FOR EAC AND EAPC (2024) CONDITIONS WITH IMPROVEMENTS

Intersection	Movement	Available Stacking Distance (Feet)	EAC (2024) 95th Percentile Queue (Feet)		EAC (2024) Acceptable? [1]		EAPC (2024) 95th Percentile Queue (Feet)		EAPC (2024) Acceptable? [1]	
			AM Peak	PM Peak	AM	PM	AM Peak	PM Peak	AM	PM
I-215 SB Ramps & Ramona Exwy. (#1)	SBL	530	202	360	Yes	Yes	223	380	Yes	Yes
	SBT	1,100	230	409	Yes	Yes	253	432	Yes	Yes
	SBR	530	104	168	Yes	Yes	104	169	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

7 HORIZON YEAR (2045) TRAFFIC CONDITIONS

This section discusses the traffic forecasts for Horizon Year (2045) conditions and the resulting intersection operations, traffic signal warrant, and queuing analyses.

7.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Horizon Year (2045) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Horizon Year (2045) conditions (e.g., intersection and roadway improvements at the Project's frontage and driveways).
- Other parallel facilities, that although not evaluated for the purposes of this analysis, are anticipated to be in place for Horizon Year traffic conditions and would affect the travel patterns within the study area.
- Although not evaluated, the I-215 Freeway/Placentia Avenue interchange is anticipated to be completed and operational.
- The Mid-County Parkway is anticipated to be completed and operational.

7.2 HORIZON YEAR (2045) TRAFFIC VOLUME FORECASTS

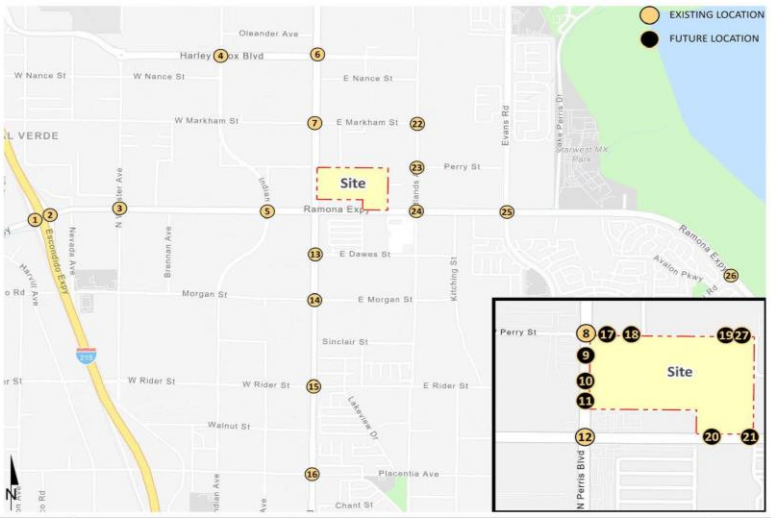
This scenario includes the refined post-process volumes obtained from the RIVCOM, plus the traffic generated by the proposed Project for With Project conditions only. The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for Horizon Year (2045) Without and With Project traffic conditions are shown on Exhibits 7-1 and 7-2, respectively.

7.3 INTERSECTION OPERATIONS ANALYSIS

Horizon Year (2045) conditions peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TA. The intersection analysis results are summarized in Table 7-1 for Horizon Year (2045) conditions which indicates the following study area intersections are anticipated to operate at an unacceptable LOS under Horizon Year (2045) traffic conditions:

- I-215 SB Ramps & Ramona Expressway (#1) – LOS F AM and PM peak hours
- I-215 NB Ramps & Ramona Expressway (#2) – LOS E AM peak hour; LOS F PM peak hour
- Webster Avenue & Ramona Expressway (#3) – LOS F AM and PM peak hours
- Indian Avenue & Harley Knox Boulevard (#4) – LOS F AM and PM peak hours
- Indian Avenue & Ramona Expressway (#5) – LOS F PM peak hour only
- Perris Boulevard & Harley Knox Boulevard (#6) – LOS E PM peak hour only
- Perris Boulevard & Ramona Expressway (#12) – LOS E AM and PM peak hours
- Perris Boulevard & Placentia Avenue (#16) – LOS E PM peak hour only
- Redlands Avenue & Ramona Expressway (#24) – LOS F AM and PM peak hours
- Evans Road & Ramona Expressway (#25) – LOS F AM and PM peak hours

EXHIBIT 7-1: HORIZON YEAR (2045) WITHOUT PROJECT TRAFFIC VOLUMES (PAGE 1 OF 2)



1 I-215 SB Ramps & Ramona Exwy.	2 I-215 NB Ramps & Ramona Exwy.	3 Webster Av. & Ramona Exwy.	4 Indian Av. & Harley Knox Bl.	5 Indian Av. & Ramona Exwy.
52,400 / 58,250	34,250 / 67,650	27,800 / 107,550	22,400 / 21,150	8,600 / 103,550
↳ 362(393) ← 1(2) ↰ 753(930)	← 656(765) ← 1364(1734)	↳ 606(1052) ← 89(91) ↰ 323(349)	↳ 196(729) ← 86(296) ↰ 138(511)	↳ 152(196) ← 78(151) ↰ 32(177)
← 1273(1244) ↰ 498(836)		← 284(90) ← 1563(2137) ↰ 33(13)	← 560(141) ← 783(691) ↰ 68(45)	← 109(189) ← 1543(1608) ↰ 37(166)
135(338) ↳	↰ ↑ ↱	745(505) ↳	606(338) ↳	268(413) ↳
1632(1578) →	407(346) 2(2) 696(495)	1668(1728) → 66(203) 89(53) 17(16)	526(510) → 100(133) 239(219) 39(75)	1308(1830) → 76(156) 88(231) 31(85)
1015(985) →		106(112) ↴	120(76) ↴	81(81) ↴
418(429) ↴				
69,150 / 20,700	58,250 / 17,250	112,950 / 5,200	33,500 / 11,300	107,050 / 9,300

6 Perris Bl. & Harley Knox Bl.	7 Perris Bl. & Markham St.	8 Perris Bl. & Perry St.	9 Perris Bl. & Driveway 1	10 Perris Bl. & Driveway 2
53,950 / 16,400	54,200 / 3,000	30,300 / 400	30,600	30,600
↳ 294(298) ← 630(1184) ↰ 103(358)	↳ 109(39) ← 752(1066) ↰ 45(30)	↳ 11(8) ← 640(1209) ↰ 7(4)	← 656(1242)	← 656(1242)
← 287(156) ← 850(395) ↰ 10(22)	← 15(48) ← 69(66) ↰ 19(29)	← 7(8) ← 2(2) ↰ 5(8)		
193(273) ↳	↰ ↑ ↱	1(5) ↳	↑	
431(598) → 216(78) 1007(926) 22(24)	18(70) → 112(31) 1256(885) 78(37)	1(1) → 11(9) 1202(934) 16(4)	1229(947)	
46(120) ↴	25(83) →	11(25) ↴		
	34(73) ↴			
20,850 / 54,200	4,400 / 53,700	750 / 30,600	30,600	30,600

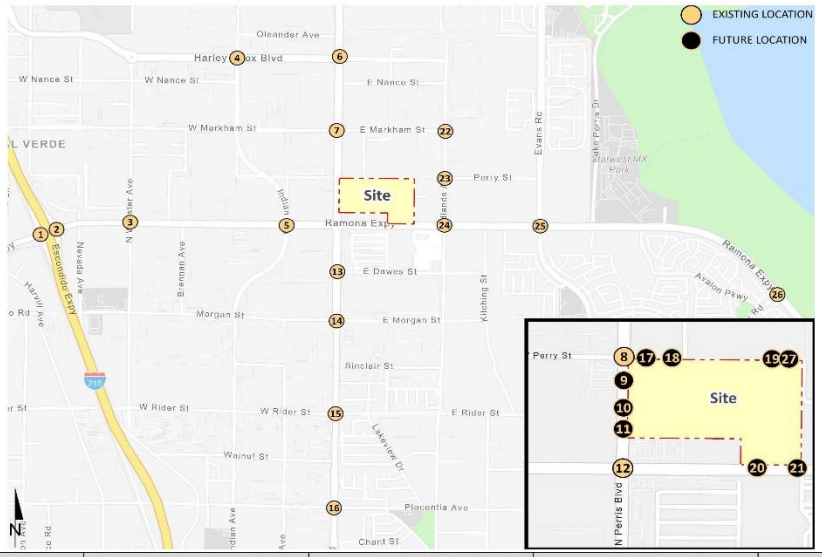
11 Perris Bl. & Driveway 3	12 Perris Bl. & Ramona Exwy.	13 Perris Bl. & Dawes St.	14 Perris Bl. & Morgan St.	15 Perris Bl. & Rider St.
30,600	53,500 / 101,200	37,600 / 1,800	36,950 / 3,500	36,000 / 11,800
← 656(1242)	↳ 155(198) ← 430(751) ↰ 183(348)	← 636(1150) ↰ 13(26)	↳ 96(17) ← 687(1040) ↰ 46(31)	↳ 38(21) ← 333(867) ↰ 120(191)
	← 231(214) ← 1257(1357) ↰ 155(173)	← 89(22) ← 71(50)	← 25(62) ← 73(95) ↰ 8(14)	← 236(236) ← 120(96) ↰ 140(232)
	342(337) ↳		33(54) ↳	17(67) ↳
1229(947) →	1031(1525) → 324(351) 1079(646) 89(136)	1(0) → 2(2) 1095(997) 11(48)	101(60) → 71(26) 1163(934) 11(15)	36(208) → 80(47) 856(738) 130(237)
	191(306) ↴		25(36) ↴	45(209) ↴
30,600	105,750 / 37,600	Nominal / 36,950	3,700 / 36,250	9,200 / 36,200

16 Perris Bl. & Placentia Av.	17 Driveway 4 & Perry St.	18 Driveway 5 & Perry St.	19 Driveway 6 & Perry St.	20 Driveway 7 & Ramona Exwy.
37,500 / 10,400	400	400	400	102,850
↳ 46(38) ← 670(1363) ↰ 36(164)	← 14(18)	← 14(19)	← 14(19)	← 2721(1985)
← 144(121) ← 246(117) ↰ 55(91)				
49(46) ↳				
121(195) → 86(169) 1106(1064) 43(125)	24(9) →	24(8) →	24(8) →	1744(2830) →
85(169) ↴				
7,750 / 38,400	400	400	400	102,850

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 7-1: HORIZON YEAR (2045) WITHOUT PROJECT TRAFFIC VOLUMES (PAGE 2 OF 2)

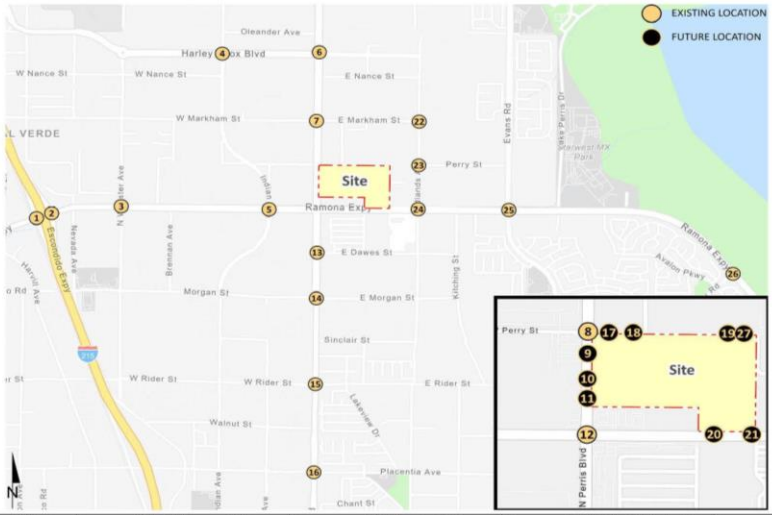


21 Driveway 8 & Ramona Exwy.			22 Redlands Av. & Markham St.			23 Redlands Av. & Perry St.			24 Redlands Av. & Ramona Exwy.			25 Evans Rd. & Ramona Exwy.		
		102,850	*16,550*			*17,650*		*1,350*	*17,800*		*113,650*	*43,950*		*101,550*
	← 2721(1985)		86(31) ↲	300(1033) ↓		6(6) ↲	459(1179) ↓		66(230) ↲	171(437) ↓	233(526) ↳	462(790) ↲	179(504) ↓	235(323) ↳
			25(93) ↳	↰	↑	4(2) ↳	↰	↑	186(70) ↳	↰	↑ ↱ 621(287)	544(672) ↳	↰	↑ ↱ 280(247)
1744(2830) →			37(133) ↴	131(57)	1252(380)	11(14) ↴	36(4)	1369(478)	1483(2658) →	59(101)	598(125) ← 2596(1654)	1099(1820) →	351(264)	457(298) ← 1479(1468)
									75(102) ↴	187(145)	↱ 119(181)	54(203) ↴	21(16)	↱ 7(25)
102,850			*1,700*		*17,850*	*350*		*17,800*	*102,850*		*20,250*	*109,300*		*53,600*

26 Ramona Exwy. & Bradley Rd.			27 Driveway 9 & Perry St.		
		101,500			*400*
	← 1296(1354)			← 14(19)	
	↰ 13(30)				
	↰	↱			
1194(1275) →	160(102)	20(22)	24(8) →		
123(197) ↴					
95,800		*5,100*	*400*		

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 7-2: HORIZON YEAR (2045) WITH PROJECT TRAFFIC VOLUMES (PAGE 1 OF 2)



1 I-215 SB Ramps & Ramona Exwy.	2 I-215 NB Ramps & Ramona Exwy.	3 Webster Av. & Ramona Exwy.	4 Indian Av. & Harley Knox Bl.	5 Indian Av. & Ramona Exwy.
53,100 / 60,100	35,000 / 70,850	27,800 / 110,750	22,550 / 21,900	8,950 / 107,600
362(393) ↳ 1(2) ↓ 850(983) ↲ ← 1293(1262) ↰ 557(891)	← 716(824) ← 1442(1807)	606(1052) ↳ 89(91) ↓ 323(349) ↲ ← 284(90) ← 1701(2269) ↰ 33(13)	196(729) ↳ 86(296) ↓ 149(517) ↲ ← 567(147) ← 802(713) ↰ 68(45)	152(196) ↳ 78(151) ↓ 60(193) ↲ ← 128(203) ← 1681(1740) ↰ 57(184)
1046(1002) → 418(429) ↴	135(338) ↳ 1761(1648) → 40/(346) ↱ 2(2) → 790(546) ↱	745(505) ↳ 1891(1849) → 106(112) ↴ 66(203) ↱ 89(53) → 17(16) ↱	606(338) ↳ 553(529) → 120(76) ↴ 100(133) ↱ 239(219) → 39(75) ↱	268(413) ↳ 1531(1951) → 81(81) ↴ 76(156) ↱ 88(231) → 62(102) ↱
69,600 / 21,400	60,100 / 17,950	116,200 / 5,200	34,050 / 11,300	110,300 / 9,750

6 Perris Bl. & Harley Knox Bl.	7 Perris Bl. & Markham St.	8 Perris Bl. & Perry St.	9 Perris Bl. & Driveway 1	10 Perris Bl. & Driveway 2
54,400 / 16,700	55,100 / 3,000	31,200 / 1,300	38,300 / 2,900	37,900 / 2,850
294(298) ↳ 661(1201) ↓ 103(358) ↲ ← 287(156) ← 857(404) ↰ 10(22)	109(39) ↳ 815(1100) ↓ 45(30) ↲ ← 15(48) ← 69(66) ↰ 19(29)	11(8) ↳ 697(1240) ↓ 13(7) ↲ ← 7(8) ← 2(2) ↰ 10(28)	← 944(1522) ← 136(114)	← 944(1522) ← 117(100)
193(273) ↳ 438(606) → 77(137) ↴ 236(96) ↱ 1027(944) → 22(24) ↱	18(70) ↳ 25(83) → 34(73) ↴ 112(31) ↱ 1295(922) → 78(37) ↱	1(5) ↳ 4(3) → 11(25) ↴ 238(242) ↱ 1241(971) → 75(43) ↱	1419(1140) → 127(90) ↱	193(133) ↱
21,600 / 55,100	4,400 / 54,600	3,800 / 35,300	37,900	38,300

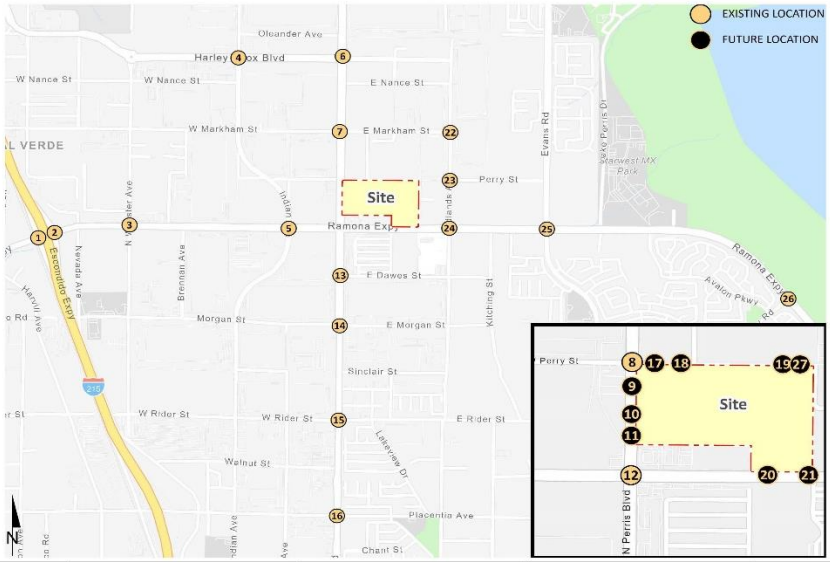
11 Perris Bl. & Driveway 3	12 Perris Bl. & Ramona Exwy.	13 Perris Bl. & Dawes St.	14 Perris Bl. & Morgan St.	15 Perris Bl. & Rider St.
38,300 / 1,850	60,650 / 105,000	38,950 / 2,200	37,900 / 3,500	36,950 / 12,250
← 944(1522) ← 51(83)	264(327) ↳ 451(777) ↓ 340(472) ↲ ← 313(293) ← 1325(1392) ↰ 192(202)	← 676(1191) ↓ 32(40) ↲ ← 117(38) ↰ 71(50)	96(17) ↳ 727(1081) ↓ 46(31) ↲ ← 25(62) ← 73(95) ↰ 8(14)	38(21) ↳ 354(889) ↓ 140(209) ↲ ← 267(253) ← 120(96) ↰ 140(232)
15/1(1180) → 57(51) ↱	508(461) ↳ 1147(1555) → 191(306) ↴ 324(351) ↱ 1173(697) → 89(136) ↱	1(0) → 2(2) ↱ 1161(1033) → 11(48) ↱	33(54) ↳ 101(60) → 25(36) ↴ 71(26) ↱ 1229(970) → 11(15) ↱	17(67) ↳ 36(208) → 45(209) ↴ 80(47) ↱ 890(757) → 130(237) ↱
38,150	109,800 / 38,950	Nominal / 37,900	3,700 / 37,250	9,200 / 36,700

16 Perris Bl. & Placentia Av.	17 Driveway 4 & Perry St.	18 Driveway 5 & Perry St.	19 Driveway 6 & Perry St.	20 Driveway 7 & Ramona Exwy.
38,050 / 10,600	1,250	1,400	1,550	4,300 / 106,050
47(42) ↳ 682(1376) ↓ 43(170) ↲ ← 155(127) ← 246(117) ↰ 55(91)	← 19(38) ↰ 6(3)	← 25(42) ↰ 4(4)	← 29(46) ↰ 4(4)	153(125) ↳ ← 183(117) ← 2755(2003)
52(48) ↳ 121(195) → 85(169) ↴ 86(169) ↱ 1126(1075) → 43(125) ↱	77(45) → 15(8) ↴ 2(8) ↱	78(52) → 4(5) ↱	82(57) → 4(5) ↱	1961(2953) →
7,850 / 38,700	1,300 / 300	1,250 / 150	1,400 / 150	106,250

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 7-2: HORIZON YEAR (2045) WITH PROJECT TRAFFIC VOLUMES (PAGE 2 OF 2)



21 Driveway 8 & Ramona Exwy.

			107,400
9,500	116(96)	138(122)	↱ 268(163)
			← 2822(2024)
	82(79) →		
	1879(2874) →		
106,050			

22 Redlands Av. & Markham St.

17,000	86(31)	318(1047)	
	25(93) →		
	54(142) →	142(66) ↑	1266(395) ↑
1,950			***18,500***

23 Redlands Av. & Perry St.

			1,350
18,300	13(14)	487(1195)	
	30(25) →		
	34(48) →	51(12) ↑	1369(478) ↑
1,350			***18,500***

24 Redlands Av. & Ramona Exwy.

			115,450
19,950	94(246)	191(455)	237(542) ↱
			633(293) ←
	384(179) →		2709(1716) ←
	1558(2715) →		119(181) ↰
	75(102) →	87(117) ↑	601(127) ↑ 187(145) ↱
106,050			***20,700***

25 Evans Rd. & Ramona Exwy.

			102,450
44,400	493(807)	179(504)	235(323) ↱
			280(247) ←
	564(690) →		1542(1502) ←
	1138(1857) →		7(25) ↰
	74(221) →	382(281) ↑	457(298) ↑ 21(16) ↱
111,100			***54,050***

26 Ramona Exwy. & Bradley Rd.

			101,950
			← 1327(1371)
			↰ 13(30)
	1214(1293) →	191(119) ↰	20(22) ↱
	143(215) →		
96,700			***5,500***

27 Driveway 9 & Perry St.

			1,400
			← 28(30)
			↰ 9(5)
	71(54) →	5(20) ↰	2(12) ↱
	15(8) →		
1,550			***550***

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

TABLE 7-1: INTERSECTION ANALYSIS FOR HORIZON YEAR (2045) CONDITIONS

#	Intersection	Traffic Control[2]	2045 Without Project Delay[1] (secs.) AM	2045 Without Project Delay[1] (secs.) PM	2045 Without Project Level of Service AM	2045 Without Project Level of Service PM	2045 With Project Delay[1] (secs.) AM	2045 With Project Delay[1] (secs.) PM	2045 With Project Level of Service AM	2045 With Project Level of Service PM
1	I-215 SB Ramps & Ramona Exwy.	TS	**109.0**	**185.1**	**F**	**F**	**132.5**	**>200.0**	**F**	**F**
2	I-215 NB Ramps & Ramona Exwy.	TS	**69.3**	**140.8**	**E**	**F**	**107.0**	**170.6**	**F**	**F**
3	Webster Av. & Ramona Exwy.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
4	Indian Av. & Harley Knox Bl.	TS	**115.2**	**>200.0**	**F**	**F**	**120.7**	**>200.0**	**F**	**F**
5	Indian Av. & Ramona Exwy.	TS	33.0	**83.0**	C	**F**	35.2	**91.4**	D	**F**
6	Perris Bl. & Harley Knox Bl.	TS	41.8	**75.4**	D	**E**	42.2	**76.9**	D	**E**
7	Perris Bl. & Markham St.	TS	16.5	16.8	B	B	16.7	16.8	B	B
8	Perris Bl. & Perry St.	TS	7.8	8.7	A	A	11.9	23.0	B	C
9	Perris Bl. & Driveway 1	**CSS**	Future Intersection				13.5	11.7	B	B
10	Perris Bl. & Driveway 2	**CSS**	Future Intersection				13.1	11.6	B	B
11	Perris Bl. & Driveway 3	**CSS**	Future Intersection				12.3	11.6	B	B
12	Perris Bl. & Ramona Exwy.	TS	**69.3**	**72.1**	**E**	**E**	**79.2**	**97.6**	**E**	**F**
13	Perris Bl. & Dawes St.	TS	12.8	8.4	B	A	14.0	9.0	B	A
14	Perris Bl. & Morgan St.	TS	16.1	17.1	B	B	16.2	17.3	B	B
15	Perris Bl. & Rider St.	TS	20.9	27.1	C	C	22.0	28.2	C	C
16	Perris Bl. & Placentia Av.	TS	20.2	**60.7**	C	**E**	20.7	**61.3**	C	**E**
17	Driveway 4 & Perry St.	**CSS**	Future Intersection				8.7	8.6	A	A
18	Driveway 5 & Perry St.	**CSS**	Future Intersection				8.7	8.6	A	A
19	Driveway 6 & Perry St.	**CSS**	Future Intersection				0.8	8.6	A	A
20	Driveway 7 & Ramona Exwy.	**CSS**	Future Intersection				32.5	16.1	D	C
21	Driveway 8 & Ramona Exwy.	**TS**	Future Intersection				12.9	10.4	B	B
22	Redlands Av. & Markham St.	TS	6.8	10.7	A	B	7.6	10.9	A	B
23	Redlands Av. & Perry St.	CSS	20.8	25.4	C	D	26.0	32.7	D	D
24	Redlands Av. & Ramona Exwy.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
25	Evans Rd. & Ramona Exwy.	TS	**93.1**	**167.4**	**F**	**F**	**112.8**	**177.6**	**F**	**F**
26	Ramona Exwy. & Bradley Rd.	TS	8.8	7.2	A	A	9.9	7.7	A	A
27	Driveway 9 & Perry St.	**CSS**	Future Intersection				9.3	9.2	A	A

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

1 Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane)

2 TS = Traffic Signal; CSS = Cross-street Stop; **CSS** = Improvement

There are no additional study area intersections anticipated to operate at an unacceptable LOS during the peak hours with the addition of Project traffic, in addition to the intersections identified under Horizon Year (2045) Without Project traffic conditions. The intersection operations analysis worksheets for Horizon Year (2045) Without and With Project traffic conditions are included in Appendices 7.1 and 7.2, respectively.

7.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

The traffic signal warrant analysis for Horizon Year (2045) traffic conditions are based on the peak hour volumes or planning level ADT volume-based traffic signal warrants. There are no additional unsignalized study area intersections anticipated to meet a traffic signal warrant under Horizon Year (2045) Without and With Project conditions, in addition to the intersection identified under E+P traffic conditions (see Appendices 7.3 and 7.4).

7.5 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for Horizon Year (2045) conditions are presented in Table 7-2. As shown in Table 7-2, there are no movements anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. It should be noted, the queues at the study area off-ramps are anticipated to improve in comparison to EAC and EAPC (2024) traffic conditions due to the construction of the Mid-County Parkway. This new freeway is anticipated to result in a shift in traffic volumes, allowing traffic to directly access the I-215 Freeway from the east, as opposed to traffic accessing the I-215 Freeway via the existing interchanges (i.e., Harley Knox Boulevard, Ramona Expressway, Placentia Avenue, etc.). Worksheets for Horizon Year (2045) Without and With Project traffic conditions queuing analysis are provided in Appendices 7.5 and 7.6, respectively.

TABLE 7-2: PEAK HOUR OFF-RAMP QUEUING SUMMARY FOR HORIZON YEAR (2045) CONDITIONS

			2045 Without Project				2045 With Project			
			95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
Intersection	Movement	Available Stacking Distance (Feet)	AM Peak	PM Peak	AM	PM	AM Peak	PM Peak	AM	PM
I-215 SB Ramps & Ramona Exwy. (#1)	SBL	530	577 [2,3]	650 [2,3]	Yes	Yes	663 [2,3]	694 [2,3]	Yes	Yes
	SBT	1,100	578 [2]	656 [2]	Yes	Yes	663 [2]	702 [2]	Yes	Yes
	SBR	530	330	457 [2]	Yes	Yes	330	457 [2]	Yes	Yes
I-215 NB Ramps & Ramona Exwy. (#2)	NBL	520	200	176	Yes	Yes	200	176	Yes	Yes
	NBL/T	1,120	202	178	Yes	Yes	202	178	Yes	Yes
	NBR	520	1,079 [2]	614 [2]	Yes	No	1,231 [2]	701 [2]	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the I-215 Freeway mainline.

7.6 DEFICIENCIES AND IMPROVEMENTS

Improvements needed to achieve acceptable LOS have been identified at intersections or off-ramps that are anticipated to operate at a deficient LOS under Horizon Year (2045) traffic conditions.

7.6.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

Improvement strategies have been recommended at intersections that have been identified as deficient under Horizon Year (2045) traffic conditions in an effort to achieve an acceptable LOS (i.e., LOS D or better). The effectiveness of the recommended improvement strategies to address Horizon Year (2045) traffic deficiencies are presented in Table 7-3. Worksheets for Horizon Year (2045), with improvements, intersection operations for Without and With Project are provided in Appendices 7.7 and 7.8, respectively.

7.6.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 7-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for Horizon Year (2045) Without and With Project traffic conditions. As such, no improvements have been identified.

TABLE 7-3: INTERSECTION ANALYSIS FOR HORIZON YEAR (2045) CONDITIONS WITH IMPROVEMENTS

	Traffic Control[3]	Intersection Approach Lanes[1] Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R	Delay[2] (secs.) AM	PM	Level of Service AM	PM
1 I-215 SB Ramps & Ramona Exwy.																	
Without Project:	TS	0	0	0	**2**	1	1	0	**3**	**1**	**2**	**3**	0	28.3	33.5	C	C
With Project:	TS	0	0	0	**2**	1	1	0	**3**	**1**	**2**	**3**	0	29.3	34.2	C	C
2 I-215 NB Ramps & Ramona Exwy.																	
Without Project:	TS	1	1	1	0	0	0	**2**	**3**	0	0	**3**	**1>>**	25.5	28.4	C	C
With Project:	TS	1	1	1	0	0	0	**2**	**3**	0	0	**3**	**1>>**	41.9	37.3	D	D
3 Webster Av. & Ramona Exwy.																	
Without Project:	TS	1	1	1	1	1	**1>**	**2**	**4**	0	1	**4**	**0**	53.3	51.3	D	D
With Project:	TS	1	1	1	1	1	**1>**	**2**	**4**	0	1	**4**	**0**	53.8	53.5	D	D
4 Indian Av. & Harley Knox Bl.																	
Without Project:	TS	2	2	1	1	2	0	**2**	3	**0**	1	3	0	49.4	48.0	D	D
With Project:	TS	2	2	1	1	2	0	**2**	3	**0**	1	3	0	50.5	49.7	D	D
5 Indian Av. & Ramona Exwy.																	
Without Project:	TS	1	2	0	1	2	1	1	**4**	0	1	**4**	**0**	26.6	48.6	C	D
With Project:	TS	1	2	0	1	2	1	1	**4**	0	1	**4**	**0**	27.8	54.5	C	D
6 Perris Bl. & Harley Knox Bl.																	
Without Project:	TS	2	3	1	2	3	1	**2**	2	1	2	3	1	25.9	48.4	C	D
With Project:	TS	2	3	1	2	3	1	**2**	2	1	2	3	1	26.2	50.5	C	D
12 Perris Bl. & Ramona Exwy.																	
Without Project:	TS	2	**3**	**0**	2	**3**	**0**	2	3	1	2	3	0	36.6	44.7	D	D
With Project:	TS	2	**3**	**0**	2	**3**	**0**	2	3	1	2	3	0	54.7	54.8	D	D
16 Perris Bl. & Placentia Av.																	
Without Project:	TS	1	**3**	**1**	1	**3**	**1**	1	1	0	1	1	1	17.9	31.8	B	C
With Project:	TS	1	**3**	**1**	1	**3**	**1**	1	1	0	1	1	1	18.3	32.1	B	C
24 Redlands Av. & Ramona Exwy.																	
Without Project[4]:	TS	1	1	**1**	**2**	1	1	**2**	**4**	1	**2**	**4**	1	69.0	45.1	E	D
With Project[4]:	TS	1	1	**1**	**2**	1	1	**2**	**4**	1	**2**	**4**	1	77.2	54.8	E	D
25 Evans Rd. & Ramona Exwy.																	
Without Project:	TS	2	2	d	2	2	1	2	3	1	1	**3**	1	40.9	48.7	D	D
With Project:	TS	2	2	d	2	2	1	2	3	1	1	**3**	1	52.1	52.9	D	D

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; **1** = Improvement; > = Right-Turn Overlap Phasing; >> = Free-Right Turn

[2] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal

[4] Per the City's General Plan, LOS E is permitted at intersections along the Cajalco-Ramona Expressway.

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8 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements throughout the City of Perris are funded through a combination of project mitigation, fair share contributions or development impact fee programs, such as TUMF program, the City's DIF program, or the NPRBBD program.

8.1 TRANSPORTATION UNIFORM MITIGATION FEE (TUMF) PROGRAM

The WRCOG is responsible for establishing and updating TUMF rates. The County may grant to developers a credit against the specific components of fees for the dedication of land or the construction of facilities identified in the list of improvements funded by each of these fee programs. Fees are based upon projected land uses and a related transportation need to address growth based upon a 2016 Nexus study. (2)

TUMF is an ambitious regional program created to address cumulative impacts of growth throughout western Riverside County. Program guidelines are being handled on an iterative basis. Exemptions, credits, reimbursements and local administration are being deferred to primary agencies. The County of Riverside serves this function for the proposed Project. Fees submitted to the County are passed on to the WRCOG as the ultimate program administrator.

TUMF guidelines empower a local zone committee to prioritize and arbitrate certain projects. The Project is located in the Central Zone. The zone has developed a 5-year capital improvement program to prioritize public construction of certain roads. TUMF is focused on improvements necessitated by regional growth.

8.2 CITY OF PERRIS DEVELOPMENT IMPACT FEE (DIF) PROGRAM

In 1991, the City of Perris created a DIF program to impose and collect fees from new residential, commercial and industrial development for the purpose of funding roadways and intersections necessary to accommodate City growth as identified in the City's General Plan Circulation Element. This DIF program has been successfully implemented by the City since 1991 and was updated in 2014. The City updated the DIF program to add new roadway segments and intersections necessary to accommodate future growth and to ensure that the identified street improvements would operate at or above the City's LOS performance threshold. The City's DIF program includes facilities that are not part of, or which may exceed improvements identified and covered by the TUMF program. As a result, the pairing of the regional and local fee programs provides a more comprehensive funding and implementation plan to ensure an adequate and interconnected transportation system. Under the City's DIF program, the City may grant to developers a credit against specific components of fees when those developers construct certain facilities and landscaped medians identified in the list of improvements funded by the DIF program.

Similar to the TUMF Program, after the City's DIF fees are collected, they are placed in a separate interest-bearing account pursuant to the requirements of Government Code sections 66000 *et seq*. The timing to use the DIF fees is established through periodic capital improvement programs which are overseen by the City's Public Works Department. Periodic traffic counts, review of traffic accidents, and a review of traffic trends throughout the City are also periodically performed by City staff and consultants. The City uses this data to determine the timing of the improvements listed in its facilities

list. The City also uses this data to ensure that the improvements listed on the facilities list are constructed before the LOS falls below the LOS performance standards adopted by the City. In this way, the improvements are constructed before the LOS falls below the City's LOS performance thresholds. The City's DIF program establishes a timeline to fund, design, and build the improvements.

The City has an established, proven track record with respect to implementing the City's DIF Program. Many of the roadway segments and intersections included within the study area for this Traffic Impact Analysis are at various stages of widening and improvement based on the City's collection of DIF fees. Under this Program, as a result of the City's continual monitoring of the local circulation system, the City ensures that DIF improvements are constructed prior to when the LOS would otherwise fall below the City's established performance criteria.

8.3 NORTH PERRIS ROAD AND BRIDGE BENEFIT DISTRICT (NPRBBD)

The NPRBBD is comprised of approximately 3,500 acres of land located within the northern portion of the City of Perris. The NPRBBD boundary is consistent with the boundary of the PVCC SP. As such, the Project will be subject to the NPRBBD. The purpose of the NPRBBD is to improve the efficiency of the financing of specific regional road and bridge improvements that are determined to provide benefit to the developing properties within the NPRBBD boundary. In addition, the NPRBBD includes additional improvements to supplement the TUMF and DIF network. NPRBBD fees are inclusive of TUMF and DIF. A significant portion of the fees collected through this mechanism are earmarked for use within the boundary sufficient to fully fund the included improvements. The balance of TUMF is transmitted to WRCOG for use in addressing cumulative impacts elsewhere within Western Riverside County. The City treats the DIF component collected within the NPRBBD in a similar way to ensure the local circulation network outside the program boundaries is adequately addressed.

Table 8-1 lists each facility identified within the NPRBBD, the General Plan roadway classification and the current estimated construction cost for the facilities. The facilities identified within the NPRBBD provide additional benefit by providing alternate truck routes within the City of Perris. It should be noted that NPRBBD fees are to be paid in conjunction with TUMF and City DIF fees as a one-time fee payment to the City prior to the issuance of a building permit.

TABLE 8-1: NPRBBD FACILITES

Facility Name	General Plan Classification	Estimated Cost
Indian Avenue	Secondary Arterial	$11,343,500
Perris Boulevard	Arterial	$17,350,800
Redlands Avenue	Secondary Arterial	$14,845,000
Harley Knox Boulevard	Arterial	$31,813,700
Markham Street	Secondary Arterial	$2,132,000
Ramona Expressway	Expressway	$10,865,000
Morgan Street	Secondary Arterial	$2,899,500
Rider Street	Secondary Arterial	$3,803,000
Placentia Avenue	Arterial	$18,705,900
Indian Avenue Bridge	Secondary Arterial	$701,800
Harley Knox Boulevard Bridge	Arterial	$4,210,800
Ramona Expressway Bridge	Expressway	$2,105,800
Placentia Avenue Bridge	Arterial	$6,316,200
Harley Knox Boulevard Interchange @ I-215	Arterial	$17,371,000
Placentia Avenue Interchange @ I-215	Arterial	$8,389,000
4-Lane Intersections – Traffic Signals	4 – Signal Locations	$870,000
6-Lane Intersections – Traffic Signals	11 – Signal Locations	$3,190,000
District Totals		**$156,913,000**

8.4 MEASURE A

Measure A, Riverside County's half-cent sales tax for transportation, was adopted by voters in 1988 and extended in 2002. It will continue to fund transportation improvements through 2039. Measure A funds a wide variety of transportation projects and services throughout the County. The RCTC is responsible for administering the program. Measure A dollars are spent in accordance with a voter-approved expenditure plan that was adopted as part of the 1988 election.

8.5 FAIR SHARE CONTRIBUTION

Project improvements may include a combination of fee payments to established programs, construction of specific improvements, payment of a fair share contribution toward future improvements or a combination of these approaches. Improvements constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate (to be determined at the County's discretion).

When off-site improvements are identified with a minor share of responsibility assigned to proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. Detailed fair share calculations, for each peak hour, have been provided in Table 8-2 for the applicable deficient study area intersection and for each applicable phase. These fees are collected with the proceeds solely used as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases.

TABLE 8-2: PROJECT FAIR SHARE CALCULATIONS

#	Intersection		Existing (2022)	Project	2045 With Project	Total New Traffic	Project % of New Traffic[1]
1	I-215 SB Ramps & Ramona Exwy.						
		AM:	2,326	207	4,526	2,200	**9.4%**
		PM:	3,036	143	4,962	1,926	7.4%
2	I-215 NB Ramps & Ramona Exwy.						
		AM:	2,853	361	5,253	2,400	**15.0%**
		PM:	3,457	253	5,509	2,052	12.3%
3	Webster Av. & Ramona Exwy.						
		AM:	2,522	361	5,950	3,428	**10.5%**
		PM:	2,969	253	6,602	3,633	7.0%
4	Indian Av. & Harley Knox Bl.						
		AM:	1,536	64	3,525	1,989	**3.2%**
		PM:	1,774	53	3,817	2,043	2.6%
5	Indian Av. & Ramona Exwy.						
		AM:	2,237	459	4,262	2,025	**22.7%**
		PM:	2,823	318	5,601	2,778	11.4%
6	Perris Bl. & Harley Knox Bl.						
		AM:	2,343	116	4,205	1,862	**6.2%**
		PM:	2,575	87	4,519	1,944	4.5%
12	Perris Bl. & Ramona Exwy.						
		AM:	3,734	850	6,317	2,583	**32.9%**
		PM:	4,058	627	6,969	2,911	21.5%
16	Perris Bl. & Placentia Av.						
		AM:	1,761	54	2,741	980	**5.5%**
		PM:	2,186	42	3,704	1,518	2.8%
24	Redlands Av. & Ramona Exwy.						
		AM:	2,447	481	6,875	4,428	**10.9%**
		PM:	3,010	302	6,818	3,808	7.9%
25	Evans Rd. & Ramona Exwy.						
		AM:	3,026	204	5,372	2,346	**8.7%**
		PM:	3,675	141	6,771	3,096	4.6%

[1] **BOLD =** Highest fair share percentage is highlighted.

9 REFERENCES

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