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MORENO VALLEY WALMART
TRAFFIC IMPACT ANALYSIS (REVISED)
CITY OF MORENO VALLEY, CALIFORNIA

March 5, 2015 (Revised)
February 25, 2014 (Revised)
September 25, 2013

JN:08660-06 Report
AE:CS:rd

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MORENO VALLEY WALMART
TRAFFIC IMPACT ANALYSIS (REVISED)
CITY OF MORENO VALLEY, CALIFORNIA

1.0 INTRODUCTION

This report presents the results of the traffic impact analysis (TIA) for the proposed Moreno Valley Walmart (referred to as "Project"), which is located west of Perris Boulevard and south of Gentian Avenue in the City of Moreno Valley as shown on Exhibit 1-1.

The purpose of this traffic impact analysis is to evaluate the potential impacts to traffic and circulation associated with the development of the proposed Project, and recommend improvements to mitigate impacts considered significant in comparison to established regulatory thresholds. As directed by City of Moreno Valley staff, this TIA has been prepared in accordance with the City of Moreno Valley Transportation Engineering Division's *Traffic Impact Analysis Preparation Guide* (August 2007). The approved Project Traffic Study Scoping agreement is provided in Appendix "1.1" of this TIA.

1.1 PROJECT OVERVIEW

The Project includes the development of a 189,520 square foot free-standing discount superstore and a 16 vehicle fueling position gas station with convenience market and car wash. Per the City's traffic study guidelines, the Opening Year will have a five (5) year minimum horizon. As such, the Opening Year analysis will assess 2018 traffic conditions.

Trips generated by the Project's proposed land uses have been estimated based on trip generation rates collected by the Institute of Transportation Engineers (ITE) and published in their most current edition of the *Trip Generation* manual, 9th Edition, 2012. The Project is estimated to generate a net total of approximately 9,625 net trip-ends per day on a typical weekday with approximately 388 net weekday AM peak hour trips, 834 net weekday PM peak hour trips and 1,086 net Saturday mid-day peak hour trips. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in detail in Section 4.1 *Project Trip Generation* of this report.

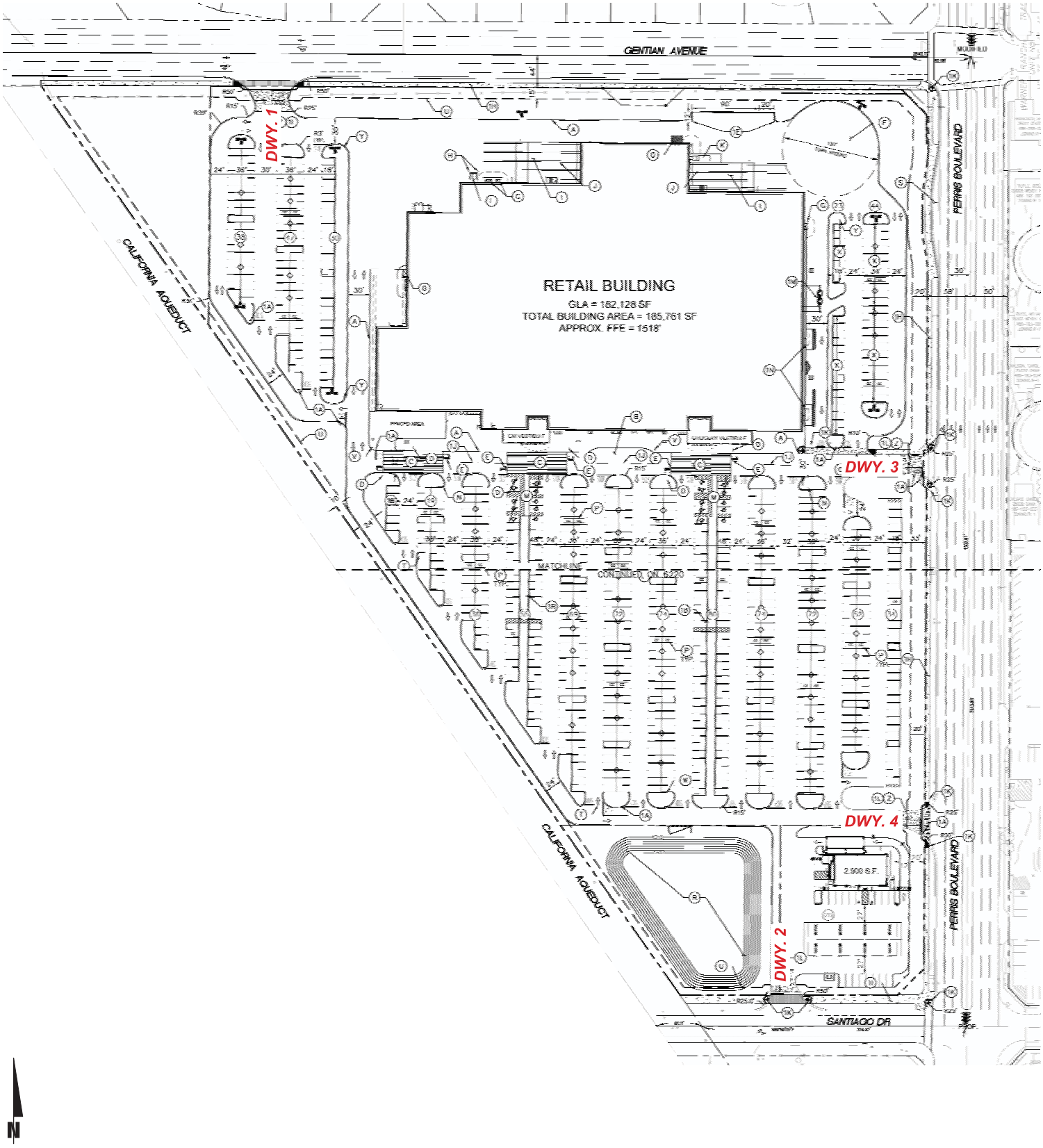
1.2 ANALYSIS SCENARIOS

Consistent with the City of Moreno Valley traffic study guidelines, potential impacts to traffic and circulation will be assessed for each of the following conditions:

- Existing (2013) Conditions (1 scenario)
- Existing plus Project Conditions (1 scenario)
- Opening Year Cumulative (2018), Without and With Project (2 scenarios) – ambient growth and

EXHIBIT 1-1

PRELIMINARY SITE PLAN



cumulative development projects (EAC and EAPC)

- General Plan Buildout (Post-2035), Without and With Project (2 scenarios) – based on a version of Riverside County Transportation Analysis Model (RivTAM) modified to represent General Plan Buildout conditions for the City of Moreno Valley

1.2.1 EXISTING (2013) CONDITIONS

Information for Existing (2013) is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared.

1.2.2 EXISTING PLUS PROJECT CONDITIONS

The Existing (2013) plus Project (E+P) analysis has been utilized to determine direct project-related traffic impacts that would occur on the existing roadway system based on a comparison of the E+P traffic conditions to the Existing (2013) traffic conditions.

1.2.3 OPENING YEAR CUMULATIVE (2018) CONDITIONS

The Opening Year Cumulative (2018) conditions analysis will be utilized to determine if improvements funded through local and regional transportation mitigation fee programs such as the Transportation Uniform Mitigation Fee (TUMF) program, City of Moreno Valley Development Impact Fee (DIF) program, or other approved funding mechanism can accommodate the near-term cumulative traffic at the target LOS identified in the City of Moreno Valley General Plan. If the "funded" improvements can provide the target LOS, then the Project's payment into the TUMF and DIF will be considered as cumulative mitigation through the conditions of approval. Other improvements needed beyond the "funded" improvements (such as localized improvements to non-TUMF or non-DIF facilities) are identified as such. To account for background traffic, sixty-three (63) other known cumulative development projects in the study area were included in addition to 10.4% of ambient growth. This comprehensive list was compiled from information provided by the City of Moreno Valley Planning Department, City of Perris, City of Riverside, unincorporated Riverside County and the March Air Reserve Base.

1.2.4 GENERAL PLAN BUILDOUT (POST-2035) CONDITIONS

Traffic projections for General Plan Buildout (Post-2035) Without Project conditions were derived from a version of RivTAM modified to represent General Plan Buildout conditions for the City of Moreno Valley using accepted procedures for model forecast refinement and smoothing. The traffic forecasts reflect the area-wide growth anticipated between Existing (2013) conditions and General Plan Buildout (Post-2035) conditions. The General Plan Buildout (Post-2035) With Project traffic forecasts were determined by adding the proposed Project traffic to the General Plan Buildout (Post-2035) Without Project traffic

forecasts from the RivTAM model. The General Plan Buildout (Post-2035) Without and With Project traffic conditions analyses will be utilized to determine if improvements funded through regional transportation mitigation fee programs, such as the Transportation Uniform Mitigation Fee (TUMF) and County Development Impact Fee (DIF) programs, or other approved funding mechanism can accommodate the long-range cumulative traffic at the target LOS identified in the City of Moreno Valley General Plan. If the "funded" improvements can provide the target LOS, then the Project's payment into TUMF and DIF will be considered as cumulative mitigation through the conditions of approval. Other improvements needed beyond the "funded" improvements (such as localized improvements to non-TUMF or non-DIF facilities) are identified as such.

In many instances, the traffic model zone structure is not designed to provide accurate turning movements along arterial roadways unless refinement and reasonableness checking is performed. As such, General Plan Buildout (Post-2035) turning volumes were compared to Opening Year Cumulative (2018) Without Project volumes in order to ensure a minimum growth of ten (10) percent as a part of the refinement process, where applicable. The minimum ten (10) percent growth includes any additional growth between Opening Year Cumulative (2018) Without Project and General Plan Buildout (Post-2035) traffic conditions that is not accounted for by the traffic generated by cumulative development projects and the ambient growth between Existing (2013) and Opening Year Cumulative (2018) Without Project conditions. The initial estimate of the future General Plan Buildout (Post-2035) Without Project peak hour turning movements was then reviewed by Urban Crossroads for reasonableness at intersections where model results showed unreasonable turning movements. The initial raw model estimates were adjusted to achieve flow conservation (where applicable), reasonable growth, and reasonable diversion between parallel routes.

1.3 STUDY AREA

The traffic impact study area was defined in coordination with the City of Moreno Valley and in conformance with the requirements of the City's TIA preparation guidelines. Based on these guidelines, the minimum area to be studied shall include any intersection of "Collector" or higher classification street, with "Collector" or higher classification streets, at which the proposed project will add 50 or more peak hour trips. Exhibit 1-2 presents the study area roadway network, intersection analysis locations, and freeway mainline segments.

It should be pointed out that the "50 peak hour trip" criteria utilized by the City of Moreno Valley is consistent with the methodology employed by other jurisdictions throughout Riverside County and generally represents a threshold of trips at which a typical intersection would have the potential to be impacted. Although each intersection may have unique operating characteristics, this traffic engineering rule of thumb is a widely utilized tool for estimating a potential area of impact (i.e., study area).

To ensure that this TIA satisfies the needs of the City of Moreno Valley and complies with the City's TIA preparation guidelines, Urban Crossroads, Inc. prepared a Project Traffic Study Scoping Agreement for review by City staff prior to the preparation of this TIA. The Agreement provides an outline of the Project study area, trip generation, trip distribution, and analysis methodology. The Agreement approved by the City of Moreno Valley is included in Appendix "1.1".

1.3.1 INTERSECTIONS

The following forty-two (42) Project study area intersection locations shown on Exhibits 1-2 and 1-3 and listed on Table 1-1 were selected for this TIA based on the following: (1) City's TIA analysis methodology that requires analysis of intersection locations with 50 or more peak-hour Project trips and (2) input from the City of Moreno Valley Traffic Engineering Division.

Table 1-1 Intersection Analysis Locations

ID	Intersection Location	Jurisdiction
1	I-215 Southbound Ramps / Cactus Avenue	Caltrans
2	I-215 Northbound Ramps / Cactus Avenue	Caltrans
3	Elsworth Street / Cactus Avenue	Moreno Valley
4	Frederick Street / Cactus Avenue	Moreno Valley
5	Graham Street / Cactus Avenue	Moreno Valley
6	Heacock Street / Alessandro Boulevard	Moreno Valley
7	Heacock Street / Cactus Avenue	Moreno Valley
8	Heacock Street / John F. Kennedy Drive	Moreno Valley
9	Heacock Street / Gentian Avenue	Moreno Valley
10	Webster Avenue / Harley Knox Boulevard	Perris
11	Indian Street / Cottonwood Avenue	Moreno Valley
12	Indian Street / Alessandro Boulevard	Moreno Valley
13	Indian Street / Cactus Avenue	Moreno Valley
14	Indian Street / John F. Kennedy Drive	Moreno Valley
15	Indian Street / Gentian Avenue	Moreno Valley
16	Indian Street / Santiago Drive	Moreno Valley
17	Indian Street / Iris Avenue	Moreno Valley
18	Indian Street / Krameria Avenue	Moreno Valley
19	Indian Street / San Michele Road	Moreno Valley
20	Indian Street / Nandina Avenue	Moreno Valley
21	Indian Street / Harley Knox Boulevard	Perris
22	Driveway 1 / Gentian Avenue – Future Intersection	Moreno Valley
23	Driveway 2 / Santiago Drive – Future Intersection	Moreno Valley

ID	Intersection Location	Jurisdiction
24	SR-60 Eastbound Off-Ramp / Sunnymead Boulevard	Caltrans
25	Perris Boulevard / SR-60 Westbound Ramps	Caltrans
26	Perris Boulevard / Sunnymead Boulevard	Moreno Valley
27	SR-60 Eastbound On-Ramp / Sunnymead Boulevard	Caltrans
28	Perris Boulevard / Eucalyptus Avenue	Moreno Valley
29	Perris Boulevard / Cottonwood Avenue	Moreno Valley
30	Perris Boulevard / Alessandro Boulevard	Moreno Valley
31	Perris Boulevard / Cactus Avenue	Moreno Valley
32	Perris Boulevard / John F. Kennedy Drive	Moreno Valley
33	Perris Boulevard / Gentian Avenue	Moreno Valley
34	Perris Boulevard / Driveway 3 – Future Intersection	Moreno Valley
35	Perris Boulevard / Driveway 4 – Future Intersection	Moreno Valley
36	Perris Boulevard / Santiago Drive	Moreno Valley
37	Perris Boulevard / Iris Avenue	Moreno Valley
38	Perris Boulevard / Krameria Avenue	Moreno Valley
39	Perris Boulevard / San Michele Road	Moreno Valley
40	Perris Boulevard / Nandina Avenue	Moreno Valley
41	Perris Boulevard / Harley Knox Boulevard	Perris
42	Perris Boulevard / Ramona Expressway	Perris
43	Kitching Street / Cactus Avenue	Moreno Valley
44	Kitching Street / John F. Kennedy Drive	Moreno Valley
45	Kitching Street / Iris Avenue	Moreno Valley
46	Lasselle Street / Iris Avenue	Moreno Valley

It should be noted that the proposed Project is anticipated to have different travel patterns for the near-term traffic condition as compared to long-range conditions due to changes to the roadway circulation network near the vicinity of the proposed Project, specifically the connections of Gentian Avenue and Santiago Drive to the west between Indian Street and Perris Boulevard. As such, the near-term trip distribution patterns for the proposed Project is anticipated to send less than fifty (50) peak hour trips during the weekday AM, weekday PM and Saturday mid-day peak hours to the following four (4) intersections:

ID	Intersection Location	Jurisdiction
9	Heacock Street / Gentian Avenue	Moreno Valley
16	Indian Street / Santiago Drive	Moreno Valley
19	Indian Street / San Michele Road	Moreno Valley
20	Indian Street / Nandina Avenue	Moreno Valley

EXHIBIT 1-2

EXISTING (2013) AND OPENING YEAR (2018) LOCATION MAP

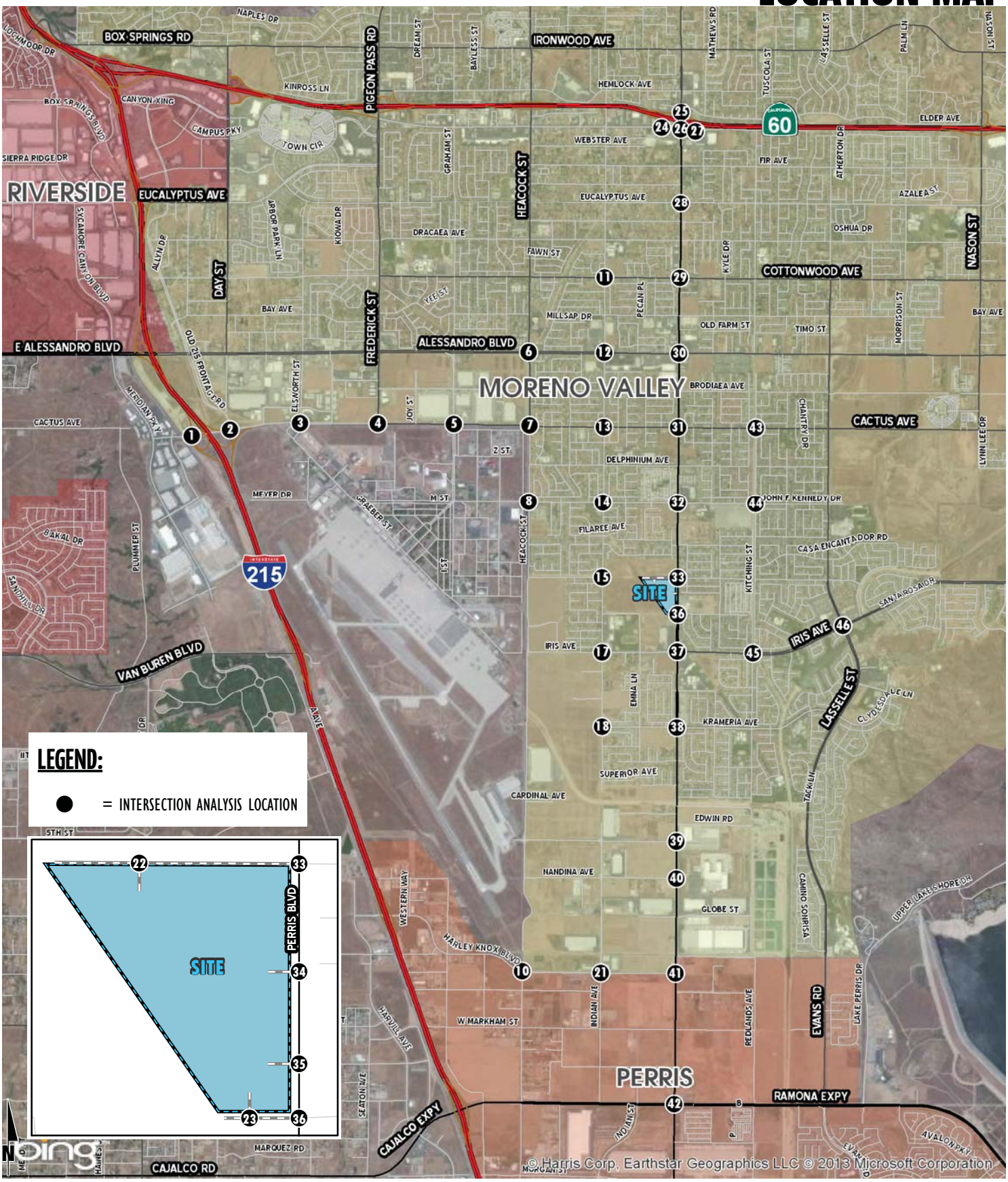
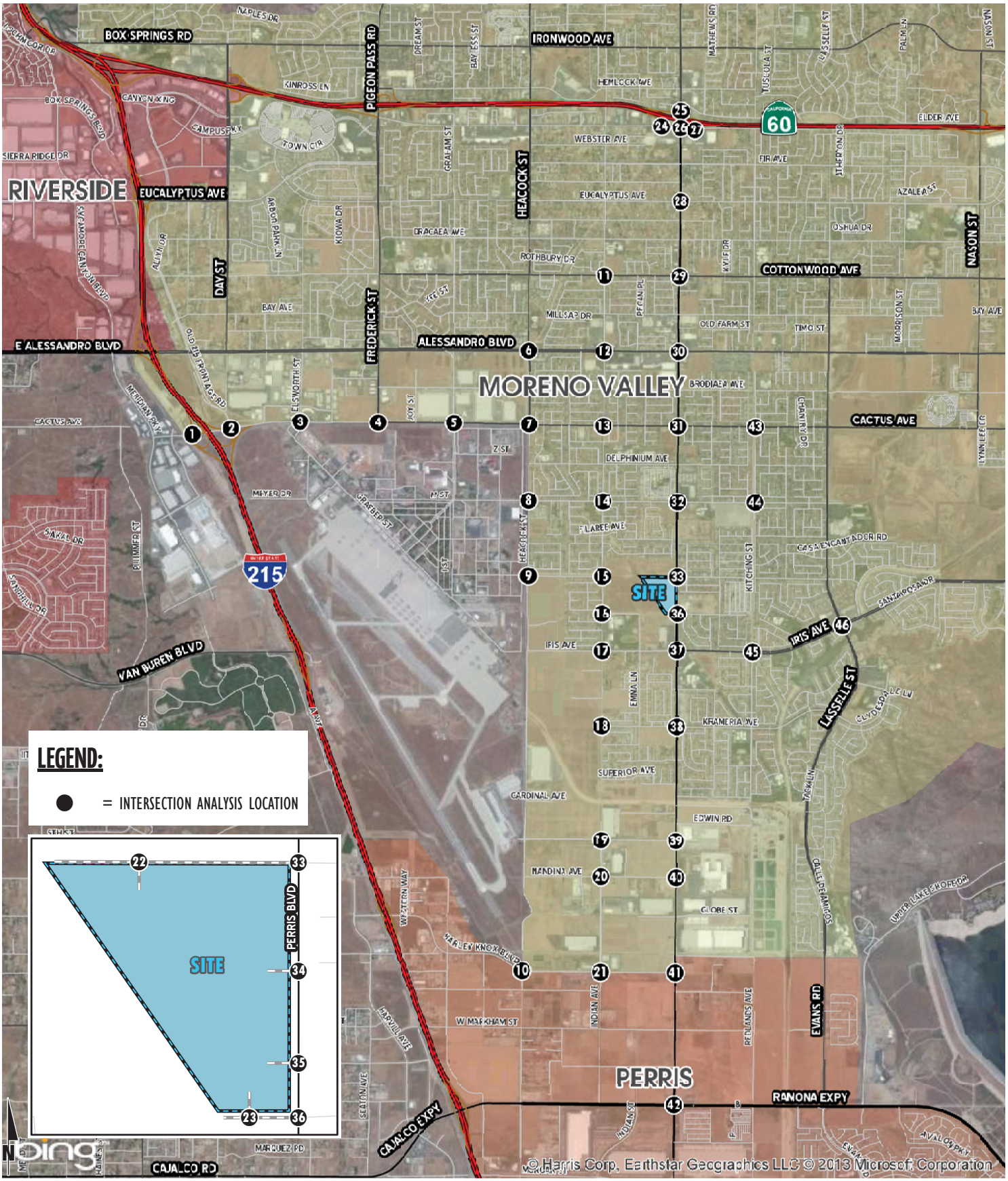


EXHIBIT 1-3

GENERAL PLAN BUILDOUT (POST-2035) LOCATION MAP



As the proposed Project is anticipated to contribute less than fifty (50) peak hour trips to the four (4) intersections listed above, peak hour intersection operations and roadway segment analyses have not been conducted for Existing plus Project, Opening Year (2018), or Opening Year Cumulative (2018) traffic conditions. The Existing (2013) and Opening Year (2018) location map is shown on Exhibit 1-2. The General Plan Buildout (Post-2035) location map is shown on Exhibit 1-3.

1.3.2 ROADWAY SEGMENTS

The roadway segment study area utilized for this analysis is based on a review of the key roadway segments in which the Project is anticipated to contribute 50 or more peak hour trips as shown on Exhibit 1-2. The study area identifies a total of one hundred forty-six (146) existing/future roadway segments. The roadway segments include the segments on either side of the study area intersections listed previously in Table 1-1.

1.4 SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

This section provides a summary of project-related impacts and associated mitigation measures. Section 2.0 *Methodologies* provides information on the methodologies used in the analyses and Section 5.0 *Existing Plus Project Traffic Analysis* includes the detailed analysis. The recommended mitigation measures necessary to reduce the direct project-related impacts to "less-than-significant" are discussed below. A comparison of Existing (2013) to E+P traffic conditions indicates that the addition of Project traffic is anticipated to result in deficient peak hour operations and a potentially significant impact at the following study area intersections:

ID	Intersection Location
36	Perris Boulevard / Santiago Drive
44	Kitching Street / John F. Kennedy Drive

Elsworth Street / Cactus Avenue (#3) – This intersection is currently operating at LOS "F" during the AM and PM peak hours under Existing (2013) traffic conditions. Although the intersection is anticipated to continue to operate at LOS "F" with the addition of Project traffic, the Project is not anticipated to contribute more than 50 peak hour trips to this intersection. Based on the stated significance threshold for intersections already operating at LOS "E" or LOS "F" under pre-project conditions, the impact is considered **less-than-significant**. Although unrelated to the proposed Project, it is our understanding that the City has received a grant for the construction of a third eastbound through lane from the I-215 Freeway to Veterans Way. The Cactus Avenue widening project is currently out to bid and the City anticipates that construction would be completed by Summer 2014.

SR-60 Eastbound On-Ramp / Sunnymead Boulevard (#27) – This intersection is currently operating at LOS "F" during the PM and Saturday mid-day peak hours under Existing (2013) traffic conditions.

Although the intersection is anticipated to continue to operate at LOS "F" with the addition of Project traffic, the Project is not anticipated to contribute more than 50 peak hour trips to this intersection. Based on the stated significance threshold for intersections already operating at LOS "E" or LOS "F" under pre-project conditions, the impact is considered **less-than-significant**. Although unrelated to the proposed Project, it is our understanding that the City has recently been awarded a Highway Safety grant for the construction of a roundabout at this location. The design process for the proposed roundabout is underway and construction is anticipated to begin in two (2) years.

Perris Boulevard / Santiago Drive (#36) – This intersection is currently operating at an acceptable LOS (LOS "D" or better) during the AM, PM and Saturday mid-day peak hours under Existing (2013) traffic conditions. The addition of Project traffic is anticipated to worsen the LOS operations from acceptable to unacceptable (LOS "E" or LOS "F"), which exceeds the stated significance threshold for intersections that are currently operating at acceptable LOS under pre-project conditions. As such, the impact is considered potentially **significant (Impact 1.1)**.

Mitigation Measure 1.1 – Perris Boulevard / Santiago Drive (#36):

- Install a traffic signal.
- Construct an eastbound left turn lane.

Kitching Street / John F. Kennedy Drive (#44) – This intersection is currently operating at LOS "E" during the AM peak hour and LOS "D" during the PM and Saturday mid-day peak hours under Existing (2013) traffic conditions. Although the intersection is anticipated to continue to operate at unacceptable LOS with the addition of Project traffic, the Project is anticipated to contribute more than 50 peak hour trips to this intersection. Based on the stated significance threshold for intersections already operating at LOS "D" or worse under pre-project conditions, the impact is considered potentially **significant (Impact 2.1)**.

Mitigation Measure 2.1 – Kitching Street / John F. Kennedy Drive (#44):

- Construct a northbound left turn lane.

1.5 SUMMARY OF CUMULATIVE IMPACTS AND RECOMMENDED IMPROVEMENTS

A summary of the cumulatively impacted study area intersections and recommended improvements to reduce cumulative impacts to less-than-significant are described in detail within Section 7.0 *Opening Year Cumulative (2018) Traffic Analysis* and Section 8.0 *General Plan Buildout (Post-2035) Traffic Analysis* of this report. Cumulative impacts are deficiencies in the transportation network's LOS that would not be directly caused by the Project. The Project would, however, contribute traffic to these deficient facilities, resulting in a finding that the Project's contribution to the cumulative impact is cumulatively considerable.

In 2002, the Transportation Uniform Mitigation Fee (TUMF) program was initiated in Western Riverside County. Under the TUMF, developers of residential, industrial and commercial property are required to pay a development fee to fund regional transportation projects, which mitigates cumulative impacts to the roadway segments and intersections included in the TUMF program. The TUMF funds both local and regional arterial projects. The applicant shall participate in the funding of off-site improvements, including traffic signals that are needed to serve cumulative traffic conditions through the payment of required Western Riverside County TUMF, in addition to City of Moreno Valley Development Impact Fees (DIF) and other fair share contributions as directed by the City. These fees are collected as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected vehicle trip increases.

It is anticipated that the improvements required to maintain or to improve the LOS operations of transportation facilities in the vicinity of the project will be constructed through either the City's local transportation impact fee or regional transportation improvement programs (i.e., the Transportation Uniform Mitigation Fee (TUMF) or the City of Moreno Valley's Development Impact Fee (DIF)). These fee programs utilize the fees collected from new development to fund the construction of new transportation facilities included in each of the funding programs. As development increases within the region, the amount of fees collected also increases thereby accelerating the construction of transportation facilities included in each funding program. Similarly, if development within the region experiences reduced growth, the amount of fees collected also is reduced. However, a slower growth cycle would likely result in a slower growth in traffic volumes, thereby lengthening the timeline necessary to complete transportation infrastructure improvements.

Intersection and roadway improvements that were identified in the analysis found in Section 8.0 *General Plan Buildout (Post-2035) Traffic Analysis* as necessary to maintain or improve the operational level of service of the street system in the vicinity of the project site are shown in Table 1-2. The table lists the total improvements that are required by General Plan Buildout (Post-2035) With Project traffic conditions. It is anticipated that the improvements required to maintain or to improve the LOS operations of transportation facilities in the vicinity of the Project will be constructed through the City's local transportation impact fee and regional transportation improvement programs, such as the Transportation Uniform Mitigation Fee (TUMF) and the City of Moreno Valley's Development Impact Fee (DIF). In addition, Table 1-2 identifies which of the total General Plan Buildout (Post-2035) improvements are not included in the TUMF or DIF programs, but may instead be covered by a fair share contribution as directed by the City.

Table 1-2
Page 1 of 2

Summary of Transportation Impact Fee Program Improvements for General Plan Buildout (Post-2035) Conditions

#	Intersection Location	Total Recommended Improvements	Project Mitigation	Program Improvements[1]	Non-Program Improvements	Fair Share[2]
1	I-215 SB Ramps / Cactus Av	1.SBFR, 1.WBL	N/A	1.SBFR, 1.WBL (TUMF Interchange)	None	--
2	I-215 NB Ramps / Cactus Av	1.NBL, 1.NBT, 1.SBR w/ overlap, 1.EBT, 1. EBR, 2.WBT, 1.WBR	N/A	1.NBL, 1.EBT, 1.EBR 1.WBT, 1.WBR (TUMF Interchange)	None	--
3	Elsworth St / Cactus Av	1.NBL, 2.EBT, 2.WBT , Removal of SB crosswalk, Protected NBL/SBL	N/A	1.NBL, 1.EBT, 1.WBT (TUMF, and/or DIF)	1.EBT, 1.WBT , Removal of SB crosswalk, Protected NBL/SBL	0.8%
4	Frederick St / Cactus Av	2.EBT	N/A	1.EBT (TUMF and/or DIF)	1.EBT	1.3%
5	Graham St / Cactus Av	1.SBL, 1.EBL, 2.EBT	N/A	1.SBL, 1.EBL, 1.EBT (TUMF and/or DIF)	1.EBT	1.0%
6	Heacock St / Alessandro Bl	1.NBL, 1.SBL, 1.EBT	N/A	1.NBL, 1.SBL (TUMF and/or DIF)	1.EBT	2.0%
7	Heacock St / Cactus Av	1.SBL, 1.EBL, 1.EBT, 1.EBR w/ overlap, 1.WBT	N/A	1.SBL, 1.EBL(TUMF and/or DIF)	1.EBT, 1.EBR w/ overlap, 1.WBT	1.4%
9	Heacock St / Gentian Av	Install traffic signal, 1.NBT, 1.SBT	N/A	Install traffic signal, 1.NBT, 1.SBT (TUMF and/or DIF)	None	--
10	Webster Av / Harley Knox Bl	Install traffic signal, 1.EBT, 1.WBT	N/A	Install traffic signal, 1.EBT, 1.WBT (TUMF and/or DIF)	None	--
12	Indian St / Alessandro Bl	1.NBL, 1.SBL, 1.EBT, 1.WBT, 1.WBR	N/A	1.NBL, 1.SBT, 1.WBT, 1.WBR (TUMF and/or DIF)	1.EBT	2.9%
13	Indian St / Cactus Av	1.EBT	N/A	None	1.EBT	4.4%
14	Indian St / John F. Kennedy Dr	1.NBR, 1.SBL	N/A	1.NBR, 1.SBL (TUMF and/or DIF)	None	--
15	Indian St / Gentian Av	Install traffic signal, 1.NBL, 1.SBL, restripe 1.EBR as 1.EBT/R, 1.WBL/T/R	N/A	Install traffic signal, 1.NBL, 1.SBL, restripe 1.EBR and 1.EBT/R, 1.WBL/T/R (TUMF and/or DIF)	None	--
17	Indian St / Iris Av	1.NBT, 1.SBT, 1.EBT, 1.WBT	N/A	1.NBT, 1.SBT, 1.EBT, 1.WBT (TUMF and/or DIF)	None	--
18	Indian St / Krameria Av	Install traffic signal, 1.NBL, 1.NBT, 1.SBT, 1.EBL, 1.EBT, 1.EBR w/ overlap, restripe 1.WBR as 1.WBT/R	N/A	Install traffic signal, 1.NBL, 1.NBT, 1.SBT, 1.EBL, 1.EBT, restripe 1.WBR as 1.WBT/R (TUMF and/or DIF)	1.EBR w/ overlap	1.8%
19	Indian St / San Michele Rd	Install traffic signal, 2.NBL, 1.NBT, 2.SBL, 1.SBR, 1.EBL, 1.EBT, 2.EBR w/ overlap, 1.WBL, 1.WBT, 1.WBR	N/A	Install traffic signal, 2.NBL, 1.NBT, 2.SBL, 1.SBR, 1.EBL, 1.EBT, 1.WBL, 1.WBT, 1.WBR (TUMF and/or DIF)	2.EBR w/ overlap	0.5%
20	Indian St / Nandina Av	Install traffic signal, 2.NBL, overlap on NBR, 1.SBL, 1.SBT, 1.SBR, 1.EBR w/ overlap, 2.WBL	N/A	Install traffic signal, 1.NBL, 1.SBL, 1.SBR, 1.EBL, 1.WBL (TUMF and/or DIF)	1.NBL, overlap on NBR, 1.SBT, 1.EBR w/ overlap, 1.WBL	0.8%
21	Indian St / Harley Knox Bl	1.NBT, 1.SBL, 1.SBR w/ overlap, 1.EBL, 2.EBT, 1.WBT, 1.WBR w/ overlap	N/A	1.SBL, 1.EBL, 2.EBT, 1.WBT (TUMF and/or DIF)	1.NBT, 1.SBR w/ overlap, 1.WBR w/ overlap	0.9%
24	SR-60 EB Off-Ramp / Sunnymead Bl	Restripe 1.SBL/R as 1.SBL, 1.SBR	N/A	Restripe 1.SBL/R as 1.SBL, 1.SBR (TUMF Interchange)	None	--
25	Perris Bl / SR-60 WB Ramps	1.WBL	N/A	1.WBL (TUMF Interchange)	None	--
26	Perris Bl / Sunnymead Bl	1.NBL, 1.NBR, 1.SBT, overlap on EBR, 2.WBR w/ overlap	N/A	1.NBL, 1.NBR, 1.SBT (TUMF and/or DIF)	Overlap on EBR, 2.WBR w/ overlap	1.2%

Table 1-2
Page 2 of 2

Summary of Transportation Impact Fee Program Improvements for General Plan Buildout (Post-2035) Conditions

#	Intersection Location	Total Recommended Improvements	Project Mitigation	Program Improvements[1]	Non-Program Improvements	Fair Share[2]
27	SR-60 EB On-Ramp / Sunnymead Bl	Construct roundabout, 1.NBL, 1.EBT, 1.WBT	N/A	Construct roundabout, 1.NBL, 1.EBT, 1.WBT (TUMF Interchange)	None	--
28	Perris Bl / Eucalyptus Av	1.NBT, 1.SBT	N/A	1.NBT, 1.SBT (TUMF and/or DIF)	None	--
29	Perris Bl / Cottonwood Av	1.NBT, 1.SBT	N/A	1.NBT, 1.SBT (TUMF and/or DIF)	None	--
30	Perris Bl / Alessandro Bl	1.NBL, 1.NBT, 1.SBT, overlap on SBR, 1.EBL, 1.EBT, overlap on EBR, 1.WBL, 1.WBR	N/A	1.NBL, 1.NBT, 1.SBT, 1.EBL, 1.EBT, 1.WBL, 1.WBR (TUMF and/or DIF)	Overlap on SBR, overlap on EBR	2.1%
31	Perris Bl / Cactus Av	1.NBL, 1.SBT, 1.EBL, 1.EBT, 1.EBR w/ overlap, 1.WBR	N/A	1.NBL, 1.SBT, 1.EBL, 1.WBR (TUMF and/or DIF)	1.EBT, 1.EBR w/ overlap	2.4%
32	Perris Bl / John F. Kennedy Dr	1.NBL, 1.NBR, 1.SBL, 1.WBL, 1.WBR	N/A	1.NBL, 1.NBR, 1.SBL, 1.WBL, 1.WBR (TUMF and/or DIF)	None	--
33	Perris Bl / Gentian Av	1.SBL, 1.EBL, 1.EBT/R, 1.WBL	N/A	1.SBL, 1.EBL, 1.EBT/R, 1.WBL (TUMF and/or DIF)	None	--
36	Perris Bl / Santiago Dr	Install traffic signal, 1.EBL, 1.WBL	Install traffic signal, 1.EBL	1.WBL (TUMF and/or DIF)	None	--
37	Perris Bl / Iris Av	1.NBL, overlap on NBR, 1.SBL, 1.SBR w/ overlap, 1.EBL, 1.EBT, 1.EBR w/ overlap, 1.WBL, 1.WBT, 1.WBR w/ overlap	N/A	1.NBL, 1.SBL, 1.EBL, 1.EBT, 1.WBL, 1.WBT (TUMF and/or DIF)	Overlap on NBR, 1.SBR w/ overlap, 1.EBR w/ overlap, 1.WBR w/ overlap	6.6%
38	Perris Bl / Krameria Av	1.NBL, 1.NBR, 1.SBL, 1.SBR, 1.EBL, 1.EBT, 1.WBL, 1.WBT	N/A	1.NBL, 1.NBR, 1.SBL, 1.SBR, 1.EBL, 1.EBT, 1.WBL, 1.WBT (TUMF and/or DIF)	None	--
39	Perris Bl / San Michele Rd	1.SBR, 1.EBR w/ overlap	N/A	1.SBR (TUMF and/or DIF)	1.EBR w/ overlap	2.5%
40	Perris Bl / Nandina Av	1.EBL, 1.EBR w/ overlap	N/A	1.EBL (TUMF and/or DIF)	1.EBR w/ overlap	1.9%
41	Perris Bl / Harley Knox Bl	2.NBT, 2.SBL, 2.SBT, overlap on SBR, 1.EBL, 2.EBT, 1.WBL, 2.WBT	N/A	2.NBT, 2.SBL, 2.SBT, 1.EBL, 2.EBT, 1.WBL, 2.WBT (TUMF and/or DIF)	Overlap on SBR	1.9%
42	Perris Bl / Ramona Expressway	1.NBT, 1.SBT, overlap on SBR, 1.WBR w/ overlap	N/A	1.NBT, 1.SBT (TUMF and/or DIF)	Overlap on SBR, 1.WBR w/ overlap	0.8%
43	Kitching St / Cactus Av	1.SBT	N/A	1.SBT (TUMF and/or DIF)	None	--
44	Kitching St / John F. Kennedy Dr	2.NBL, 1.NBT, 1.SBL, 1.SBT	N/A	2.NBL, 1.NBT, 1.SBL, 1.SBT (TUMF and/or DIF)	None	--
45	Kitching St / Iris Av	1.NBL, 1.NBR w/ overlap, 1.SBL, 1.SBR, 1.EBL, 1.EBT, 1.EBR, 1.WBL, 1.WBT	1.EBR	1.NBL, 1.SBL, 1.SBR, 1.EBL, 1.EBT, 1.WBL, 1.WBT (TUMF and/or DIF)	1.NBR w/ overlap	2.5%
46	Lasselle St / Iris Av	1.EBR w/ overlap, 1.WBR	N/A	1.WBR (TUMF and/or DIF)	1.EBR w/ overlap	1.5%

[1] Improvements included in TUMF Nexus or City of Moreno Valley DIF programs.

[2] Program improvements constructed by project may be eligible for fee credit. In lieu fee payment is at discretion of City. Represents the fair share percentage for the Project during the most impacted peak hour.

1.6 ON-SITE ROADWAY AND SITE ACCESS IMPROVEMENTS

The Project is proposed to have access on Gentian Avenue, Perris Boulevard and Santiago Drive. All Project access points are proposed to be full-access, with the exception of Driveway 3 and Driveway 4 on Perris Boulevard which are proposed for right-in/right-out access only. Regional access to the Project site will be provided by the I-215 Freeway (located to the west) via Cactus Avenue and Harley Knox Boulevard and by the SR-60 Freeway (located to the north) via Perris Boulevard.

As part of the development, the Project will construct improvements on the site adjacent roadways of Gentian Avenue, Perris Boulevard and Santiago Drive. Roadway improvements necessary to provide site access and on-site circulation are assumed to be constructed in conjunction with site development and are described below. These improvements should be in place prior to occupancy.

1.6.1 ON-SITE ROADWAY IMPROVEMENTS

The recommended site-adjacent roadway improvements for the Project are described below. Exhibit 1-4 illustrates the site-adjacent roadway improvement recommendations.

Gentian Avenue – Gentian Avenue is an east-west oriented roadway located along the Project's northern boundary. Construct Gentian Avenue at its ultimate half-section width as a modified Minor Arterial Highway (88-foot right-of-way) between the Project's western boundary and Perris Boulevard. Gentian Avenue will be constructed with a wide raised median in conjunction with a reduction in the number of through lanes (one lane in each direction) from the standard Minor Arterial Highway cross-section. Improvements along the Project's frontage (south side of Gentian Avenue) would be those required by final conditions of approval for the proposed Project and applicable City of Moreno Valley standards.

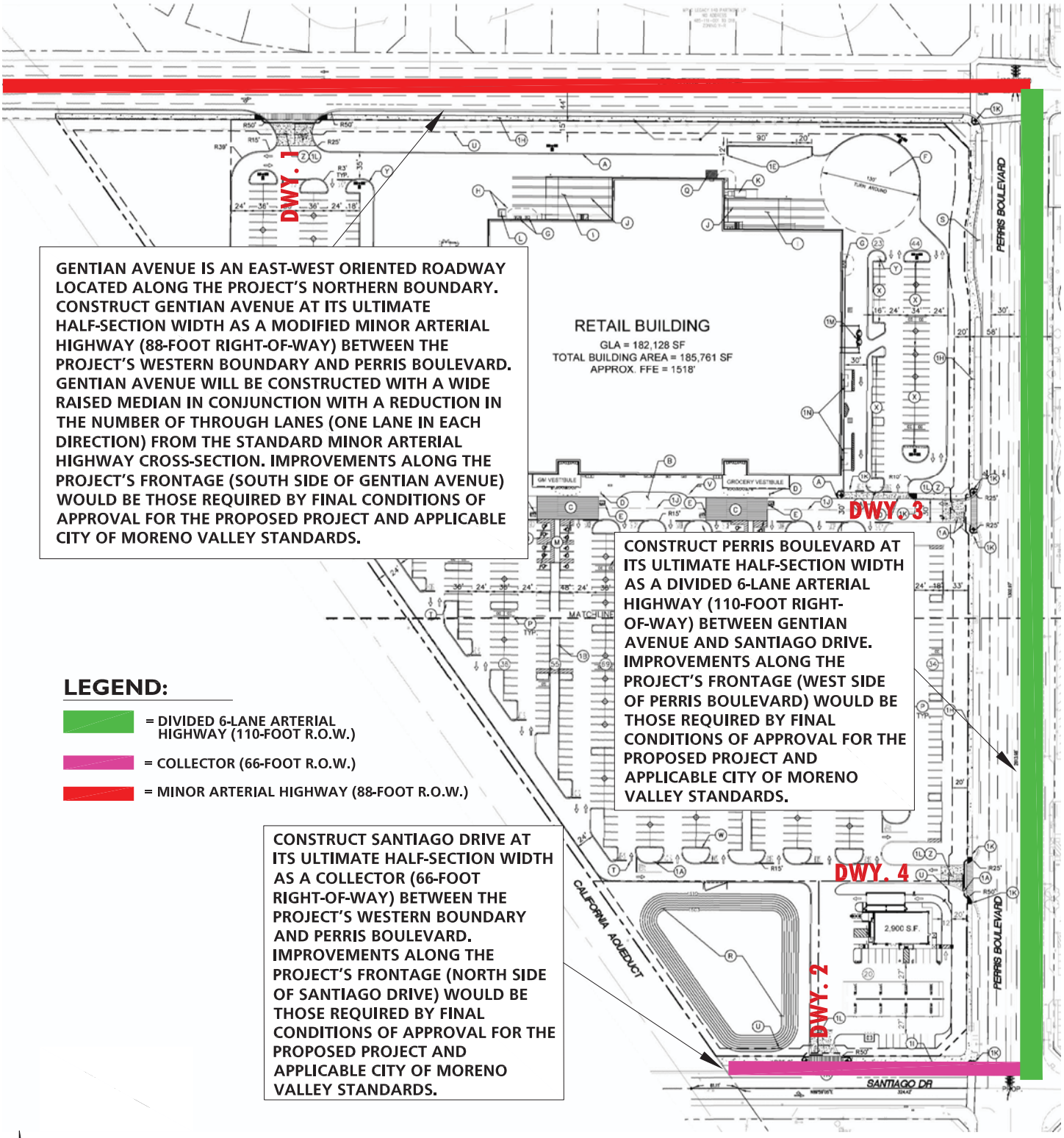
Perris Boulevard – Perris Boulevard is a north-south oriented roadway located along the Project's eastern boundary. Construct Perris Boulevard at its ultimate half-section width as a Divided 6-Lane Arterial Highway (110-foot right-of-way) between Gentian Avenue and Santiago Drive. Improvements along the Project's frontage (west side of Perris Boulevard) would be those required by final conditions of approval for the proposed Project and applicable City of Moreno Valley standards.

Santiago Drive – Santiago Drive is an east-west oriented roadway located along the Project's southern boundary. Construct Santiago Drive at its ultimate half-section width as a Collector (66-foot right-of-way) between the Project's western boundary and Perris Boulevard. Improvements along the Project's frontage (north side of Santiago Drive) would be those required by final conditions of approval for the proposed Project and applicable City of Moreno Valley standards.

Wherever necessary, roadways adjacent to the Project, site access points and site-adjacent intersections will be constructed to be consistent with or within the recommended roadway

EXHIBIT 1-4

SITE ADJACENT ROADWAY RECOMMENDATIONS



classifications and respective cross-sections in the City of Moreno Valley General Plan Circulation Element.

1.6.2 SITE ACCESS IMPROVEMENTS

The recommended site access driveway improvements for the Project are described below. Exhibit 1-5 illustrates the on-site and site adjacent recommended roadway lane improvements. Construction of on-site and site adjacent improvements shall occur in conjunction with adjacent Project development activity or as needed for Project access purposes.

Driveway 1 / Gentian Avenue – Install a stop control on the northbound approach and construct the intersection with the following geometrics:
Northbound Approach: One shared left-right turn lane.
Southbound Approach: N/A
Eastbound Approach: One shared through-right turn lane.
Westbound Approach: One shared left-through lane.

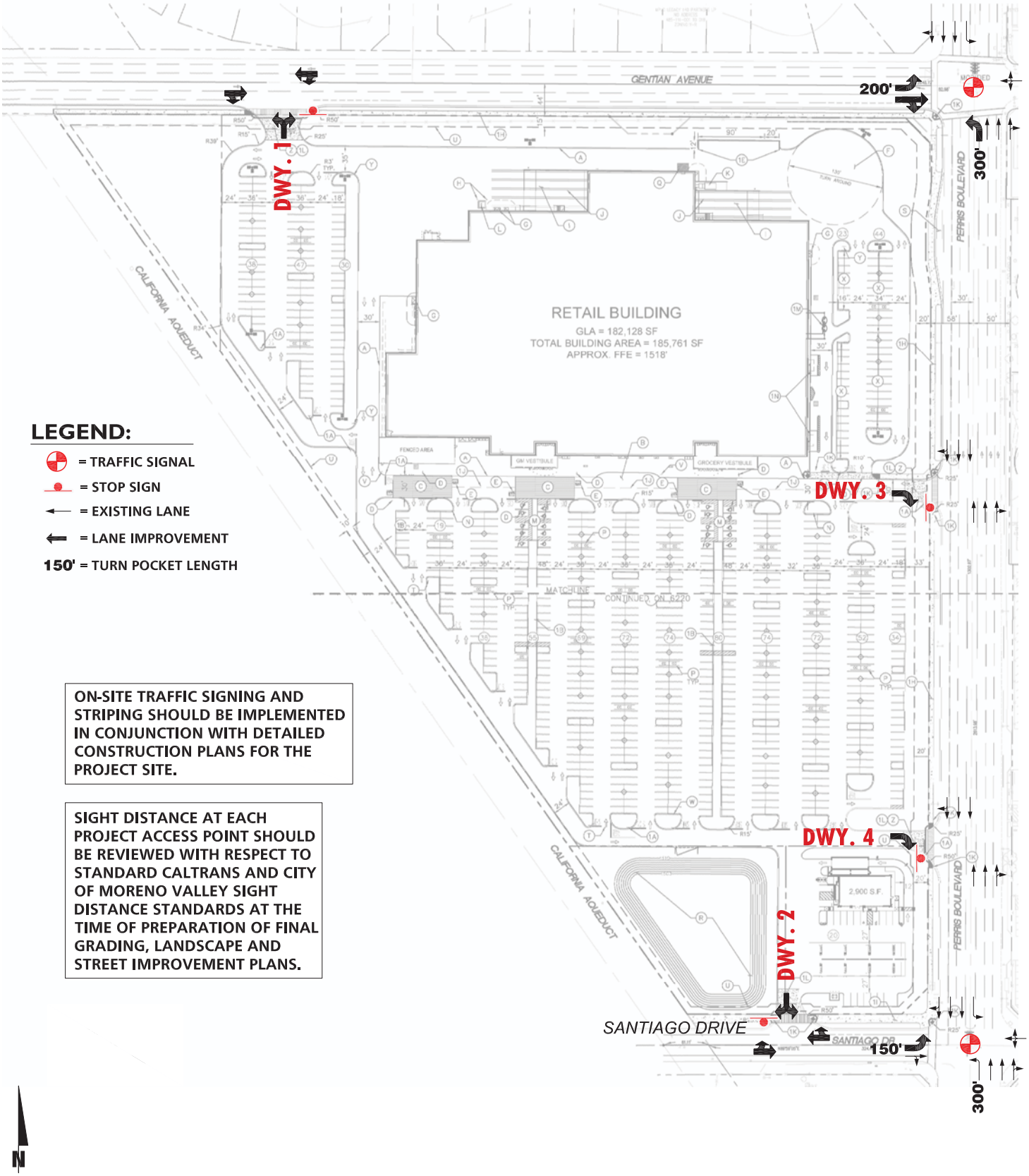
Driveway 2 / Santiago Drive – Install a stop control on the southbound approach and construct the intersection with the following geometrics:
Northbound Approach: N/A
Southbound Approach: One shared left-right turn lane.
Eastbound Approach: One shared left-through lane.
Westbound Approach: One shared through-right turn lane.

Perris Boulevard / Gentian Avenue – Maintain the existing traffic signal; however, install signal heads for the eastbound approach, and construct the intersection with the following geometrics:
Northbound Approach: One left turn lane (to provide a minimum of 300-feet of storage), two through lanes and one shared through-right turn lane.
Southbound Approach: One southbound left turn lane, two through lanes and one shared through-right turn lane.
Eastbound Approach: One left turn lane (to provide a minimum of 200-feet of storage) and a shared through-right turn lane.
Westbound Approach: One shared left-through-right turn lane.

Perris Boulevard / Driveway 3 – Install a stop control on the eastbound approach and construct the intersection with the following geometrics:
Northbound Approach: Three through lanes.
Southbound Approach: Two through lanes and one shared through-right turn lane.
Eastbound Approach: One right turn lane.
Westbound Approach: N/A

EXHIBIT 1-5

ON-SITE CIRCULATION RECOMMENDATIONS



Perris Boulevard / Driveway 4 – Install a stop control on the eastbound approach and construct the intersection with the following geometrics:
Northbound Approach: Three through lanes.
Southbound Approach: Two through lanes and one shared through-right turn lane.
Eastbound Approach: One right turn lane.
Westbound Approach: N/A

Perris Boulevard / Santiago Drive – Install a traffic signal and construct the intersection with the following geometrics:
Northbound Approach: One left turn lane (to provide a minimum of 300-feet of storage), two though lanes and one shared through-right turn lane.
Southbound Approach: One left turn lane, two through lanes and one shared through-right turn lane.
Eastbound Approach: One left turn lane (to provide a minimum of 150-feet of storage) and a shared through-right turn lane.
Westbound Approach: One shared left-through-right turn lane.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the Project site.

Sight distance at each project access point should be reviewed with respect to standard Caltrans and City of Moreno Valley sight distance standards at the time of preparation of final grading, landscape and street improvement plans.

2.0 METHODOLOGIES

This section documents the methodologies and assumptions used to perform this TIA.

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 *Highway Capacity Manual* (HCM) (Transportation Research Board 2000) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

The City of Moreno Valley requires signalized intersection operations analysis based on the methodology described in Chapter 16 of the HCM. 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 directly related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 2-1.

Per the Caltrans *Guide for the Preparation of Traffic Impact Studies*, the traffic modeling and signal timing optimization software package Synchro (Version 8 Build 804) has been utilized to analyze signalized intersections under Caltrans’ jurisdiction, which include interchange to arterial ramps (i.e. I-215 Freeway ramps at Cactus Avenue and SR-60 Freeway ramps at Perris Boulevard). Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the Chapter 16 of 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. All other study area intersections within the City of Moreno Valley have been

analyzed using the software package Traffix (Version 8.0 R1, 2008).

Table 2-1 Signalized Intersection LOS Descriptors

Level of Service	Description	Average Control Delay (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00
D	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
E	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
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths	80.01 and up

Source: HCM 2000, Chapter 16

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15 minute volumes. Common practice for LOS analysis is to use a peak 15-mintue 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, with the exception of General Plan Buildout (Post-2035) traffic conditions. Where applicable, a PHF of 0.92 or higher has been used for General Plan Buildout (Post-2035) Without and With Project traffic conditions.

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Moreno Valley requires the operations of unsignalized intersections be evaluated using the methodology described in Chapter 17 of the HCM. 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. For all-way stop controlled intersections, LOS is computed for the intersection as a whole. All unsignalized study area intersections have utilized the Traffix software (Version 8.0 R1, 2008).

Table 2-2 Unsignalized Intersection LOS Descriptors

Level of Service	Description	Average Control Per Vehicle (Seconds)
A	Little or no delays.	0 to 10.00
B	Short traffic delays.	10.01 to 15.00
C	Average traffic delays.	15.01 to 25.00
D	Long traffic delays.	25.01 to 35.00
E	Very long traffic delays.	35.01 to 50.00
F	Extreme traffic delays with intersection capacity exceeded.	> 50.00

Source: HCM 2000, Chapter 17

2.3 ROADWAY SEGMENT CAPACITY ANALYSIS

Roadway segment operations have been evaluated using the City of Moreno Valley Daily Roadway Capacity Values provided in the *City of Moreno Valley Transportation Engineering Division Traffic Impact Analysis (TIA) Preparation Guide* (dated August 2007). Per the City of Moreno Valley TIA guidelines, roadway segments within the study area should maintain the LOS capacities illustrated on Exhibit 2-1. The daily roadway segment capacities for each type of roadway are summarized in Table 2-3.

Table 2-3 Roadway Segment Capacity LOS Descriptors[1]

Facility Type	Level of Service Capacity[1]				
	A	B	C	D	E
Six Lane Divided Arterial	33,900	39,400	45,000	50,600	56,300
Four Lane Divided Arterial	22,500	26,300	30,000	33,800	37,500
Four Lane Undivided Arterial	15,000	17,500	20,000	22,500	25,000
Two Lane Industrial Collector	7,500	8,800	10,000	11,300	12,500
Two Lane Undivided Residential	N/A	N/A	N/A	N/A	2,000

[1] These maximum roadway capacities have been extracted from the City of Moreno Valley's Transportation Division's TIA Preparation Guidelines (August 2007). These roadway capacities are "rule of thumb" estimates for planning purposes. The LOS "E" service volumes are estimated maximum daily capacity for respective roadway classifications. Capacity is affected by such factors as intersections (spacing, configuration and control features), degree of access control, roadway grades, design geometrics (horizontal and vertical alignment standards), sight distance, vehicle mix (truck and bus traffic) and pedestrian and bicycle traffic.

These roadway capacities are “rule of thumb” estimates for planning purposes and do not reflect such factors as intersections (spacing, configuration and control features), degree of access control, roadway grades, design geometrics (horizontal and vertical alignment standards), sight distance, vehicle mix (truck and bus traffic) and pedestrian bicycle traffic. As such, where the ADT-based roadway segment analysis indicates a deficiency (unacceptable LOS), a review of the more detailed peak hour intersection analysis and progression analysis are undertaken. The more detailed peak hour intersection analysis explicitly

accounts for factors that affect roadway capacity. Therefore, roadway segment widening is typically only recommended if the peak hour intersection analysis indicates the need for additional through lanes.

2.4 FREEWAY RAMP PROGRESSION ANALYSIS

The study area for this TIA includes segments of the I-215 Freeway from north of Cactus Avenue to south of Cactus Avenue and the SR-60 Freeway both west and east of Perris Boulevard; and also includes the freeway-to-arterial interchanges of the I-215 Freeway with the Cactus Avenue ramps and the SR-60 Freeway with the Perris Boulevard ramps. Consistent with Caltrans requirements, the progression of vehicles has been assessed to determine potential queuing impacts at the freeway ramp intersections on Cactus Avenue at the I-215 Freeway and Perris Boulevard/Sunnymead Boulevard at the SR-60 Freeway. Specifically, the queuing analysis is utilized to identify any potential queuing and "spill back" onto the I-215 Freeway and SR-60 Freeway mainline from the off-ramps.

The traffic progression analysis tool and HCM intersection analysis program, Synchro, has been used to assess the potential impacts/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 95th percentile queue is the maximum back of queue with 95th percentile traffic volumes. The queue length reported is for the lane with the highest queue in the lane group.

There are two footnotes which appear on the Synchro outputs. One footnote 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 other footnote indicates whether or not the volume for the 95th percentile queue is metered by an upstream signal. In many cases, the 95th percentile queue will not be experienced and may potentially be less than the 50th percentile queue due to upstream metering. If the upstream intersection is at or near capacity, the 50th percentile queue represents the maximum queue experienced.

A vehicle is considered queued whenever it is traveling at less than 10 feet/second. A vehicle will only become queued when it is either at the stop bar or behind another queued vehicle. Although only the 95th percentile queue has been reported in the tables, the 50th percentile queue can be found in the appendix alongside the 95th percentile queue for each ramp location. The 50th percentile maximum queue is the maximum back of queue on a typical cycle during the peak hour, while the 95th percentile queue is the maximum back of queue with 95th percentile traffic volumes during the peak hour. In other words, if traffic were observed for 100 cycles, the 95th percentile queue would be the queue experienced with the 95th busiest cycle (or 5% of the time). The 50th percentile or average queue represents the typical queue length for peak hour traffic conditions, while 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 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 ascertain the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TIA uses the signal warrant criteria presented in the latest edition of the Federal Highway Administration's (FHWA) *Manual on Uniform Traffic Control Devices (MUTCD)*, as amended by the *2012 California MUTCD (CA MUTCD)*, for all study area intersections.

The signal warrant criteria for Existing (2013) conditions are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. Both the FHWA's *MUTCD* and the *2012 CA MUTCD* indicate that the installation of a traffic signal should be considered if one or more of the signal warrants are met. Specifically, this TIA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for Existing (2013) traffic conditions. Warrant 3 criteria are basically identical for both the FHWA's *MUTCD* and the *2012 CA MUTCD*. Warrant 3 is appropriate to use for this TIA because it provides specialized warrant criteria for intersections with rural characteristics (e.g. located in communities with populations of less than 10,000 persons or with adjacent major streets operating above 40 miles per hour). 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.

Future (new) unsignalized intersections and existing intersections under future traffic conditions 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.

ID	Intersection Location	Jurisdiction
9	Heacock Street / Gentian Avenue	Moreno Valley
10	Webster Avenue / Harley Knox Boulevard	Perris
15	Indian Street / Gentian Avenue	Moreno Valley
18	Indian Street / Krameria Avenue	Moreno Valley
22	Driveway 1 / Gentian Avenue – Future Intersection	Moreno Valley
23	Driveway 2 / Santiago Drive – Future Intersection	Moreno Valley
36	Perris Boulevard / Santiago Drive	Moreno Valley

The Existing (2013) conditions traffic signal warrant analysis is presented in the subsequent section, Section 3.0 *Area Conditions* of this report. The traffic signal warrant analysis for future conditions is presented in Section 5.0 *Existing plus Project Traffic Analysis*, Section 6.0 *Opening Year (2018) Traffic Analysis*, Section 7.0 *Opening Year Cumulative (2018) Traffic Analysis* and Section 8.0 *General Plan Buildout (Post-2035) Traffic Analysis* 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 level of service. An intersection may satisfy a signal warrant condition and operate at or above LOS "D" or operate below LOS "D" and not meet a signal warrant.

2.6 LOS CRITERIA

The definition of an intersection deficiency in the City of Moreno Valley is based on the City of Moreno Valley General Plan Circulation Element. The City of Moreno Valley General Plan states that target LOS "C" or LOS "D" be maintained along City roads (including intersections) wherever possible. An exhibit depicting the level of service standards within the City is provided on Exhibit 2-1.

Regarding Caltrans' ramp to arterial intersections and other Caltrans maintained facilities, the published Caltrans traffic study guidelines (December 2002) states the following:

> *"Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS."*

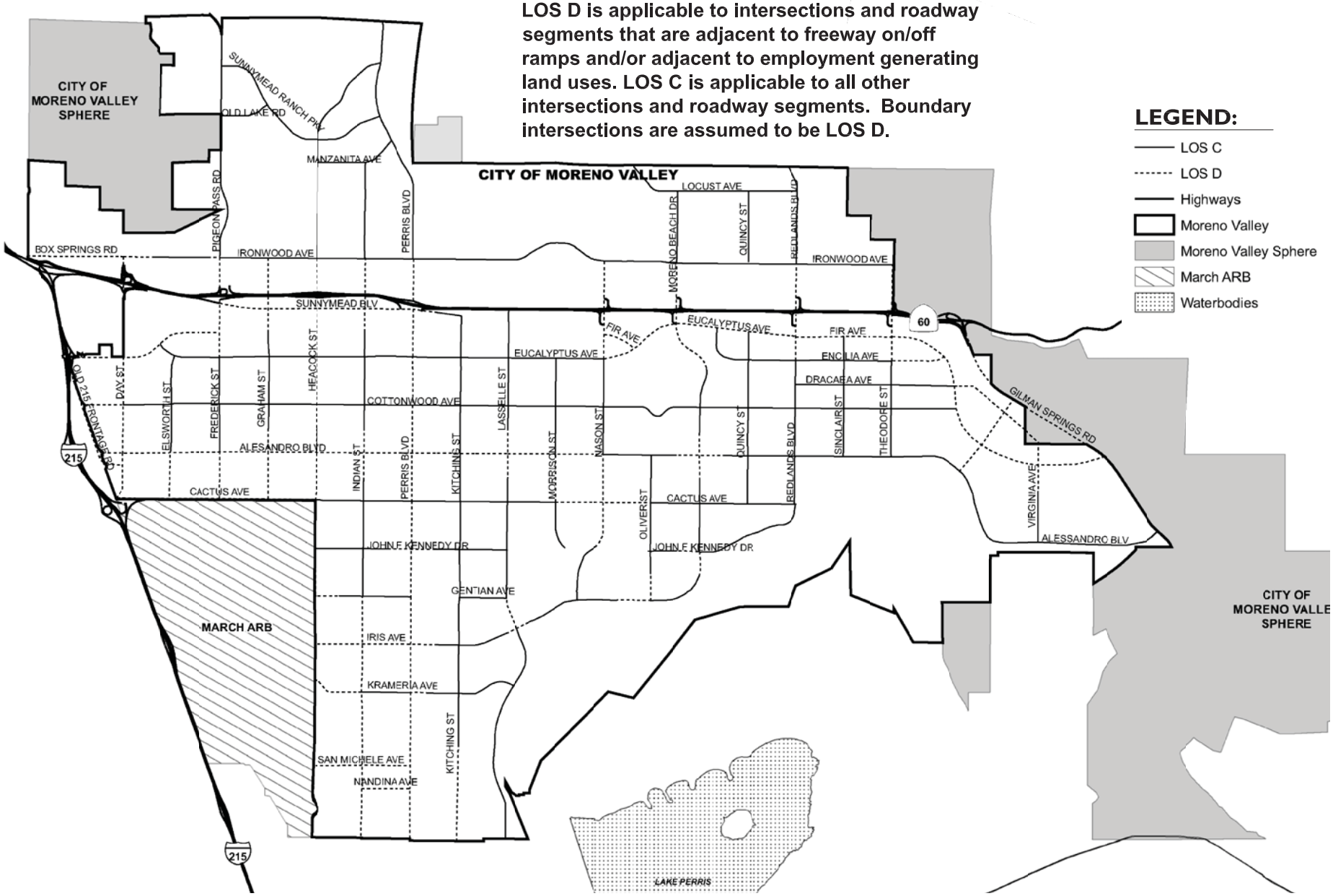
Caltrans has worked with the County of Riverside and local jurisdictions such as the City of Moreno Valley to establish a local threshold for freeway-to-arterial interchange intersections. Consistent with City's stated threshold, LOS "D" is considered to be the limit of acceptable traffic operations during the peak hour at the freeway-to-arterial interchange intersections maintained by Caltrans.

In an effort to more directly link land use, transportation and air quality and promote reasonable growth, the County of Riverside adopted a Congestion Management Plan (CMP) (March 10, 2010). The Riverside County Transportation Commission (RCTC) monitors the CMP roadway network system to minimize LOS deficiencies. Within the project study area, the I-215 Freeway is recognized as a key transportation facility within the CMP system. Although Caltrans utilizes LOS "D" as their stated threshold, RCTC has adopted LOS "E" as the minimum standard for intersections and segments along the CMP System of Highways and Roadways. However, for the purposes of this traffic impact analysis, LOS "D" has been considered to be the limit of acceptable traffic operations for the I-215 Freeway mainline segments and ramp junctions in an effort to be conservative.

EXHIBIT 2-1

CITY OF MORENO VALLEY LEVEL OF SERVICE (LOS) STANDARDS

LOS D is applicable to intersections and roadway segments that are adjacent to freeway on/off ramps and/or adjacent to employment generating land uses. LOS C is applicable to all other intersections and roadway segments. Boundary intersections are assumed to be LOS D.



2.7 THRESHOLDS OF SIGNIFICANCE

This section outlines the significance criteria used in this analysis relating to roadway system impacts. The Criteria are based on California Environmental Quality Act (CEQA).

According to CEQA guidelines, a project is considered to cause a significant impact to the transportation system if it:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit.
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roadway or highways.
- Conflicts with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Based on the City of Moreno Valley traffic study guidelines, a “significant” traffic impact under CEQA occurs when the addition of project traffic as defined by the Existing plus Project (E+P) scenario causes an intersection that operates at an acceptable LOS under Existing (2013) traffic conditions to fall to an unacceptable LOS. Therefore, E+P traffic conditions are compared to Existing (2013) traffic conditions to identify potentially significant project-related impacts according to the following criteria:

- If an intersection is projected to operate at an acceptable level of service without the Project (Existing baseline 2013) and the addition of Project traffic, as measured by 50 or more peak hour trips, is expected to cause the intersection to operate at an unacceptable level of service, the impact is considered a potentially significant direct impact.
- Of if an intersection is currently operating at an unacceptable level of service without the Project (Existing baseline 2013) and the Project contributes 50 or more peak hour trips, the impact is considered a potentially significant direct impact.

The proposed Project would mitigate its direct impacts by reducing delays to pre-project levels or better.

A potentially significant cumulative impact is identified when a facility is projected to operate below the level of service standards due to local and regional traffic growth (i.e., cumulative development and ambient growth) along with the addition of project traffic. A project’s contribution to a cumulatively significant traffic impact can be reduced to less-than-significant if the Project is required to implement or

fund its fair share of improvements designed to alleviate the potential cumulative impact. If full funding of future cumulative improvements is not reasonably assured, a temporary unmitigated cumulative impact may occur until the needed improvement is fully funded and constructed.

2.8 PROJECT FAIR SHARE CALCULATION METHODOLOGY

In cases where this TIA identifies that the proposed Project would have a potentially significant cumulative impact to a roadway facility, and the recommended mitigation measure is a fair share monetary contribution, the following methodology was applied to determine the fair share contribution. A project's fair share contribution at an off-site study area intersection is determined based on the following equation, which is the ratio of project traffic to new traffic, and new traffic is total future traffic subtracts existing baseline traffic:

Project Fair Share % = Project Traffic / (Post-2035 Total Traffic – Existing Baseline Traffic)

The project fair share contribution calculations are presented in Section 9.0 *Local and Regional Funding Mechanisms* of this TIA.

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3.0 AREA CONDITIONS

This section provides a summary of the existing circulation network, the City of Moreno Valley General Plan Circulation Network, and a review of existing peak hour intersection operations, roadway segment analyses and traffic signal warrants.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the Traffic Study Scoping Agreement (Appendix "1.1") and discussion with the City of Moreno Valley staff, the study area includes a total of forty-six (46) existing and future intersections as shown on Exhibit 1-2. Of these forty-six (46) intersections, the existing study area circulation network includes forty-two (42) intersections analysis locations shown on Table 1-1. The other four (4) intersections in the study area are future planned intersections (Project driveways) that do not currently exist.

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 MORENO VALLEY GENERAL PLAN CIRCULATION ELEMENT

As previously noted, the Project site is located within the City of Moreno Valley. Exhibit 3-2 shows the City of Moreno Valley General Plan Circulation Element, and Exhibit 3-3 illustrates the City of Moreno Valley General Plan roadway cross-sections.

Exhibit 3-4 shows the City of Perris General Plan Circulation Element, and Exhibit 3-5 illustrates the City of Perris General Plan roadway cross-sections.

3.3 PEDESTRIAN AND BICYCLE FACILITIES

Field observations conducted in May 2013 indicate nominal pedestrian and bicycle activity within the study area, which can be attributable to the limited residential and commercial development within and immediately surrounding the study area. Exhibit 3-6 illustrates the planned trails included on the City of Moreno Valley Master Plan of Trails. As shown, there are no proposed trails in the immediate vicinity of the proposed Project. The closest is an existing regional and multi-purpose trail located around Lake Perris. Exhibit 3-7 illustrates the proposed City of Moreno Valley Bikeway Plan. The following bikeways are designated within the vicinity of the study area in the proposed City of Moreno Valley Bikeway Plan:

- A Class I bikeway facility is designated along the California Aqueduct, running from the northwest portion of the study area to the southeast. Class I bikeways are dedicated trails, separated from vehicular traffic.

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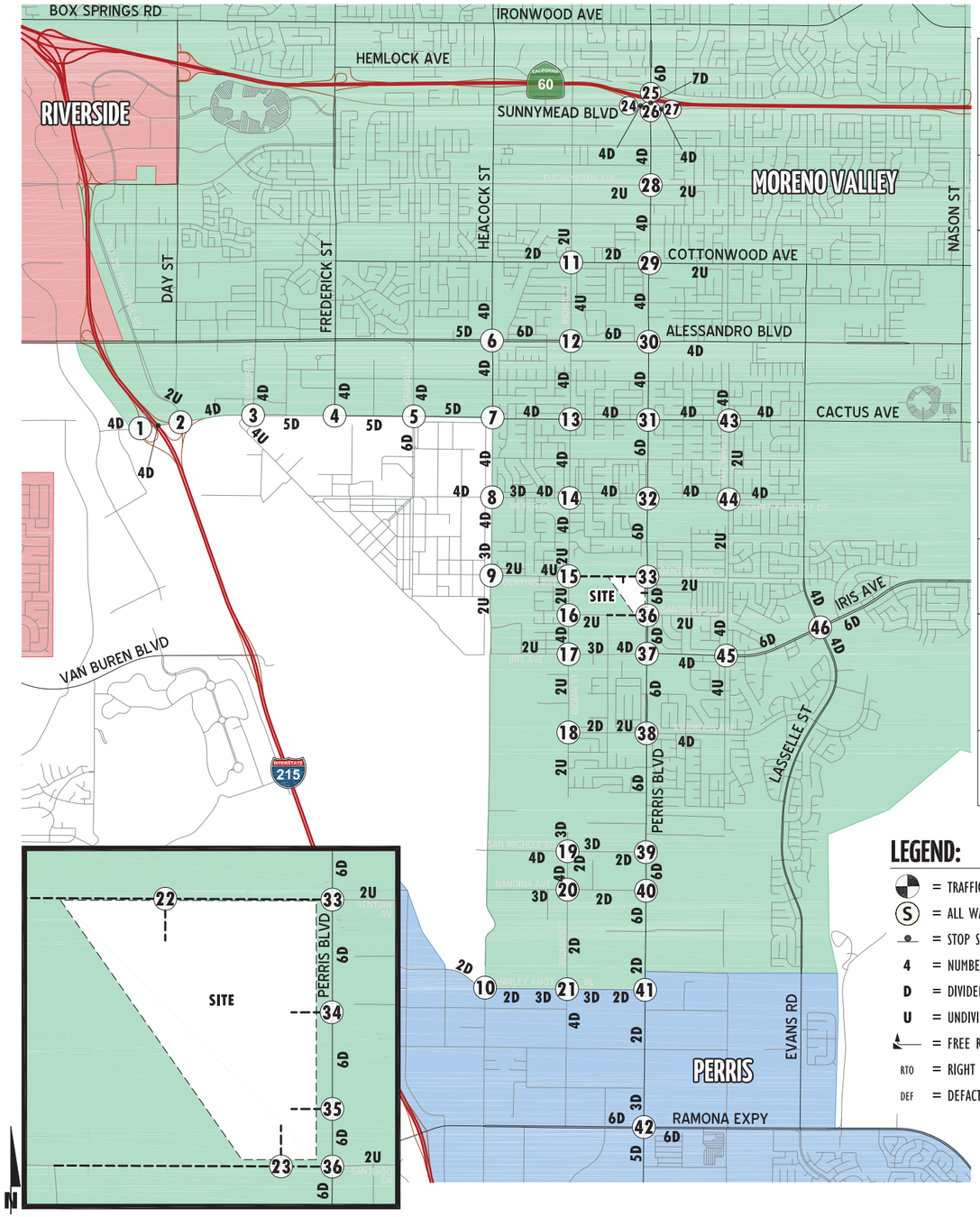
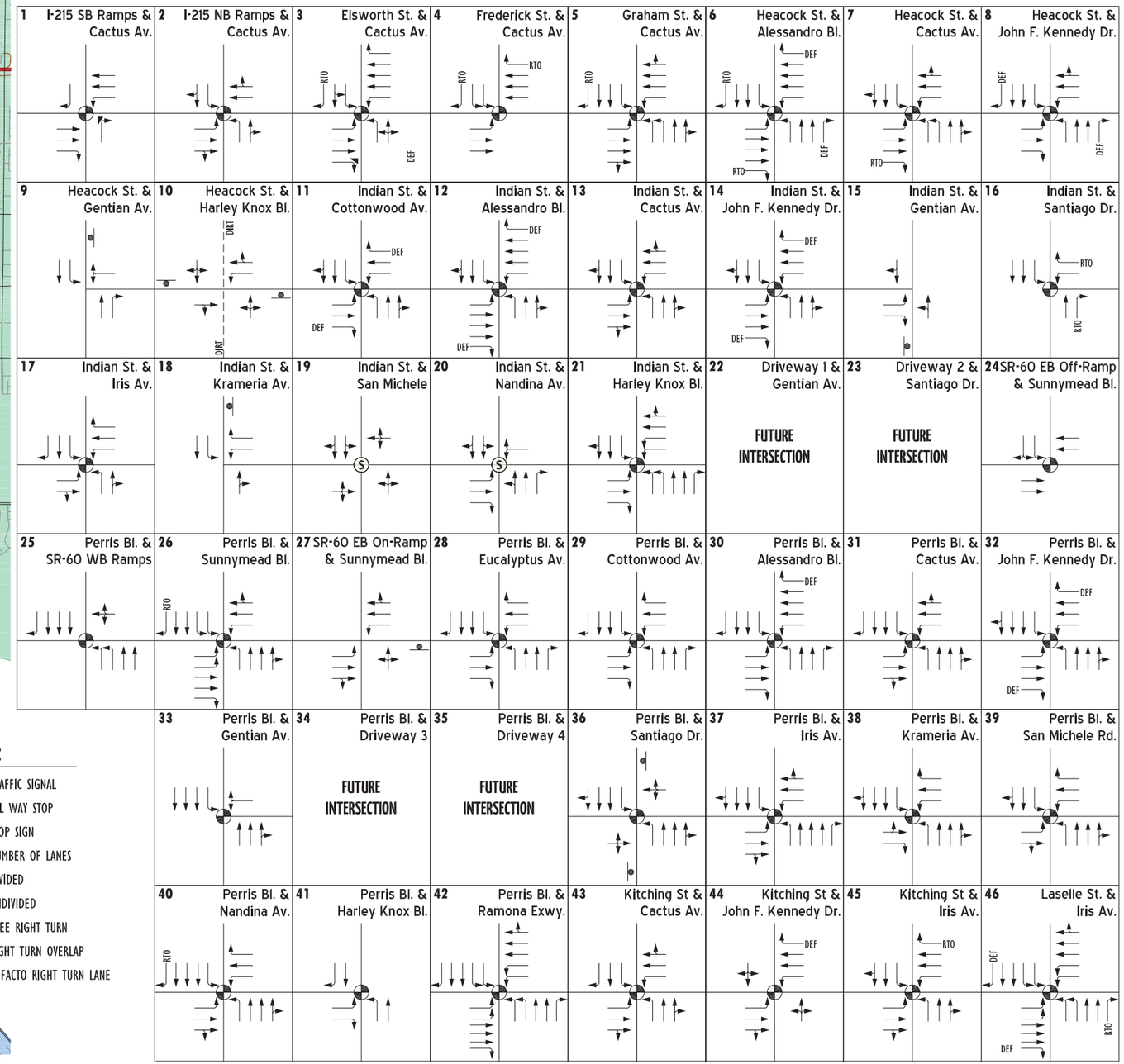
EXHIBIT 3-1

EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS





LEGEND:

- = TRAFFIC SIGNAL
- S = ALL WAY STOP
- = STOP SIGN
- 4 = NUMBER OF LANES
- D = DIVIDED
- U = UNDIVIDED
- = FREE RIGHT TURN
- RTO = RIGHT TURN OVERLAP
- DEF = DEFACTO RIGHT TURN LANE

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EXHIBIT 3-2

CITY OF MORENO VALLEY GENERAL PLAN CIRCULATION ELEMENT

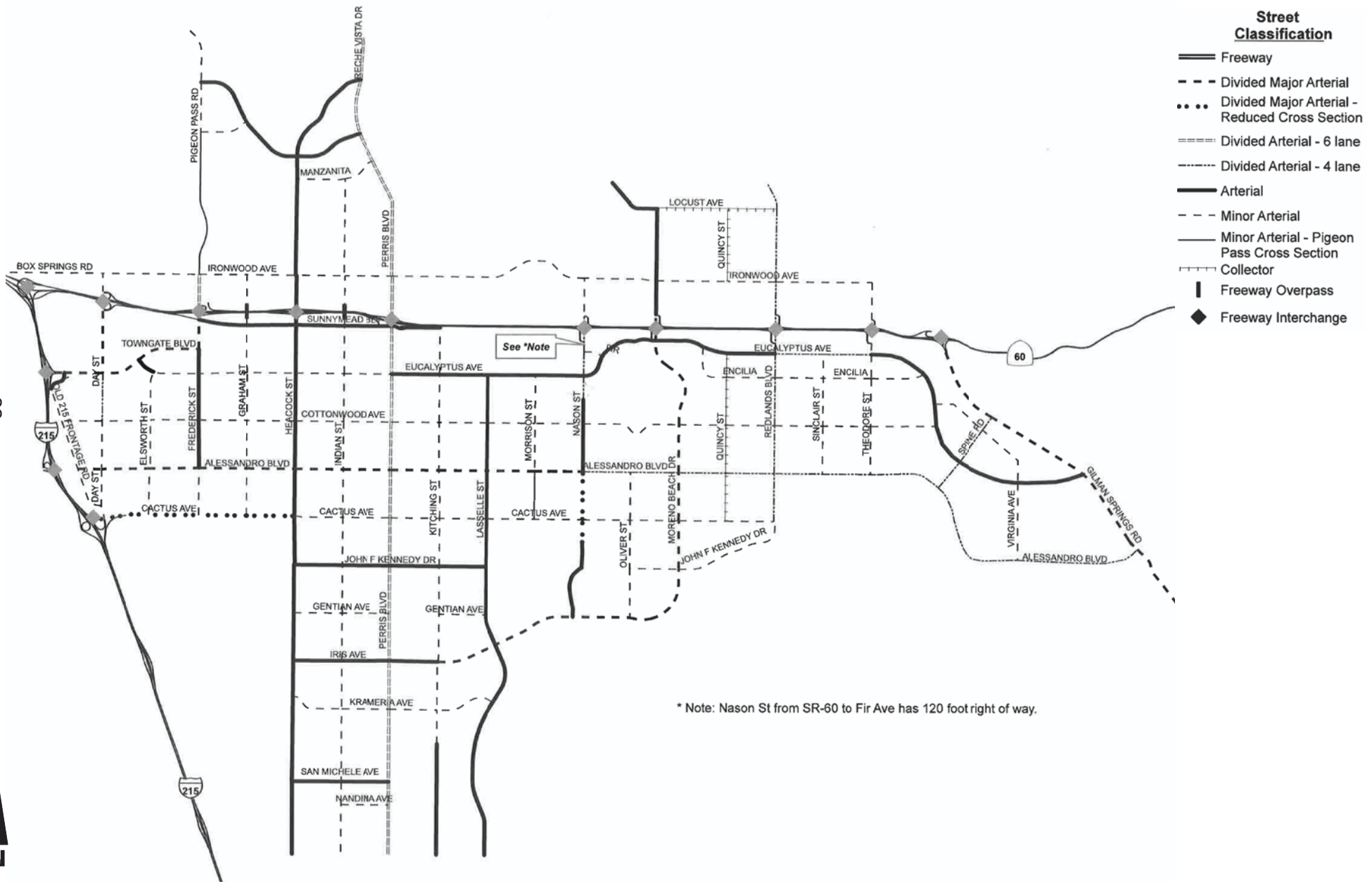
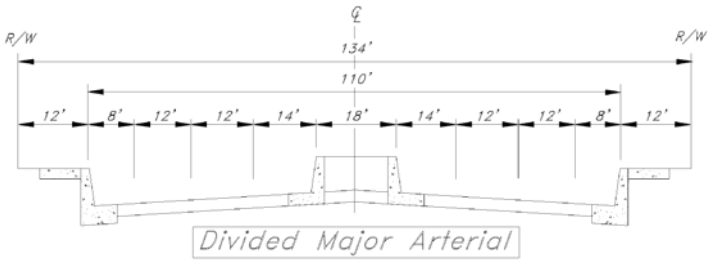
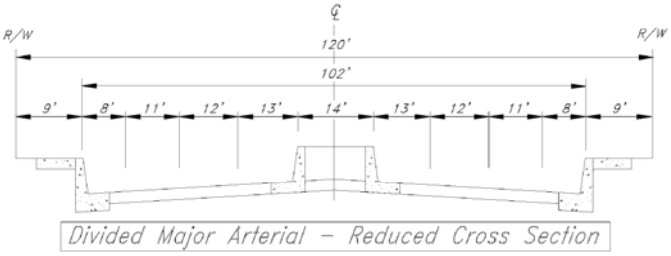
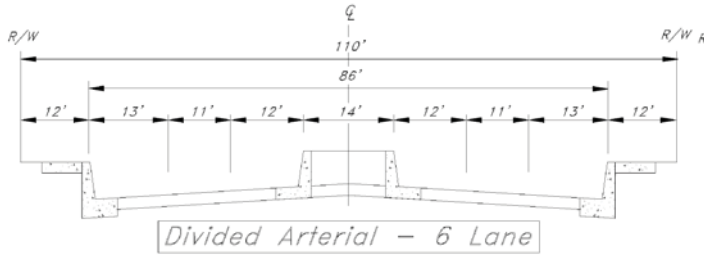


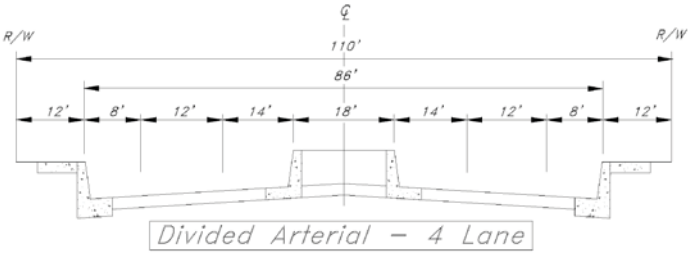
EXHIBIT 3-3

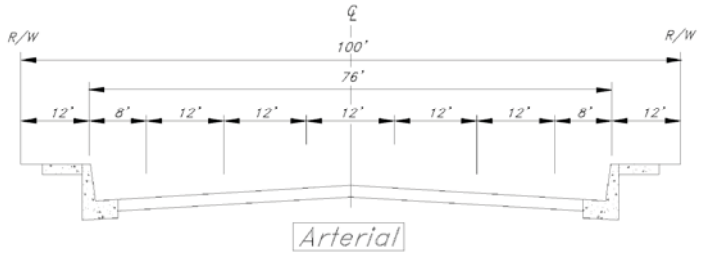
CITY OF MORENO VALLEY GENERAL PLAN ROADWAY CROSS-SECTIONS

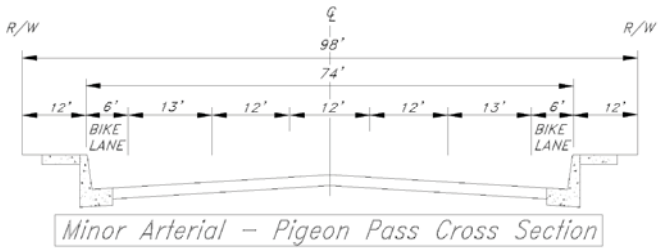


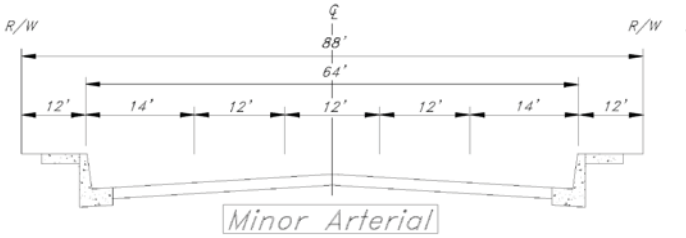


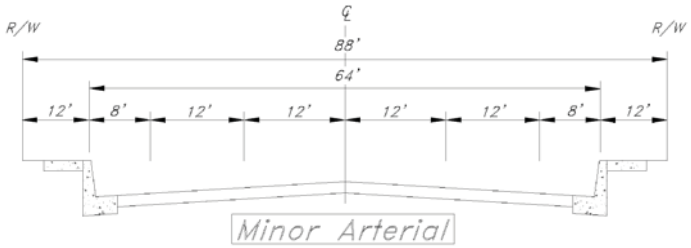


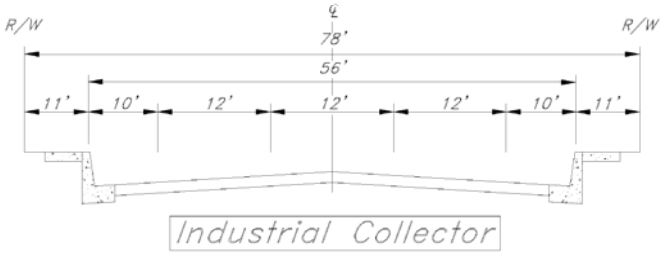










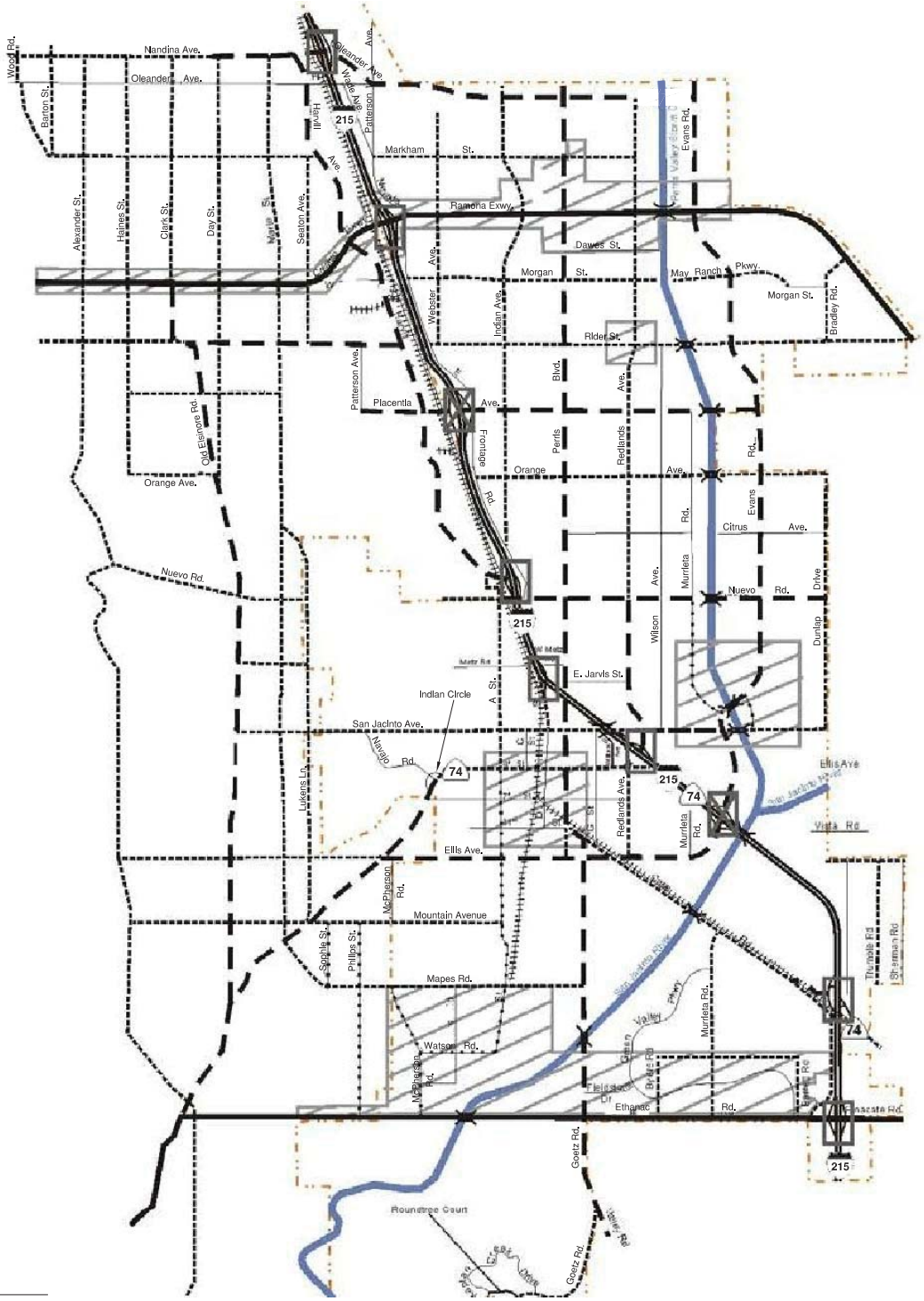


NOT TO SCALE

SOURCE: CITY OF MORENO VALLEY (July 11, 2006)

EXHIBIT 3-4

CITY OF PERRIS
GENERAL PLAN CIRCULATION ELEMENT



LEGEND:

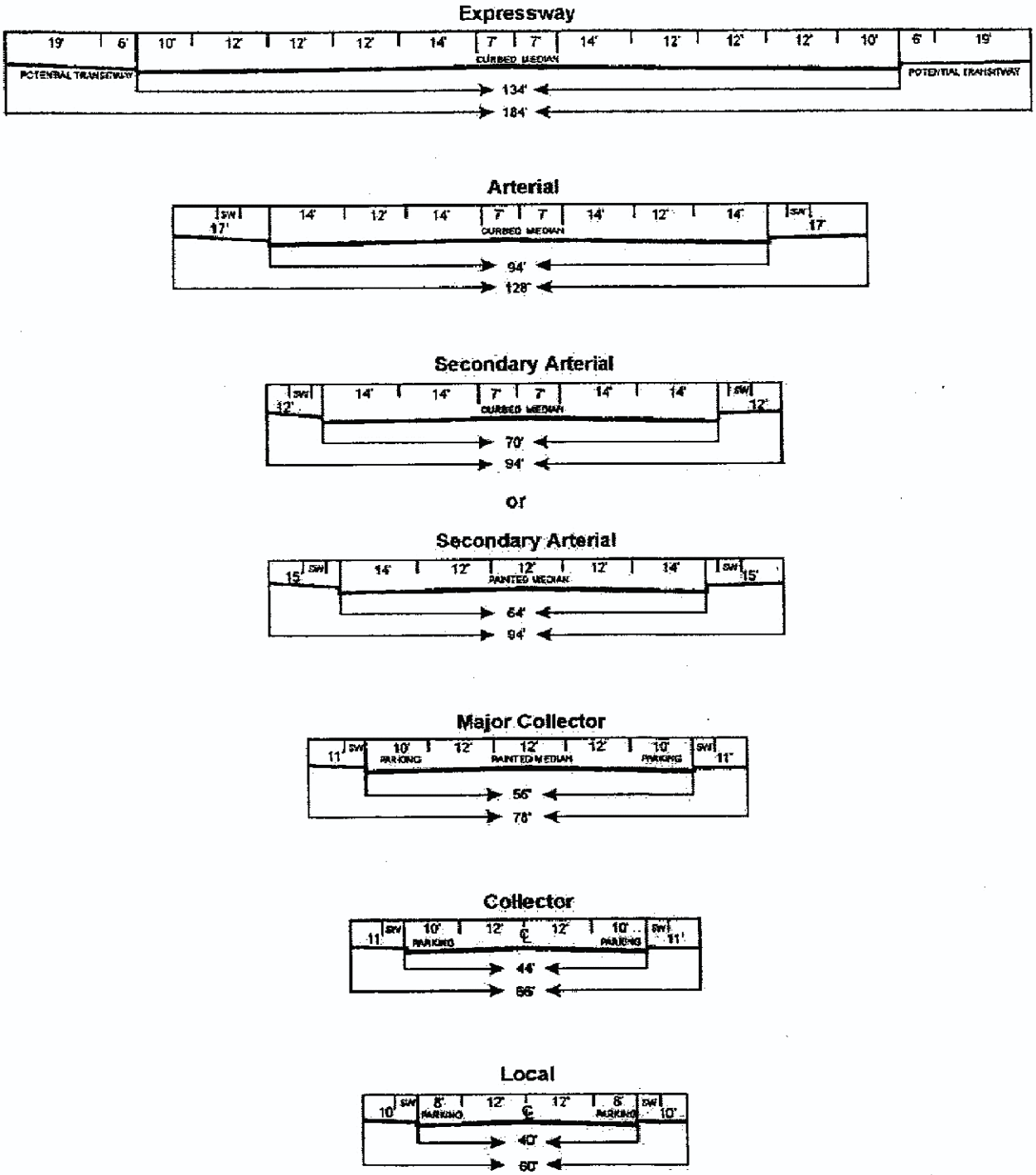
- Freeway
- Expressway (184' ROW)
- Arterial (128' ROW)
- Secondary Arterial (94' ROW)
- Major Collector (78' ROW)
- Collector (66' ROW)
- Railroad
- Bridge
- Water
- City Boundary
- Existing Interchange With Future Modifications
- Proposed Interchange
- Corridor Study Areas

N

SOURCE: CITY OF PERRIS (June 14, 2005)

EXHIBIT 3-5

CITY OF PERRIS
GENERAL PLAN ROADWAY CROSS-SECTIONS



Specific details for each cross-section follow in Figures 4.1 A - 4.1 F

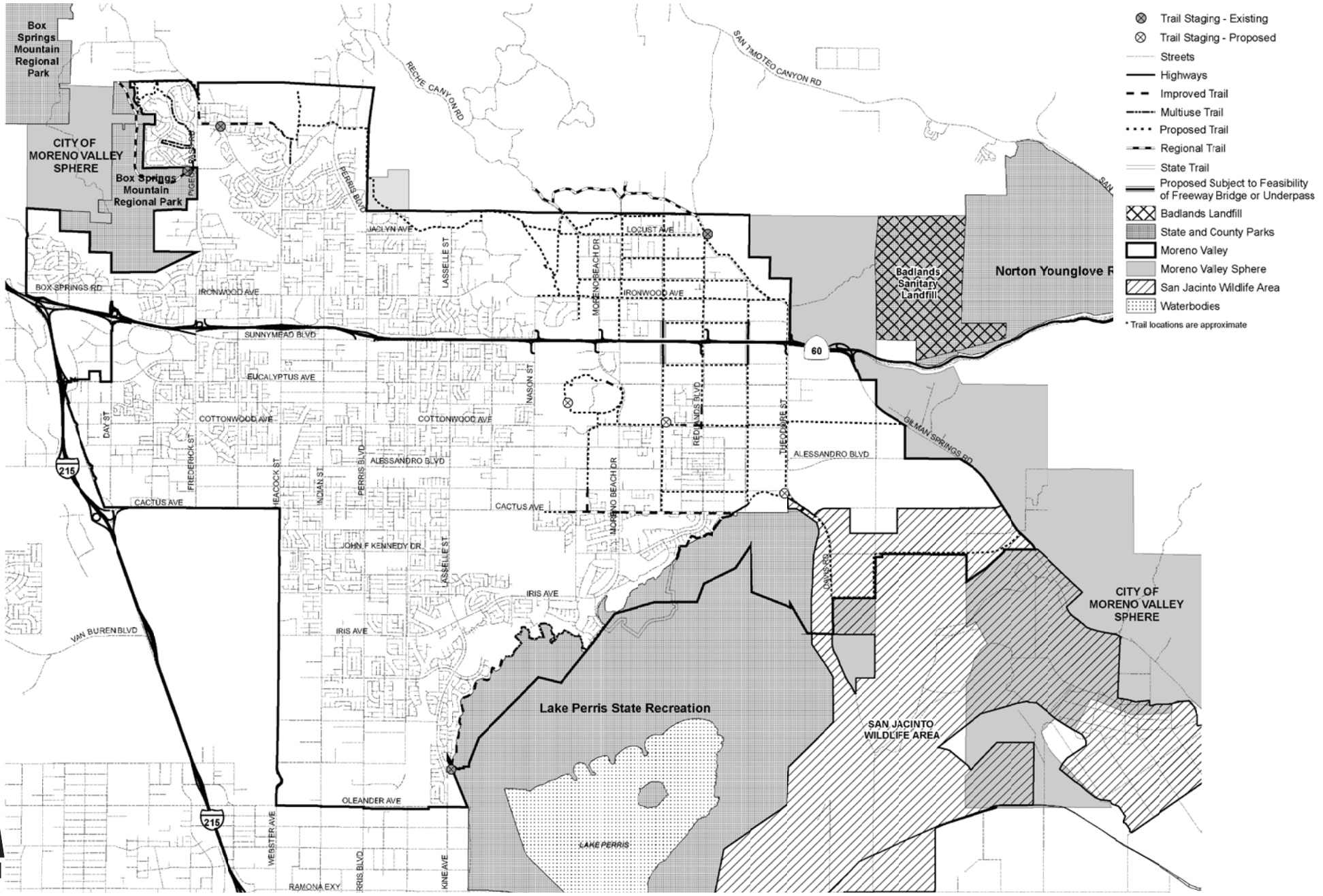
Legend

SW	Sidewalk or Trail (at least 4 feet)	CURBED MEDIAN	Landscaped Center Median
PARKING	Parking or Bike Lane		
PAINTED MEDIAN	Center Median and/or Continuous Left Turning Lane		

SOURCE: CITY OF PERRIS

EXHIBIT 3-6

CITY OF MORENO VALLEY MASTER PLAN OF TRAILS

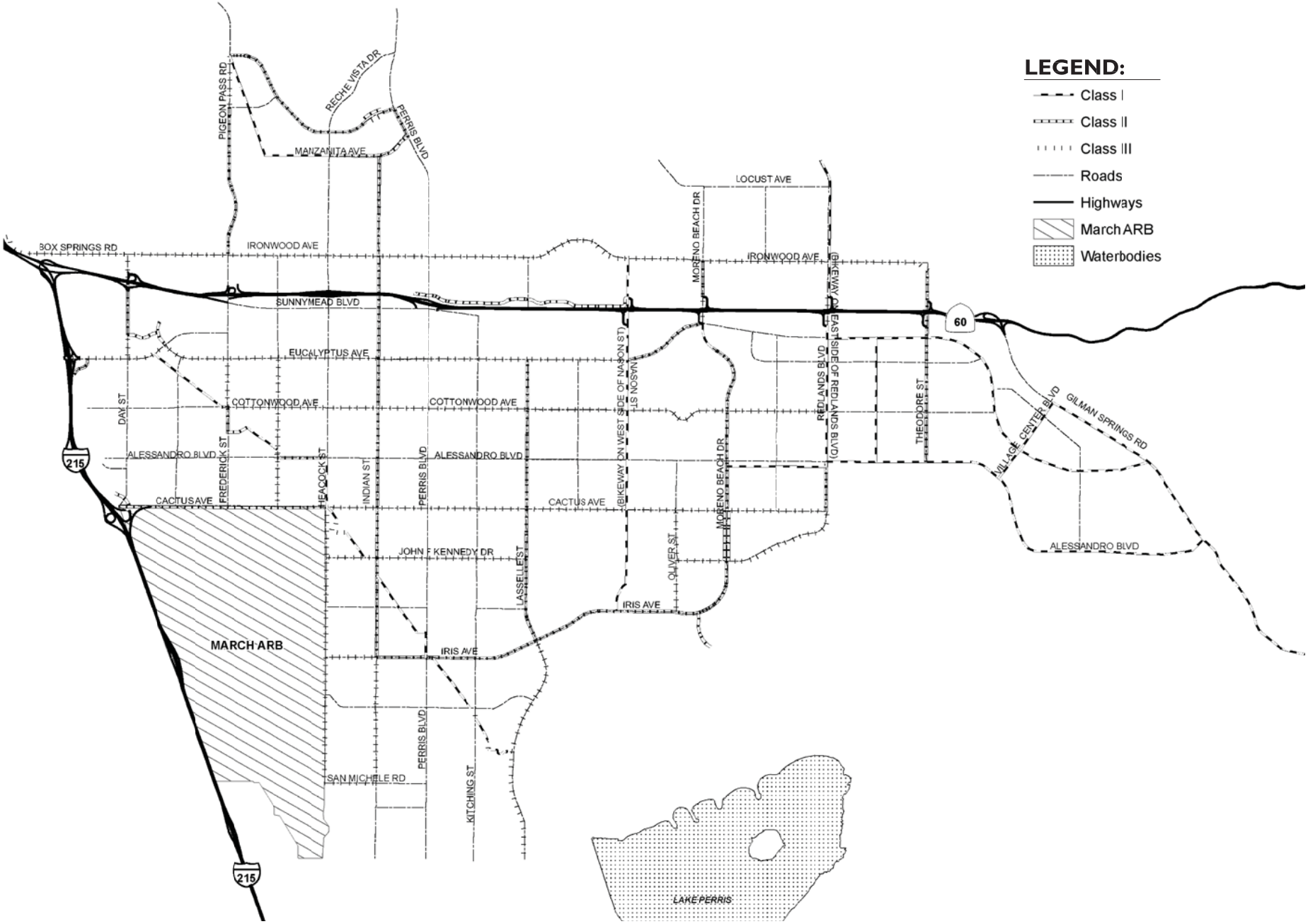


Moreno Valley Walmart Traffic Impact Analysis
City of Moreno Valley, CA (JN - 08660:010.dwg)

URBAN CROSSROADS

EXHIBIT 3-7

CITY OF MORENO VALLEY BIKE PLAN



- Class II bikeway facilities are designated along Alessandro Boulevard, west of Heacock Street, Indian Street from north of the study area to Iris Avenue, Iris Avenue from Indian Street to east of the study area, and Lasselle Street north of Iris Avenue. Class II bikeways are designated, striped bikeways generally located along the right shoulder of the roadway.
- Class III bikeway facilities are designated along Cactus Avenue, Graham Street, Eucalyptus Avenue, Cottonwood Avenue, John F. Kennedy Drive, Iris Avenue west of Indian Street, Indian Street south of Iris Avenue, San Michele Road west of Indian Street, and Lasselle Street south of Iris Avenue. Class III routes are designated bikeways, although not striped, and are shared with vehicles.

Existing pedestrian/bicycle facilities (e.g., crosswalks, sidewalks, bus stops, bike lanes etc.) within the study area are shown on Exhibit 3-8.

3.4 TRANSIT SERVICE

The study area is currently served by the Riverside Transit Agency (RTA) with bus services along Cottonwood Avenue, Perris Boulevard, John F. Kennedy Drive, Kitching Street, Iris Avenue, Lasselle Street, and Krameria Avenue via Route 18; along Sunnymead Boulevard, Perris Boulevard, Iris Avenue, Lasselle Street, and Krameria Avenue via Route 19; and Alessandro Boulevard, Iris Avenue, Kitching Street, Krameria Avenue, and Lasselle Street via Route 20. The existing RTA Route 19 would likely serve the proposed Project. It is our understanding that the proposed Project would provide a bus turnout for a future stop along its frontage on Perris Boulevard. Exhibit 3-9 illustrates the RTA bus routes for the study area.

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.

3.5 EXISTING TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in May 2013. 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)
- Saturday Mid-Day Peak Hour (peak hour between 12:00 PM and 3:00 PM)

Manual weekday AM, weekday PM and Saturday mid-day peak hour turning movement counts were conducted in May 2013. The weekday AM, weekday PM and Saturday mid-day peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations

EXHIBIT 3-8

EXISTING PEDESTRIAN FACILITIES

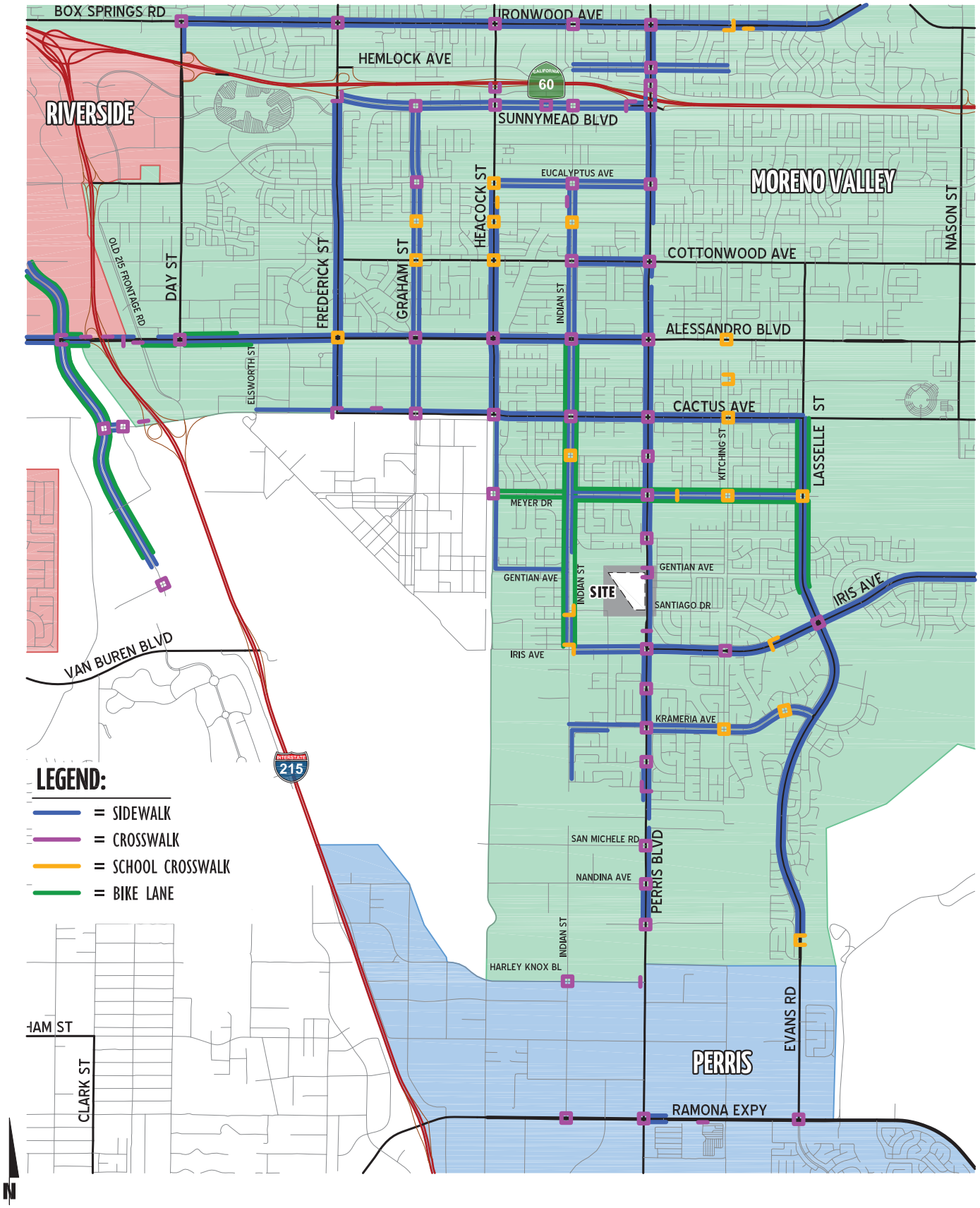
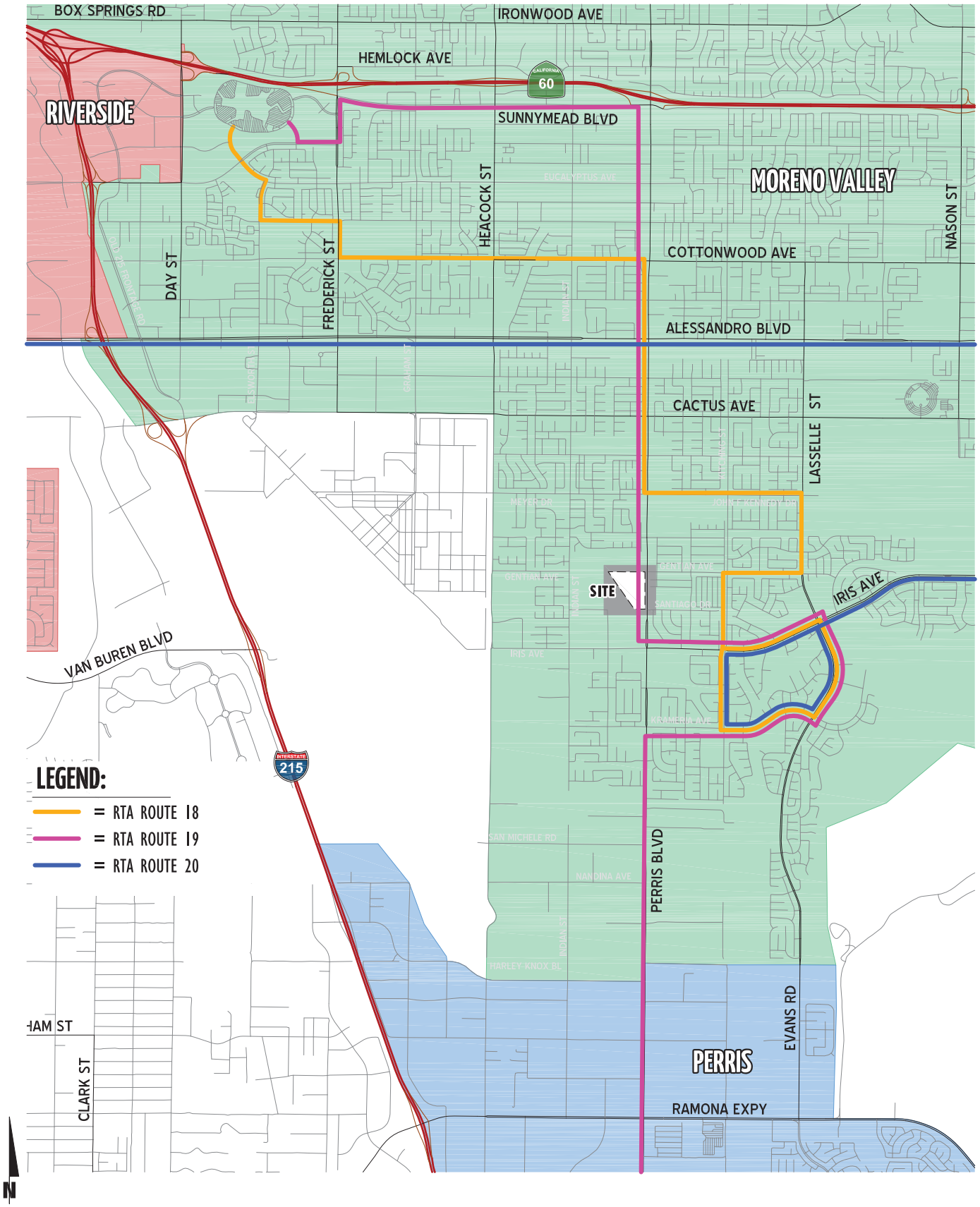


EXHIBIT 3-9

EXISTING TRANSIT ROUTES



made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes. The raw manual peak hour turning movement traffic count data sheets are included in Appendix "3.1". The traffic counts collected in May 2013 include the vehicle classifications as shown below for the Caltrans arterial-to-freeway ramp facilities:

- Passenger Cars
- 2-Axle Trucks
- 3-Axle Trucks
- 4 or More Axle Trucks

To represent the impact large trucks, buses and recreational vehicles have on traffic flow; all trucks were converted into Passenger Car Equivalents (PCEs). 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 the purpose of this analysis, a PCE factor of 1.5 has been applied to 2-axle trucks, 2.0 for 3-axle trucks and 3.0 for 4+-axle trucks to estimate each turning movement.

Existing (2013) average daily traffic (ADT) volumes on arterial highways throughout the study area are shown on Exhibit 3-10. Existing (2013) ADT volumes are based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

PM Peak Hour (Approach Volume + Exit Volume) x 12 = Leg Volume

Based on a comparison of PM peak hour traffic count data to 24-hour tube count data along roadway segments in close proximity to the study area, it was determined that the PM peak hour volumes were approximately eight (8) to nine (9) percent of the total 24-hour daily volume on select segments. As such, it was determined that the above equation could be utilized to approximate the ADT volume on the study area segments based on the same relationship (i.e., 8-9 percent PM peak-to-daily relationship).

Existing (2013) weekday AM, weekday PM, and Saturday mid-day peak hour intersection volumes are shown on Exhibits 3-11, 3-12, and 3-13, respectively. It should be noted that the volumes utilized at the Caltrans arterial-to-freeway ramp intersections have been modified to reflect PCE volumes for the peak hour intersection operations analysis.

3.6 EXISTING CONDITIONS INTERSECTION OPERATIONS ANALYSIS

Existing (2013) 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. The Existing (2013) conditions operations analysis shows that all but four (4) study area intersections currently operate at

EXHIBIT 3-10

EXISTING (2013) AVERAGE DAILY TRAFFIC (ADT)

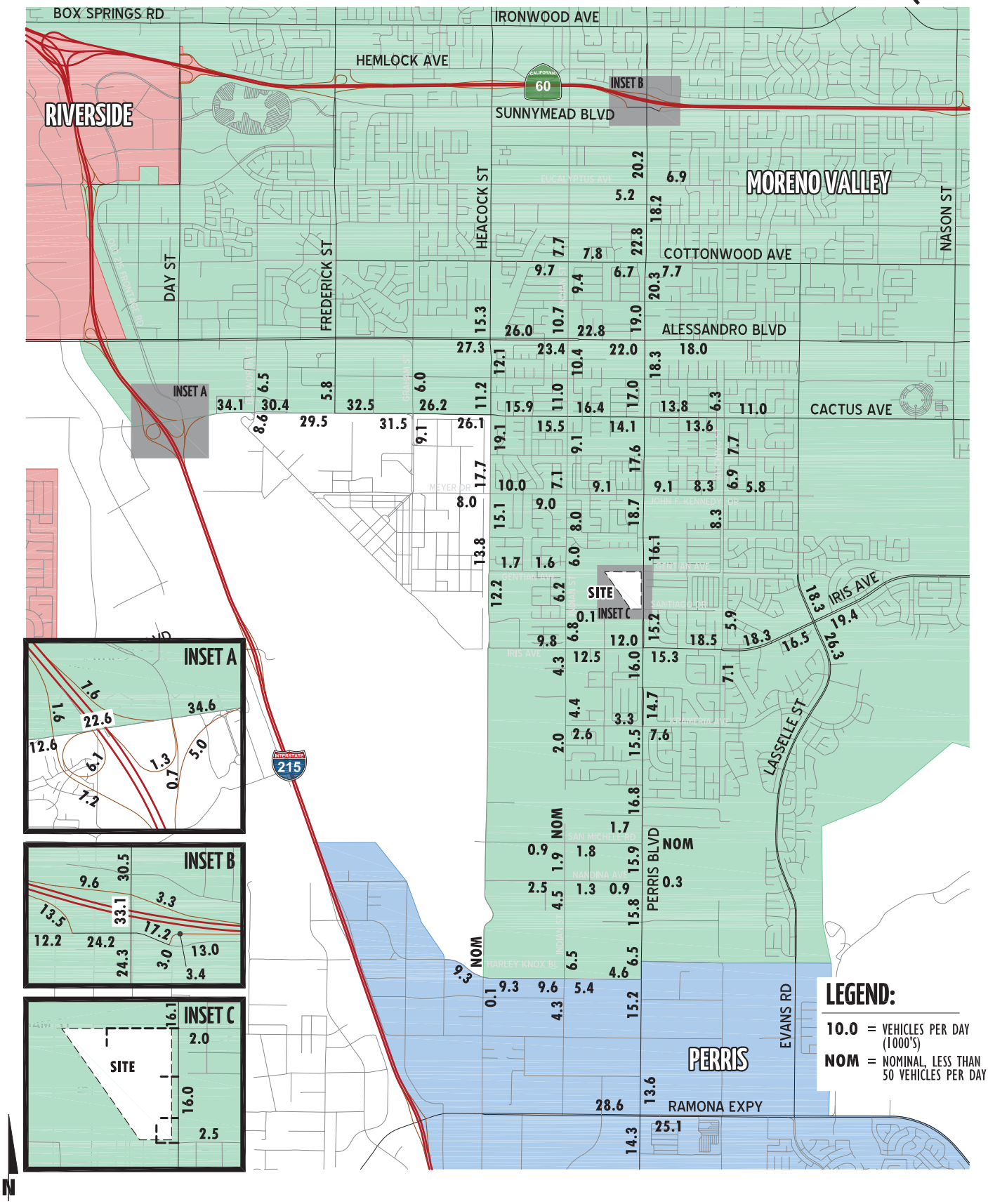


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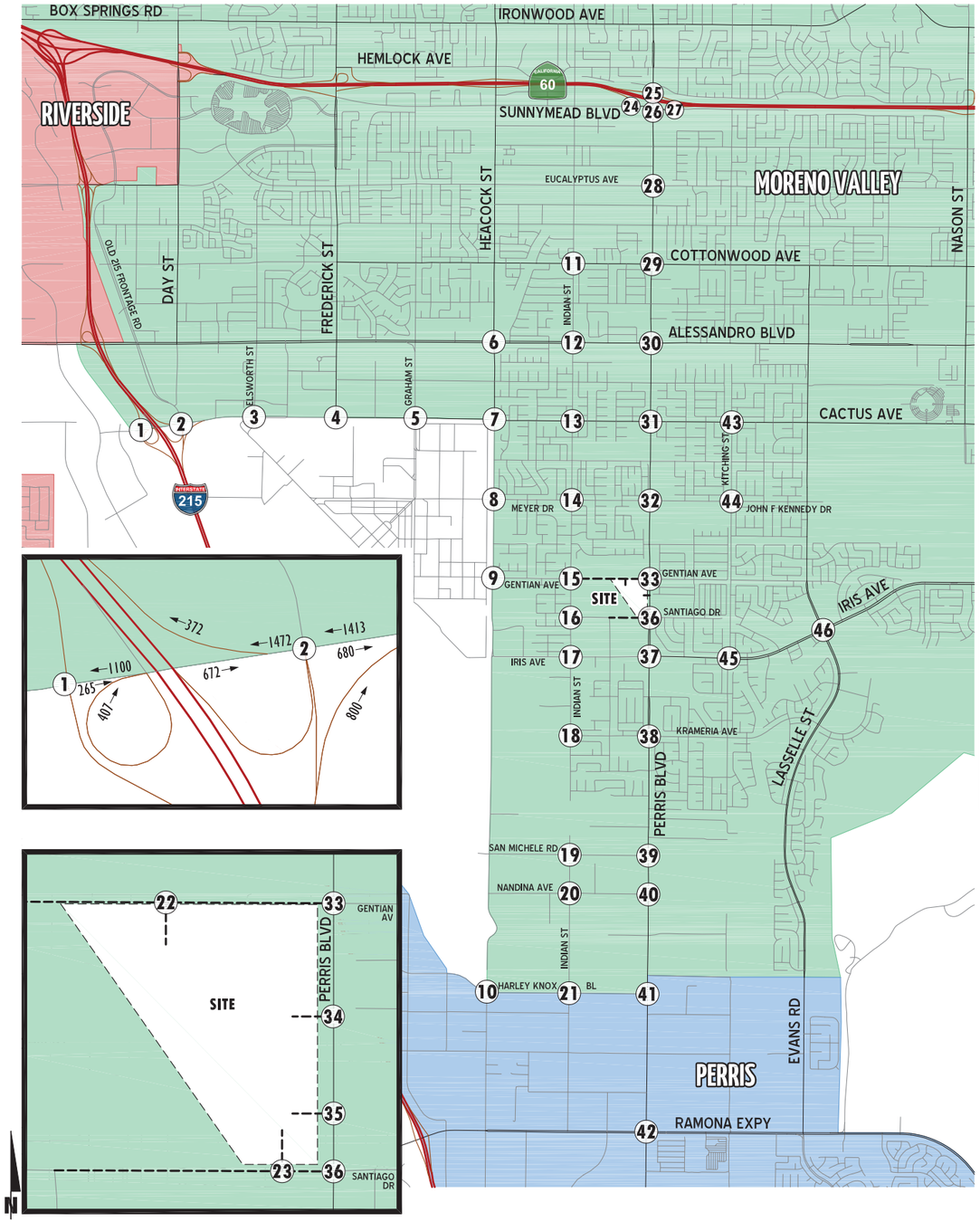
EXHIBIT 3-11

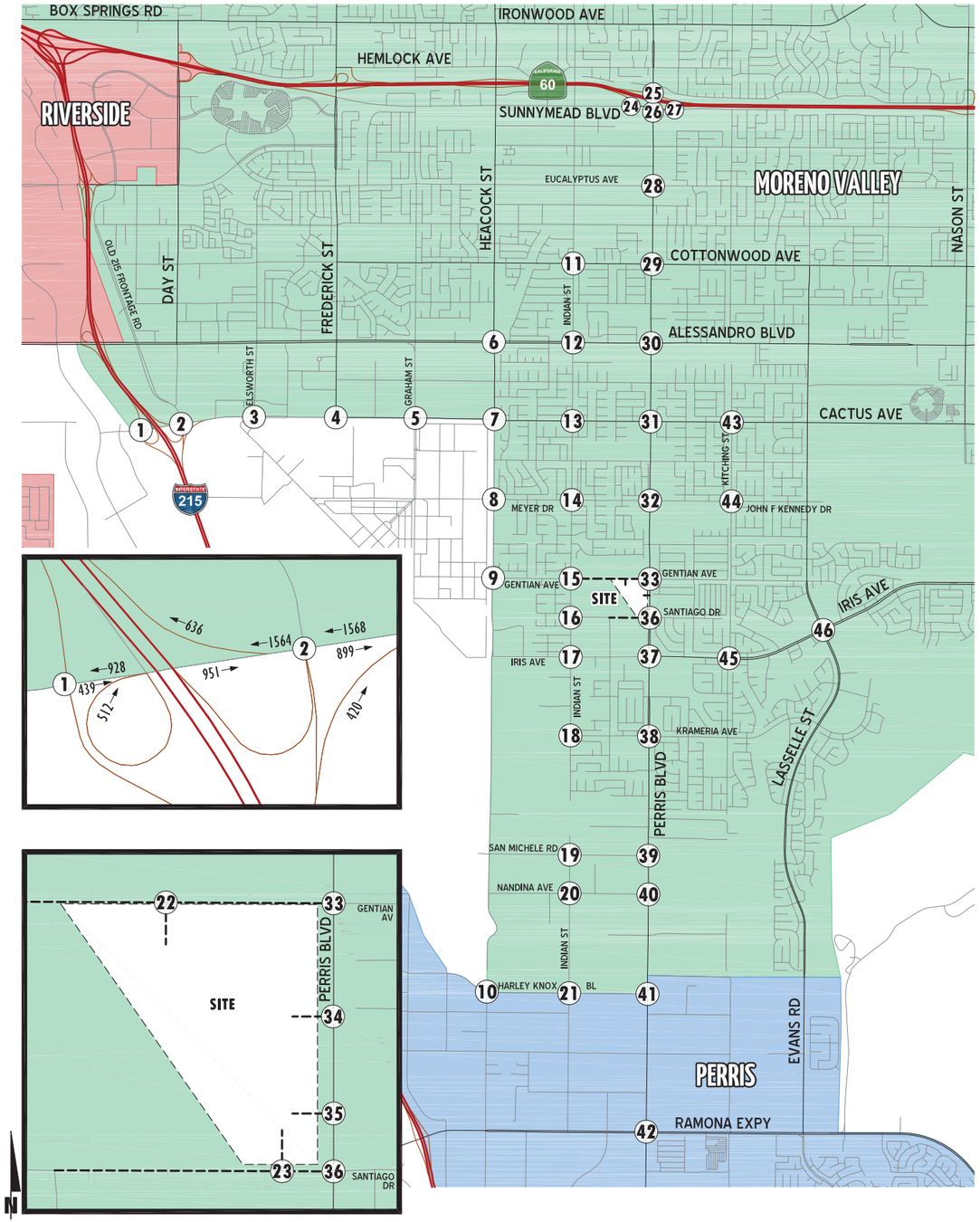
EXISTING (2013) AM PEAK HOUR INTERSECTION VOLUMES



1	I-215 SB Ramps & Cactus Av.	162	746	354	265	9		2	I-215 NB Ramps & Cactus Av.	22	0	25	138	1275	10	645	17	175	85	10
3	Elsworth St. & Cactus Av.	103	125	45	78	1475	97	126	1013	316	46	23	17	4	Frederick St. & Cactus Av.	37	106	102	1322	55	881		
5	Graham St. & Cactus Av.	35	73	55	100	1353	10	83	726	151	116	64	2	6	Heacock St. & Alessandro Bl.	133	189	120	150	923	34	107	432	64	185	334	50
7	Heacock St. & Cactus Av.	30	181	39	77	737	9	83	463	242	620	371	5	8	Heacock St. & John F. Kennedy Dr.	24	245	130	246	135	34	11	65	63	106	696	37
9	Heacock St. & Gentian Av.	295	72	110	3	511	2	10	Heacock St. & Harley Knox Bl.	1	1	0	0	357	0	0	358	1	1	2	1
11	Indian St. & Cottonwood Av.	56	202	44	78	337	46	49	227	132	101	248	37	12	Indian St. & Alessandro Bl.	78	141	63	69	784	36	41	413	78	155	217	82
13	Indian St. & Cactus Av.	14	224	54	83	617	41	26	490	43	37	271	25	14	Indian St. & John F. Kennedy Dr.	34	173	102	83	342	64	32	225	49	53	273	83
15	Indian St. & Gentian Av.	33	183	23	65	73	293	16	Indian St. & Santiago Dr.	266	29	112	222	279	18	17	Indian St. & Iris Av.	16	224	301	411	356	5	30	198	39	127	264	7
18	Indian St. & Krameria Av.	76	193	263	3	119	15	19	Indian St. & San Michele	0	4	1	2	8	59	0	9	19	29	1	78	20	Indian St. & Nandina Av.	2	77	0	2	20	55
1	8	44	58	108	34	21	Indian St. & Harley Knox Bl.	173	53	8	8	216	11	148	188	21	48	90	16	22	Driveway 1 & Gentian Av.	FUTURE INTERSECTION	23	Driveway 2 & Santiago Dr.	FUTURE INTERSECTION	24	SR-60 EB Off-Ramp & Sunnymead Bl.	40	523	299	231
25	Perris Bl. & SR-60 WB Ramps	359	778	126	0	124	482	982	26	Perris Bl. & Sunnymead Bl.	99	560	243	419	84	22	284	243	227	116	761	77	27	SR-60 EB On-Ramp & Sunnymead Bl.	26	513	11	238	307	18	12	3	6
28	Perris Bl. & Eucalyptus Av.	23	764	113	157	157	68	12	69	43	44	752	24	29	Perris Bl. & Cottonwood Av.	99	679	105	139	192	39	80	144	59	64	606	39
30	Perris Bl. & Alessandro Bl.	154	401	149	103	679	66	98	276	58	132	457	84	31	Perris Bl. & Cactus Av.	35	373	105	76	603	46	51	391	105	111	484	63
32	Perris Bl. & John F. Kennedy Dr.	48	267	166	95	357	160	54	321	43	116	456	165	33	Perris Bl. & Gentian Av.	350	21	50	27	593	17	34	Perris Bl. & Driveway 3	FUTURE INTERSECTION	35	Perris Bl. & Driveway 4	FUTURE INTERSECTION	36	Perris Bl. & Santiago Dr.	4	353	20	91	4	40	2	2	6	1	517	36
37	Perris Bl. & Iris Av.	45	237	133	113	511	171	44	338	81	202	384	212	38	Perris Bl. & Krameria Av.	7	385	68	151	177	193	24	146	43	50	585	207
39	Perris Bl. & San Michele Rd.	67	629	1	0	0	0	80	0	5	10	740	1	40	Perris Bl. & Nandina Av.	60	552	9	4	5	7	28	4	12	20	744	15
41	Perris Bl. & Harley Knox Bl.	171	385	194	15	58	655	42	Perris Bl. & Ramona Exwy.	100	159	63	119	1150	68	142	484	92	302	311	21	43	Kitching St & Cactus Av.	102	216	30	23	493	17	90	459	162	195	295	27
44	Kitching St & John F. Kennedy Dr.	40	195	89	95	426	14	40	438	136	163	296	7	45	Kitching St & Iris Av.	121	131	30	53	573	111	75	470	104	130	124	91	46	Laselle St. & Iris Av.	61	459	75	48	438	344	79	304	280	261	385	262

EXHIBIT 3-12

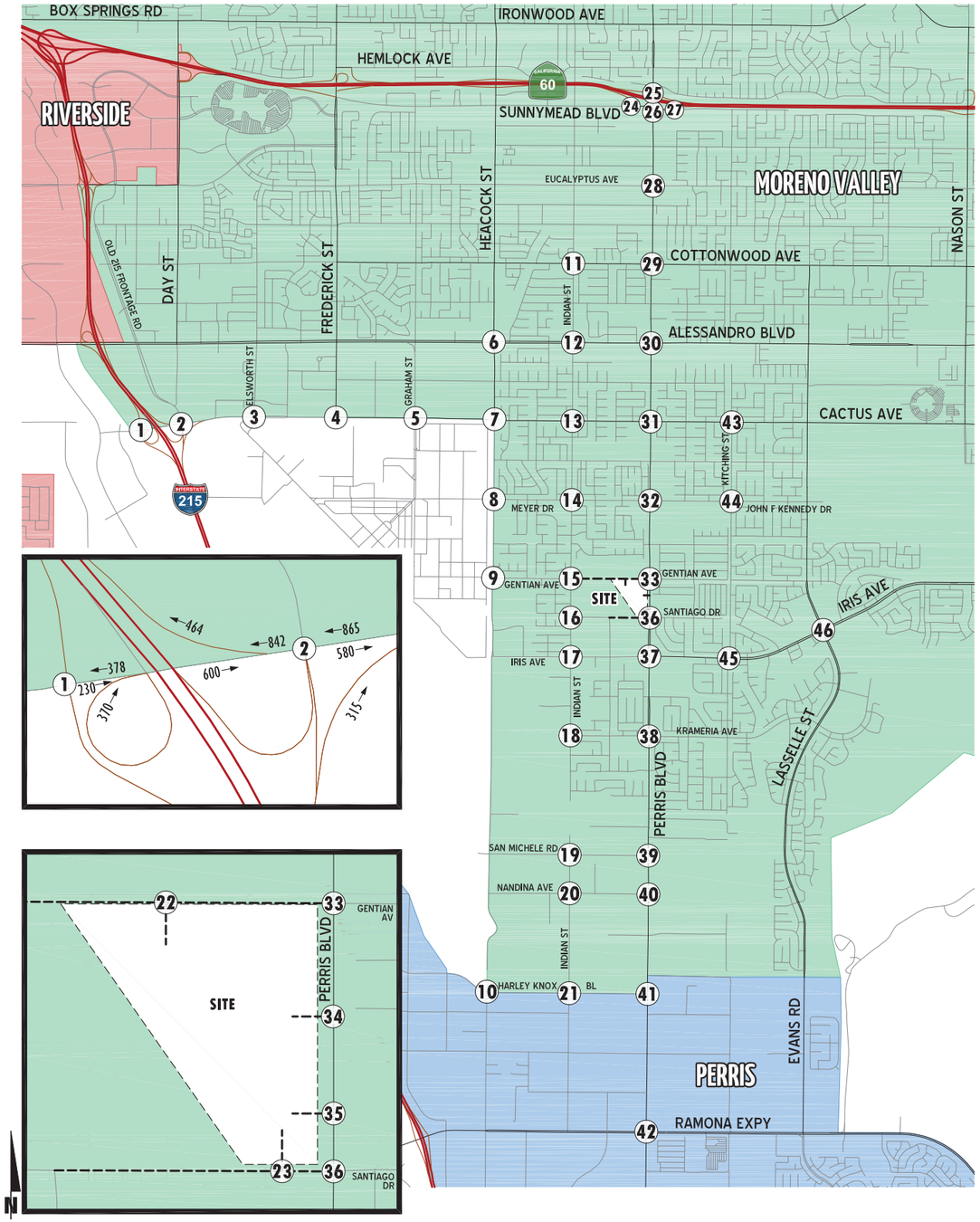
EXISTING (2013) PM PEAK HOUR INTERSECTION VOLUMES



1	I-215 SB Ramps & Cactus Av.			2	I-215 NB Ramps & Cactus Av.			3	Elsworth St. & Cactus Av.			4	Frederick St. & Cactus Av.			5	Graham St. & Cactus Av.			6	Heacock St. & Alessandro Bl.		
	129	406	522		34	72	64	1504	140	22	109	79	990	27	79	246	121	902	55	123	135	62	789	12	173	353	216	157	681	44
439	74			18	826	107	26	34	1	90	1194	30	397	103	136	35	1443		59	1178	363	184	69	10	111	1018	134	159	268	51
7	Heacock St. & Cactus Av.			8	Heacock St. & John F. Kennedy Dr.			9	Heacock St. & Gentian Av.			10	Heacock St. & Harley Knox Bl.			11	Indian St. & Cottonwood Av.			12	Indian St. & Alessandro Bl.		
33	382	76	68	480	11	47	579	300	182	73	15	704	95	42	1	0	1	0	338	2	43	248	23	40	227	41	49	264	139	113	705	63
75	689	586	313	299	4	29	230	229	62	336	37	305	6		1	434	0	2	0	1	45	283	136	76	244	39	109	822	137	130	216	61
13	Indian St. & Cactus Av.			14	Indian St. & John F. Kennedy Dr.			15	Indian St. & Gentian Av.			16	Indian St. & Santiago Dr.			17	Indian St. & Iris Av.			18	Indian St. & Krameria Av.		
43	371	121	93	417	25	28	246	68	40	208	52	18	253		283	1	3	2			6	114	211	169	236	10	97	147	61	6
36	695	60	38	252	15	23	352	95	47	189	39	27	65	22	199		228	0			7	408	115	48	60	8	61	6		
19	Indian St. & San Michele			20	Indian St. & Nandina Av.			21	Indian St. & Harley Knox Bl.			22	Driveway 1 & Gentian Av.			23	Driveway 2 & Santiago Dr.			24	SR-60 EB Off-Ramp & Sunnymead Bl.		
1	0	0	0	16	43	0	65	0	0	9	38	148	159	18	17	128	8	FUTURE INTERSECTION			FUTURE INTERSECTION			64	1061	366			
0	15	24	15	1	78	2	37	122	39	88	24	128	273	83	36	71	5							586					
25	Perris Bl. & SR-60 WB Ramps			26	Perris Bl. & Sunnymead Bl.			27	SR-60 EB On-Ramp & Sunnymead Bl.			28	Perris Bl. & Eucalyptus Av.			29	Perris Bl. & Cottonwood Av.			30	Perris Bl. & Alessandro Bl.		
311	917		118	1	155	137	624	311	327	84	48		19	406	24	54	730	140	112	104	39	91	806	163	99	123	33	129	530	140	73	446	90
			490	1194		630	597	420	145	727	63	240	605	126	53	22	26	39	139	56	45	605	39	61	167	69	48	680	54	189	679	184	203	442	72
31	Perris Bl. & Cactus Av.			32	Perris Bl. & John F. Kennedy Dr.			33	Perris Bl. & Gentian Av.			34	Perris Bl. & Driveway 3			35	Perris Bl. & Driveway 4			36	Perris Bl. & Santiago Dr.		
49	611	122	74	380	48	41	515	98	33	144	120	624	47	37	35	FUTURE INTERSECTION			FUTURE INTERSECTION			0	591	68	65	3	30			
41	469	127	106	517	55	37	263	130	139	552	104	630	45									0	1	0	1	610	38			
37	Perris Bl. & Iris Av.			38	Perris Bl. & Krameria Av.			39	Perris Bl. & San Michele Rd.			40	Perris Bl. & Nandina Av.			41	Perris Bl. & Harley Knox Bl.			42	Perris Bl. & Ramona Exwy.		
17	397	172	90	316	130	17	443	94	92	69	121	28	657	0	1	1	1				17	640	1	2	3	10	97	639			90	312	185	85	637	80
29	411	101	125	431	153	27	117	22	23	549	137	78	0	21	11	634	0				19	1	31	2	627	9	151	116	18	490	195	1016	249	198	264	87
43	Kitching St & Cactus Av.			44	Kitching St & John F. Kennedy Dr.			45	Kitching St & Iris Av.			46	Laselle St. & Iris Av.										
42	195	24	18	418	23	32	251	40	20	146	7	75	114	37	93	579	108	98	585	200	62	425	380						
49	414	145	65	195	16	29	260	139	84	204	10	78	622	128	58	95	86	118	260	236	240	460	290						

EXHIBIT 3-13

EXISTING (2013)
SATURDAY MID-DAY PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.
← 61 ← 123 ← 255 230 → 11 →	11 ← 0 ← 51 ← 58 ← 807 9 → 525 → 66 → 24 ← 14 ← 4	42 ← 55 ← 49 ← 71 ← 695 ← 93 67 → 713 → 69 → 98 ← 130 ← 85	38 ← 174 ← 134 ← 838 30 → 838 →	41 ← 91 ← 68 ← 43 ← 757 ← 14 30 → 688 → 260 → 184 ← 62 ← 6	112 ← 737 ← 84 ← 124 ← 277 ← 178 174 → 241 → 53 → 41 ← 708 ← 133	39 ← 279 ← 67 ← 69 ← 441 ← 8 59 → 444 → 288 → 299 ← 319 ← 10	33 ← 281 ← 219 ← 197 ← 63 ← 13 48 → 152 → 111 → 34 ← 329 ← 23
9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.
401 ← 54 ← 39 ← 3 352 → 7 →	0 ← 0 ← 0 ← 0 ← 134 ← 1 0 → 205 → 0 → 1 → 0 → 3 →	27 ← 165 ← 15 ← 18 ← 178 ← 23 20 → 209 → 104 → 62 ← 227 ← 28	46 ← 198 ← 132 ← 72 ← 641 ← 87 61 → 686 → 68 → 151 ← 210 ← 82	21 ← 247 ← 32 ← 40 ← 416 ← 12 37 → 377 → 55 → 47 ← 248 ← 19	29 ← 182 ← 63 ← 27 ← 176 ← 44 22 → 210 → 43 → 41 ← 152 ← 39	24 ← 202 21 → 39 → 33 ← 207	234 ← 0 ← 0 ← 0 256 → 0 →
17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.
11 ← 72 ← 146 ← 186 ← 233 ← 10 4 → 248 → 68 → 50 ← 59 ← 5	67 ← 94 ← 81 ← 4 44 → 4 →	0 ← 1 ← 0 ← 0 ← 11 ← 43 0 → 10 → 17 → 18 → 1 → 65 →	0 ← 56 ← 2 ← 1 ← 6 ← 13 0 → 15 → 67 → 49 ← 80 ← 24	41 ← 90 ← 3 ← 1 ← 78 ← 9 53 → 97 → 19 → 20 ← 109 ← 20	FUTURE INTERSECTION	FUTURE INTERSECTION	66 ← 880 ← 491 697 →
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.
350 ← 807 ← 99 ← 3 ← 127 628 → 1085 →	166 ← 477 ← 291 ← 405 ← 138 ← 80 545 → 574 → 458 → 187 ← 763 ← 84	← 21 ← 517 ← 33 260 → 513 → 176 → 106 ← 28 ← 44	48 ← 854 ← 84 ← 92 ← 84 ← 37 31 → 95 → 48 → 32 ← 843 ← 46	75 ← 701 ← 110 ← 77 ← 98 ← 28 73 → 133 → 45 → 32 ← 728 ← 50	165 ← 483 ← 116 ← 74 ← 442 ← 92 203 → 446 → 156 → 281 ← 480 ← 58	38 ← 573 ← 114 ← 64 ← 288 ← 30 28 → 298 → 139 → 118 ← 587 ← 28	52 ← 522 ← 90 ← 42 ← 133 ← 99 53 → 179 → 78 → 133 ← 664 ← 110
	33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.
	583 ← 22 ← 40 ← 37 689 → 38 →	FUTURE INTERSECTION	FUTURE INTERSECTION	1 ← 569 ← 50 ← 45 ← 0 ← 22 0 → 0 → 2 → 0 → 682 → 40 →	23 ← 422 ← 206 ← 103 ← 338 ← 126 28 → 227 → 99 → 171 ← 495 ← 132	17 ← 435 ← 85 ← 103 ← 60 ← 80 27 → 68 → 22 → 17 → 521 → 64	43 ← 562 ← 1 ← 0 ← 0 ← 0 60 → 0 → 4 → 4 → 477 → 0 →
40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.	
12 ← 482 ← 2 ← 2 ← 1 ← 3 21 → 0 → 16 → 5 → 539 → 1 →	74 ← 459 88 → 39 → 13 → 407 →	94 ← 267 ← 257 ← 163 ← 734 ← 123 109 → 789 → 65 → 142 ← 284 ← 111	33 ← 169 ← 31 ← 26 ← 273 ← 11 30 → 281 → 89 → 91 ← 196 ← 14	27 ← 169 ← 22 ← 14 ← 147 ← 13 31 → 229 → 116 → 77 ← 185 ← 9	67 ← 116 ← 30 ← 94 ← 565 ← 76 71 → 517 → 84 → 56 ← 98 ← 60	62 ← 260 ← 171 ← 59 ← 330 ← 225 124 → 243 → 146 → 148 ← 311 ← 167	

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Table 3-1

Intersection Analysis for Existing (2013) Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1] Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R	Delay[2] (secs.) AM	PM	Sat	Level of Service AM	PM	Sat
1	I-215 SB Ramps / Cactus Av	TS	0	0	0	0	0	1	0	2	1	1	2	0	11.8	18.1	15.5	B	B	B
2	I-215 NB Ramps / Cactus Av	TS	1	1	0	1	1	0	1	2	0	0	2	0	10.0	6.4	4.3	A	A	A
3	Elsworth St / Cactus Av	TS	1	1	0	1	1	1>	1	2	1>>	1	3	1	**68.0**	**82.7**	40.0	**E**	**F**	D
4	Frederick St / Cactus Av	TS	0	0	0	2	0	1>	1	2	0	0	3	1>	15.8	23.3	17.3	B	C	B
5	Graham St / Cactus Av	TS	2	2	0	1	2	1>	1	2	1>>	1	3	0	29.7	36.6	31.5	C	D	C
6	Heacock St / Alessandro Bl	TS	1	2	d	1	2	1>	1	3	1>	1	3	d	35.8	38.0	34.0	D	D	C
7	Heacock St / Cactus Av	TS	2	2	0	1	2	0	1	2	1>	1	2	0	28.1	25.3	22.3	C	C	C
8	Heacock St / John F. Kennedy Dr	TS	1	2	d	1	2	d	1	1	1	1	2	0	33.3	37.5	37.8	C	D	D
9	Heacock St / Gentian Av	CSS	0	1	1	1	1	0	0	0	0	0	1	0	13.7	10.9	11.1	B	B	B
10	Webster Av / Harley Knox Bl	CSS	0	1	0	0	1	0	0	1	0	1	1	0	16.4	17.1	9.9	C	C	A
11	Indian St / Cottonwood Av	TS	1	2	0	1	2	0	1	1	d	1	1	d	28.9	25.8	24.7	C	C	C
12	Indian St / Alessandro Bl	TS	1	2	0	1	2	0	1	3	d	1	3	d	35.0	36.3	37.4	C	D	D
13	Indian St / Cactus Av	TS	1	2	0	1	2	0	1	2	0	1	2	0	24.0	26.3	22.7	C	C	C
14	Indian St / John F. Kennedy Dr	TS	1	2	0	1	2	0	1	2	d	1	2	d	26.8	25.7	25.3	C	C	C
15	Indian St / Gentian Av	CSS	0	1	0	0	1	0	1	0	1	0	0	0	15.2	13.0	13.1	C	B	B
16	Indian St / Santiago Dr	TS	0	1	1>	1	2	0	0	0	0	1	0	1>	15.5	9.1	0.7	B	A	A
17	Indian St / Iris Av	TS	1	1	0	1	1	1	1	1	0	1	1	1	47.7	39.7	36.4	D	D	D
18	Indian St / Krameria Av	CSS	0	1	0	1	1	0	0	0	0	1	0	1	15.3	12.7	10.7	C	B	B
19	Indian St / San Michele Rd	AWS	0	1	0	0	2	0	0	1	0	0	1	0	7.4	7.3	7.4	A	A	A
20	Indian St / Nandina Av	AWS	0	2	1	0	2	0	1	1	1	0	1	0	8.5	8.4	8.4	A	A	A
21	Indian St / Harley Knox Bl	TS	2	2	1	1	2	0	1	1	1	2	2	0	31.6	32.9	29.4	C	C	C
22	Driveway 1 / Gentian Av		Not an Analysis Location																	
23	Driveway 2 / Santiago Dr		Not an Analysis Location																	
24	SR-60 EB Off-Ramp / Sunnymead Bl	TS	0	0	0	1	1	0	0	2	0	0	2	0	21.6	36.7	21.1	C	D	C
25	Perris Bl / SR-60 WB Ramps	TS	2	2	0	0	3	1	0	0	0	0	1	0	21.2	20.9	21.8	C	C	C
26	Perris Bl / Sunnymead Bl	TS	1	3	0	2	2	1>	2	2	1	1	2	0	40.5	48.4	47.4	D	D	D
27	SR-60 EB On-Ramp / Sunnymead Bl	CSS	0	1	0	0	0	0	1	2	0	1	2	0	34.1	**>100.0**	**>100.0**	D	**F**	**F**
28	Perris Bl / Eucalyptus Av	TS	1	2	1	1	2	1	1	1	1	1	1	1	33.7	32.0	34.7	C	C	C
29	Perris Bl / Cottonwood Av	TS	1	2	1	1	2	1	1	1	1	1	1	1	31.9	33.3	31.5	C	C	C
30	Perris Bl / Alessandro Bl	TS	1	2	1	1	2	1	1	2	1	1	3	d	24.0	28.3	28.7	C	C	C
31	Perris Bl / Cactus Av	TS	1	3	0	1	2	1	1	2	0	1	2	0	25.2	25.9	23.6	C	C	C
32	Perris Bl / John F. Kennedy Dr	TS	1	3	0	1	3	0	1	2	d	1	2	d	25.0	23.3	23.5	D	C	C
33	Perris Bl / Gentian Av	TS	0	3	0	1	3	0	0	0	0	0	1	0	13.7	14.2	13.2	B	B	B
34	Perris Bl / Driveway 3		Not an Analysis Location																	
35	Perris Bl / Driveway 4		Not an Analysis Location																	
36	Perris Bl / Santiago Dr	CSS	1	3	0	1	3	0	0	1	0	0	1	0	15.0	34.0	18.1	C	D	C
37	Perris Bl / Iris Av	TS	1	3	1	1	3	0	1	2	0	1	2	0	39.5	33.7	39.8	D	C	D
38	Perris Bl / Krameria Av	TS	1	3	0	1	3	0	0	1	1	1	1	1	40.4	40.3	40.2	D	D	D
39	Perris Bl / San Michele Rd	TS	1	3	0	1	3	0	1	1	0	1	1	1	13.7	25.3	17.6	B	C	B
40	Perris Bl / Nandina Av	TS	1	3	0	1	3	1>	1	2	0	1	1	1	30.2	29.8	29.4	C	C	C
41	Perris Bl / Harley Knox Bl	TS	1	1	0	0	1	1	1	0	1	0	0	0	12.5	13.2	10.4	B	B	B

Table 3-1

Intersection Analysis for Existing (2013) Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)			Level of Service		
			Northbound			Southbound			Eastbound			Westbound								
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	Sat	AM	PM	Sat
42	Perris Bl / Ramona Expressway	TS	2	2	1	2	2	1	2	3	1	2	3	0	40.3	36.2	37.4	D	D	D
43	Kitching St / Cactus Av	TS	1	2	0	1	1	1	1	2	0	1	2	0	28.3	23.3	21.8	C	C	C
44	Kitching St / John F. Kennedy Dr	TS	0	1	0	0	1	0	1	2	0	1	2	d	**42.0**	26.4	22.9	**D**	C	C
45	Kitching St / Iris Av	TS	1	2	0	1	2	0	1	2	0	1	2	1>	23.7	23.0	22.5	C	C	C
46	Lasselle St / Iris Av	TS	2	2	1>	2	2	d	2	3	d	2	3	0	36.7	37.7	35.3	D	D	D

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

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; > = Right-Turn Overlap Phasing; >> = Free-Right Turn Lane; d= Defacto Right Turn Lane

2 Per the 2000 Highway Capacity Manual, 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. The I-215 ramp locations at Cactus Avenue and SR-60 ramp locations at Perris Boulevard have been analyzed using the Synchro software (Version 8).

3 CSS = Cross-street Stop; TS = Traffic Signal; AWS= All ways stop

acceptable LOS (i.e., LOS "C"/"D" or better) during the peak hours. As shown below, the following intersections are currently shown to be operating at an unacceptable LOS during one or more peak hours:

ID	Intersection Location
3	Elsworth Street / Cactus Avenue – LOS "E" AM peak hour and LOS "F" PM peak hour
27	SR-60 EB On-Ramp / Sunnymead Boulevard – LOS "F" PM and Saturday peak hours
44	Kitching Street / John F. Kennedy Drive – LOS "D" AM peak hour only

Exhibit 3-14 summarizes the weekday AM, weekday PM, and Saturday mid-day peak hour study area intersection LOS under Existing (2013) conditions, consistent with the summary provided in Table 3-1. The intersection operations analysis worksheets are included in Appendix "3.2" of this TIA.

3.7 EXISTING CONDITIONS ROADWAY SEGMENT CAPACITY ANALYSIS

The City of Moreno Valley General Plan Circulation Element provides roadway volume capacity values presented previously on Table 2-3. The roadway segment capacities are approximate figures only and reflect only raw lane capacities, and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet estimated traffic demands. Table 3-2 presents the three (3) study area roadway segments that are currently calculated to operate at an unacceptable LOS based solely on daily roadway segment capacities; and without taking in to account factors noted previously, such as, intersections (spacing, configuration, and control features), degree of access control, roadway grades, design geometrics (horizontal and vertical alignment standards), sight distance, vehicle mix (truck and bus traffic), and pedestrian and bicycle traffic.

ID	Roadway Segments
19	Cactus Avenue, East of I-215 NB Ramps – LOS "E"
20	Cactus Avenue, West of Elsworth Street – LOS "E"
90	Heacock Street, South of Gentian Avenue – LOS "E"

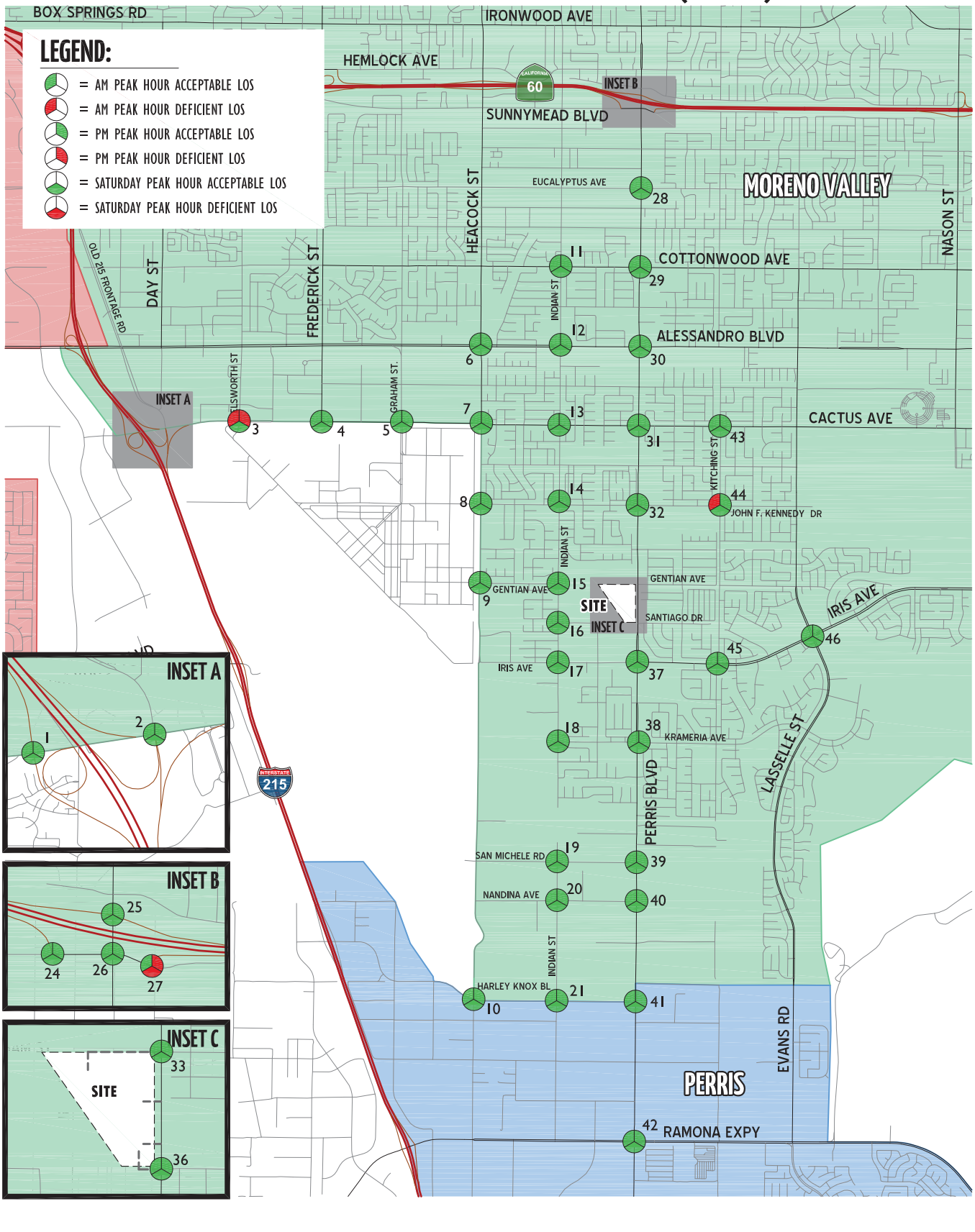
As shown previously on Table 3-1, the Existing (2013) peak hour analysis indicates that the adjacent study area intersections on either side of the deficient roadway segments are currently operating at acceptable LOS. As such, roadway segment widening does not appear necessary to address the existing deficiencies at the three (3) identified roadway segments.

3.8 EXISTING CONDITIONS TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection volumes. For Existing (2013) conditions, the intersection of Perris Boulevard at Santiago Drive currently appears to warrant a traffic signal (see Appendix "3.3").

EXHIBIT 3-14

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR EXISTING (2013) CONDITIONS



Existing (2013) Conditions
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Existing (2013)	V/C	LOS	Acceptable LOS
1	Sunnymead Boulevard	West of SR-60 EB Off-Ramp	4D	37,500	12,192	0.33	A	D
2		SR-60 EB Off-Ramp to Perris Boulevard	4D	37,500	24,156	0.64	B	D
3		Perris Boulevard to SR-60 EB On-Ramp	4D	37,500	17,160	0.46	A	D
4		East of SR-60 EB On-Ramp	4D	37,500	12,960	0.35	A	D
5	Eucalyptus Avenue	West of Perris Boulevard	2U	12,500	5,244	0.42	A	C
6		East of Perris Boulevard	2U	12,500	6,876	0.55	A	C
7	Cottonwood Avenue	West of Indian Street	2D	18,750	9,720	0.52	A	C
8		East of Indian Street	2D	18,750	7,836	0.42	A	C
9		West of Perris Boulevard	2D	18,750	6,708	0.36	A	C
10		East of Perris Boulevard	2U	12,500	7,668	0.61	B	C
11	Alessandro Boulevard	West of Heacock Street	5D	46,900	27,312	0.58	A	D
12		East of Heacock Street	6D	56,300	26,004	0.46	A	D
13		West of Indian Street	6D	56,300	23,424	0.42	A	D
14		East of Indian Street	6D	56,300	22,836	0.41	A	D
15		West of Perris Boulevard	6D	56,300	21,960	0.39	A	D
16		East of Perris Boulevard	4D	37,500	18,000	0.48	A	D
17	Cactus Avenue	West of I-215 Freeway	4D	37,500	12,576	0.34	A	D
18		I-215 SB Ramps to I-215 NB Ramps	4D	37,500	22,548	0.60	A	D
19		East of I-215 NB Ramps	4D	37,500	**34,644**	**0.92**	**E**	D
20		West of Elsworth Street	4D	37,500	**34,092**	**0.91**	**E**	D
21		East of Elsworth Street	5D	46,900	30,420	0.65	B	D
22		West of Frederick Street	5D	46,900	29,508	0.63	B	D
23		East of Frederick Street	5D	46,900	32,544	0.69	B	D
24		West of Graham Street	5D	46,900	31,536	0.67	B	D
25		East of Graham Street	5D	46,900	26,232	0.56	A	D
26		West of Heacock Street	5D	46,900	26,112	0.56	A	D
27		East of Heacock Street	4D	37,500	15,936	0.42	A	C
28		West of Indian Street	4D	37,500	15,468	0.41	A	C
29		East of Indian Street	4D	37,500	16,392	0.44	A	C
30		West of Perris Boulevard	4D	37,500	14,064	0.38	A	C
31		East of Perris Boulevard	4D	37,500	13,776	0.37	A	C
32		West of Kitching Street	4D	37,500	13,596	0.36	A	C
33		East of Kitching Street	4D	37,500	10,956	0.29	A	C
34	John F. Kennedy Drive	West of Heacock Street	4D	37,500	8,040	0.21	A	D
35		East of Heacock Street	3D	28,150	10,044	0.36	A	C
36		West of Indian Street	4D	37,500	9,036	0.24	A	C
37		East of Indian Street	4D	37,500	9,108	0.24	A	C
38		West of Perris Boulevard	4D	37,500	9,048	0.24	A	C
39		East of Perris Boulevard	4D	37,500	9,144	0.24	A	C
40		West of Kitching Street	4D	37,500	8,280	0.22	A	C
41		East of Kitching Street	4D	37,500	5,796	0.15	A	C
42	Gentian Avenue	East of Heacock Street	2U	12,500	1,728	0.14	A	D
43		West of Indian Street	4U	25,000	1,584	0.06	A	C
44		Indian Street to Driveway 1			N/A	N/A	N/A	C
45		Driveway 1 to Perris Boulevard			N/A	N/A	N/A	C
46		East of Perris Boulevard	2U	12,500	1,968	0.16	A	C
47	Santiago Drive	East of Indian St.	2U	12,500	72	0.01	A	C
48		West of Driveway 2	2U	12,500	60	0.00	A	C
49		Driveway 2 to Perris Boulevard	2U	12,500	60	0.00	A	C
50		East of Perris Boulevard	2U	12,500	2,460	0.20	A	C

Existing (2013) Conditions
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Existing (2013)	V/C	LOS	Acceptable LOS
51	Iris Avenue	West of Indian Street	2U	12,500	9,840	0.79	C	D
52		East of Indian Street	3D	28,150	12,504	0.44	A	D
53		West of Perris Boulevard	4D	37,500	11,988	0.32	A	D
54		East of Perris Boulevard	4D	37,500	15,264	0.41	A	D
55		West of Kitching Street	4D	37,500	18,480	0.49	A	C
56		East of Kitching Street	6D	56,300	18,300	0.33	A	C
57		West of Lasselle Street	6D	56,300	16,524	0.29	A	C
58		East of Lasselle Street	6D	56,300	19,404	0.34	A	C
59	Krameria Avenue	East of Indian Street	2D	18,750	2,640	0.14	A	C
60		West of Perris Boulevard	2U	12,500	3,300	0.26	A	C
61		East of Perris Boulevard	4D	37,500	7,560	0.20	A	D
62	San Michele Road	West of Indian Street	4D	37,500	852	0.02	A	D
63		East of Indian Street	3D	28,150	1,824	0.06	A	D
64		West of Perris Boulevard	2D	18,750	1,668	0.09	A	D
65		East of Perris Boulevard	2U	12,500	36	0.00	A	D
66	Nandina Avenue	West of Indian Street	3D	28,150	2,508	0.09	A	D
67		East of Indian Street	2D	18,750	1,296	0.07	A	D
68		West of Perris Boulevard	2D	18,750	876	0.05	A	D
69		East of Perris Boulevard	2U	12,500	312	0.02	A	D
70	Harley Knox Boulevard	West of Webster Avenue	2D	18,750	9,300	0.50	A	D
71		East of Webster Avenue	2D	18,750	9,300	0.50	A	D
72		West of Indian Street	3D	28,150	9,552	0.34	A	D
73		East of Indian Street	3D	28,150	5,388	0.19	A	D
74		West of Perris Boulevard	2D	18,750	4,584	0.24	A	D
75	Ramona Expressway	West of Perris Boulevard	6D	56,300	28,620	0.51	A	D
76		East of Perris Boulevard	6D	56,300	25,080	0.45	A	D
77	Old Frontage Road	North of Cactus Avenue	2U	12,500	2,688	0.22	A	D
78	Elsworth Street	North of Cactus Avenue	4D	37,500	6,516	0.17	A	D
79		South of Cactus Avenue	4U	25,000	8,580	0.34	A	D
80	Frederick Street	North of Cactus Avenue	4D	37,500	5,772	0.15	A	D
81	Graham Street	North of Cactus Avenue	4D	37,500	6,036	0.16	A	D
82		South of Cactus Avenue	6D	56,300	9,132	0.16	A	D
83	Heacock Street	North of Alessandro Boulevard	4D	37,500	15,336	0.41	A	C
84		South of Alessandro Boulevard	4D	37,500	12,108	0.32	A	D
85		North of Cactus Avenue	4D	37,500	11,196	0.30	A	D
86		South of Cactus Avenue	4D	37,500	19,140	0.51	A	D
87		North of John F. Kennedy Drive	4D	37,500	17,676	0.47	A	D
88		South of John F. Kennedy Drive	4D	37,500	15,096	0.40	A	D
89		North of Gentian Avenue	3D	28,150	13,752	0.49	A	D
90		South of Gentian Avenue	2U	12,500	**12,192**	**0.98**	**E**	D
91	Webster Avenue	South of Harley Knox Boulevard	2U	12,500	72	0.01	A	D
92	Indian Street	North of Cottonwood Avenue	2U	12,500	7,716	0.62	B	C
93		South of Cottonwood Avenue	4U	25,000	9,408	0.38	A	C
94		North of Alessandro Boulevard	3D	28,150	10,680	0.38	A	D
95		South of Alessandro Boulevard	4D	37,500	10,452	0.28	A	D
96		North of Cactus Avenue	4D	37,500	10,992	0.29	A	C
97		South of Cactus Avenue	4D	37,500	9,132	0.24	A	C
98		North of John F. Kennedy Drive	4D	37,500	7,128	0.19	A	C
99		South of John F. Kennedy Drive	4D	37,500	8,016	0.21	A	C
100		North of Gentian Avenue	2U	12,500	5,964	0.48	A	C

Existing (2013) Conditions
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Existing (2013)	V/C	LOS	Acceptable LOS
101	Indian Street	Gentian Avenue to Santiago Drive	4D	37,500	6,468	0.17	A	D
102		Santiago Drive to Iris Avenue	2U	12,500	6,804	0.54	A	D
103		South of Iris Avenue	2U	12,500	4,260	0.34	A	D
104		North of Krameria Avenue	2U	12,500	4,392	0.35	A	D
105		South of Krameria Avenue	2U	12,500	2,040	0.16	A	D
106		North of San Michele Road	3D	28,150	24	0.00	A	D
107		San Michele Road to Nandina Avenue	2D	18,750	1,932	0.10	A	D
108		South of Nandina Avenue	2D	18,750	4,512	0.24	A	D
109		North of Harley Knox Boulevard	2D	18,750	6,492	0.35	A	D
110		South of Harley Knox Boulevard	4D	37,500	4,344	0.12	A	D
111	Perris Boulevard	North of SR-60 WB Ramps	6D	56,300	30,480	0.54	A	D
112		SR-60 WB Ramps to Sunnymead Boulevard	7D	65,683	33,072	0.50	A	D
113		South of Sunnymead Boulevard	4D	37,500	24,324	0.65	B	D
114		North of Eucalyptus Avenue	4D	37,500	20,160	0.54	A	D
115		South of Eucalyptus Avenue	4D	37,500	18,168	0.48	A	D
116		North of Cottonwood Avenue	4D	37,500	22,800	0.61	B	D
117		South of Cottonwood Avenue	4D	37,500	20,280	0.54	A	D
118		North of Alessandro Boulevard	4D	37,500	18,036	0.48	A	D
119		South of Alessandro Boulevard	4D	37,500	18,252	0.49	A	D
120		North of Cactus Avenue	4D	37,500	16,968	0.45	A	D
121		South of Cactus Avenue	6D	56,300	17,568	0.31	A	D
122		North of John F. Kennedy Drive	6D	56,300	15,312	0.27	A	D
123		South of John F. Kennedy Drive	6D	56,300	18,720	0.33	A	D
124		North of Gentian Avenue	6D	56,300	16,056	0.29	A	D
125		Gentian Avenue to Driveway 3	6D	56,300	16,008	0.28	A	D
126		Driveway 3 to Driveway 4	6D	56,300	16,008	0.28	A	D
127		Driveway 4 to Santiago Drive	6D	56,300	16,008	0.28	A	D
128		Santiago Drive to Iris Avenue	6D	56,300	15,240	0.27	A	D
129		South of Iris Avenue	6D	56,300	16,044	0.28	A	D
130		North of Krameria Avenue	6D	56,300	14,664	0.26	A	D
131		South of Krameria Avenue	6D	56,300	15,540	0.28	A	D
132		North of San Michele Road	6D	56,300	16,776	0.30	A	D
133		San Michele Road to Nandina Avenue	6D	56,300	15,888	0.28	A	D
134		South of Nandina Avenue	6D	56,300	15,828	0.28	A	D
135		North of Harley Knox Boulevard	2D	18,750	16,524	0.88	D	D
136		South of Harley Knox Boulevard	2D	18,750	15,156	0.81	D	D
137		North of Ramona Expressway	3D	28,150	13,572	0.48	A	D
138		South of Ramona Expressway	5D	46,916	14,280	0.30	A	D
139	Kitching Street	North of Cactus Avenue	4D	37,500	6,276	0.17	A	C
140		South of Cactus Avenue	2U	12,500	7,668	0.61	B	C
141		North of John F. Kennedy Drive	2U	12,500	6,912	0.55	A	C
142		South of John F. Kennedy Drive	2U	12,500	8,340	0.67	B	C
143		North of Iris Avenue	4D	37,500	5,904	0.16	A	C
144		South of Iris Avenue	4U	25,000	7,068	0.28	A	C
145	Lasselle Street	North of Iris Avenue	4D	37,500	18,276	0.49	A	D
146		South of Iris Avenue	4D	37,500	26,292	0.70	B	C

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

[1] These maximum roadway capacities have been extracted from the City of Moreno Valley's Transportation Division's Traffic Impact Analysis Preparation Guidelines (August 2007).

3.9 EXISTING CONDITIONS PROGRESSION ANALYSIS

A progression analysis was also performed for southbound and northbound off-ramps at the I-215/Cactus Avenue interchange and the eastbound and westbound off-ramps at the SR-60/Perris Boulevard interchange to assess vehicle queues for the off ramps that may potentially impact peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-215 or SR-60 Freeway mainline. Progression analysis findings are presented in Table 3-3. It is important to note that segment lengths are consistent with the measured distance between the ramps and the adjacent signalized/full-access intersection. As shown on Table 3-3, there are currently no queuing issues during the weekday AM, weekday PM or Saturday mid-day peak 95th percentile traffic flows.

Worksheets for Existing (2013) conditions queuing analysis are provided in Appendix "3.4".

Table 3-3

Existing (2013) Conditions
AM/PM Peak Hour Stacking Length Summary at I-215/Cactus Avenue and SR-60/Perris Boulevard

Intersection	Movement	Stacking Distance (Feet)	95th Percentile Stacking Distance Required (Feet)			Acceptable?[1]		
			AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM	PM	SAT
I-215 SB Ramps / Cactus Av.	SBR	1,115	26	0	0	Yes	Yes	Yes
I-215 NB Ramps / Cactus Av.	NBL	145	113	30	28	Yes	Yes	Yes
	NBT	1,650	59	35	31	Yes	Yes	Yes
SR-60 EB Off-Ramp / Sunnymead Bl.	SBL	1,295	191	465 [2]	313	Yes	Yes	Yes
Perris Bl. / SR-60 WB Ramps	WBL-T-R	1,230	234	256	217	Yes	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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4.0 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. The proposed Project is anticipated to include the development of a 189,520 square foot free-standing discount superstore and a 16 vehicle fueling position gas station with convenience market and car was, locate on the southwest corner of Perris Boulevard and Gentian Avenue. Per the City's traffic study guidelines, the Opening Year will have a five (5) year minimum horizon. As such, the Opening Year analysis will assess 2018 traffic conditions.

The Project is proposed to have access on Gentian Avenue, Perris Boulevard, and Santiago Drive. All Project access points are proposed to be full-access, with the exception of Driveway 3 and Driveway 4 on Perris Boulevard which are proposed to have right-in/right-out access only. Regional access to the Project site will be provided by the SR-60 Freeway (located to the north) via Perris Boulevard and I-215 Freeway (located to the west) via Cactus Avenue and Harley Knox Boulevard. As part of the development, the Project will construct improvements on the site adjacent roadways of Gentian Avenue, Perris Boulevard, and Santiago Drive.

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.

Trip generation rates used to estimate Project traffic are shown in Table 4-1 and a summary of the Project's trip generation is shown in Table 4-2. The trip generation rates are based upon data collected by the Institute of Transportation Engineers (ITE) for free-standing discount superstore (ITE Land Use Code 813) and gas station with convenience market and car wash (ITE Land Use Code 946) in their recently published *Trip Generation* manual, 9th Edition, 2012.

Pass-by trips are defined as intermediate stops on the way from an origin to a primary trip destination without a route diversion. Pass-by trips are attracted from traffic passing the site on an adjacent street or roadway that offers direct access to the generator. These types of trips are many times associated with retail uses such as gas stations and convenience stores just to name a few. As the project is proposed to include a gas station with convenience market, pass-by percentages have been obtained from Tables 5.29 and 5.30 of the ITE *Trip Generation Handbook* (2nd Edition, 2004) for the gas station with convenience market and car wash. Although the ITE *Trip Generation Handbook* allows up to a 34% pass-by reduction on the free-standing discount superstore, no pass-by trip reductions were taken on this particular land use for the purposes of this analysis in an effort to overstate as opposed to understate project-related impacts.

Table 4-1

Project Trip Generation Rates[1]

Land Use[1]	ITE LU Code	Units[2]	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekday Daily	Saturday Mid-Day Peak Hour[3]		
			In	Out	Total	In	Out	Total		In	Out	Total
Free Standing Discount Superstore	813	TSF	1.04	0.81	1.85	2.13	2.22	4.35	50.75	2.82	2.82	5.64
Gas/Market/Car Wash	946	VFP	6.04	5.80	11.84	7.07	6.79	13.86	152.84	9.73	9.73	19.46

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation, Ninth Edition (2012).

[2] TSF = Thousand Square Feet; VFP = Vehicle Fueling Positions

[3] Saturday peak hour of the generator trip rates is utilized.

Table 4-2

Project Trip Generation Summary

Land Use	Quantity	Units[1]	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekday	Saturday Mid-Day Peak Hour		
			In	Out	Total	In	Out	Total	Daily	In	Out	Total
Free-Standing Discount Superstore	189.520	TSF	197	154	351	404	421	824	9,618	534	534	1,069
Internal Trip Reduction (10%)			-15	-15	-31	-40	-40	-81	-962	-53	-53	-106
Subtotal			*182*	*138*	*320*	*363*	*380*	*744*	*8,656*	*481*	*481*	*963*
Gas Station/Market/Car Wash	16	VFP	97	93	189	113	109	222	2,445	156	156	311
Internal Trip Reduction (10%)			-9	-9	-18	-11	-11	-22	-245	-16	-16	-32
Pass-by Trip Reduction (62% AM; 56% PM/Daily)[2]			-52	-52	-104	-55	-55	-110	-1,233	-78	-78	-157
Subtotal			*36*	*32*	*68*	*48*	*43*	*91*	*968*	*61*	*62*	*123*
TOTAL NET TRIPS			218	170	388	411	423	834	9,625	543	543	1,086

[1] TSF = Thousand Square Feet; VFP = Vehicle Fueling Positions

[2] Pass-by reduction percentages are from the ITE Trip Generation Handbook (2nd Edition, 2004): Tables 5.29 and 5.30.

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 uses on-site and can be made either by walking or using internal roadways without using external streets. It has been assumed that approximately 10% of Project trips would remain within the Project boundary. As the trip generation for the site was conservatively estimated based on individual land uses as opposed to the overall ITE Shopping Center rate, an internal capture reduction of 10% was applied to recognize the interactions that would occur between the various complimentary land uses. For example, patrons of the free-standing discount superstore may also visit the gas station without leaving the site and are therefore considered as vehicle trips that are internal to the site. As shown on Table 7.1 of the ITE *Trip Generation Handbook*, the internal capture percentage between retail-to-retail land uses is approximately 29% during the weekday mid-day peak hour and approximately 20% during the weekday PM peak hour. As such, a 10% internal capture reduction has been utilized in an effort to estimate a conservative trip generation for the proposed Project. The internal capture reduction percentage applied has been reviewed and approved by City staff.

Saturday mid-day peak hour and daily trip generation has also been estimated. To estimate the worse-case scenario, the highest peak rate of the generator for Saturday or Sunday has been used. The proposed development is projected to generate a total of approximately 9,625 net trip-ends per day on a typical weekday. The Project is anticipated to generate a total of approximately 388 net weekday AM peak hour trips, 834 net weekday PM peak hour trips and 1,086 net Saturday Mid-day peak hour trips. It should be noted that truck traffic is limited to deliveries which typically occur during the off-peak hours. As such, truck traffic related to ongoing operations of the project (i.e., deliveries) during weekday and Saturday peak hour conditions is considered less-than-significant.

4.2 PROJECT TRIP DISTRIBUTION

Exhibit 4-1 illustrates the proposed Project trip distribution patterns under Opening Year (2018) traffic conditions. Exhibit 4-2 illustrates the proposed Project trip distribution patterns under General Plan Buildout (Post-2035) traffic conditions, and assumes the anticipated long-range roadway network. The General Plan Buildout (Post-2035) Project trip distribution patterns have been identified based on a “select zone” model run from the RivTAM (2035) focused model, and assumes congested conditions during the weekday PM peak period. As RivTAM does not include a weekend model, weekend travel patterns are assumed to be consistent with those identified for weekday PM peak hour conditions. To develop the Opening Year (2018) trip distribution patterns, the General Plan Buildout (Post-2035) Project trip distribution patterns were adjusted accordingly to utilize the existing and near-term roadway network only.

EXHIBIT 4-1

OPENING YEAR (2018) TRIP DISTRIBUTION

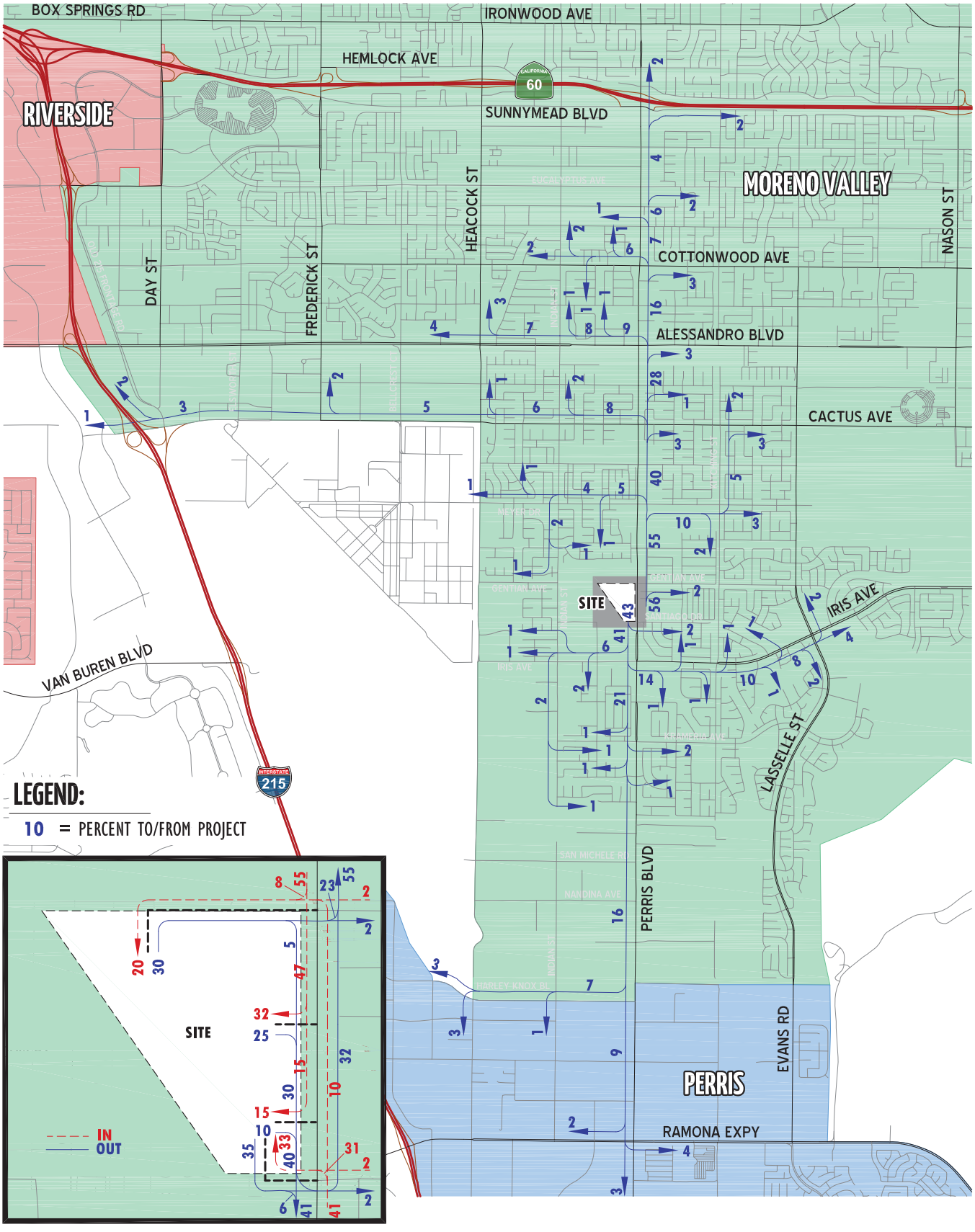
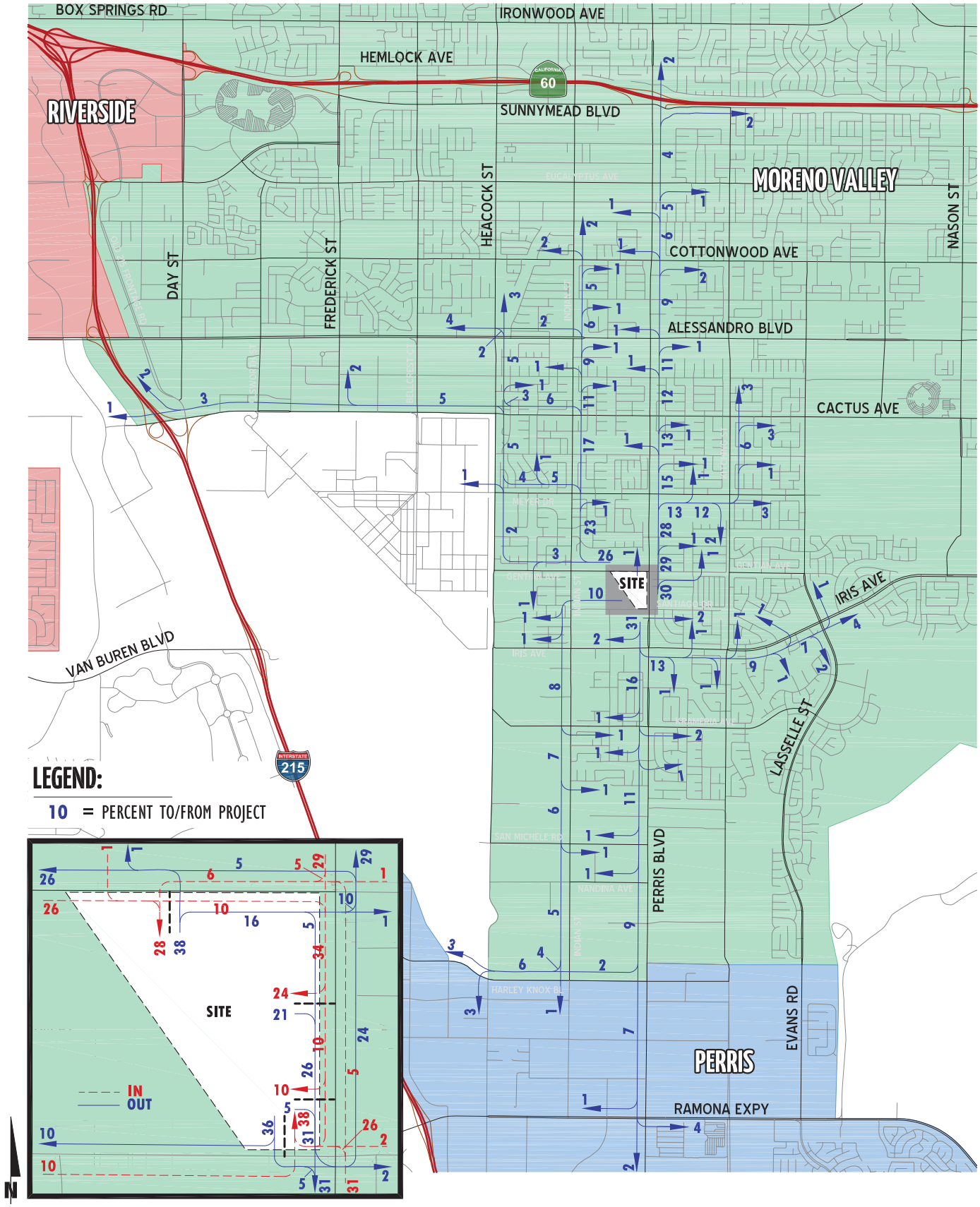


EXHIBIT 4-2

GENERAL PLAN BUILDOUT (POST-2035) TRIP DISTRIBUTION



4.3 MODAL SPLIT

The traffic reducing potential of public transit, walking or bicycling have not been considered in this TIA. Essentially, the traffic projections are "conservative" in that these alternative travel modes might be able to reduce the forecasted traffic volumes (employee trips only).

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 (2018) average daily traffic (ADT) volumes for the weekday are shown on Exhibit 4-3. Project (2018) weekday AM, weekday PM and Saturday Mid-day peak hour volumes are shown on Exhibits 4-4, 4-5 and 4-6, respectively.

4.5 CONSTRUCTION TRAFFIC

Traffic operations during the proposed construction phase of the project may potentially result in traffic impacts related to construction employees, export of materials, import of construction materials, etc. It is anticipated that the following construction-related activities would generate traffic and may potentially result in construction-related traffic impacts:

- Employee trips
- Soil Import and construction material deliveries
- Use of heavy equipment

Each of the traffic generating activities listed above is discussed thoroughly in the subsequent sections. It has been assumed that construction activity will occur consistent with the City's Municipal Code requirements.

4.5.1 EMPLOYEE TRIPS

Employee trips are estimated based on the number of employees estimated to be on-site throughout the various stages of construction. Each employee is assumed to drive and from the construction site each day. It has been assumed that employees will arrive up to 30 minutes prior to the workday and will leave up to 30 minutes after the workday ends. Parking for employees and non-employee vehicles can be accommodated through the construction of a portion of the proposed parking lot for the Project.
It is anticipated that the majority of employees would arrive and depart from the site adjacent to the peak commute traffic periods (i.e., 7:00 AM – 9:00 AM and 4:00 PM – 6:00 PM) with a period of overlap. Employee trips are based on the number of employees estimated to be on site during different

EXHIBIT 4-3

PROJECT ONLY AVERAGE DAILY TRAFFIC (ADT)

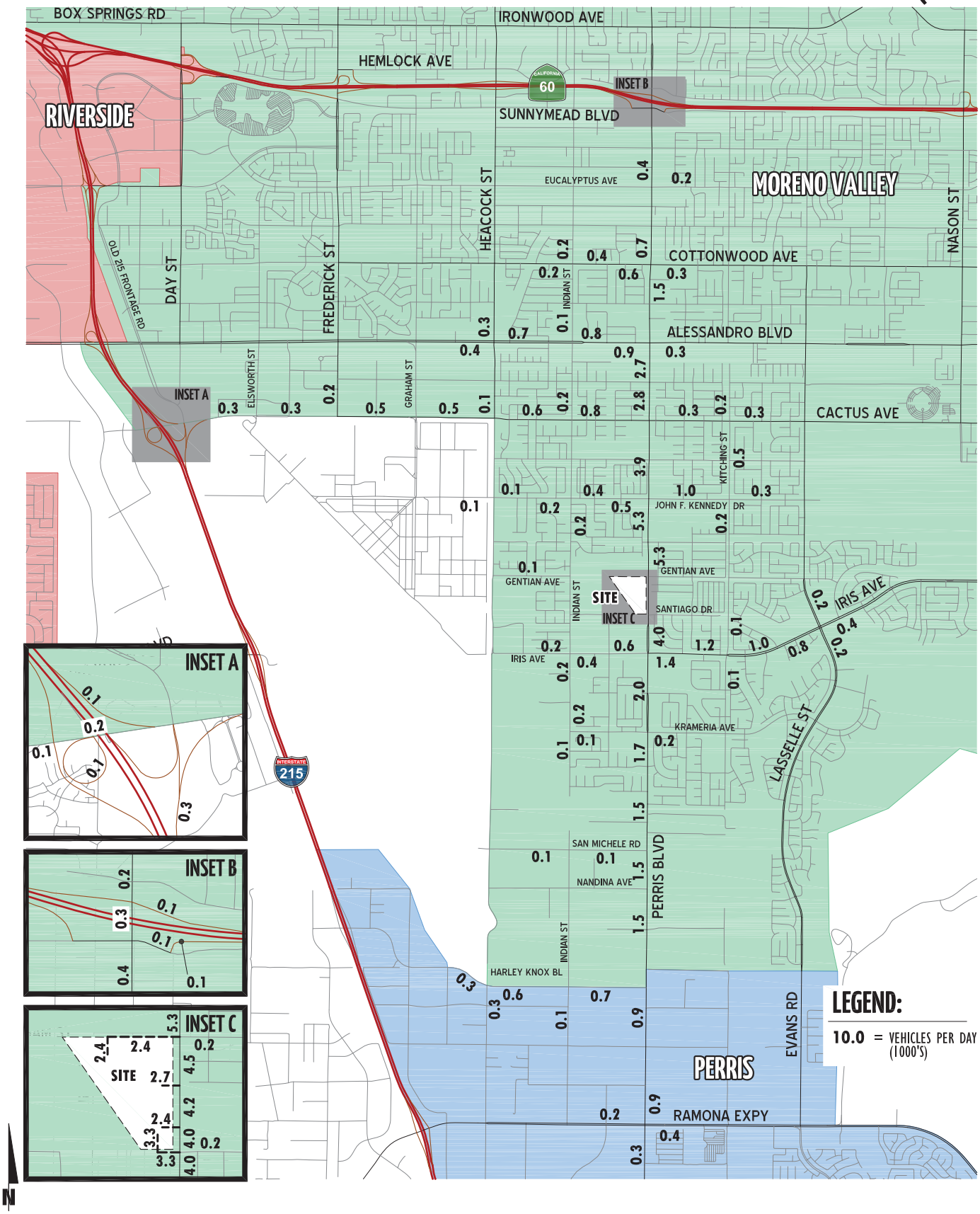
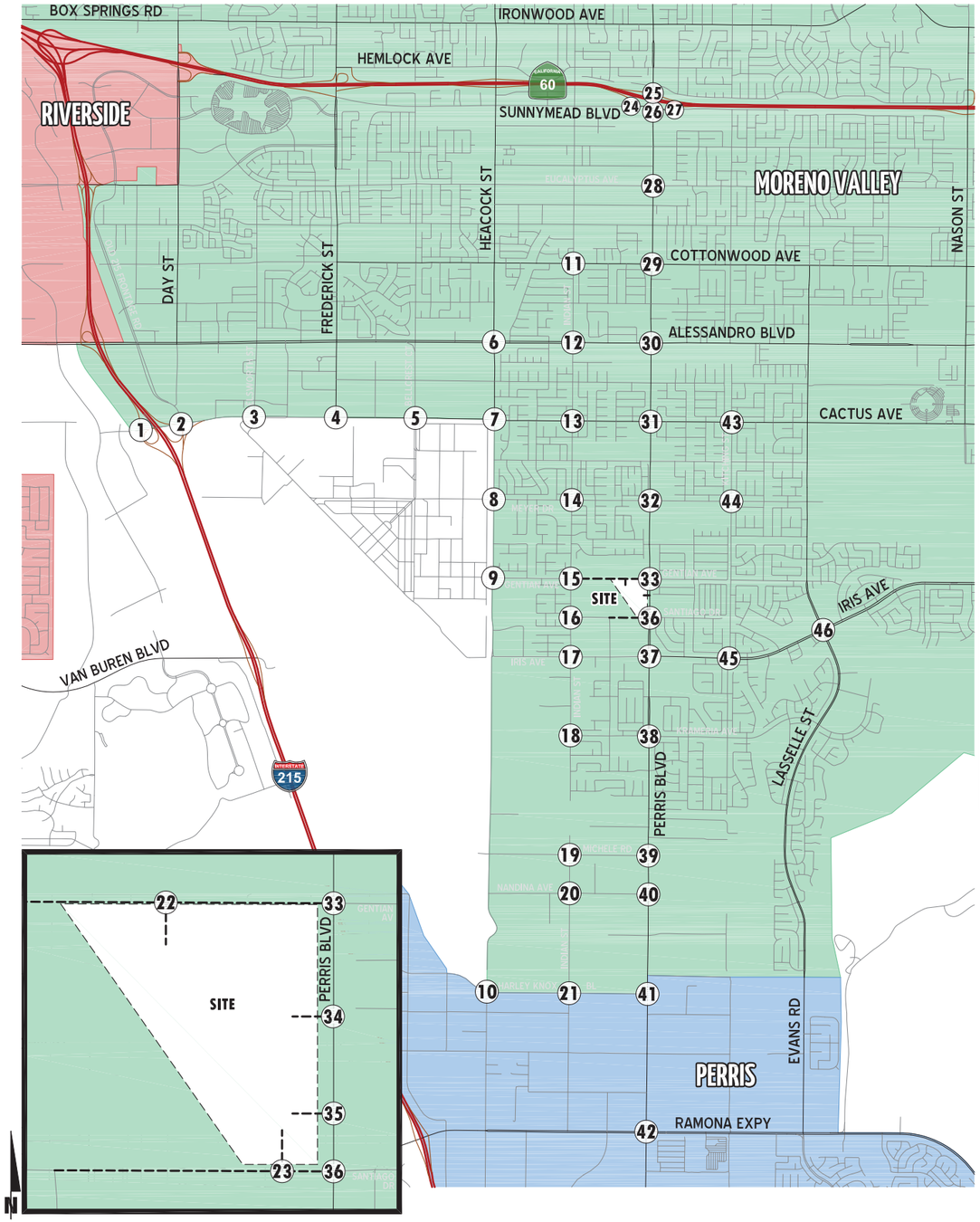


EXHIBIT 4-4

PROJECT ONLY AM PEAK HOUR INTERSECTION VOLUMES



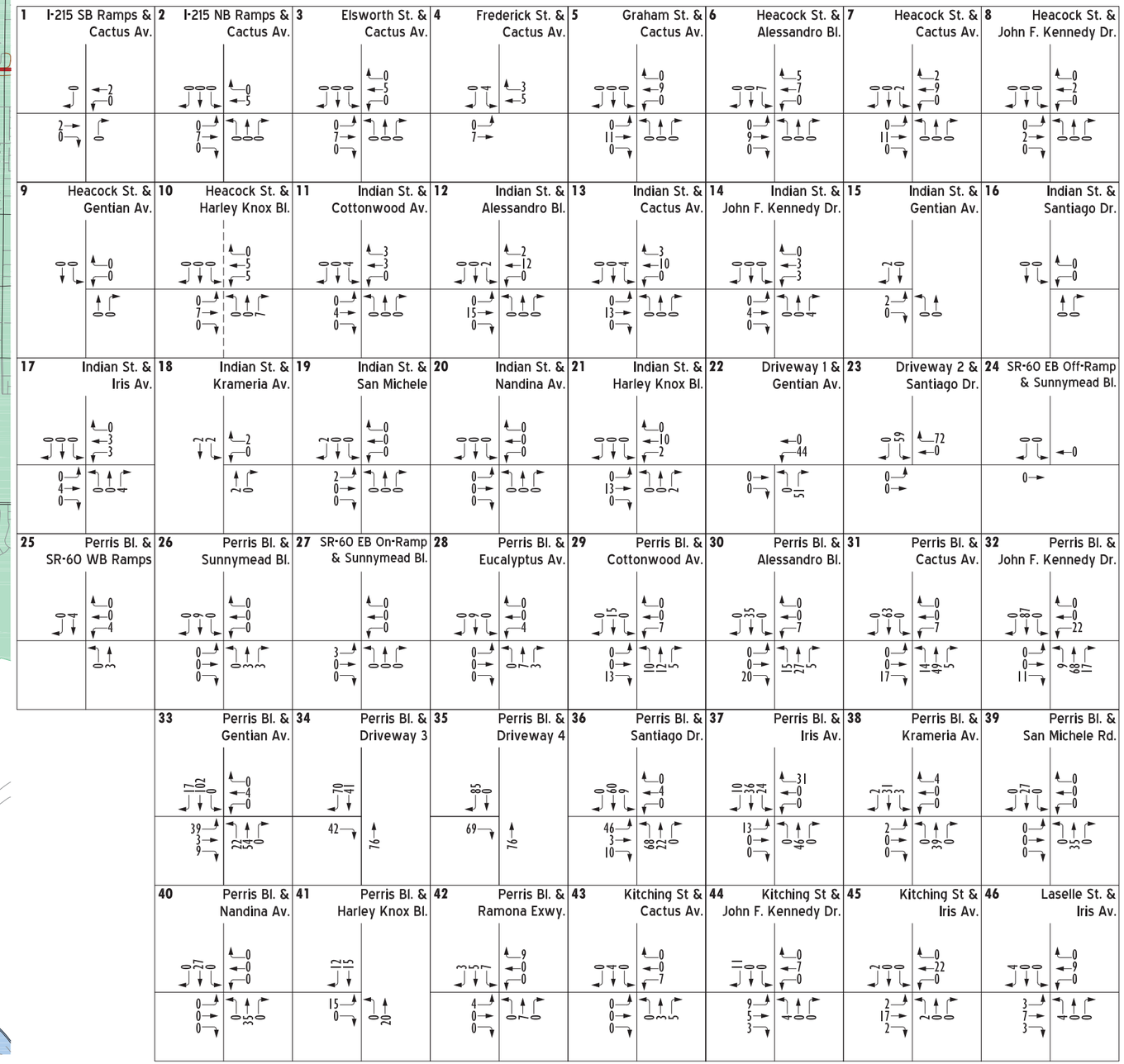
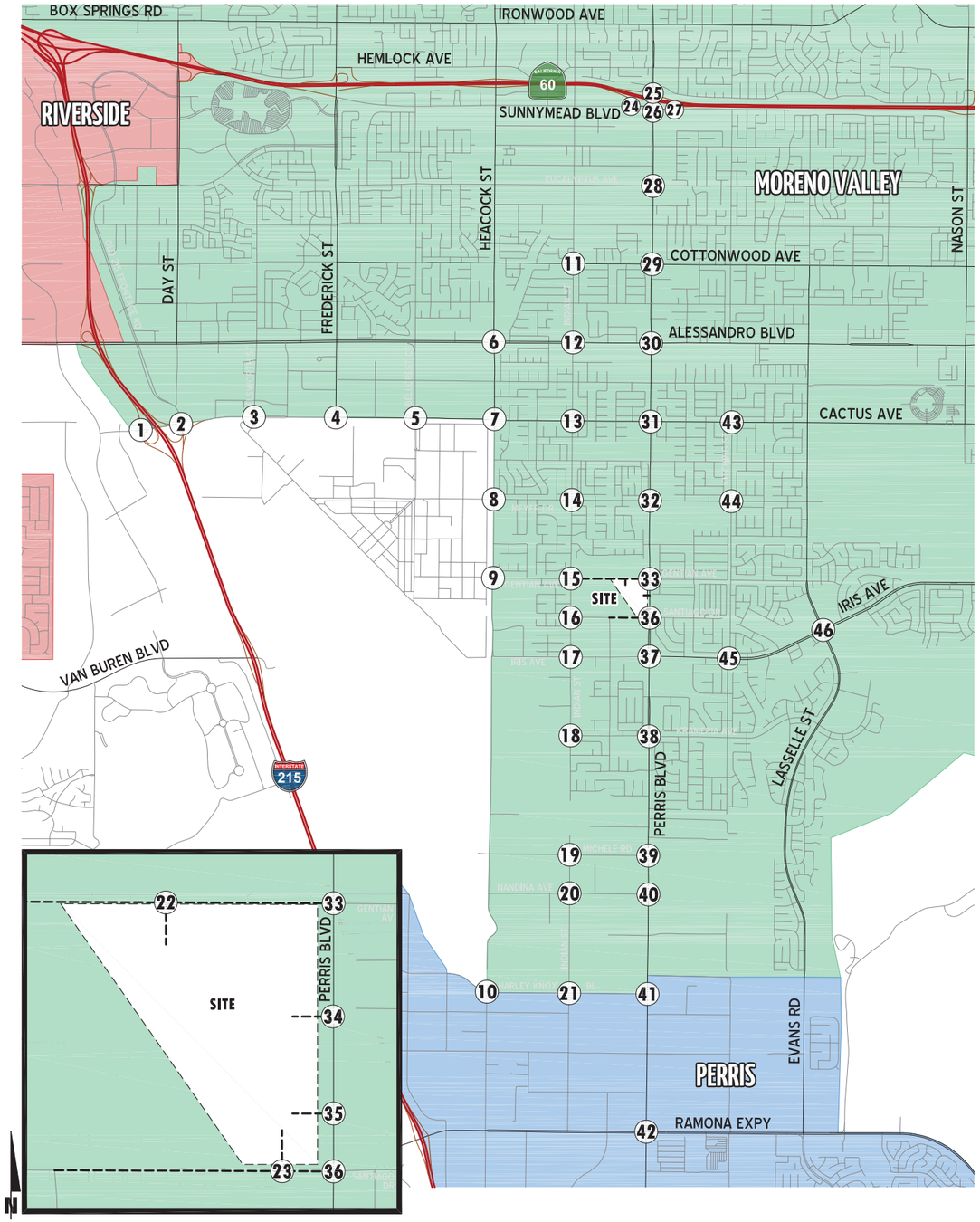


EXHIBIT 4-5

PROJECT ONLY PM PEAK HOUR INTERSECTION VOLUMES



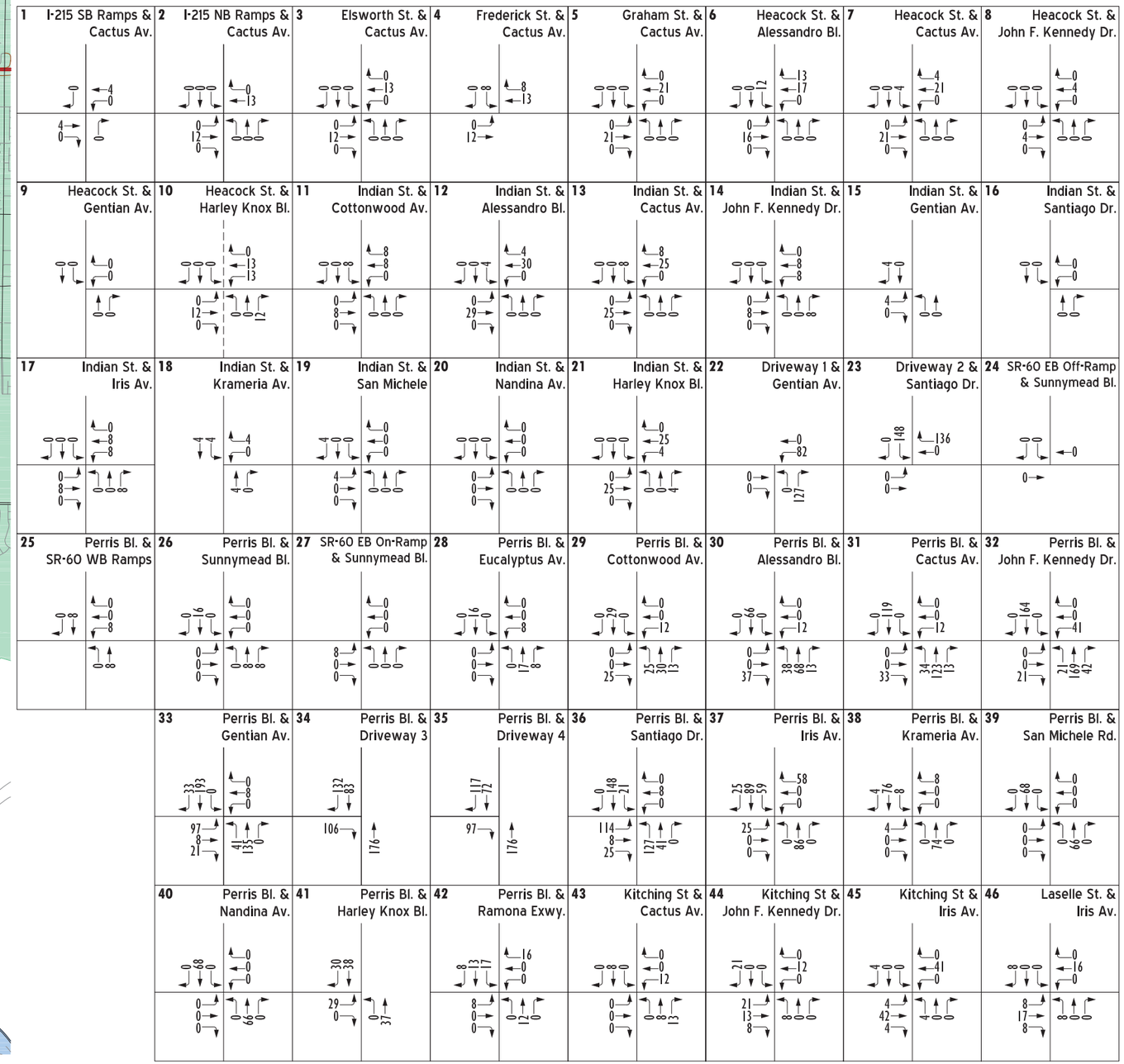
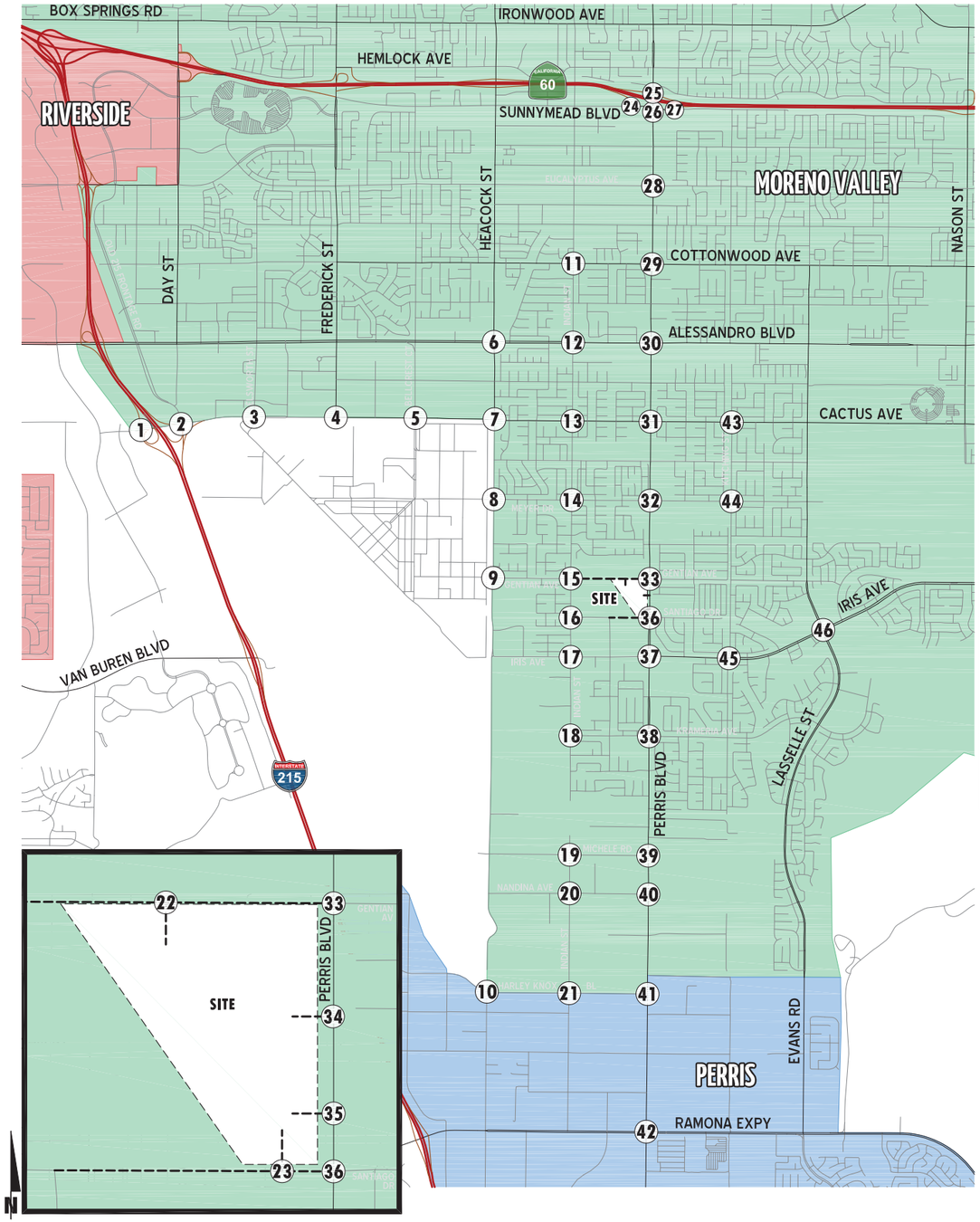
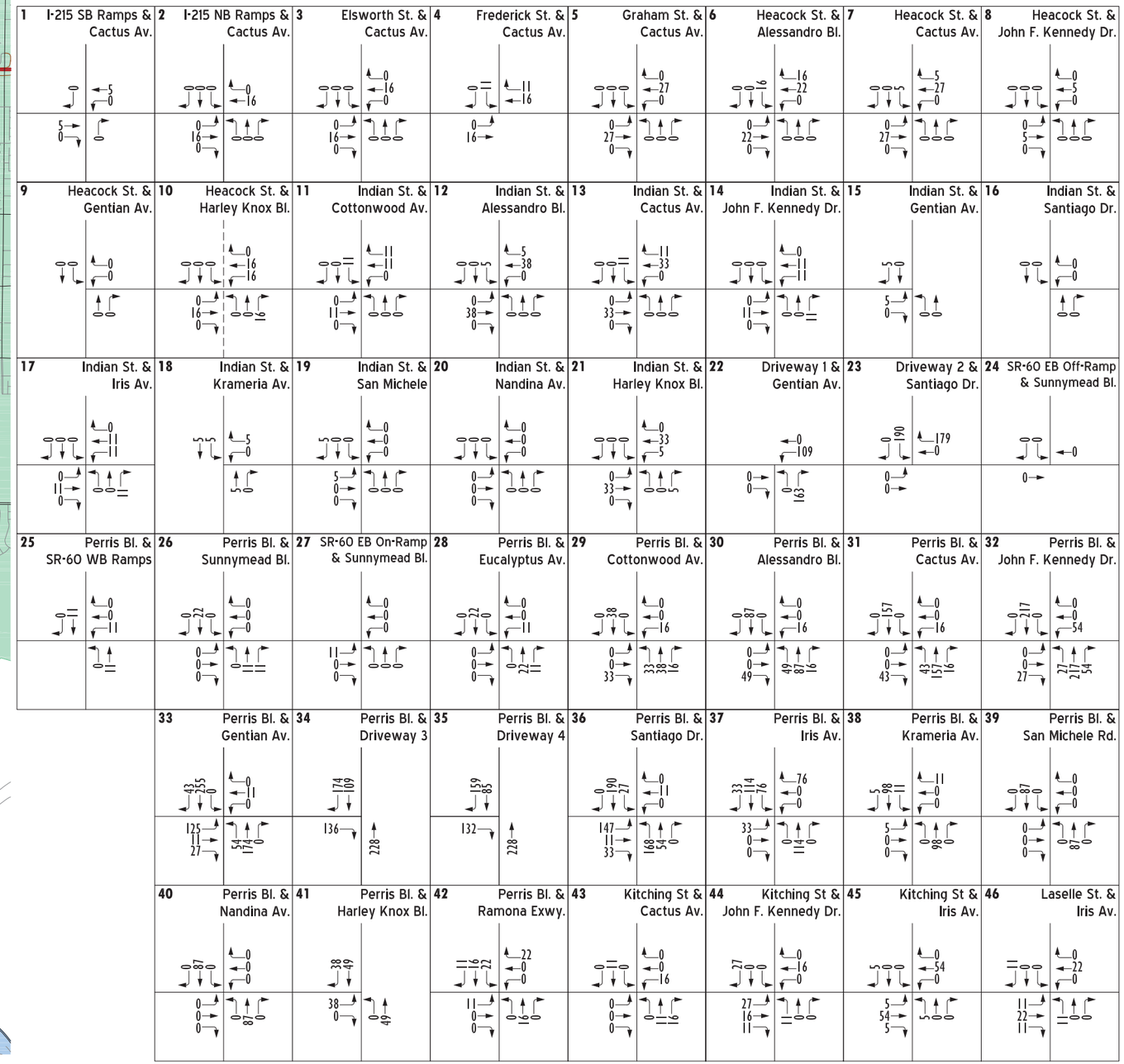


EXHIBIT 4-6

PROJECT ONLY SATURDAY PEAK HOUR INTERSECTION VOLUMES





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points throughout the project. Each employee is assumed to drive to and from the site alone each day. The impacts of construction-related parking and employee traffic are considered less-than-significant.

4.5.2 SOIL IMPORT AND CONSTRUCTION MATERIAL DELIVERIES

Construction of the Project will require soil import and delivery of construction materials. The export/import materials will be transported via 16-cubic yard (cy) capacity dump trucks. Export of construction materials is anticipated to consist of the exportation of "cut" soil from the site. Import of construction materials is anticipated to consist of the importation of raw building materials, concrete, asphalt, etc.

In order to minimize the impact of construction truck traffic to the surrounding roadway network, it is recommended that trucks utilize the most direct route between the site and the I-215 Freeway via Cactus Avenue to Perris Boulevard. It is anticipated that the construction staging will be located off of Perris Boulevard. As such, the proposed construction access on Perris Boulevard will provide the most direct access.

It is recommended that the export and import of construction materials occur during off-peak hours in order to have a minimal traffic impact to the surrounding roadway network. It is also recommended that a construction traffic management plan be implemented for the duration of the construction phase. If such measures are imposed, it can be assumed that truck traffic impacts associated with the export and import of construction materials could be considered less-than-significant.

4.5.3 HEAVY EQUIPMENT

Heavy equipment to be utilized on-site during construction include, but is not limited to: flat beds, dozers, scrapers, graders, track hoes, dump trucks, forklifts, cranes, cement trucks, pavers, rollers, water trucks, rolling container trucks and bobcats. Heavy equipment will be delivered and removed from the site throughout the construction phase. As most heavy equipment is typically not an authorized vehicle to be driven on a public roadway, most of the equipment will be delivered and removed from the site via large flatbed trucks. It is anticipated that delivery of heavy equipment would not occur on a daily basis, but rather periodically throughout the construction phase based on need.

The delivery and removal of heavy equipment is recommended to occur outside of the morning and evening peak hours in order to have nominal impacts to traffic and circulation near the vicinity of the project. If this measure is applied, it is anticipated that traffic impacts associated with the delivery and removal of heavy equipment are less-than-significant.

4.6 BACKGROUND TRAFFIC

Future year traffic forecasts have been based upon five (5) years of background (ambient) growth at 2% per year for 2018 traffic conditions. The ambient growth factor is intended to approximate regional traffic growth. The total ambient growth is 10.4% for 2018 traffic conditions (compounded growth of two percent per year over five years or $1.02^{5\ \text{years}}$). 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 addition to 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.

According to information published by the Riverside County Center for Demographic Research (RCCDR) and used as the basis for completing the Western Riverside Council of Governments (WRCOG) TUMF Nexus Study – 2009 Program Update, the population of Western Riverside County is projected to increase by 62% in the period between 2007 and 2035, a compounded rate of approximately 1.73% annually. During the same period, employment in Western Riverside County is expected to increase by 111% or 2.71% compounded annually. Therefore, the use of an annual growth rate of 2.0 percent would appear to conservatively approximate the anticipated regional growth in traffic volumes in the City of Moreno Valley, especially when considered along with the addition of project-related traffic and traffic generated by other known development projects. As such, the growth in traffic volumes assumed in this traffic impact analysis would tend to overstate as opposed to understate the potential impacts to traffic and circulation.

4.7 CUMULATIVE DEVELOPMENT TRAFFIC

CEQA guidelines require that other reasonably foreseeable development projects which are either approved or being processed concurrently in the study area also be included as part of a cumulative analysis scenario. A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the City of Moreno Valley. Exhibit 4-7 illustrates the cumulative development location map. A summary of cumulative development land uses are shown on Table 4-3.

4.8 TRAFFIC FORECASTS

An Existing plus Project (E+P) analysis scenario has been included to address a recent CEQA case ruling, which asserts that impacts of a proposed project must be measured against the current existing physical conditions. However, for the purposes of this TIA, the results for the E+P scenario has been provided for informational purposes only as the City of Moreno Valley TIA guidelines requires the EAP (Opening Year 2018 With Project) analysis scenario to identify project-related impacts.

EXHIBIT 4-7

CUMULATIVE DEVELOPMENT PROJECTS LOCATION MAP

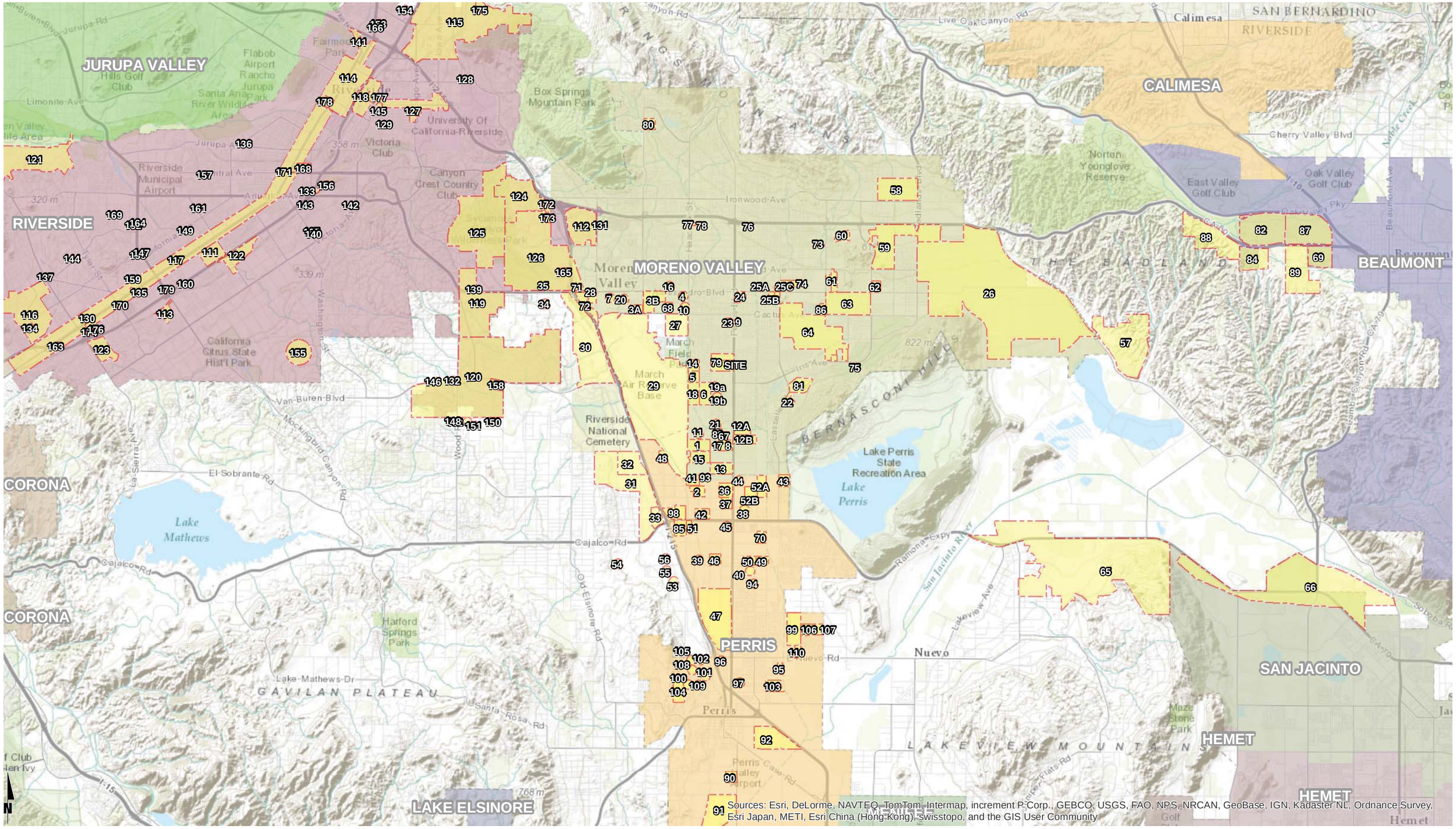

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Table 4-3

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
1	PA 06-0152 & PA 06-0153 (First Park Nandina I & II)	High-Cube Warehouse	1,182.918	TSF
2	Integra Pacific Industrial Facility	High-Cube Warehouse	880.000	TSF
3A	PA 08-0072 (Overton Moore Properties)	High-Cube Warehouse	520.000	TSF
3B	Harbor Freight Expansion	High-Cube Warehouse	1,279.910	TSF
4	PA 04-0063 (Centerpointe Buildings 8 and 9)	General Light Industrial	361.384	TSF
5	PA 07-0035; PA 07-0039 (Moreno Valley Industrial Park)	General Light Industrial	204.657	TSF
		High-Cube Warehouse	409.920	TSF
6	PA 07-0079 (Indian Business Park)	High-Cube Warehouse	1,560.046	TSF
7	PA 08-0047-0052 (Komar Cactus Plaza)[3]	Hotel	110	RMS
		Fast Food w/Drive Thru	8.000	TSF
		Commercial	42.400	TSF
8	First Inland Logistics Center	High-Cube Warehouse	400.130	TSF
9	TM 33607	Condo/Townhomes	54	DU
10	PA 08-0093 (Centerpointe Business Park II)	General Light Industrial	99.988	TSF
11	PA 06-0021; PA 06-0022; PA 06-0048; PA 06-0049 (Komar Investments)	Warehousing	2,057.400	TSF
12A	PA 06-0017 (Ivan Devries)	Industrial Park	569.200	TSF
12B	Modular Logistics (Dorado Property)	High-Cube Warehouse	1,109.378	TSF
13	PA 09-0004 (Vogel)	High-Cube Warehouse	1,616.133	TSF
14	TM 34748	SFDR	135	DU
15	First Nandina Logistics Center	High-Cube Warehouse	1,450.000	TSF
16	PA 09-0031	Gas Station	12	VFP
17	First Park Nandina III	High-Cube Warehouse	691.960	TSF
	Moreno Valley Commerce Park	High-Cube Warehouse	354.321	TSF
18	March Business Center	General Light Industrial	16.732	TSF
		Warehousing	87.429	TSF
		High-Cube Warehouse	1,380.246	TSF
19A	TM 33810	SFDR	16	DU
19B	TM 34151	SFDR	37	DU
20	373K Industrial Facility	High-Cube Warehouse	373.030	TSF
21	TM 32716	SFDR	57	DU
22	TM 32917	Condo/Townhomes	227	DU
23	TM 33417	Condo/Townhomes	10	DU
24	TM 34988	Condo/Townhomes	251	DU
25A	TM 34216	Condo/Townhomes	40	DU
25B	TM 34681	Condo/Townhomes	49	DU
25C	PA 08-0079-0081 (Winco Foods)	Discount Supermarket	95.440	TSF
		Specialty Retail	14.800	TSF

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
26	Moreno Beach Marketplace (Lowe's)	Commercial Retail	175.000	TSF
	Auto Mall Specific Plan (Planning Area C)	Commercial Retail	304.500	TSF
	Westridge	High-Cube Warehouse	937.260	TSF
	ProLogis	High-Cube Warehouse	1,916.190	TSF
		Warehousing	328.448	TSF
	World Logistics Center	High-Cube Warehouse	41,400.000	TSF
		Warehousing	200.000	TSF
		Gas Station w/ Market	12	VFP
		Existing SFDR	7	DU
27	March Lifecare Campus Specific Plan[4]	Medical Offices	190.000	TSF
		Commercial Retail	210.000	TSF
		Research & Education	200.000	TSF
		Hospital	50	Beds
		Institutional Residential	660	Beds
28	Alessandro Metrolink Station	Light Rail Transit Station	300	SP
29	Airport Master Plan	Airport Use	559.000	TSF
30	Meridian Business Park North	Industrial Park	5,985.000	TSF
31	SP 341; PP 21552 (Majestic Freeway Business Center)	High-Cube Warehouse	6,200.000	TSF
32	PP 20699 (Oleander Business Park)	Warehousing	1,206.710	TSF
33	Ramona Metrolink Station	Light Rail Transit Station	300	SP
34	PP 22925 (Amstar/Kaliber Development)	Office (258.102 TSF)	258.102	TSF
		Warehousing	409.312	TSF
		General Light Industrial	42.222	TSF
		Retail	10.000	TSF
35	P07-1028 (Alessandro Business Park)	General Light Industrial	662.018	TSF
36	P 05-0113 (IDI)	High-Cube Warehouse	1,750.000	TSF
37	P 05-0192 (Oakmont I)	High-Cube Warehouse	697.600	TSF
38	P 05-0477	High-Cube Warehouse	462.692	TSF
39	Rados Distribution Center	High-Cube Warehouse	1,200.000	TSF
40	Investment Development Services (IDS) II	High-Cube Warehouse	350.000	TSF
41	P 07-09-0018	Warehousing	170.000	TSF
42	P 07-07-0029 (Oakmont II)	High-Cube Warehouse	1,600.000	TSF
43	TR 32707	SFDR	137	DU
44	TR 34716	SFDR	318	DU
45	P 05-0493 (Ridge I)	High-Cube Warehouse	700.000	TSF
46	Ridge II	High-Cube Warehouse	2,000.000	TSF

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
47	Harvest Landing Specific Plan	SFDR	717	DU
		Condo/Townhomes	1,139	DU
		Sports Park	16.700	AC
		Business Park	1,233.401	TSF
		Shopping Center	73.181	TSF
	Perris Marketplace	Shopping Center	450.000	TSF
48	P 06-0411 (Concrete Batch Plant)	Manufacturing	2.000	TSF
49	Jordan Distribution	High-Cube Warehouse	378.000	TSF
50	Aiere	High-Cube Warehouse	642.000	TSF
51	P 08-11-0005; P 08-11-0006 (Starcrest)	High-Cube Warehouse	454.088	TSF
52A	Stratford Ranch Specific Plan	High-Cube Warehouse	1,725.411	TSF
52B	Stratford Ranch Specific Plan	High-Cube Warehouse	480.000	TSF
		General Light Industrial	120.000	TSF
53	PP 18908	General Light Industrial	133.000	TSF
54	Tract 33869	SFDR	39.000	DU
55	PP 16976	General Light Industrial	85.000	TSF
56	PP 21144	Industrial Park	190.802	TSF
57	Quail Ranch Specific Plan	Private School (K-12)	300	STU
		Golf Course	18	Holes
		Hotel	500	ROOMS
		Specialty Retail	66.667	TSF
		General office	66.667	TSF
		Assisted Living	500	Beds
		Senior Living (Detached)	200	DU
		SFDR	600	DU
58	a TR 32460 (Sussex Capital)	SFDR	58	DU
	b TR 32459 (Sussex Capital)	SFDR	11	DU
	c TR 30411 (Pacific Communities)	SFDR	24	DU
	d TR 33962 (Pacific Scene Homes)	SFDR	31	DU
	e TR 30998 (Pacific Communities)	SFDR	47	DU
59	a Westridge Commerce Center	High-Cube Warehouse	937.260	TSF
	b P06-158 (Gascon)	Commercial Retail	116.360	TSF
	c Auto Mall Specific Plan (PAC)	Commercial Retail	304.500	TSF
	d ProLogis	Warehousing	367.000	TSF
		High-Cube Warehouse	1,901.000	TSF
	e TR 35823 (Stowe Passco)	SFDR	262	DU
		Apartments	216	DU
60	TR 36340	SFDR	275	DU

Table 4-3

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
61	a TR 31771 (Sanchez)	SFDR	25	DU
	b TR 34397 (Winchester Associates)	SFDR	52	DU
	c TR 32645 (Winchester Associates)	SFDR	54	DU
62	Lowe's (Moreno Beach Marketplace)	Home Improvement Store	175.000	TSF
63	a Convenience Store/ Fueling Station	Gas Station w/ Market	30.750	TSF
	b Senior Assisted Living	Assisted Living Units	139	DU
	c TR 31590 (Winchester Associates)	SFDR	96	DU
	d TR 32548 (Gabel, Cook & Associates)	SFDR	107	DU
	e 26th Corp. & Granite Capitol	SFDR	32	DU
	f TR 32218 (Whitney)	SFDR	63	DU
	g Moreno Marketplace	Commercial Retail	93.788	TSF
	h Medical Plaza	Medical Offices	311.633	TSF
64	a Moreno Medical Campus	Medical Offices	80.000	TSF
	b Aqua Bella Specific Plan	SFDR	2,922	DU
	c TR 34329 (Granite Capitol)	SFDR	90	DU
	d Cresta Bella	General Office	30.000	TSF
65	a Villages of Lakeview	SFDR	860	DU
		Condo/Townhomes	1,920	DU
		Elementary School	1,200	STU
		Commercial Retail	100.000	TSF
		Soccer Complex	12	Fields
		City Park	8.900	AC
		County Park	8.100	AC
		Regional Park	107.100	AC
	b Motte Lakeview Ranch	SFDR	847	DU
		Condo/Townhomes	686	DU
		Apartments	467	DU
		Elementary School	650	STU
		Middle School	300	STU
		Commercial Retail	120.000	TSF
		Regional Park	177.000	AC
66	Gateway Area Specific Plan	Commercial Retail	255.000	AC
		General Office	510.000	AC
		Business Park	595.000	AC
		Residential	340.000	AC
67	Moreno Valley Industrial Center (Industrial Area SP)	General Light Industrial	354.810	TSF
68	Centerpointe Business Park	General Light Industrial	356.000	TSF
69	ProLogis/Rolling Hills Ranch Industrial	Heavy Industrial	2,565.684	TSF
70	P05-0493	Logistics	597.370	TSF

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
71	P07-1028, -0102; and P09-0416, -0418, -0419	General Light Industrial	652.018	TSF
72	Amstar/Kaliber Development, PP22925	General Light Industrial	42.222	TSF
		Heavy Industrial	409.312	TSF
		Commercial Retail	10.000	TSF
		General Office	258.102	TSF
73	TR 31305 / Richmond American	Residential	87	DU
74	TR 32505 / DR Horton	Residential	71	DU
75	TR 34329 / Granite Capitol	Residential	90	DU
76	TR 31814 / Moreno Valley Investors	Residential	60	DU
77	TR 33771 / Creative Design Associates	Residential	12	DU
78	TR 35663 / Kha	Residential	12	DU
79	TR 22180 / Young Homes	Residential	87	DU
80	TR 32515	Residential	161	DU
81	TR 32142	Residential	81	DU
82	Heartland	Residential	922	DU
83	San Michele Industrial Center (Industrial Area SP)	General Light Industrial	865.960	TSF
84	Hidden Canyon	General Light Industrial	2,890.000	TSF
85	Starcrest, P011-0005; 08-11-0006	General Light Industrial	454.088	TSF
86	Commercial Medical Plaza	Medical Offices	311.633	TSF
87	Mountain Bridge Regional Commercial Community	Commercial	1,853.251	TSF
88	Jack Rabbit Trail	Residential	2,000	DU
89	The Preserve / Legacy Highlands SP	Commercial	595.901	TSF
		Residential	3,412	DU
90	South Perris Industrial Phase 1	Logistics	787.700	TSF
91	South Perris Industrial Phase 2	Logistics	3,448.734	TSF
92	South Perris Industrial Phase 3	Logistics	3,166.857	TSF
93	P 04-0343	Warehousing	41.650	TSF
94	P 06-0228	General Light Industrial	149.738	TSF
95	P 06-0378	Senior Housing	429	DU
96	P 11-09-0011	Retail	80.000	TSF
97	P 12-05-0013	Apartments	75	DU
98	P 12-10-0005	High-Cube Warehouse	1,463.887	TSF
99	TR 30850	Residential	496	DU
100	TR 30973	Residential	35	DU
101	TR 31225	Residential	57	DU
102	TR 31226	Residential	82	DU
103	TR 31240	Residential	114	DU
104	TR 31407	Residential	243	DU
105	TR 31650	SFDR	61	DU
106	TR 31659	SFDR	161	DU

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
107	TR 32041	Residential	122	DU
108	TR 32406	SFDR	15	DU
109	TR 33193	Townhomes	94	DU
110	TR 33338	Residential	75	DU
111	California Baptist University Specific Plan	University	157	AC
112	Canyon Springs Specific Plan	Commercial, Office, Entertainment, Recreational	318	AC
113	Citrus Business Park Specific Plan	Industrial Business Park	49	AC
114	Downtown Specific Plan	Residential	5,000	DU
115	Hunter Business Park	Industrial	1,300	AC
116	La Sierra University Specific Plan	Mixed-Use		
117	Magnolia Avenue Specific Plan	Mixed-Use/Very High Residential	1,473	AC
118	Marketplace Specific Plan	Commercial Retail/Office	200	AC
119	Mission Grove Specific Plan	Business/Office Park	56.79	AC
		Commercial Retail	68.12	AC
		High Density Residential	53.77	AC
		Low Density Residential	78.38	AC
		Medium Density Residential	155.31	AC
120	Orangecrest Specific Plan	Rural Residential	2.13	AC
		Business/Office Park	2.70	AC
		Commercial Retail	138.96	AC
		High Density Residential	13.70	AC
		Low Density Residential	540.76	AC
		Medium Density Residential	1,217.80	AC
		Public Facilities/Institutions	121.59	AC
		Public Park	59.51	AC
121	Rancho La Sierra Specific Plan	SFDR	598	DU
122	Riverside Auto Center Specific Plan	Auto Center		
123	Riverwalk Vista Specific Plan	Residential	402	DU
124	Sycamore Canyon Specific Plan	Hillside Residential	41.83	AC
		Low Density Residential	97.28	AC
		Medium Density Residential	14.84	AC
		Very Low Density Residential	884.22	AC
		Public Park	27.85	AC
125	Sycamore Canyon Business Park Specific Plan	Business/Office Park	847.15	AC
		Commercial Retail	10.32	AC

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
126	Sycamore-Highlands Specific Plan	Commercial Retail	14.63	AC
		High Density Residential	52.18	AC
		Medium Density Residential	99.11	AC
		Public Facilities	1.56	AC
		Public Park	144.17	AC
		Very Low Density Residential	49.09	AC
127	University Avenue Specific Plan	Mixed-Use	Varies	
128	807 Blaine Street (P09-0717; P09-0718)	Apartments	55	DU
129	2340 Fourteenth Street (P09-0808; P08-0809)	Senior Housing	134	BEDS
130	10938 Magnolia Avenue (P10-0083)	Pharmacy	14.064	TSF
131	6287 Day Street (P10-0090; P10-0091)	Gas Station	2	VFP
132	N. of Van Buren Boulevard; W. of Wood Street (P10-0808; P10-0708)	Fast Food w/Drive Thru	2.361	TSF
133	3439 Arlington Avenue (P12-0234)	Fitness Club	9.600	TSF
134	NWC of Riverwalk Parkway and Flat Rock Drive (P12-0019; P12-0156; P12-0158)	Convenience Store	2.400	TSF
		Coffee Shop	3.946	TSF
135	3875 Dawes Street (P10-0438; Magnolia Garden Condominiums)	Condo/Townhomes	62	DU
136	5938-5944 Grand Avenue (P12-0266; P12-0267; P12-0268)	Senior Housing	37	DU
137	4901 La Sierra Avenue (P11-0627; P11-0628; P11-0777; P11-0778)	Gas Station	4.100	TSF
138	4250 Van Buren Boulevard (P12-0605; P12-0606)	Gas Station	1.776	TSF
139	360 Alessandro Boulevard (P12-0419; P12-0557; P12-0558; P12-0559)	Bank	3.858	TSF
140	2831 Mary Street (P12-0761; P12-0442 P12-0443; P12-0444)	Pharmacy	56.101	TSF
141	2450 Market Street (P13-0087; P13-0262)	Apartments	77	DU
142	6091 Victoria Avenue (P13-0432)	Day Care	1.831	TSF
143	6692 Indiana Avenue (P13-0159; P13-0160)	Gas Station	2.958	TSF
144	4824 Jones Avenue (P13-0181; P13-0182)	Church	23.124	TSF
145	2586 University avenue (P13-0650; P13-0651)	Bed and Breakfast	3.618	TSF
146	18580 Van Buren Boulevard (P08-0402; P13-0822)	Auto Repair Shop	8.142	TSF
147	4247 Van Buren Boulevard (P13-0785; P13-0787)	Church Expansion	12.166	TSF
148	SWC of Lurin Avenue and Wood Road (P06-0900; P08-0269; P08-0270; TTM 32301)	SFDR	20	DU
149	8616 California Avenue (P08-0084; PM 35852)	Condo/Townhomes	21	DU
150	19811 Lurin Avenue (P06-1355; TM 33480)	SFDR	32	DU
151	APN:266140029, 030 (P06-1396; Mariposa Avenue; TM 33481)	SFDR	25	DU
152	APN:266140002, 021, 022 (P06-1404; Lurin Avenue; TM 33482)	SFDR	29	DU
153	3719 Strong Street (P05-0269; P08-0416; TM 33550)	SFDR	9	DU
154	1006 & 1008 Clark Street (P06-0782; TM 34908)	SFDR	15	DU
155	E. of Gratton St., W. of Corsica Av., N. of Van Buren Bl. (P05-1528; P09-0087; TM 34509)	SFDR	50	DU
156	NWC of Dominion Avenue and Division Street (P08-0396; P08-0397; P08-0398; P08-0399; TM 35620)	Condo/Townhomes	36	DU
157	6639 Hillside Avenue (P08-0727; PM 35901)	Industrial	5	LOTS
158	19985 Van Buren Boulevard (P10-0118; Gless Ranch)	Commercial Retail	425.447	TSF

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
159	3990 Reynolds Road (P12-0021; P12-0022; P12-0074; PM 36442)	Condo/Townhomes	102	DU
160	NEC of Martha Way & Everest Avenue (P13-0389; TM 36579)	SFDR	5	DU
161	4325, 4335, 4345, 4355, 4375 Adams Street (P13-0723; P13-0724; P13-0725; TM 36654)	SFDR	62	DU
162	5200 Van Buren Boulevard (P09-0600; P09-0601; Walmart Expansion)	Free Standing Discount Store	22.272	TSF
163	11500 Magnolia Avenue (P10-0406; P10-0407; P10-0408)	Apartments	168	DU
164	9241 & 9265 Audrey Avenue (P12-0184; P12-0185; P12-0187; Azar Plaza)	Commercial Retail	6.150	TSF
165	2325 Cottonwood Avenue (P12-0507; P12-0508; P12-0509; P12-0510)	High-Cube Warehouse	235.741	TSF
166	1710 Main Street (P12-0717)	Family Dollar Store	8.039	TSF
167	2861 Mary Street (P12-0442; P12-0443; P12-0444)	Shopping Center	56.101	TSF
168	3545 Central Avenue (P12-0741; P12-0743)	Riverside Plaza Renovations	35	AC
169	5731, 5741, 5761 & 5797 Pickler Street (P13-0198; P13-0199; P13-0200; P13-0201)	Apartments	30	DU
170	3705 Tyler Street (P13-0501; P13-0502)	Restaurant	6.000	TSF
171	6570 Magnolia Avenue; 3739 & 3747 Central Avenue (P13-0196; P13-0197)	Fast Food w/Drive Thru	3.795	TSF
172	5940-5980 Sycamore Canyon Boulevard (P13-0553; P13-0554; P13-0583; P14-0065)	Apartments	275	DU
173	SEC Sycamore Canyon Boulevard & Box Springs Road (P13-0607 P13-06008; P0609; P13-0854)	Industrial Building	171.616	TSF
174	3742 Park Sierra Avenue (P13-0912; P13-0913)	Fitness Club	45.000	TSF
175	474 Palmyrita Avenue (P13-0956; P13-0959; P13-0960; P13-0963; P13-0964; P13-0965; P13-0966)	High-Cube Warehouse	1,461.449	TSF
176	Park Sierra Avenue (P14-0026; P14-0027)	Fast Food w/Drive Thru	3.500	TSF
177	E. of Commerce St., between Mission Inn Av. and Ninth St. (P14-0045; P14-0046; P14-0047; P14-0048; P14-0049)	Apartments	208	DU
178	4445 Magnolia Avenue (P13-0207; P13-0208; P13-0209; P13-0210; P13-0211)	Hospital Expansion	Varies	
179	SR-91/Van Buren Commercial	Commercial Retail	23.565	TSF

[1] SFDR = Single Family Detached Residential

[2] DU = Dwelling Units; TSF = Thousand Square Feet; SP = Spaces; VFP = Vehicle Fueling Positions

[3] Source: Cactus Avenue and Commerce Center Drive Commercial Center TIA, Urban Crossroads, Inc., December 9, 2008 (Revised).

[4] Source: March Lifecare Campus Specific Plan Traffic Impact Analysis, Mountain Pacific, Inc., May 2009 (Revised).

To provide a comprehensive assessment of the potential project-related and cumulative traffic impacts, the "buildup" analyses were performed in support of this work effort. The buildup method was used to approximate the Opening Year conditions for the study year of 2018, and is intended to identify the direct project-related impacts on both the existing and planned near-term circulation system. The Opening Year traffic condition includes background traffic in addition to the traffic generated by the proposed Project. The buildup method was also utilized to approximate the Opening Year Cumulative conditions for the study year of 2018, and is intended to identify the cumulative impacts on both the existing and planned near-term circulation system. The Opening Year Cumulative traffic condition includes background traffic, traffic generated by other cumulative development projects within the study area and the traffic generated by the proposed Project.

4.9 NEAR-TERM (2018) CONDITIONS

The buildup approach combines existing traffic counts with a background ambient growth factor to forecast the near-term 2018 traffic conditions. An ambient growth factor of 10.4% accounts for background (area-wide) traffic increases that occur over time up to the year 2018 from the year 2013 (compounded two percent per year growth over a minimum five year period). Traffic volumes generated by the Project are then added to assess the 2018 With Project traffic conditions. The 2018 roadway network is similar to the Existing (2013) conditions roadway network, with the exception of future driveways proposed to be developed by the Project.

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

- Opening Year (2018) Without Project
    - Existing 2013 counts
    - Ambient growth traffic (10.4%)

- Opening Year (2018) With Project
    - Existing 2013 counts
    - Ambient growth traffic (10.4%)
    - Project traffic

- Opening Year Cumulative (2018) Without Project
    - Existing 2013 counts
    - Ambient growth traffic (10.4%)
    - Cumulative Development Project traffic

- Opening Year Cumulative (2018) With Project
    - Existing 2013 counts
    - Ambient growth traffic (10.4%)

- Cumulative Development Project traffic
- Project traffic

4.10 GENERAL PLAN BUILDOUT (POST-2035) CONDITIONS

Traffic projections for General Plan Buildout (Post-2035) Without Project conditions were derived from a version of RivTAM modified to represent General Plan Buildout conditions for the City of Moreno Valley using accepted procedures for model forecast refinement and smoothing. The traffic forecasts reflect the area-wide growth anticipated between Existing (2013) conditions and General Plan Buildout (Post-2035) conditions. The General Plan Buildout (Post-2035) With Project traffic forecasts were determined by adding the proposed Project trips to the General Plan Buildout (Post-2035) Without Project traffic forecasts from the RivTAM model. The General Plan Buildout (Post-2035) Without and With Project traffic conditions analyses will be utilized to determine if improvements funded through regional transportation mitigation fee programs, such as the Transportation Uniform Mitigation Fee (TUMF) and County Development Impact Fee (DIF) programs, or other approved funding mechanism can accommodate the long-range cumulative traffic at the target LOS identified in the City of Moreno Valley General Plan. If the "funded" improvements can provide the target LOS, then the Project's payment into TUMF and DIF will be considered as cumulative mitigation through the conditions of approval. Other improvements needed beyond the "funded" improvements (such as localized improvements to non-TUMF or non-DIF facilities) are identified as such.

The traffic model zone structure is not designed to provide accurate turning movements along arterial roadways unless refinement and reasonableness checking is performed. General Plan Buildout (Post-2035) turning volumes were compared to Opening Year Cumulative (2018) Without Project volumes in order to ensure a minimum growth of ten (10) percent as a part of the refinement process, where applicable. The minimum ten (10) percent growth includes any additional growth between Opening Year Cumulative (2018) Without Project and General Plan Buildout (Post-2035) traffic conditions that is not accounted for by the traffic generated by cumulative development projects and the ambient growth between Existing (2013) and Opening Year Cumulative (2018) Without Project conditions. The initial estimate of the future General Plan Buildout (Post-2035) Without Project peak hour turning movements was then reviewed by Urban Crossroads for reasonableness at intersections where model results showed unreasonable turning movements. The initial raw model estimates were adjusted to achieve flow conservation (where applicable), reasonable growth, and reasonable diversion between parallel routes.

As noted previously, the traffic analysis in this report considers Saturday mid-day peak hour traffic conditions in addition to the weekday AM and weekday PM peak hours. Therefore, factors were applied to the weekday PM peak hour General Plan Buildout (Post-2035) traffic forecasts with a relationship to the Saturday mid-day Existing (2013) turning volumes to estimate Saturday mid-day peak hour General Plan Buildout (Post-2035) traffic forecasts since the RivTAM 2035 traffic model considers only weekday peak hour traffic conditions. Based on the volume comparison and evaluation of Existing (2013) PM peak hour

and Saturday mid-day peak hour traffic forecasts, relationships were found to vary between study area intersections. These calculated factors (determined by turning movement) were then applied to the weekday PM General Plan Buildout (Post-2035) peak hour turning volumes to determine General Plan Buildout (Post-2035) turning volumes during the Saturday mid-day peak hour using the same relationship observed for Existing (2013) traffic conditions.

Post-processing worksheets for General Plan Buildout (Post-2035) Without Project traffic conditions are provided in Appendix “4.1”.

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5.0 EXISTING PLUS PROJECT TRAFFIC ANALYSIS

This section discusses the traffic forecasts for Existing plus Project (E+P) conditions and the resulting intersection operations, roadway segment analyses and traffic signal warrants. As noted previously, the E+P analysis scenario has been utilized to determine direct project-related traffic impacts that would occur on the existing roadway system based on a comparison of the E+P traffic conditions to the Existing (2013) traffic conditions.

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:

- At 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 only (e.g., intersection turn lane improvements at the Project driveways).

5.2 EXISTING PLUS PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2013) traffic volumes plus Project traffic. Exhibit 5-1 shows the ADT volumes which can be expected for E+P traffic conditions. E+P weekday AM, weekday PM, and Saturday mid-day peak hour intersection turning movement volumes are shown on Exhibits 5-2, 5-3, and 5-4, respectively.

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 2.0 *Methodologies* of this TIA. The intersection analysis results are summarized in Table 5-1, which indicates that the following study area intersection is anticipated experience unacceptable LOS (i.e., LOS "D" or better) during one or more peak hours in addition to those previously identified under Existing (2013) traffic conditions:

ID	Intersection Location
36	Perris Boulevard / Santiago Drive – LOS "F" PM and Saturday peak hours

Exhibit 5-5 summarizes the weekday AM, weekday PM, and Saturday peak hour study area intersection LOS under E+P traffic conditions, consistent with the summary provided in Table 5-1. The intersection operations analysis worksheets are included in Appendix "5.1" of this TIA.

EXHIBIT 5-1

EXISTING PLUS PROJECT AVERAGE DAILY TRAFFIC (ADT)

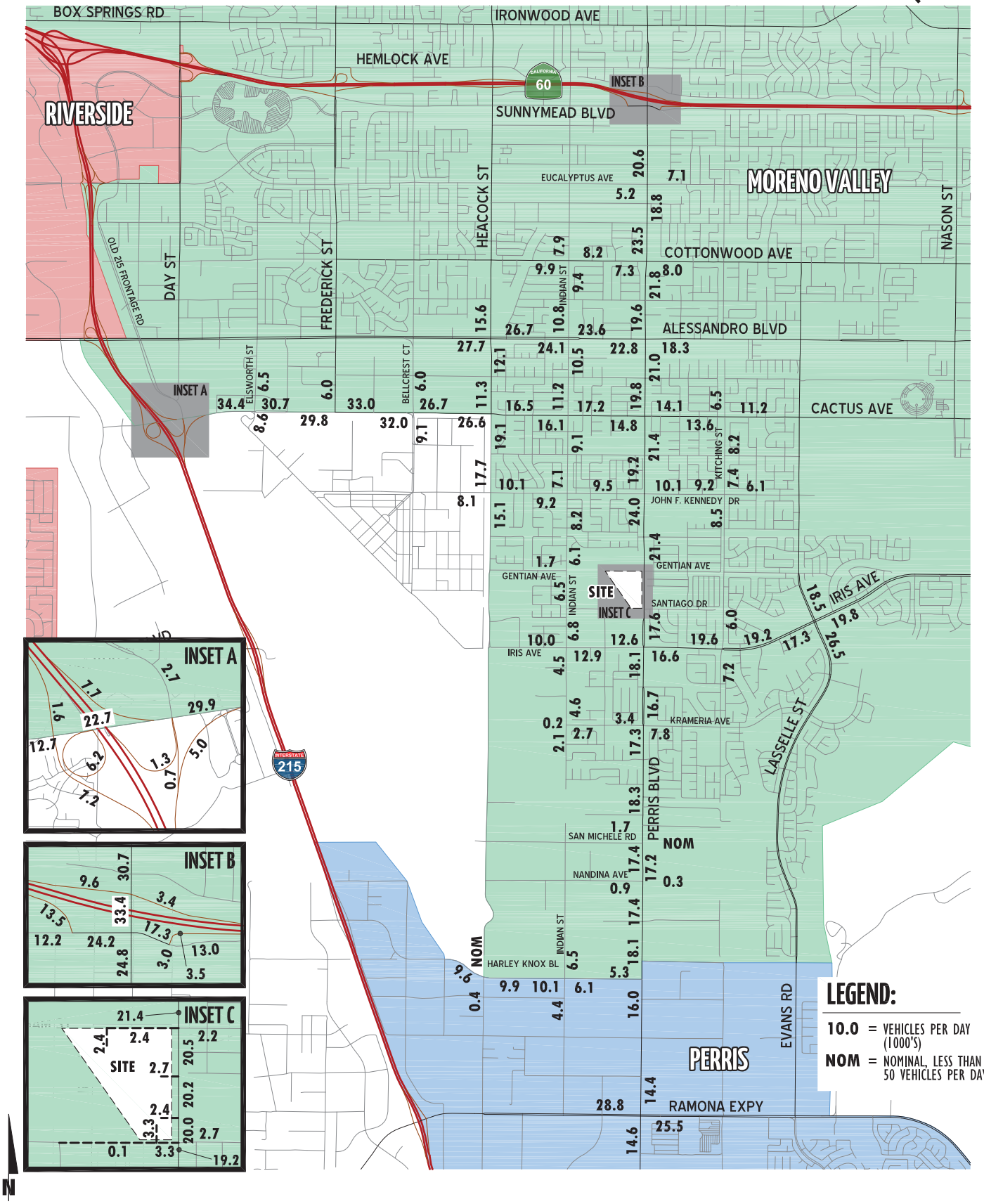
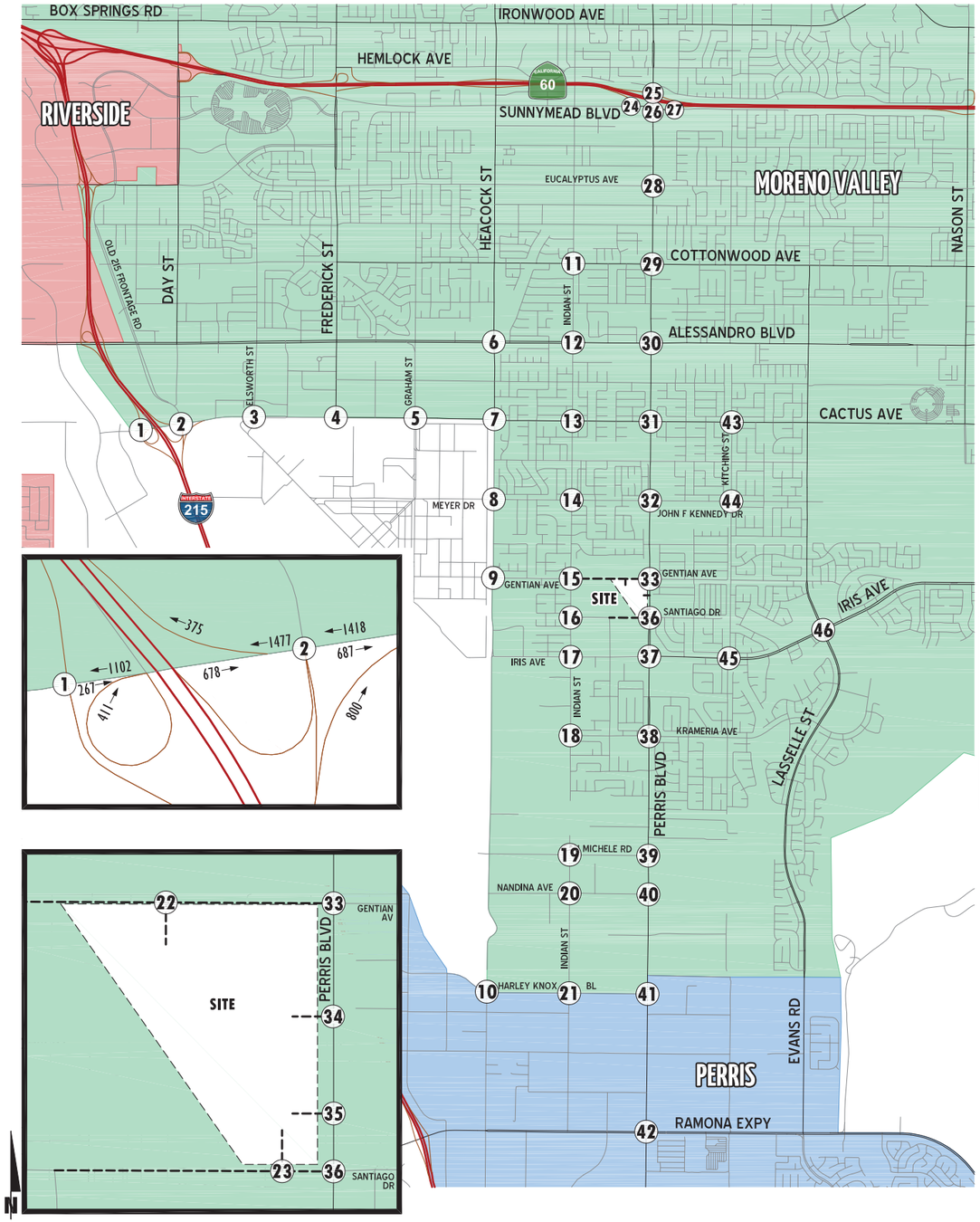


EXHIBIT 5-2

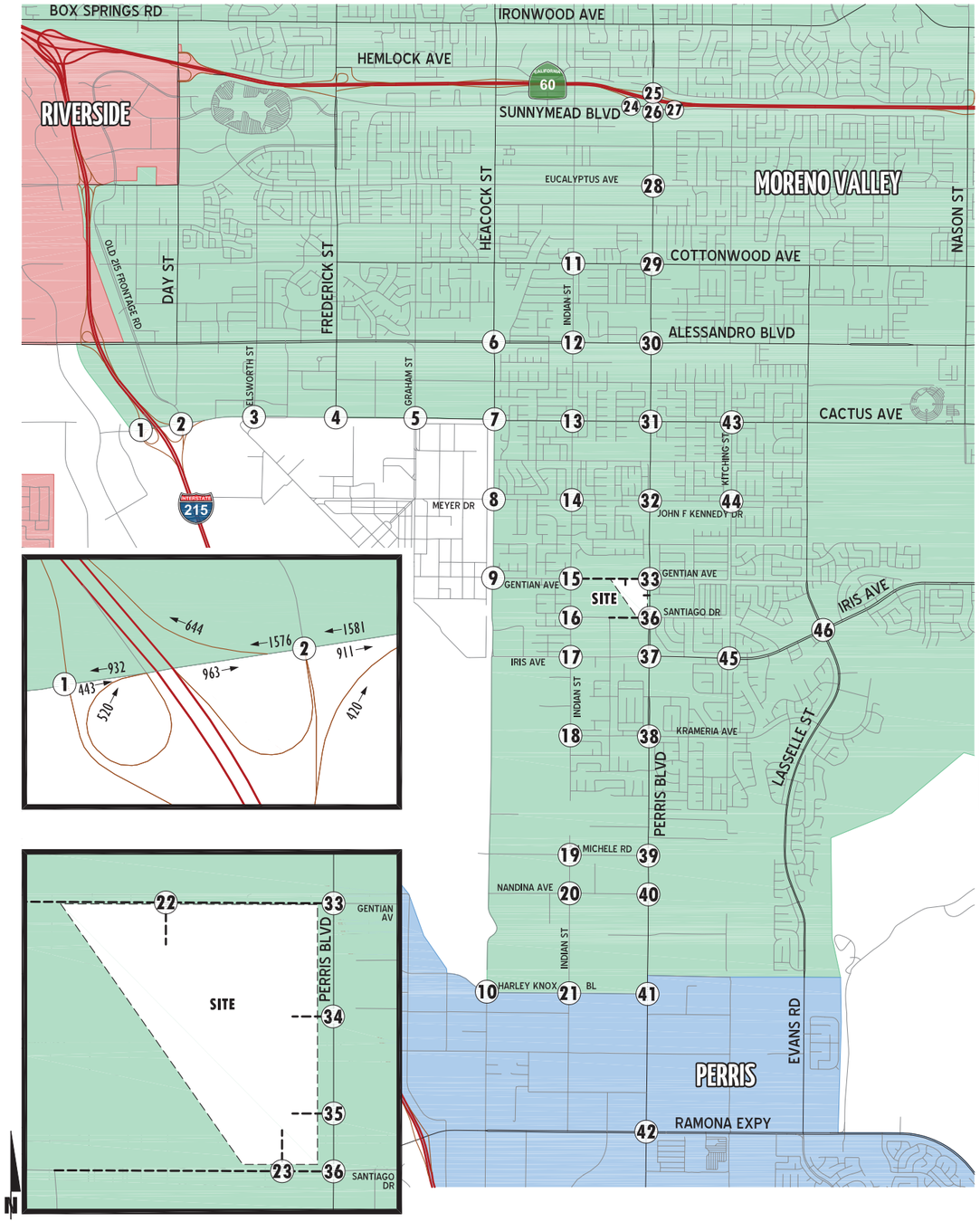
EXISTING PLUS PROJECT AM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.
162 ← 748 ← 354 267 → 9	22 0 25 ← 138 ← 1280 10 → 652 → 17 175 ↑ 85 ↱ 10	103 125 45 ← 78 ← 1480 ← 97 126 → 1020 → 316 46 ↑ 23 ↱ 17	37 110 ← 105 ← 1327 55 → 888	35 73 55 ← 100 ← 1362 ← 10 83 → 737 → 151 116 ↑ 64 ↱ 2	133 189 127 ← 155 ← 930 ← 34 107 → 441 → 64 185 ↑ 334 ↱ 50	30 181 41 ← 79 ← 746 ← 9 83 → 474 → 242 620 ↑ 371 ↱ 5	24 245 130 ← 246 ← 137 ← 34 11 → 67 → 63 106 ↑ 696 ↱ 37
9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.
NOT AN ANALYSIS LOCATION	1 1 0 ← 0 ← 362 ← 5 0 → 365 → 1 1 ↑ 2 ↱ 8	56 202 48 ← 81 ← 340 ← 46 49 → 231 → 132 101 ↑ 248 ↱ 37	78 141 65 ← 71 ← 796 ← 36 41 → 428 → 78 155 ↑ 217 ↱ 82	14 224 58 ← 86 ← 627 ← 41 26 → 503 → 43 37 ↑ 271 ↱ 25	34 173 102 ← 83 ← 345 ← 67 32 → 229 → 49 53 ↑ 273 ↱ 87	35 183 25 → 65 73 ↑ 293	NOT AN ANALYSIS LOCATION
17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.
16 224 301 ← 411 ← 359 ← 8 30 → 202 → 39 127 ↑ 264 ↱ 11	78 195 ← 265 ← 3 121 ↑ 15	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	173 53 8 ← 8 ← 226 ← 13 148 → 201 → 21 48 ↑ 90 ↱ 18	← 0 ← 44 0 → 0 0 ↑ 51	0 59 ← 72 ← 9 0 → 10	40 523 ← 299 231 →
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.
359 782 ← 126 ← 0 ← 128 482 ↑ 985	99 569 243 ← 419 ← 84 ← 22 284 → 243 → 227 116 ↑ 764 ↱ 80	← 26 ← 513 ← 11 241 → 307 → 18 12 ↑ 3 ↱ 6	23 773 113 ← 157 ← 157 ← 72 12 → 69 → 43 44 ↑ 759 ↱ 27	99 694 105 ← 139 ← 192 ← 46 80 → 144 → 72 74 ↑ 618 ↱ 44	154 436 149 ← 103 ← 679 ← 73 98 → 276 → 78 147 ↑ 484 ↱ 89	35 436 105 ← 76 ← 603 ← 53 51 → 391 → 122 125 ↑ 533 ↱ 68	48 354 166 ← 95 ← 357 ← 182 54 → 321 → 54 125 ↑ 524 ↱ 182
	33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.
	17 452 21 ← 50 ← 4 ← 27 39 → 3 → 9 22 ↑ 647 ↱ 17	70 418 42 → 686	85 376 69 → 686	4 413 29 ← 91 ← 8 ← 40 48 → 5 → 16 69 ↑ 539 ↱ 36	55 273 157 ← 144 ← 511 ← 171 57 → 338 → 81 202 ↑ 430 ↱ 212	9 416 71 ← 155 ← 177 ← 193 26 → 146 → 43 50 ↑ 624 ↱ 207	67 656 1 ← 0 ← 0 ← 0 80 → 0 → 5 10 ↑ 775 ↱ 1
	40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.
	60 519 9 ← 4 ← 5 ← 7 28 → 4 → 12 20 ↑ 779 ↱ 15	183 400 209 → 15 → 58 ↑ 675	103 164 70 ← 128 ← 1150 ← 68 146 → 484 → 92 302 ↑ 318 ↱ 21	102 220 30 ← 23 ← 493 ← 24 90 → 459 → 162 195 ↑ 298 ↱ 32	51 195 89 ← 95 ← 433 ← 14 49 → 443 → 139 167 ↑ 296 ↱ 7	123 131 30 ← 53 ← 595 ← 111 77 → 487 → 106 132 ↑ 124 ↱ 91	65 459 75 ← 48 ← 447 ← 344 82 → 311 → 283 265 ↑ 385 ↱ 262

EXHIBIT 5-3

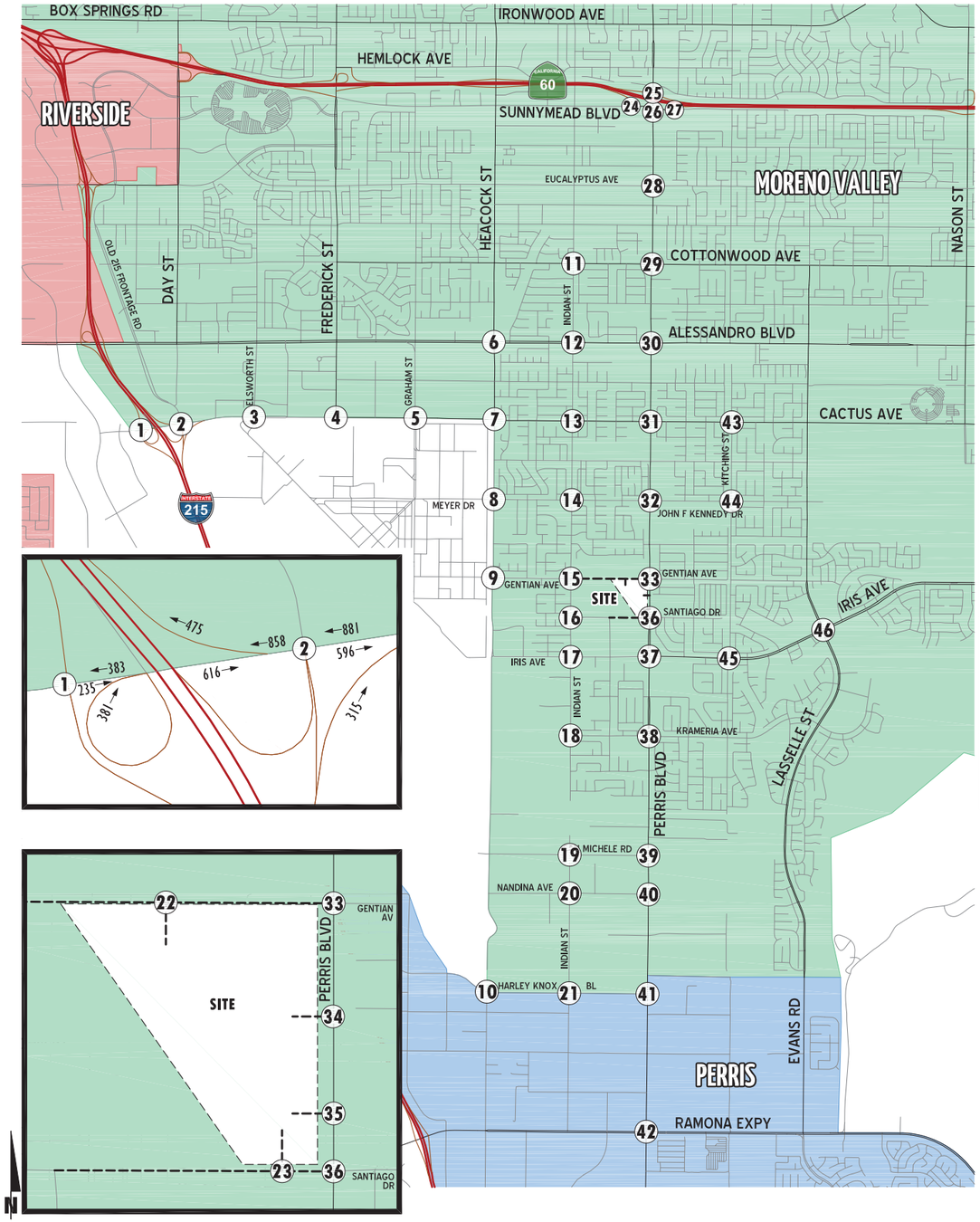
EXISTING PLUS PROJECT PM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.
129 ← 410 ← 522	34 → 72 ← 64 ← 1517	140 → 22 → 109 ← 79 ← 1003 ← 27	79 → 254 ← 129 ← 915	55 → 123 → 135 ← 62 ← 810 ← 12	173 → 353 → 228 ← 170 ← 698 ← 44	33 → 382 → 80 ← 72 ← 501 ← 11	47 → 579 → 300 ← 182 ← 77 ← 15
443 → 74 →	18 → 838 → 107 → 26 → 34 → 1	90 → 1206 → 30 → 397 → 103 → 136	35 → 1455 →	59 → 1199 → 363 → 184 → 69 → 10	111 → 1034 → 134 → 159 → 268 → 51	75 → 710 → 586 → 313 → 299 → 4	29 → 234 → 229 → 62 → 336 → 37
9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.
NOT AN ANALYSIS LOCATION	0 → 1 → 0 ← 0 ← 351 ← 15	43 → 248 → 31 ← 48 ← 235 ← 41	49 → 264 → 143 ← 117 ← 735 ← 63	43 → 371 → 129 ← 101 ← 442 ← 25	28 → 246 → 68 ← 40 ← 216 ← 60	22 → 253	NOT AN ANALYSIS LOCATION
	1 → 446 → 0 → 2 → 0 → 13	45 → 291 → 136 → 76 → 244 → 39	109 → 851 → 137 → 130 → 216 → 61	36 → 720 → 60 → 38 → 252 → 15	23 → 360 → 95 → 47 → 189 → 47	31 → 65 → 22 → 199	
17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.
6 → 114 → 211 ← 169 ← 244 ← 18	101 → 151 ← 65 ← 6	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	148 → 159 → 18 ← 17 ← 153 ← 12	← 0 ← 82	0 → 148 ← 136 ← 4	64 → 1061 ← 366
7 → 416 → 115 → 48 → 60 → 16	65 → 6			128 → 298 → 83 → 36 → 71 → 9	0 → 0 → 0 → 127	0 → 1	586 →
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.
311 → 925 ← 118 ← 1 ← 163	137 → 640 → 311 ← 327 ← 84 ← 48	← 19 ← 406 ← 24	54 → 746 → 140 ← 112 ← 104 ← 47	91 → 835 → 163 ← 99 ← 123 ← 45	129 → 596 → 140 ← 73 ← 446 ← 102	49 → 730 → 122 ← 74 ← 380 ← 60	41 → 679 → 98 ← 33 ← 144 ← 161
490 → 1202 →	630 → 597 → 420 → 145 → 735 → 71	248 → 605 → 126 → 53 → 22 → 26	39 → 139 → 56 → 45 → 622 → 47	61 → 167 → 94 → 73 → 710 → 67	189 → 679 → 221 → 241 → 510 → 85	41 → 469 → 160 → 140 → 640 → 68	37 → 263 → 151 → 160 → 721 → 146
	33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.
	33 → 817 → 47 ← 37 ← 8 ← 35	132 → 742	117 → 731	0 → 739 → 89 ← 65 ← 11 ← 30	42 → 486 → 231 ← 148 ← 316 ← 130	21 → 519 → 102 ← 100 ← 69 ← 121	28 → 725 → 0 ← 1 ← 1 ← 1
	97 → 8 → 21 → 41 → 765 → 45	106 → 851	97 → 851	114 → 9 → 25 → 128 → 651 → 38	54 → 411 → 101 → 125 → 517 → 153	31 → 117 → 22 → 23 → 623 → 137	78 → 0 → 21 → 11 → 700 → 0
40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.	
17 → 708 → 1 ← 2 ← 3 ← 10	127 → 677	98 → 325 → 202 ← 101 ← 637 ← 80	42 → 203 → 24 ← 18 ← 418 ← 35	53 → 251 → 40 ← 20 ← 158 ← 7	79 → 114 → 37 ← 93 ← 620 ← 108	106 → 585 → 200 ← 62 ← 441 ← 380	
19 → 1 → 31 → 2 → 693 → 9	180 → 116 → 18 → 527	203 → 1016 → 249 → 198 → 276 → 87	49 → 414 → 145 → 65 → 203 → 29	50 → 273 → 147 → 92 → 204 → 10	82 → 664 → 132 → 62 → 95 → 86	126 → 277 → 244 → 248 → 460 → 290	

EXHIBIT 5-4

EXISTING PLUS PROJECT
SATURDAY MID-DAY PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.	
61 / 128 / 255	11 / 0 / 51 / 58 / 823	42 / 55 / 49 / 71 / 711 / 93	38 / 185 / 145 / 854	41 / 91 / 68 / 43 / 784 / 14	112 / 737 / 100 / 140 / 299 / 178	39 / 279 / 72 / 74 / 468 / 8	33 / 281 / 219 / 197 / 68 / 13	
235 / 11	9 / 541 / 66 / 24 / 14 / 4	67 / 729 / 69 / 98 / 130 / 85	30 / 854	30 / 715 / 260 / 184 / 62 / 6	174 / 263 / 53 / 41 / 708 / 133	59 / 471 / 288 / 299 / 319 / 10	48 / 157 / 111 / 34 / 329 / 23	
9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.	
NOT AN ANALYSIS LOCATION	0 / 0 / 0 / 0 / 150 / 17	27 / 165 / 26 / 29 / 189 / 23	46 / 198 / 137 / 77 / 679 / 87	21 / 247 / 43 / 51 / 449 / 12	29 / 182 / 63 / 27 / 187 / 55	29 / 202	NOT AN ANALYSIS LOCATION	
	0 / 221 / 0 / 1 / 0 / 19	20 / 220 / 104 / 62 / 227 / 28	61 / 724 / 68 / 151 / 210 / 82	37 / 410 / 55 / 47 / 248 / 19	22 / 221 / 43 / 41 / 152 / 50	26 / 39 / 33 / 207		
17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.	
11 / 72 / 146 / 186 / 244 / 21	72 / 99 / 86 / 4	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	41 / 90 / 3 / 1 / 111 / 14	0 / 109	0 / 190 / 179 / 1	66 / 880 / 491	
4 / 259 / 68 / 50 / 59 / 16	49 / 4			53 / 130 / 19 / 20 / 109 / 25	0 / 0 / 0 / 163	0 / 2	697	
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.	
350 / 818 / 99 / 3 / 138	166 / 499 / 291 / 405 / 138 / 80	21 / 517 / 33	48 / 876 / 84 / 92 / 84 / 48	75 / 739 / 110 / 77 / 98 / 44	165 / 570 / 116 / 74 / 442 / 108	38 / 730 / 114 / 64 / 288 / 46	52 / 739 / 90 / 42 / 133 / 153	
628 / 1096	545 / 574 / 458 / 187 / 774 / 95	271 / 513 / 176 / 106 / 28 / 44	31 / 95 / 48 / 32 / 865 / 57	73 / 133 / 78 / 65 / 766 / 66	203 / 446 / 205 / 330 / 567 / 74	28 / 298 / 182 / 161 / 744 / 44	53 / 179 / 105 / 160 / 881 / 164	
	33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.	
	43 / 838 / 22 / 40 / 11 / 37	174 / 729	159 / 105	1 / 759 / 77 / 45 / 11 / 22	56 / 536 / 282 / 179 / 338 / 126	22 / 533 / 96 / 114 / 60 / 80	43 / 649 / 1 / 0 / 0 / 0	
	125 / 11 / 27 / 54 / 863 / 38	136 / 955	132 / 955	147 / 11 / 35 / 168 / 736 / 40	61 / 227 / 99 / 171 / 609 / 132	32 / 68 / 22 / 17 / 619 / 64	60 / 0 / 4 / 4 / 564 / 0	
	40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.	
	12 / 569 / 2 / 2 / 1 / 3	112 / 508	105 / 283 / 279 / 185 / 734 / 123	33 / 180 / 31 / 26 / 273 / 27	54 / 169 / 22 / 14 / 163 / 13	72 / 116 / 30 / 94 / 619 / 76	73 / 260 / 171 / 59 / 352 / 225	
	21 / 0 / 16 / 5 / 626 / 1	126 / 39 / 13 / 456	120 / 789 / 65 / 142 / 300 / 111	30 / 281 / 89 / 91 / 207 / 30	58 / 245 / 127 / 88 / 185 / 9	76 / 571 / 89 / 61 / 98 / 60	135 / 265 / 157 / 159 / 311 / 167	

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EXHIBIT 5-5

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR EXISTING PLUS PROJECT CONDITIONS

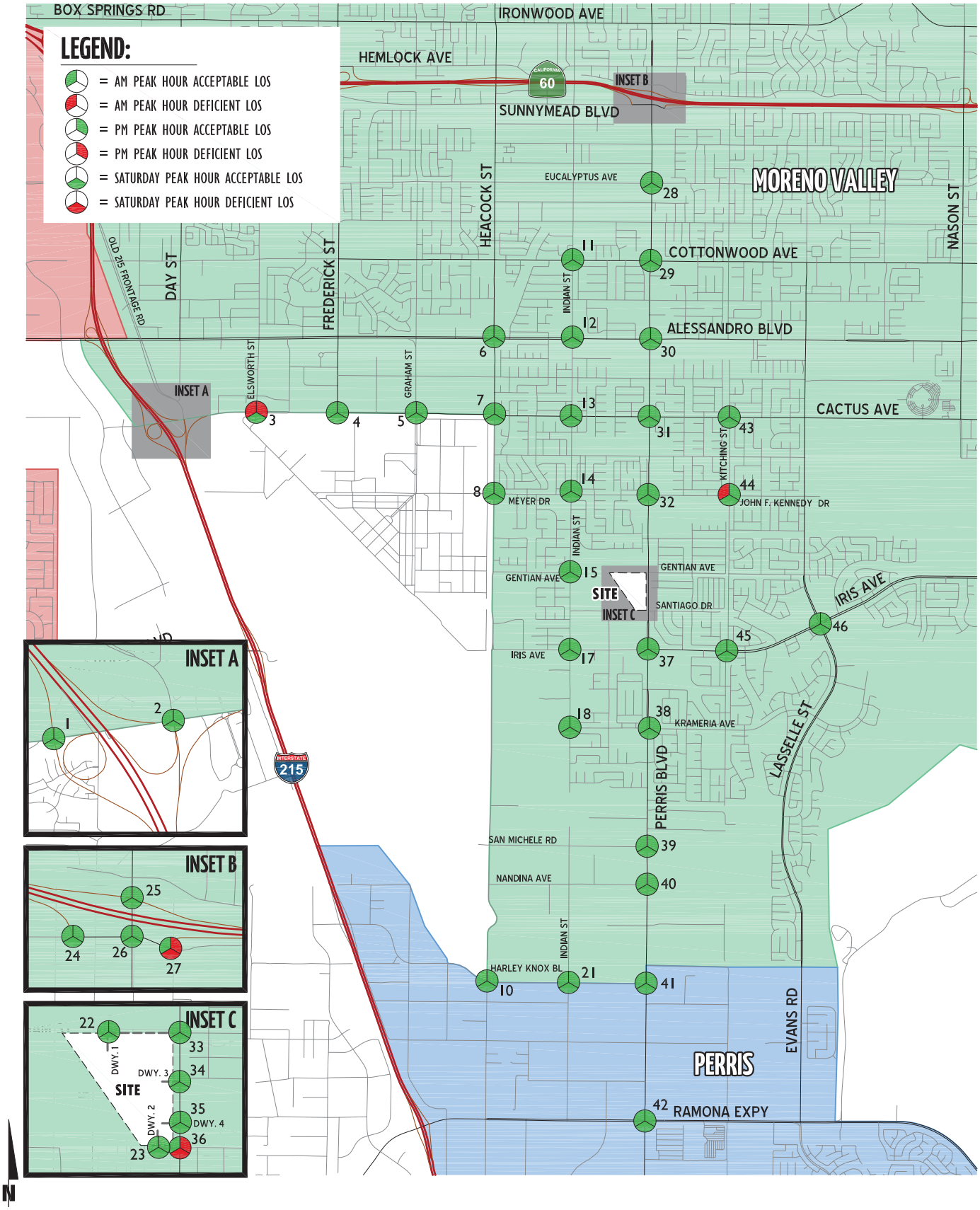

Table 5-1
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Intersection Analysis for Existing Plus Project Conditions

#	Intersection	Traffic Control [2]	Existing (2013) Delay [1] (secs.) AM	PM	Sat	Level of Service AM	PM	Sat	Existing Plus Project Delay [1] (secs.) AM	PM	Sat	Level of Service AM	PM	Sat
1	I-215 SB Ramps / Cactus Av	TS	11.8	18.1	15.5	B	B	B	11.8	18.1	15.4	B	B	B
2	I-215 NB Ramps / Cactus Av	TS	10.0	6.4	4.3	A	A	A	10.0	6.4	4.3	B	A	A
3	Elsworth St / Cactus Av	TS	**68.0**	**82.7**	40.0	**E**	**F**	D	**69.1**	**84.7**	40.2	**E**	**F**	D
4	Frederick St / Cactus Av	TS	15.8	23.3	17.3	B	C	B	15.8	23.6	14.9	B	C	B
5	Graham St / Cactus Av	TS	29.7	36.6	31.5	C	D	C	29.8	36.9	30.6	C	D	C
6	Heacock St / Alessandro Bl	TS	35.8	38.0	34.0	D	D	C	36.1	38.6	34.2	D	D	C
7	Heacock St / Cactus Av	TS	28.1	25.3	22.3	C	C	C	28.2	25.3	22.6	C	C	C
8	Heacock St / John F. Kennedy Dr	TS	33.3	37.5	37.8	C	D	D	33.3	37.5	36.4	C	D	D
9	Heacock St / Gentian Av	CSS	13.7	10.9	11.1	B	B	B	Not an Analysis Location					
10	Webster Av / Harley Knox Bl	CSS	16.4	17.1	9.9	C	C	A	14.6	18.2	9.8	B	C	A
11	Indian St / Cottonwood Av	TS	28.9	25.8	24.7	C	C	C	29.0	26.0	24.9	C	C	C
12	Indian St / Alessandro Bl	TS	35.0	36.3	37.4	C	D	D	35.1	36.8	37.7	D	D	D
13	Indian St / Cactus Av	TS	24.0	26.3	22.7	C	C	C	24.1	26.7	23.1	C	C	C
14	Indian St / John F. Kennedy Dr	TS	26.8	25.7	25.3	C	C	C	26.8	25.7	25.4	C	C	C
15	Indian St / Gentian Av	CSS	15.2	13.0	13.1	C	B	B	15.3	13.1	13.2	C	B	B
16	Indian St / Santiago Dr	TS	15.5	9.1	0.7	B	A	A	Not an Analysis Location					
17	Indian St / Iris Av	TS	47.7	39.7	36.4	D	D	D	47.8	40.0	34.0	D	D	C
18	Indian St / Krameria Av	CSS	15.3	12.7	10.7	C	B	B	15.5	12.9	10.9	C	B	B
19	Indian St / San Michele Rd	AWS	7.4	7.3	7.4	A	A	A	Not an Analysis Location					
20	Indian St / Nandina Av	AWS	8.5	8.4	8.4	A	A	A	Not an Analysis Location					
21	Indian St / Harley Knox Bl	TS	31.6	32.9	29.4	C	C	C	33.6	33.9	28.9	C	C	C
22	Driveway 1 / Gentian Av	**CSS**	Not an Analysis Location						8.5	8.8	8.9	A	A	A
23	Driveway 2 / Santiago Dr	**CSS**	Not an Analysis Location						9.1	9.7	10.2	A	A	B
24	SR-60 EB Off-Ramp / Sunnymead Bl	TS	21.6	36.7	21.1	C	D	C	21.6	36.7	21.1	C	D	C
25	Perris Bl / SR-60 WB Ramps	TS	21.2	20.9	21.8	C	C	C	21.3	21.1	22.2	C	C	C
26	Perris Bl / Sunnymead Bl	TS	40.5	48.4	47.4	D	D	D	40.4	48.3	47.3	D	D	D
27	SR-60 EB On-Ramp / Sunnymead Bl	CSS	34.1	**>100.0**	**>100.0**	D	**F**	**F**	34.6	**>100.0**	**>100.0**	D	**F**	**F**
28	Perris Bl / Eucalyptus Av	TS	33.7	32.0	34.7	C	C	C	32.7	32.2	31.7	C	C	C
29	Perris Bl / Cottonwood Av	TS	31.9	33.3	31.5	C	C	C	31.7	33.8	32.0	C	C	C
30	Perris Bl / Alessandro Bl	TS	24.0	28.3	28.7	C	C	C	24.1	30.0	30.6	C	C	C
31	Perris Bl / Cactus Av	TS	25.2	25.9	23.6	C	C	C	26.1	27.9	25.9	C	C	C
32	Perris Bl / John F. Kennedy Dr	TS	25.0	23.3	23.5	D	C	C	26.0	25.0	25.3	C	C	C
33	Perris Bl / Gentian Av	TS	13.7	14.2	13.2	B	B	B	14.2	15.7	16.3	B	B	B
34	Perris Bl / Driveway 3	**CSS**	Not an Analysis Location						9.6	11.6	12.3	A	B	B
35	Perris Bl / Driveway 4	**CSS**	Not an Analysis Location						9.7	11.3	12.0	A	B	B
36	Perris Bl / Santiago Dr	CSS	15.0	34.0	18.1	C	D	C	27.7	**>100.0**	**>100.0**	D	**F**	**F**
37	Perris Bl / Iris Av	TS	39.5	33.7	39.8	D	C	D	40.4	35.9	39.9	D	D	D
38	Perris Bl / Krameria Av	TS	40.4	40.3	40.2	D	D	D	40.8	41.4	41.8	D	D	D
39	Perris Bl / San Michele Rd	TS	13.7	25.3	17.6	B	C	B	20.8	25.0	20.1	C	C	C
40	Perris Bl / Nandina Av	TS	30.2	29.8	29.4	C	C	C	30.4	30.3	30.0	C	C	C
41	Perris Bl / Harley Knox Bl	TS	12.5	13.2	10.4	B	B	B	13.3	14.2	11.3	B	B	B

Table 5-1
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Intersection Analysis for Existing Plus Project Conditions

#	Intersection	Traffic Control [2]	Existing (2013) Delay [1] (secs.) AM	PM	Sat	Level of Service AM	PM	Sat	Existing Plus Project Delay [1] (secs.) AM	PM	Sat	Level of Service AM	PM	Sat
42	Perris Bl / Ramona Expressway	TS	40.3	36.2	37.4	D	D	D	40.4	36.5	37.4	D	D	D
43	Kitching St / Cactus Av	TS	28.3	23.3	21.8	C	C	C	28.4	23.4	21.9	C	C	C
44	Kitching St / John F. Kennedy Dr	TS	**42.0**	26.4	22.9	**D**	C	C	**43.2**	27.5	23.5	**D**	C	C
45	Kitching St / Iris Av	TS	23.7	23.0	22.5	C	C	C	23.8	23.1	22.6	C	C	C
46	Lasselle St / Iris Av	TS	36.7	37.7	35.3	D	D	D	36.8	37.9	33.9	D	D	C

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

BOLD = Potentially Significant Impact: 1) the pre-Project condition is at or above LOS "D" and Project traffic causes deterioration below LOS "D" or 2) if the pre-Project condition is already below LOS "D" (i.e., LOS "E" or "F") and the Project contributes 50 or more peak hour vehicle trips, the Project's impact is considered "significant". Consistent with County traffic study guidelines, the impact will be improved back to acceptable LOS (i.e., LOS "D" or better), thus reducing the Project's contribution to the impact "less-than-significant".

[1] Per the 2000 Highway Capacity Manual, 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. The I-215 ramp locations at Cactus Avenue and SR-60 ramp locations at Perris Boulevard have been analyzed using the Synchro software (Version 8).

[2] CSS = Cross-street Stop; TS = Traffic Signal: AWS= All-way stop

As shown on Table 5-1, the addition of Project traffic has the potential to worsen the peak hour operations, resulting in potentially significant impacts at study area intersection #36 and #44, as described below. At other intersection identified as deficient on Table 5-1, the Project would not contribute more than 50 peak hour trips, and would therefore not substantively affect pre-project LOS conditions.

Perris Boulevard / Santiago Drive (#36) – This intersection is currently operating at an acceptable LOS (LOS "D" or better) during the AM, PM and Saturday mid-day peak hours under Existing (2013) traffic conditions. The addition of Project traffic is anticipated to worsen the LOS operations from acceptable to unacceptable (LOS "E" or LOS "F"), which exceeds the stated significance threshold for intersections that are currently operating at acceptable LOS under pre-project conditions. As such, the impact is considered potentially **significant (Impact 1.1)**.

Kitching Street / John F. Kennedy Drive (#44) – This intersection is currently operating at LOS "E" during the AM peak hour and LOS "D" during the PM and Saturday mid-day peak hours under Existing (2013) traffic conditions. Although the intersection is anticipated to continue to operate at unacceptable LOS with the addition of Project traffic, the Project is anticipated to contribute more than 50 peak hour trips to this intersection. Based on the stated significance threshold for intersections already operating at LOS "D" or worse under pre-project conditions, the impact is considered potentially **significant (Impact 2.1)**.

Measures to address Project impacts for E+P traffic conditions are discussed in Section 5.8 *Project Impacts and Mitigation Measures*.

5.4 ROADWAY SEGMENT CAPACITY ANALYSIS

Based solely on calculated lane capacities, the following additional roadway segment LOS would be considered deficient under E+P traffic conditions in addition to those previously identified under Existing conditions, as shown on Table 5-2.

ID	Roadway Segments
135	Perris Boulevard, North of Harley Knox Boulevard – LOS "E"

Notwithstanding the above-noted calculated roadway segment capacity deficiency, the functional operation and capacity of this roadway segment is controlled by the intersections that are located at each end of the segment. In this regard, LOS of controlling intersection(s) on either end of any given roadway segment is considered the appropriate and accurate indicator of the functional LOS of the roadway segment under consideration. That is, irrespective of a roadway segment's calculated capacity based on its lane configurations alone, the segment's operational conditions are defined by that segment's intersection operations efficiencies. To this end, the peak hour analysis indicates that

Table 5-2
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Existing Plus Project Conditions
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Existing (2013)	V/C	LOS	E+P	V/C	LOS	Acceptable LOS
1	Sunnymead Boulevard	West of SR-60 EB Off-Ramp	4D	37,500	12,192	0.33	A	12,192	0.33	A	D
2		SR-60 EB Off-Ramp to Perris Boulevard	4D	37,500	24,156	0.64	B	24,156	0.64	B	D
3		Perris Boulevard to SR-60 EB On-Ramp	4D	37,500	17,160	0.46	A	17,256	0.46	A	D
4		East of SR-60 EB On-Ramp	4D	37,500	12,960	0.35	A	12,960	0.35	A	D
5	Eucalyptus Avenue	West of Perris Boulevard	2U	12,500	5,244	0.42	A	5,244	0.42	A	C
6		East of Perris Boulevard	2U	12,500	6,876	0.55	A	7,068	0.57	A	C
7	Cottonwood Avenue	West of Indian Street	2D	18,750	9,720	0.52	A	9,912	0.53	A	C
8		East of Indian Street	2D	18,750	7,836	0.42	A	8,220	0.44	A	C
9		West of Perris Boulevard	2D	18,750	6,708	0.36	A	7,286	0.39	A	C
10		East of Perris Boulevard	2U	12,500	7,668	0.61	B	7,956	0.64	B	C
11	Alessandro Boulevard	West of Heacock Street	5D	46,900	27,312	0.58	A	27,697	0.59	A	D
12		East of Heacock Street	6D	56,300	26,004	0.46	A	26,677	0.47	A	D
13		West of Indian Street	6D	56,300	23,424	0.42	A	24,098	0.43	A	D
14		East of Indian Street	6D	56,300	22,836	0.41	A	23,606	0.42	A	D
15		West of Perris Boulevard	6D	56,300	21,960	0.39	A	22,826	0.41	A	D
16		East of Perris Boulevard	4D	37,500	18,000	0.48	A	18,288	0.49	A	D
17	Cactus Avenue	West of I-215 Freeway	4D	37,500	12,576	0.34	A	12,672	0.34	A	D
18		I-215 SB Ramps to I-215 NB Ramps	4D	37,500	22,548	0.60	A	22,740	0.61	B	D
19		East of I-215 NB Ramps	4D	37,500	**34,644**	**0.92**	**E**	**34,932**	**0.93**	**E**	D
20		West of Elsworth Street	4D	37,500	**34,092**	**0.91**	**E**	**34,380**	**0.92**	**E**	D
21		East of Elsworth Street	5D	46,900	30,420	0.65	B	30,708	0.65	B	D
22		West of Frederick Street	5D	46,900	29,508	0.63	B	29,796	0.64	B	D
23		East of Frederick Street	5D	46,900	32,544	0.69	B	33,024	0.70	B	D
24		West of Graham Street	5D	46,900	31,536	0.67	B	32,018	0.68	B	D
25		East of Graham Street	5D	46,900	26,232	0.56	A	26,714	0.57	A	D
26		West of Heacock Street	5D	46,900	26,112	0.56	A	26,594	0.57	A	D
27		East of Heacock Street	4D	37,500	15,936	0.42	A	16,514	0.44	A	C
28		West of Indian Street	4D	37,500	15,468	0.41	A	16,046	0.43	A	C
29		East of Indian Street	4D	37,500	16,392	0.44	A	17,162	0.46	A	C
30		West of Perris Boulevard	4D	37,500	14,064	0.38	A	14,834	0.40	A	C
31		East of Perris Boulevard	4D	37,500	13,776	0.37	A	14,064	0.38	A	C
32		West of Kitching Street	4D	37,500	13,596	0.36	A	13,596	0.36	A	C
33		East of Kitching Street	4D	37,500	10,956	0.29	A	11,244	0.30	A	C
34	John F. Kennedy Drive	West of Heacock Street	4D	37,500	8,040	0.21	A	8,136	0.22	A	D
35		East of Heacock Street	3D	28,150	10,044	0.36	A	10,140	0.36	A	C
36		West of Indian Street	4D	37,500	9,036	0.24	A	9,228	0.25	A	C
37		East of Indian Street	4D	37,500	9,108	0.24	A	9,492	0.25	A	C
38		West of Perris Boulevard	4D	37,500	9,048	0.24	A	9,530	0.25	A	C
39		East of Perris Boulevard	4D	37,500	9,144	0.24	A	10,106	0.27	A	C
40		West of Kitching Street	4D	37,500	8,280	0.22	A	9,242	0.25	A	C
41		East of Kitching Street	4D	37,500	5,796	0.15	A	6,084	0.16	A	C
42	Gentian Avenue	East of Heacock Street	2U	12,500	1,728	0.14	A	Not an Analysis Location			
43		West of Indian Street	4U	25,000	1,584	0.06	A	1,680	0.07	A	C
44		Indian Street to Driveway 1[2]	2U	12,500	Does Not Exist			0	0.00	A	C
45		Driveway 1 to Perris Boulevard[2]	2U	12,500	Does Not Exist			1,444	0.12	A	C
46		East of Perris Boulevard	2U	12,500	1,968	0.16	A	2,160	0.17	A	C
47	Santiago Drive	East of Indian St.	2U	12,500	72	0.01	A	Not an Analysis Location			
48		West of Driveway 2	2U	12,500	60	0.00	A	60	0.00	A	C
49		Driveway 2 to Perris Boulevard	2U	12,500	60	0.00	A	1,745	0.14	A	C
50		East of Perris Boulevard	2U	12,500	2,460	0.20	A	2,652	0.21	A	C

Existing Plus Project Conditions
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Existing (2013)	V/C	LOS	E+P	V/C	LOS	Acceptable LOS
51	Iris Avenue	West of Indian Street	2U	12,500	9,840	0.79	C	10,032	0.80	C	D
52		East of Indian Street	3D	28,150	12,504	0.44	A	12,888	0.46	A	D
53		West of Perris Boulevard	4D	37,500	11,988	0.32	A	12,566	0.34	A	D
54		East of Perris Boulevard	4D	37,500	15,264	0.41	A	16,612	0.44	A	D
55		West of Kitching Street	4D	37,500	18,480	0.49	A	19,634	0.52	A	C
56		East of Kitching Street	6D	56,300	18,300	0.33	A	19,262	0.34	A	C
57		West of Lasselle Street	6D	56,300	16,524	0.29	A	17,293	0.31	A	C
58		East of Lasselle Street	6D	56,300	19,404	0.34	A	19,789	0.35	A	C
59	Krameria Avenue	East of Indian Street	2D	18,750	2,640	0.14	A	2,736	0.15	A	C
60		West of Perris Boulevard	2U	12,500	3,300	0.26	A	3,396	0.27	A	C
61		East of Perris Boulevard	4D	37,500	7,560	0.20	A	7,752	0.21	A	D
62	San Michele Road	West of Indian Street	4D	37,500	852	0.02	A	Not an Analysis Location			
63		East of Indian Street	3D	28,150	1,824	0.06	A	Not an Analysis Location			
64		West of Perris Boulevard	2D	18,750	1,668	0.09	A	1,668	0.09	A	D
65		East of Perris Boulevard	2U	12,500	36	0.00	A	36	0.00	A	D
66	Nandina Avenue	West of Indian Street	3D	28,150	2,508	0.09	A	Not an Analysis Location			
67		East of Indian Street	2D	18,750	1,296	0.07	A	Not an Analysis Location			
68		West of Perris Boulevard	2D	18,750	876	0.05	A	876	0.05	A	D
69		East of Perris Boulevard	2U	12,500	312	0.02	A	312	0.02	A	D
70	Harley Knox Boulevard	West of Webster Avenue	2D	18,750	9,300	0.50	A	9,588	0.51	A	D
71		East of Webster Avenue	2D	18,750	9,300	0.50	A	9,876	0.53	A	D
72		West of Indian Street	3D	28,150	9,552	0.34	A	10,130	0.36	A	D
73		East of Indian Street	3D	28,150	5,388	0.19	A	6,062	0.22	A	D
74		West of Perris Boulevard	2D	18,750	4,584	0.24	A	5,258	0.28	A	D
75	Ramona Expressway	West of Perris Boulevard	6D	56,300	28,620	0.51	A	28,812	0.51	A	D
76		East of Perris Boulevard	6D	56,300	25,080	0.45	A	25,465	0.45	A	D
77	Old Frontage Road	North of Cactus Avenue	2U	12,500	2,688	0.22	A	2,688	0.22	A	D
78	Elsworth Street	North of Cactus Avenue	4D	37,500	6,516	0.17	A	6,516	0.17	A	D
79		South of Cactus Avenue	4U	25,000	8,580	0.34	A	8,580	0.34	A	D
80	Frederick Street	North of Cactus Avenue	4D	37,500	5,772	0.15	A	5,964	0.16	A	D
81	Graham Street	North of Cactus Avenue	4D	37,500	6,036	0.16	A	6,036	0.16	A	D
82		South of Cactus Avenue	6D	56,300	9,132	0.16	A	9,132	0.16	A	D
83	Heacock Street	North of Alessandro Boulevard	4D	37,500	15,336	0.41	A	15,480	0.41	A	C
84		South of Alessandro Boulevard	4D	37,500	12,108	0.32	A	12,108	0.32	A	D
85		North of Cactus Avenue	4D	37,500	11,196	0.30	A	11,292	0.30	A	D
86		South of Cactus Avenue	4D	37,500	19,140	0.51	A	19,140	0.51	A	D
87		North of John F. Kennedy Drive	4D	37,500	17,676	0.47	A	17,676	0.47	A	D
88		South of John F. Kennedy Drive	4D	37,500	15,096	0.40	A	15,096	0.40	A	D
89		North of Gentian Avenue	3D	28,150	13,752	0.49	A	Not an Analysis Location			
90		South of Gentian Avenue	2U	12,500	**12,192**	**0.98**	**E**	Not an Analysis Location			
91	Webster Avenue	South of Harley Knox Boulevard	2U	12,500	72	0.01	A	72	0.01	A	D
92	Indian Street	North of Cottonwood Avenue	2U	12,500	7,716	0.62	B	7,908	0.63	B	C
93		South of Cottonwood Avenue	4U	25,000	9,408	0.38	A	9,408	0.38	A	C
94		North of Alessandro Boulevard	3D	28,150	10,680	0.38	A	10,776	0.38	A	D
95		South of Alessandro Boulevard	4D	37,500	10,452	0.28	A	10,452	0.28	A	D
96		North of Cactus Avenue	4D	37,500	10,992	0.29	A	11,184	0.30	A	C
97		South of Cactus Avenue	4D	37,500	9,132	0.24	A	9,132	0.24	A	C
98		North of John F. Kennedy Drive	4D	37,500	7,128	0.19	A	7,128	0.19	A	C
99		South of John F. Kennedy Drive	4D	37,500	8,016	0.21	A	8,208	0.22	A	C
100		North of Gentian Avenue	2U	12,500	5,964	0.48	A	6,060	0.48	A	C
101		Gentian Avenue to Santiago Drive	4D	37,500	6,468	0.17	A	6,468	0.17	A	D
102		Santiago Drive to Iris Avenue	2U	12,500	6,804	0.54	A	6,804	0.54	A	D
103		South of Iris Avenue	2U	12,500	4,260	0.34	A	4,452	0.36	A	D
104		North of Krameria Avenue	2U	12,500	4,392	0.35	A	4,584	0.37	A	D
105		South of Krameria Avenue	2U	12,500	2,040	0.16	A	2,136	0.17	A	D

Existing Plus Project Conditions
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Existing (2013)	V/C	LOS	E+P	V/C	LOS	Acceptable LOS
106	Indian Street	North of San Michele Road	3D	28,150	24	0.00	A	Not an Analysis Location			
107		San Michele Road to Nandina Avenue	2D	18,750	1,932	0.10	A	Not an Analysis Location			
108		South of Nandina Avenue	2D	18,750	4,512	0.24	A	Not an Analysis Location			
109		North of Harley Knox Boulevard	2D	18,750	6,492	0.35	A	6,492	0.35	A	D
110		South of Harley Knox Boulevard	4D	37,500	4,344	0.12	A	4,440	0.12	A	D
111	Perris Boulevard	North of SR-60 WB Ramps	6D	56,300	30,480	0.54	A	30,672	0.54	A	D
112		SR-60 WB Ramps to Sunnymead Boulevard	7D	65,683	33,072	0.50	A	33,360	0.51	A	D
113		South of Sunnymead Boulevard	4D	37,500	24,324	0.65	B	24,708	0.66	B	D
114		North of Eucalyptus Avenue	4D	37,500	20,160	0.54	A	20,545	0.55	A	D
115		South of Eucalyptus Avenue	4D	37,500	18,168	0.48	A	18,745	0.50	A	D
116		North of Cottonwood Avenue	4D	37,500	22,800	0.61	B	23,474	0.63	B	D
117		South of Cottonwood Avenue	4D	37,500	20,280	0.54	A	21,820	0.58	A	D
118		North of Alessandro Boulevard	4D	37,500	18,036	0.48	A	19,576	0.52	A	D
119		South of Alessandro Boulevard	4D	37,500	18,252	0.49	A	20,946	0.56	A	D
120		North of Cactus Avenue	4D	37,500	16,968	0.45	A	19,759	0.53	A	D
121		South of Cactus Avenue	6D	56,300	17,568	0.31	A	21,417	0.38	A	D
122		North of John F. Kennedy Drive	6D	56,300	15,312	0.27	A	19,162	0.34	A	D
123		South of John F. Kennedy Drive	6D	56,300	18,720	0.33	A	24,014	0.43	A	D
124		North of Gentian Avenue	6D	56,300	16,056	0.29	A	21,350	0.38	A	D
125		Gentian Avenue to Driveway 3	6D	56,300	16,008	0.28	A	21,014	0.37	A	D
126		Driveway 3 to Driveway 4	6D	56,300	16,008	0.28	A	19,666	0.35	A	D
127		Driveway 4 to Santiago Drive	6D	56,300	16,008	0.28	A	19,425	0.35	A	D
128		Santiago Drive to Iris Avenue	6D	56,300	15,240	0.27	A	19,188	0.34	A	D
129		South of Iris Avenue	6D	56,300	16,044	0.28	A	18,066	0.32	A	D
130		North of Krameria Avenue	6D	56,300	14,664	0.26	A	16,684	0.30	A	D
131		South of Krameria Avenue	6D	56,300	15,540	0.28	A	17,272	0.31	A	D
132		North of San Michele Road	6D	56,300	16,776	0.30	A	18,316	0.33	A	D
133		San Michele Road to Nandina Avenue	6D	56,300	15,888	0.28	A	17,428	0.31	A	D
134		South of Nandina Avenue	6D	56,300	15,828	0.28	A	17,368	0.31	A	D
135		North of Harley Knox Boulevard	2D	18,750	16,524	0.88	D	**18,064**	**0.96**	**E**	D
136		South of Harley Knox Boulevard	2D	18,750	15,156	0.81	D	16,022	0.85	D	D
137		North of Ramona Expressway	3D	28,150	13,572	0.48	A	14,437	0.51	A	D
138		South of Ramona Expressway	5D	46,916	14,280	0.30	A	14,568	0.31	A	D
139	Kitching Street	North of Cactus Avenue	4D	37,500	6,276	0.17	A	6,468	0.17	A	C
140		South of Cactus Avenue	2U	12,500	7,668	0.61	B	8,148	0.65	B	C
141		North of John F. Kennedy Drive	2U	12,500	6,912	0.55	A	7,394	0.59	A	C
142		South of John F. Kennedy Drive	2U	12,500	8,340	0.67	B	8,532	0.68	B	C
143		North of Iris Avenue	4D	37,500	5,904	0.16	A	6,000	0.16	A	C
144		South of Iris Avenue	4U	25,000	7,068	0.28	A	7,164	0.29	A	C
145	Lasselle Street	North of Iris Avenue	4D	37,500	18,276	0.49	A	18,468	0.49	A	D
146		South of Iris Avenue	4D	37,500	26,292	0.70	B	26,484	0.71	C	C

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

[1] These maximum roadway capacities have been extracted from the City of Moreno Valley's Transportation Division's Traffic Impact Analysis Preparation Guidelines (August 2007).

[2] Assumes proposed downgrade of Gentian Avenue to a Collector.

the adjacent study area intersections along study area roadway segment #135 (Perris Boulevard, north of Harley Knox Boulevard) are anticipated to operate at acceptable LOS, as would the intervening roadway segment. On this basis, Project traffic would not adversely affect study area roadway segment #135 (Perris Boulevard, north of Harley Knox Boulevard under E+P traffic conditions. As such, no roadway segment widening has been recommended.

5.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for E+P traffic conditions are based on E+P ADT volumes. For E+P conditions, there are no additional study area intersections anticipated to warrant a traffic signal in addition to those previously warranted under Existing (2013) conditions (see Appendix "5.2").

5.6 PROGRESSION ANALYSIS

A progression analysis was also performed for southbound and northbound off-ramps at the I-215/Cactus Avenue interchange and the eastbound and westbound off-ramps at the SR-60/Perris Boulevard interchange to assess vehicle queues for the off ramps that may potentially impact peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-215 or SR-60 Freeway mainline for E+P traffic conditions. Progression analysis findings are presented in Table 5-3. As shown on Table 5-3, there are no potential queuing issues anticipated during the weekday AM, weekday PM or Saturday mid-day peak 95th percentile traffic flows for E+P traffic conditions.

Worksheets for E+P conditions queuing analysis is provided in Appendix "5.3".

5.7 FREEWAY MAINLINE ANALYSIS

The basic freeway segments on the SR-60 Freeway and I-215 Freeway within the defined study area are anticipated to perform at acceptable levels of service (i.e., LOS "D" or better) with the addition of Project traffic. The freeway merge/diverge ramp junctions on the SR-60 Freeway and I-215 Freeway within the defined study area are anticipated to perform at acceptable levels of service (i.e., LOS "D" or better) with the addition of Project traffic.

As the proposed Project is anticipated to contribute nominal trips to the SR-60 Freeway and I-215 Freeway (i.e., less than 25 two-way peak hour trips), it was determined that basic freeway segment and freeway merge/diverge ramp junction analyses beyond E+P traffic conditions was not necessary.

The detailed freeway mainline analysis for Existing (2013) and E+P traffic conditions is provided in Appendix "5.4".

Table 5-3

Existing Plus Project Conditions
AM/PM Peak Hour Stacking Length Summary at I-215/Cactus Avenue and SR-60/Perris Boulevard

Intersection	Movement	Stacking Distance (Feet)	95th Percentile Stacking Distance Required (Feet)			Acceptable?[1]		
			AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM	PM	SAT
I-215 SB Ramps / Cactus Av.	SBR	1,115	26	0	0	Yes	Yes	Yes
I-215 NB Ramps / Cactus Av.	NBL	145	113	30	28	Yes	Yes	Yes
	NBT	1,650	59	35	21	Yes	Yes	Yes
SR-60 EB Off-Ramp / Sunnymead Bl.	SBL	1,295	191	465 [2]	313	Yes	Yes	Yes
Perris Bl. / SR-60 WB Ramps	WBL-T-R	1,230	239	262	227	Yes	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.

5.8 PROJECT IMPACTS AND MITIGATION MEASURES

Improvement strategies have been recommended at intersections that have been identified as impacted to reduce each location's peak hour delay and improve the associated LOS grade to pre-project (i.e., Existing (2013) conditions) or better. The effectiveness of the proposed recommended improvements is presented in Table 5-4 for E+P traffic conditions.

The following intersection improvements are recommended to reduce the E+P impacts to ***"less-than-significant"***:

Mitigation Measure 1.1 – Perris Boulevard / Santiago Drive (#36):

- Install a traffic signal.
- Construct an eastbound left turn lane.

Mitigation Measure 2.1 – Kitching Street / John F. Kennedy Drive (#44):

- Construct a northbound left turn lane.

Worksheets for E+P traffic conditions, with improvements, HCM calculations are provided in Appendix "5.5".

Table 5-4

Recommended Improvements for Existing Plus Project Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)			Level of Service		
			Northbound			Southbound			Eastbound			Westbound								
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	Sat	AM	PM	Sat
36	Perris Bl / Santiago Dr																			
	- Existing (2013) (Pre-Project)	CSS	1	3	0	1	3	0	0	1	0	0	1	0	15.0	34.0	18.1	C	D	C
	- Without Improvements	CSS	1	3	0	1	3	0	0	1	0	0	1	0	27.7	**>100.0**	**>100.0**	D	**F**	**F**
	- With Improvements	**TS**	1	3	0	1	3	0	**1**	1	0	0	1	0	36.9	39.3	41.5	D	D	D
44	Kitching St / John F. Kennedy Dr																			
	- Existing (2013) (Pre-Project)	TS	0	1	0	0	1	0	1	2	0	1	2	d	**42.0**	26.4	22.9	**D**	C	C
	- Without Improvements	TS	0	1	0	0	1	0	1	2	0	1	2	d	**43.2**	27.5	23.5	**D**	C	C
	- With Improvements	TS	**1**	1	0	0	1	0	1	2	0	1	2	d	33.5	24.9	22.3	C	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; > = Right-Turn Overlap Phasing; >> = Free-Right Turn Lane; d= Defacto Right Turn Lane; **1** = Improvement

2 Per the 2000 Highway Capacity Manual, 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 CSS = Cross-street Stop; AWS = All-Way Stop; TS = Traffic Signal

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6.0 OPENING YEAR CUMULATIVE (2018) TRAFFIC ANALYSIS

This section discusses the methods used to develop Opening Year Cumulative (2018) traffic forecasts for Without and With Project conditions and the resulting intersection operations, roadway segment analyses and traffic signal warrants. The Opening Year Cumulative (2018) traffic conditions analysis has been utilized to identify potential near-term cumulative traffic impacts.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year Cumulative (2018) conditions is consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- A third eastbound through lane is proposed to be constructed along Cactus Avenue between the I-215 Freeway and Veterans Way. Based on discussions with City staff, this widening project is identified as a Capital Improvement Plan (CIP) project and funding for the widening project has been secured. It is anticipated that the third eastbound through lane would be constructed by Summer 2014. As such, the third eastbound through lane has been assumed as part of the base condition (i.e., "without improvements").
- At project driveways and those facilities assumed to be constructed by the Project and cumulative developments to provide site access are also assumed to be in place for Opening Year Cumulative (2018) With Project conditions only (e.g., intersection turn lane improvements at the Project and cumulative development driveways).

6.2 OPENING YEAR CUMULATIVE (2018) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2013) traffic volumes plus an ambient growth factor of 10.4% plus traffic from pending and approved but not yet constructed known development projects in the area. The ADT volumes which can be expected for Opening Year Cumulative (2018) Without Project traffic conditions are shown on Exhibit 6-1. Exhibits 6-2, 6-3 and 6-4 show the AM, PM and Saturday mid-day peak hour intersection turning movement volumes for Opening Year Cumulative (2018) Without Project traffic conditions.

6.3 OPENING YEAR CUMULATIVE (2018) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2013) traffic volumes, an ambient growth factor of 10.4%, traffic from pending and approved but not yet constructed known development projects in the area and the addition of Project traffic. The ADT volumes which can be expected for Opening Year Cumulative (2018) With Project traffic conditions are shown on Exhibit 6-5. Exhibits 6-6, 6-7 and 6-8 show the AM, PM and

EXHIBIT 6-1

OPENING YEAR CUMULATIVE (2018) WITHOUT PROJECT AVERAGE DAILY TRAFFIC (ADT)

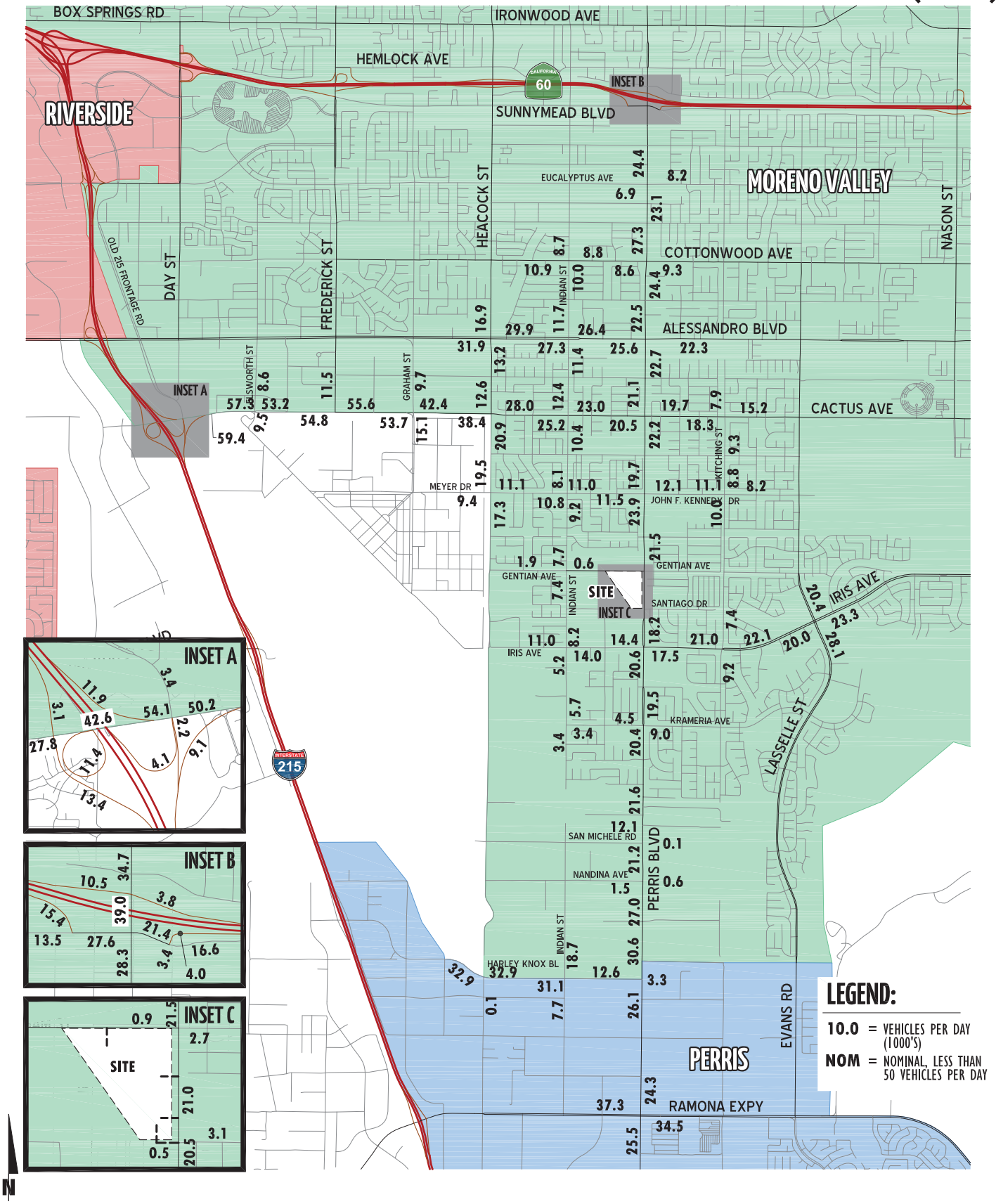
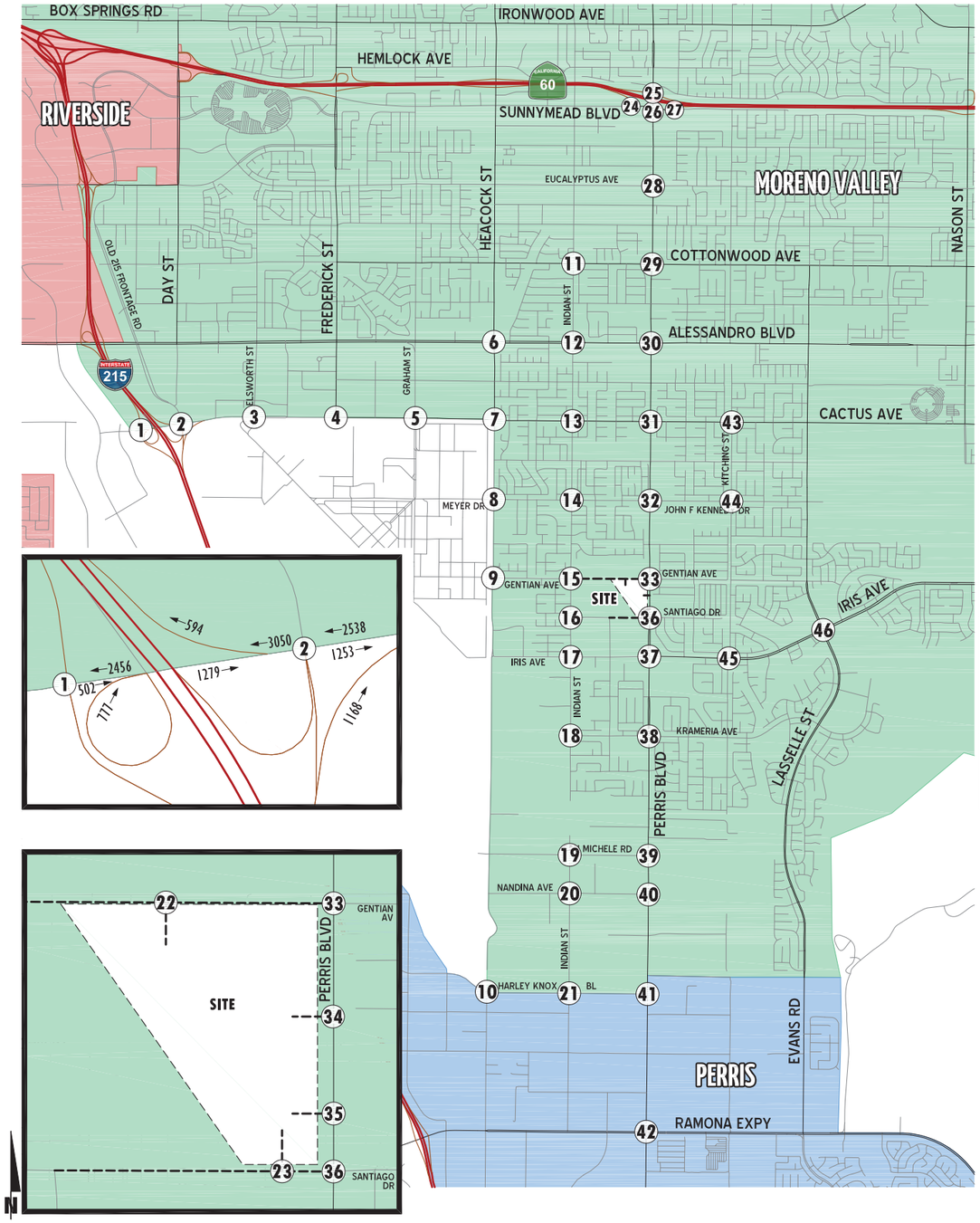


EXHIBIT 6-2

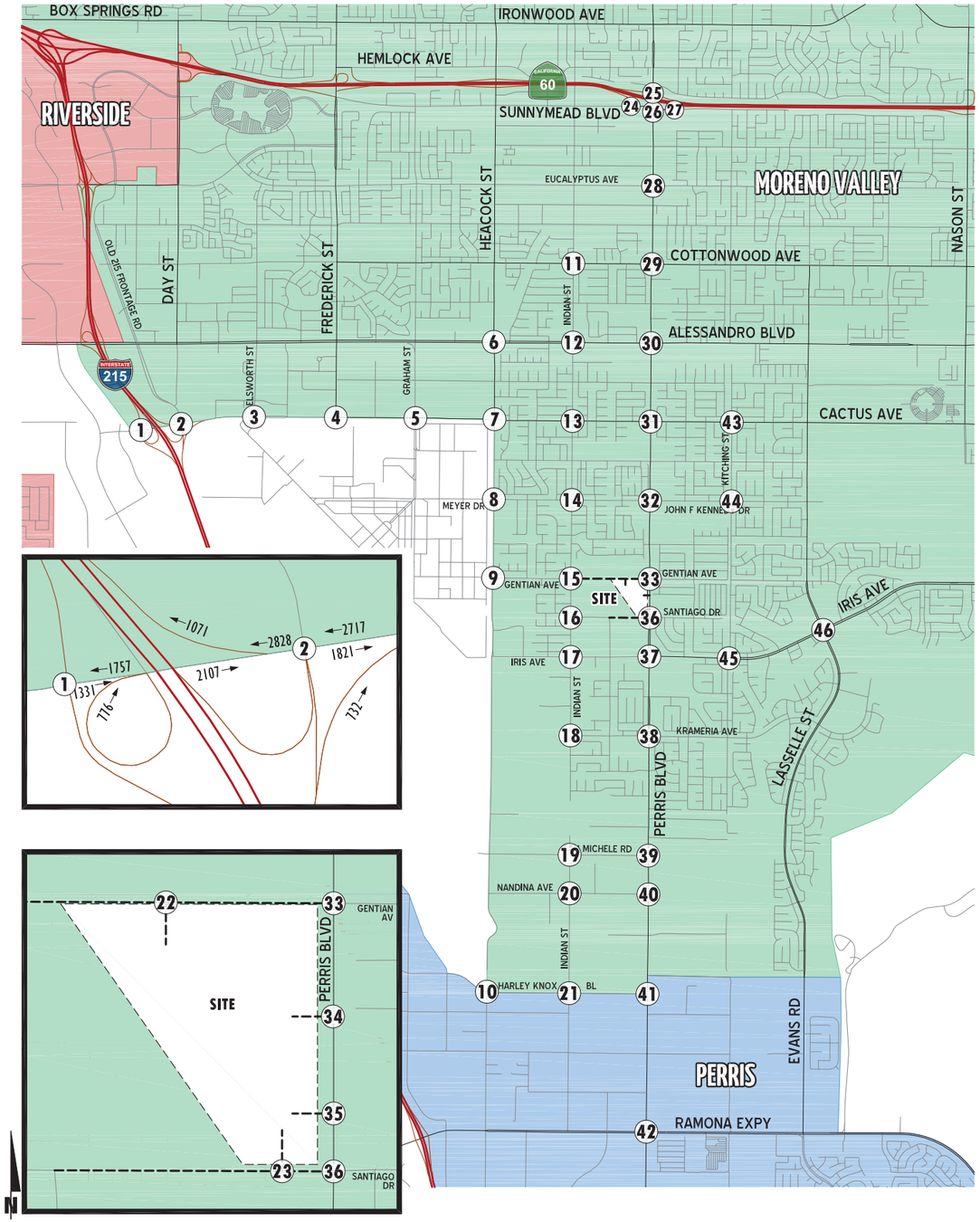
OPENING YEAR CUMULATIVE (2018) WITHOUT PROJECT AM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.	
480 ← 1877 ← 579	50 0 41 ← 182 ← 2356	129 138 74 ← 115 ← 2538 ← 107	60 171 ← 164 ← 2429	101 118 89 ← 161 ← 2179 ← 26	139 195 130 ← 163 ← 1095 ← 37	48 292 63 ← 124 ← 1482 ← 14	26 262 140 ← 264 ← 144 ← 41	
502 → 95 →	24 → 1176 → 80 →	644 130 36	177 → 1806 → 350 →	53 25 19	89 → 1519 →	134 → 1460 → 243 →	187 103 16	116 → 533 → 70 →
						194 367 54	134 → 931 → 390 →	791 597 8
							12 → 71 → 80 →	113 781 41
9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.	
NOT AN ANALYSIS LOCATION	0 0 0 ← 0 ← 492 ← 1	62 220 48 ← 83 ← 365 ← 49	87 240 71 ← 82 ← 1138 ← 80	23 361 87 ← 134 ← 1535 ← 66	36 194 122 ← 101 ← 417 ← 82	35 210 11 ← 30 ← 0 ← 4	NOT AN ANALYSIS LOCATION	
	0 → 446 → 1 →	51 → 238 → 139 →	49 → 565 → 90 →	42 → 789 → 69 →	33 → 289 → 57 →	25 → 0 → 68 →		
	1 0 2	108 260 39	163 260 86	100 436 40	59 298 103	75 359 1		
17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.	
17 260 315 ← 430 ← 420 ← 8	107 203 ← 276 ← 7	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	353 69 18 ← 46 ← 398 ← 17	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	74 642 ← 585	
32 → 238 → 46 →	163 25			964 → 498 → 240 →			395 →	
133 279 9				118 123 20				
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.	
443 1216 ← 200 ← 0 ← 205	231 843 347 ← 465 ← 168 ← 55	59 ← 672 ← 41	58 1031 156 ← 231 ← 253 ← 105	173 926 148 ← 210 ← 332 ← 104	197 506 199 ← 177 ← 924 ← 142	207 634 175 ← 113 ← 1046 ← 119	70 568 253 ← 125 ← 507 ← 259	
622 1303	358 → 378 → 302 →	319 → 530 → 23 →	44 → 112 → 71 →	148 → 217 → 97 →	139 → 500 → 102 →	124 → 568 → 158 →	129 → 469 → 119 →	
	187 1103 147	16 5 9	56 988 57	104 714 75	221 621 108	273 738 114	156 787 260	
33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.		
12 697 82 ← 121 ← 0 ← 35	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	30 661 52 ← 120 ← 34 ← 62	87 432 188 ← 168 ← 603 ← 228	37 713 105 ← 218 ← 315 ← 272	142 985 1 ← 1 ← 1 ← 1		
33 → 0 → 11 →			28 → 19 → 28 →	118 → 421 → 124 →	57 → 219 → 112 →	209 → 1 → 112 →		
3 962 19			31 835 100	273 684 284	76 918 277	121 1082 1		
40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.		
90 909 29 ← 7 ← 8 ← 12	257 802 36 ← 53 ← 66 ← 2	271 354 149 ← 365 ← 1511 ← 139	147 265 64 ← 85 ← 572 ← 75	85 239 129 ← 167 ← 508 ← 46	165 174 67 ← 95 ← 646 ← 169	104 629 146 ← 87 ← 758 ← 432		
52 → 4 → 71 →	285 → 98 → 98 →	380 → 703 → 136 →	128 → 622 → 236 →	110 → 671 → 181 →	114 → 639 → 146 →	124 → 483 → 338 →		
252 1214 49	144 1297 4	379 573 127	238 345 51	243 351 36	206 153 152	310 548 318		

EXHIBIT 6-3

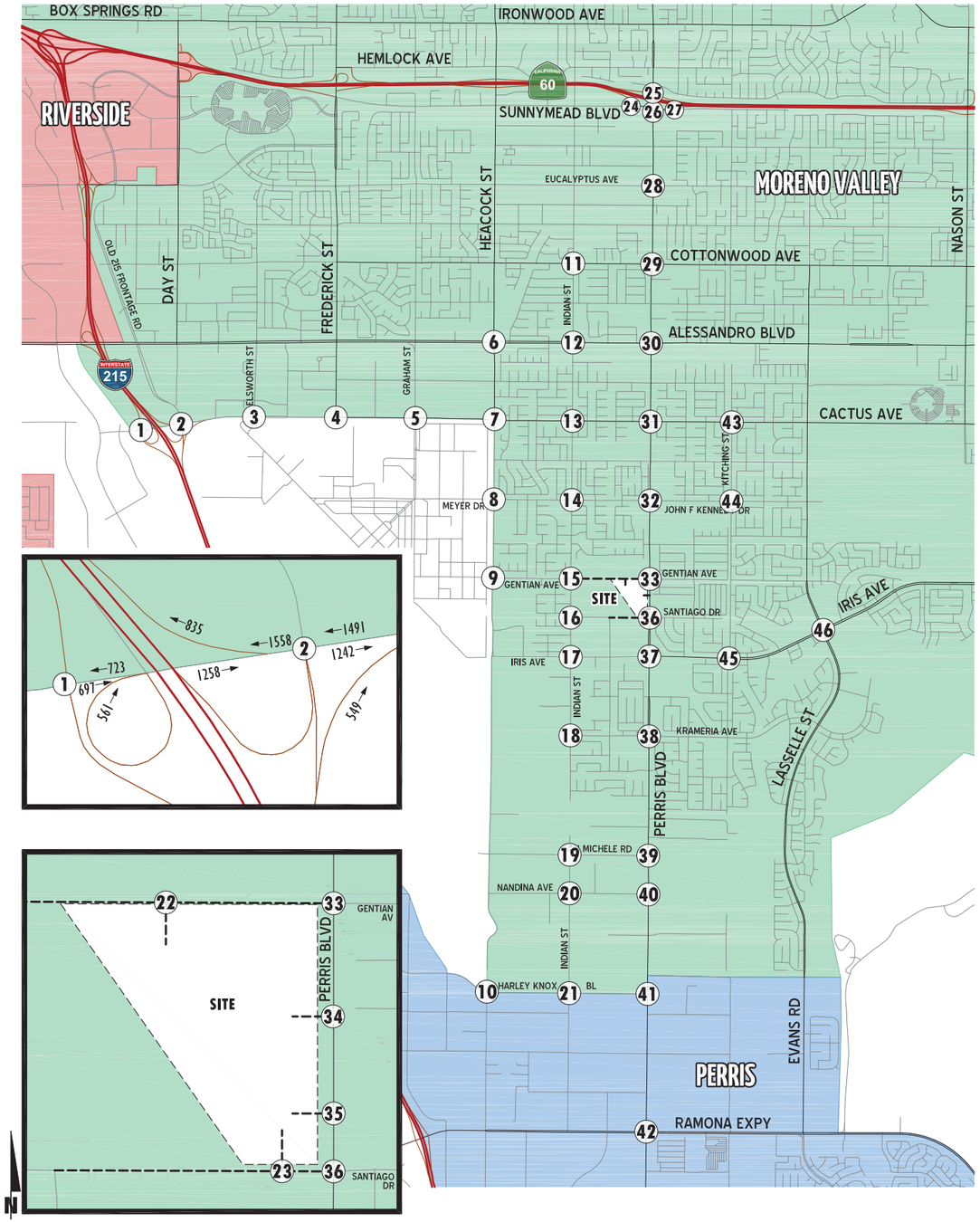
OPENING YEAR CUMULATIVE (2018) WITHOUT PROJECT PM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	**2** I-215 NB Ramps & Cactus Av.	**3** Elsworth St. & Cactus Av.	**4** Frederick St. & Cactus Av.	**5** Graham St. & Cactus Av.	**6** Heacock St. & Alessandro Bl.	**7** Heacock St. & Cactus Av.	**8** Heacock St. & John F. Kennedy Dr.	
215 / 728 / 1029	63 / 3 / 96 / 91 / 2626	190 / 24 / 146 / 112 / 1992 / 30	127 / 396 / 195 / 1753	169 / 198 / 217 / 100 / 1371 / 23	185 / 389 / 232 / 176 / 822 / 48	53 / 615 / 122 / 110 / 773 / 18	53 / 660 / 339 / 207 / 88 / 19	
1331 / 537	31 / 170 / 374 / 139 / 66 / 23	120 / 2317 / 33 / 438 / 114 / 150	56 / 2424	195 / 2474 / 585 / 296 / 126 / 25	123 / 1217 / 145 / 167 / 296 / 53	121 / 1511 / 944 / 504 / 482 / 6	33 / 241 / 243 / 82 / 377 / 48	
9 Heacock St. & Gentian Av.	**10** Heacock St. & Harley Knox Bl.	**11** Indian St. & Cottonwood Av.	**12** Indian St. & Alessandro Bl.	**13** Indian St. & Cactus Av.	**14** Indian St. & John F. Kennedy Dr.	**15** Indian St. & Gentian Av.	**16** Indian St. & Santiago Dr.	
NOT AN ANALYSIS LOCATION	0 / 0 / 0 / 0 / 449 / 4	49 / 279 / 29 / 47 / 254 / 46	70 / 370 / 226 / 136 / 990 / 73	69 / 597 / 195 / 150 / 672 / 40	29 / 304 / 71 / 42 / 219 / 63	25 / 303 / 36 / 21 / 0 / 3	NOT AN ANALYSIS LOCATION	
	0 / 589 / 0 / 2 / 0 / 2	51 / 343 / 146 / 83 / 274 / 47	126 / 1291 / 155 / 220 / 310 / 190	58 / 1398 / 97 / 70 / 406 / 50	24 / 370 / 110 / 59 / 229 / 47	31 / 0 / 68 / 25 / 248 / 4		
17 Indian St. & Iris Av.	**18** Indian St. & Krameria Av.	**19** Indian St. & San Michele	**20** Indian St. & Nandina Av.	**21** Indian St. & Harley Knox Bl.	**22** Driveway 1 & Gentian Av.	**23** Driveway 2 & Santiago Dr.	**24** SR-60 EB Off-Ramp & Sunnymead Bl.	
35 / 143 / 236 / 190 / 315 / 68	142 / 155 / 65 / 13	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	818 / 321 / 75 / 20 / 504 / 14	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	100 / 1209 / 445	
25 / 496 / 120 / 56 / 194 / 38	101 / 13			429 / 455 / 140 / 269 / 106 / 7			697	
25 Perris Bl. & SR-60 WB Ramps	**26** Perris Bl. & Sunnymead Bl.	**27** SR-60 EB On-Ramp & Sunnymead Bl.	**28** Perris Bl. & Eucalyptus Av.	**29** Perris Bl. & Cottonwood Av.	**30** Perris Bl. & Alessandro Bl.	**31** Perris Bl. & Cactus Av.	**32** Perris Bl. & John F. Kennedy Dr.	
384 / 1210 / 189 / 1 / 231	163 / 913 / 366 / 387 / 111 / 56	22 / 493 / 27	126 / 1039 / 180 / 157 / 238 / 104	135 / 1011 / 215 / 148 / 203 / 98	201 / 729 / 190 / 145 / 703 / 149	97 / 973 / 193 / 142 / 538 / 88	76 / 1003 / 218 / 96 / 267 / 203	
606 / 1568	709 / 708 / 489 / 172 / 1078 / 75	270 / 737 / 142 / 61 / 25 / 30	106 / 231 / 126 / 85 / 922 / 62	108 / 265 / 144 / 149 / 796 / 92	264 / 985 / 250 / 303 / 607 / 128	217 / 988 / 273 / 184 / 731 / 126	150 / 342 / 179 / 194 / 901 / 155	
33 Perris Bl. & Gentian Av.	**34** Perris Bl. & Driveway 3	**35** Perris Bl. & Driveway 4	**36** Perris Bl. & Santiago Dr.	**37** Perris Bl. & Iris Av.	**38** Perris Bl. & Krameria Av.	**39** Perris Bl. & San Michele Rd.		
36 / 1139 / 171 / 154 / 0 / 43	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	34 / 1049 / 105 / 88 / 31 / 63	81 / 683 / 274 / 175 / 410 / 213	50 / 787 / 165 / 132 / 136 / 200	147 / 831 / 1 / 1 / 1 / 1		
21 / 0 / 8 / 12 / 1015 / 117			15 / 28 / 15 / 12 / 1040 / 62	98 / 498 / 171 / 171 / 723 / 208	61 / 188 / 48 / 48 / 927 / 169	211 / 1 / 141 / 123 / 916 / 1		
40 Perris Bl. & Nandina Av.	**41** Perris Bl. & Harley Knox Bl.	**42** Perris Bl. & Ramona Exwy.	**43** Kitching St & Cactus Av.	**44** Kitching St & John F. Kennedy Dr.	**45** Kitching St & Iris Av.	**46** Laselle St. & Iris Av.		
25 / 1057 / 53 / 3 / 5 / 14	344 / 109 / 58 / 53 / 115 / 5	224 / 627 / 450 / 129 / 898 / 91	78 / 333 / 60 / 41 / 671 / 57	61 / 401 / 77 / 54 / 389 / 37	145 / 251 / 105 / 171 / 770 / 161	132 / 759 / 282 / 133 / 794 / 463		
135 / 2 / 204 / 4 / 828 / 17	238 / 70 / 252 / 51 / 755 / 2	255 / 1241 / 311 / 267 / 432 / 109	97 / 813 / 218 / 101 / 346 / 49	67 / 515 / 173 / 114 / 349 / 40	149 / 875 / 204 / 126 / 223 / 186	199 / 561 / 324 / 298 / 623 / 346		

EXHIBIT 6-4

OPENING YEAR CUMULATIVE (2018) WITHOUT PROJECT SATURDAY MID-DAY PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.
102 / 221 / 502	20 / 0 / 68 / 82 / 1409	57 / 85 / 66 / 101 / 1398 / 128	61 / 280 / 216 / 1628	126 / 147 / 110 / 69 / 1315 / 27	145 / 862 / 215 / 189 / 584 / 293	163 / 649 / 208 / 211 / 710 / 13	162 / 470 / 297 / 299 / 126 / 17
697 / 80	16 / 101 / 231 / 128 / 27 / 92	89 / 1384 / 101 / 158 / 169 / 119	48 / 1408	99 / 1445 / 419 / 296 / 113 / 15	218 / 538 / 82 / 43 / 832 / 264	195 / 973 / 464 / 482 / 614 / 16	104 / 209 / 143 / 45 / 520 / 30
9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.
NOT AN ANALYSIS LOCATION	0 / 0 / 0 / 0 / 228 / 27	56 / 285 / 44 / 46 / 249 / 51	91 / 278 / 215 / 102 / 1000 / 216	99 / 448 / 67 / 129 / 670 / 34	45 / 375 / 91 / 93 / 285 / 68	48 / 389 / 27 / 24 / 0 / 3	NOT AN ANALYSIS LOCATION
	0 / 328 / 0 / 16 / 0 / 31	47 / 303 / 137 / 93 / 305 / 59	96 / 1077 / 92 / 256 / 301 / 255	110 / 958 / 89 / 137 / 499 / 63	88 / 321 / 65 / 67 / 435 / 62	89 / 0 / 56 / 51 / 409 / 4	
17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.
64 / 105 / 178 / 224 / 311 / 68	113 / 124 / 112 / 24	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	277 / 532 / 63 / 5 / 307 / 31	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	103 / 1103 / 666
14 / 327 / 136 / 73 / 191 / 24	123 / 24			178 / 212 / 32 / 149 / 363 / 43			1001
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.
433 / 1065 / 159 / 3 / 204	213 / 715 / 342 / 479 / 232 / 109	39 / 682 / 52	112 / 1216 / 108 / 129 / 192 / 99	111 / 979 / 145 / 115 / 162 / 83	257 / 664 / 157 / 147 / 697 / 152	75 / 913 / 181 / 123 / 408 / 55	97 / 1016 / 201 / 122 / 246 / 183
774 / 1533	697 / 799 / 608 / 221 / 1131 / 125	343 / 675 / 248 / 138 / 37 / 66	84 / 158 / 108 / 60 / 1285 / 73	129 / 211 / 94 / 113 / 1003 / 85	334 / 847 / 262 / 420 / 659 / 103	148 / 628 / 299 / 304 / 830 / 264	216 / 233 / 133 / 185 / 1084 / 189
33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.	
30 / 1270 / 80 / 166 / 0 / 45	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	32 / 1206 / 77 / 61 / 10 / 47	110 / 826 / 328 / 250 / 638 / 206	100 / 772 / 199 / 148 / 118 / 132	226 / 811 / 1 / 1 / 1 / 1	
25 / 0 / 9 / 11 / 1313 / 99			16 / 28 / 26 / 10 / 1345 / 66	95 / 275 / 168 / 235 / 1031 / 180	61 / 109 / 48 / 35 / 1080 / 94	163 / 1 / 27 / 45 / 889 / 1	
40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.	
68 / 746 / 106 / 3 / 2 / 4	262 / 697 / 15 / 13 / 29 / 1	184 / 437 / 375 / 247 / 1035 / 140	61 / 289 / 77 / 59 / 438 / 52	76 / 270 / 42 / 38 / 392 / 68	130 / 255 / 85 / 172 / 751 / 254	84 / 337 / 241 / 126 / 816 / 274	
150 / 2 / 105 / 11 / 811 / 2	189 / 18 / 135 / 37 / 627 / 1	143 / 964 / 81 / 191 / 465 / 139	59 / 752 / 134 / 141 / 347 / 43	97 / 453 / 144 / 105 / 317 / 36	110 / 702 / 109 / 122 / 231 / 130	209 / 524 / 200 / 184 / 421 / 199	

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EXHIBIT 6-5

OPENING YEAR CUMULATIVE (2018) WITH PROJECT AVERAGE DAILY TRAFFIC (ADT)

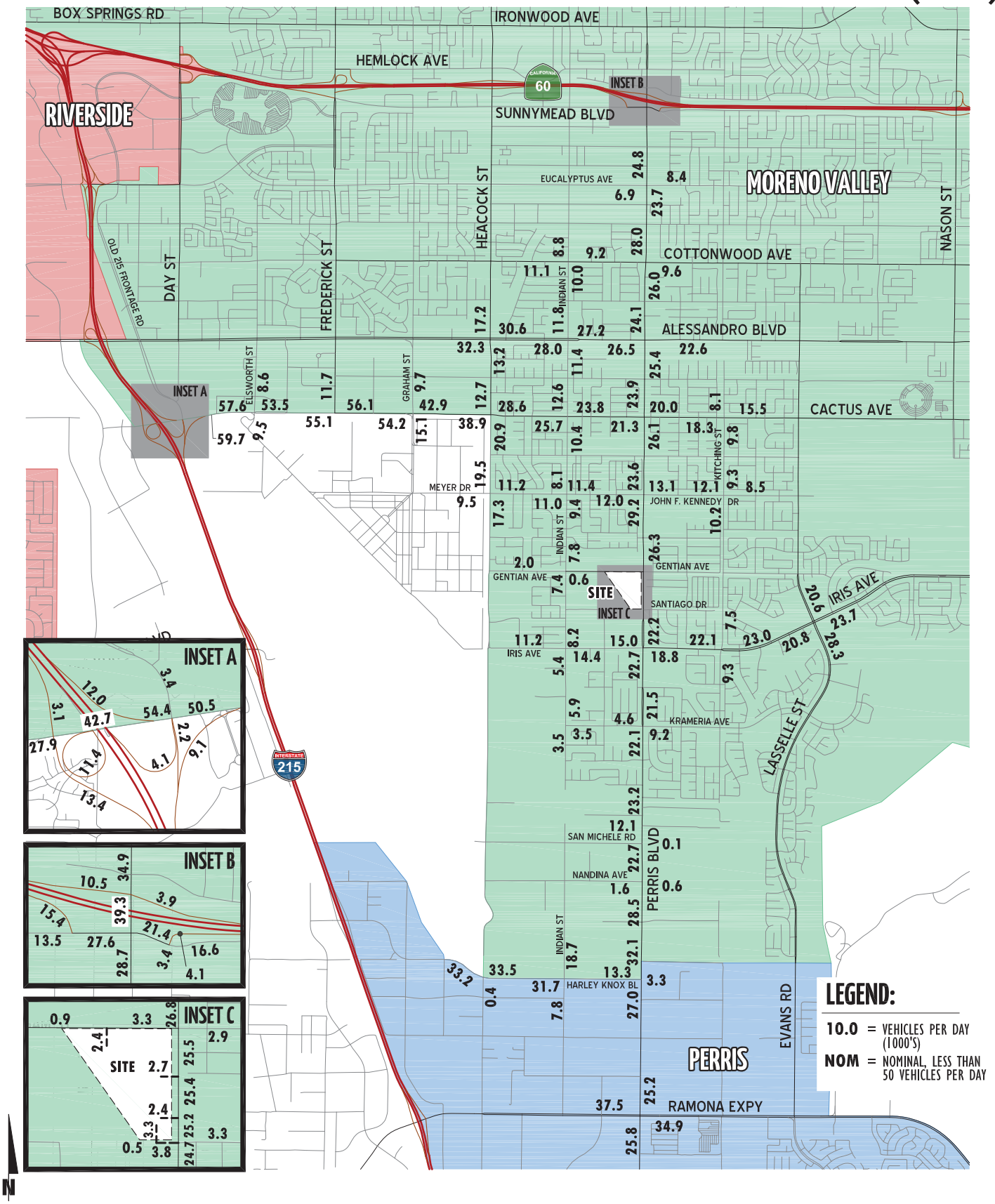

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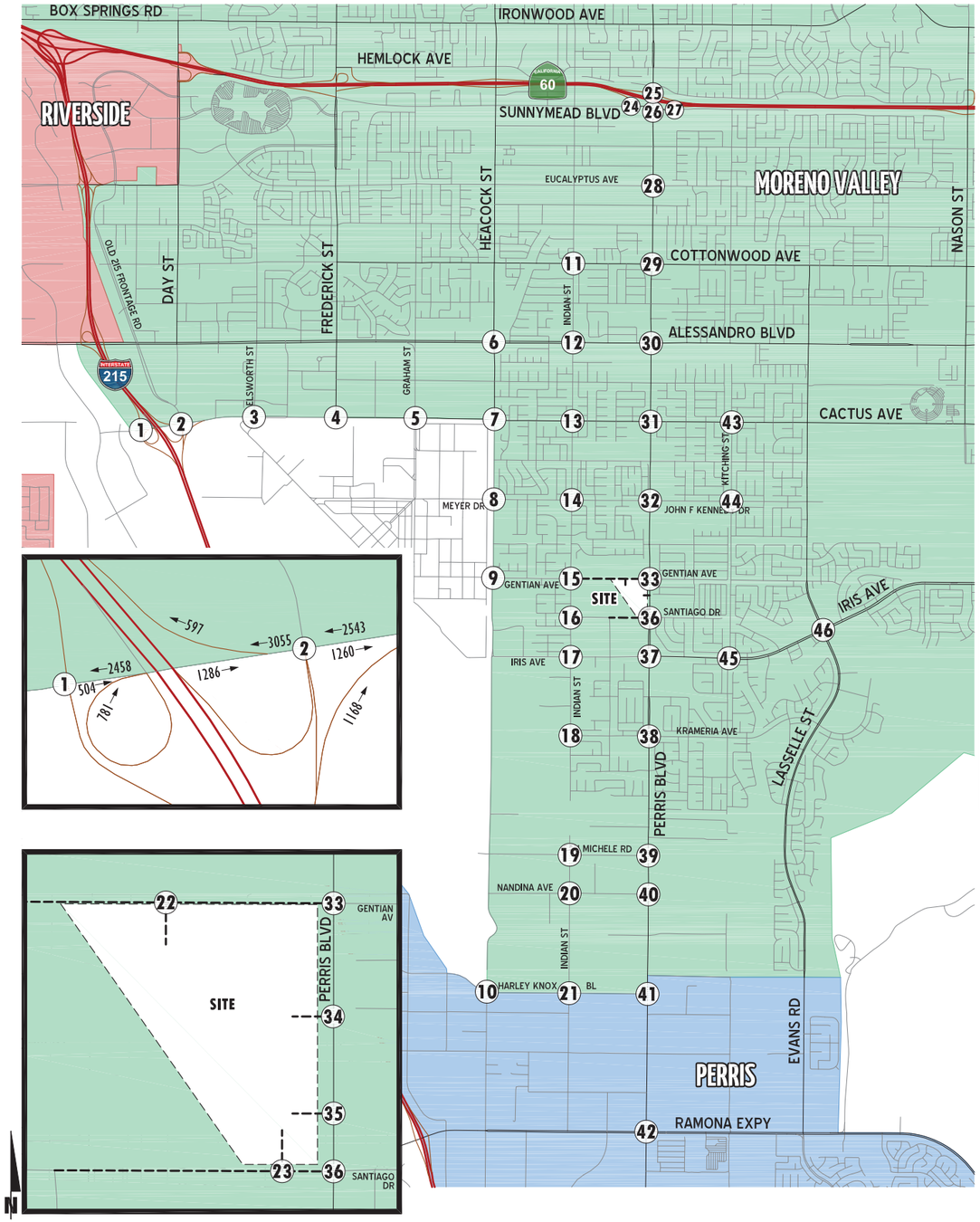
EXHIBIT 6-6

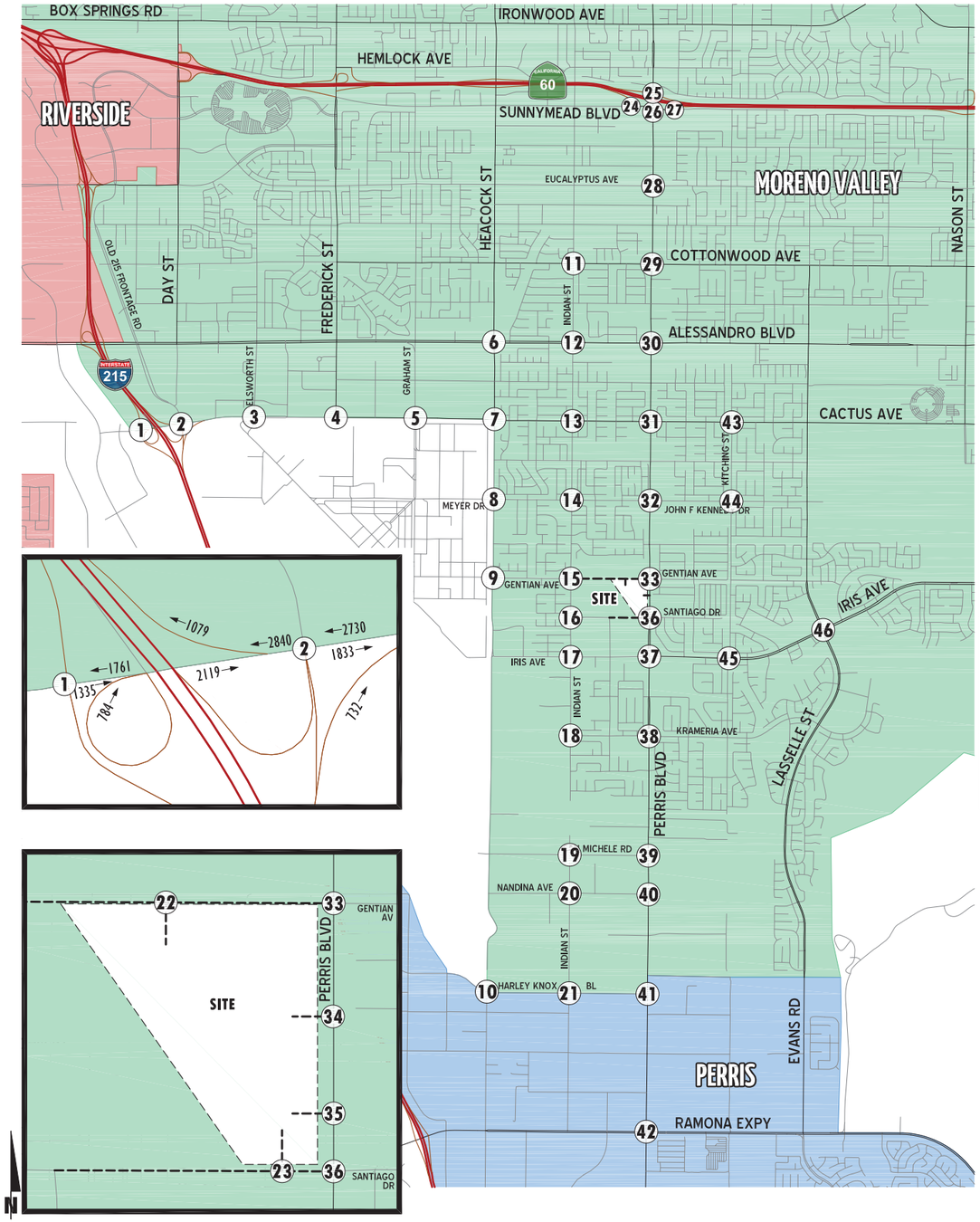
OPENING YEAR CUMULATIVE (2018) WITH PROJECT AM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.
480 ← 1879 ← 579	50 0 41 → 182 → 2361	129 138 74 → 115 → 2543 → 107	60 175 → 167 → 2434	101 118 89 → 161 → 2188 → 26	139 195 137 → 168 → 1102 → 37	48 292 65 → 126 → 1491 → 14	26 262 140 → 264 → 146 → 41
504 → 95 →	24 → 1183 → 80 → 644 130 36	177 → 1813 → 350 → 53 25 19	89 → 1526 →	134 → 1471 → 243 → 187 103 16	116 → 542 → 70 → 194 367 54	134 → 942 → 390 → 791 597 8	12 → 73 → 80 → 113 781 41
9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.
NOT AN ANALYSIS LOCATION	0 0 0 → 0 → 497 → 6	62 220 52 → 86 → 368 → 49	87 240 73 → 84 → 1150 → 80	23 361 91 → 137 → 1545 → 66	36 194 122 → 101 → 420 → 85	37 210 11 → 30 → 0 → 4	NOT AN ANALYSIS LOCATION
	0 → 453 → 1 → 1 0 9	51 → 242 → 139 → 108 260 39	49 → 580 → 90 → 163 260 86	42 → 802 → 69 → 100 436 40	33 → 293 → 57 → 59 298 107	27 → 0 → 68 → 75 359 1	
17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.
17 260 315 → 430 → 423 → 11	109 205 → 278 → 7	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	353 69 18 → 46 → 408 → 19	→ 20 → 44	0 59 → 72 → 89	74 642 → → 585
32 → 242 → 46 → 133 279 13	→ 165 25			964 → 511 → 240 → 118 123 22	31 → 0 → 0 → 51	0 → 74 →	395 →
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.
443 1220 → 200 → 0 → 209	231 852 347 → 465 → 168 → 55	→ 59 → 672 → 41	58 1040 156 → 231 → 253 → 109	173 941 148 → 210 → 332 → 111	197 541 199 → 177 → 924 → 149	207 697 175 → 113 → 1046 → 126	70 655 253 → 125 → 507 → 281
→ 622 1306	358 → 378 → 302 → 187 1106 150	322 → 530 → 23 → 16 5 9	44 → 112 → 71 → 56 995 60	148 → 217 → 110 → 114 726 80	139 → 500 → 122 → 236 648 113	124 → 568 → 175 → 287 787 119	129 → 469 → 130 → 165 855 277
	33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.
	29 799 82 → 121 → 4 → 35	70 780 →	85 738 →	26 722 61 → 120 → 38 → 62	97 468 212 → 199 → 603 → 228	39 744 108 → 222 → 315 → 272	142 1012 1 → 1 → 1 → 1
	72 → 3 → 20 → 32 1009 19	42 → 1060	69 → 1059	74 → 22 → 38 → 99 857 100	131 → 421 → 124 → 273 730 284	59 → 219 → 112 → 76 957 277	209 → 1 → 112 → 121 1117 1
	40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.
	90 936 29 → 7 → 8 → 12	269 817 36 → 53 → 66 → 2	274 359 156 → 374 → 1511 → 139	147 269 64 → 85 → 572 → 82	96 239 129 → 167 → 515 → 46	167 174 67 → 95 → 668 → 169	108 629 146 → 87 → 767 → 432
	52 → 4 → 71 → 252 1249 49	300 → 98 → 98 → 144 1317 4	384 → 703 → 136 → 379 580 127	128 → 622 → 236 → 238 348 56	119 → 676 → 184 → 247 351 36	116 → 656 → 148 → 208 153 152	127 → 490 → 341 → 314 548 318

EXHIBIT 6-7

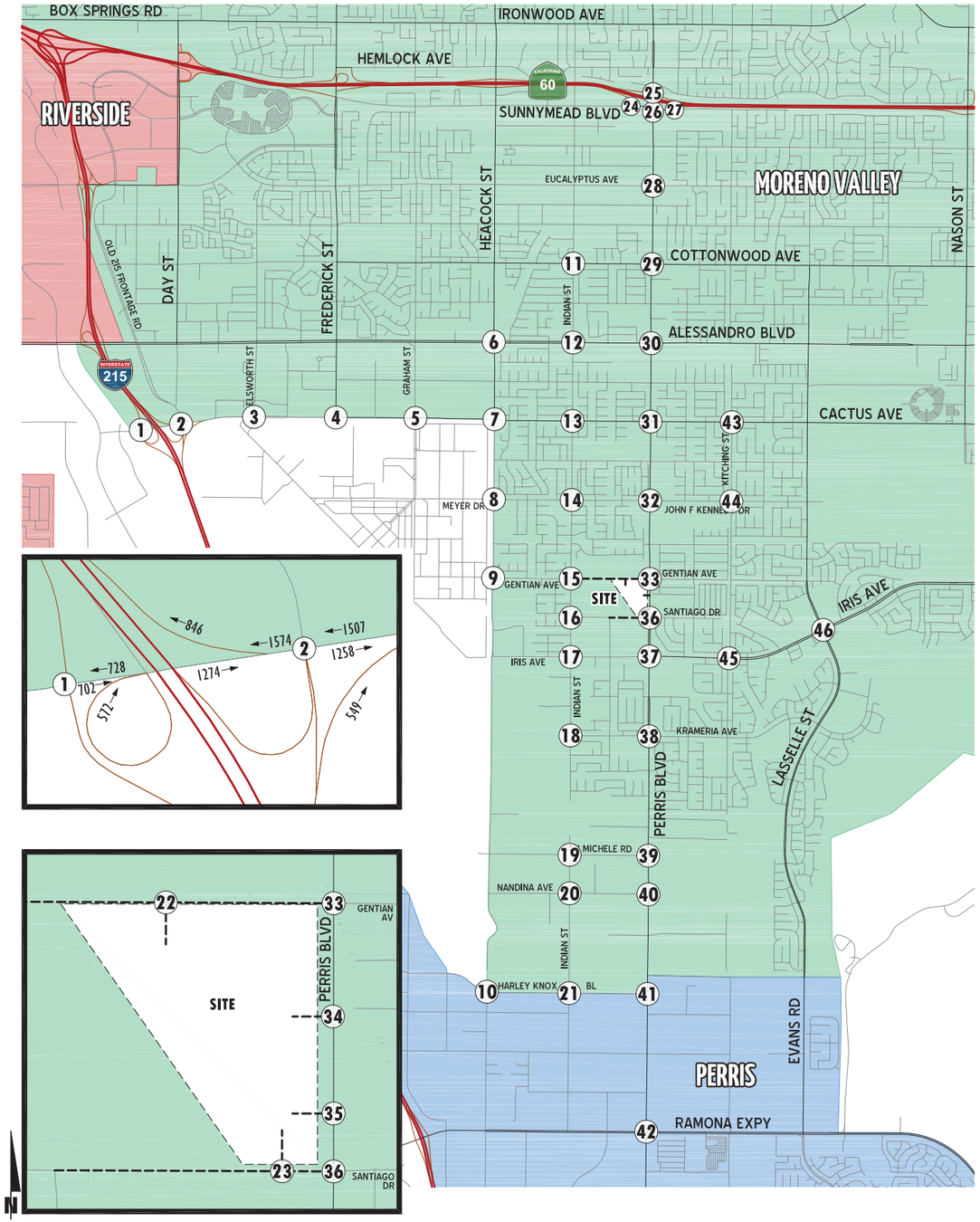
OPENING YEAR CUMULATIVE (2018) WITH PROJECT PM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.	
215 ← 732 ← 1029	63 → 3 → 96 ← 91 ← 2639	190 → 24 → 146 ← 112 ← 2005 ← 30	127 → 404 ← 203 ← 1766	169 → 198 → 217 ← 100 ← 1392 ← 23	185 → 389 → 244 ← 189 ← 839 ← 48	53 → 615 → 126 ← 114 ← 794 ← 18	53 → 660 → 339 ← 207 ← 92 ← 19	
1335 → 537 →	31 → 1713 → 374 → 139 ↑ 66 ↑ 23	120 → 2329 → 33 → 438 ↑ 114 ↑ 150	56 → 2436 →	195 → 2495 → 585 → 296 ↑ 126 ↑ 25	123 → 1233 → 145 → 167 ↑ 296 ↑ 53	121 → 1532 → 944 → 504 ↑ 482 ↑ 6	33 → 245 → 243 → 82 ↑ 377 ↑ 48	
9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.	
NOT AN ANALYSIS LOCATION	0 → 0 → 0 ← 0 ← 462 ← 17	49 → 279 → 37 ← 55 ← 262 ← 46	70 → 370 → 230 ← 140 ← 1020 ← 73	69 → 597 → 203 ← 158 ← 697 ← 40	29 → 304 → 71 ← 42 ← 227 ← 71	29 → 303 → 36 ← 21 ← 0 ← 3	NOT AN ANALYSIS LOCATION	
	0 → 601 → 0 → 2 ↑ 0 ↑ 14	51 → 351 → 146 → 83 ↑ 274 ↑ 47	126 → 1320 → 155 → 220 ↑ 310 ↑ 190	58 → 1423 → 97 → 70 ↑ 406 ↑ 50	24 → 378 → 110 → 59 ↑ 229 ↑ 55	35 → 0 → 68 → 25 ↑ 248 ↑ 4		
17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.	
35 → 143 → 236 ← 190 ← 323 ← 76	146 → 159 ← 69 ← 13	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	818 → 321 → 75 ← 20 ← 529 ← 18	← 38 ← 82	0 → 148 ← 136 ← 77	100 → 1209 ← 445	
25 → 504 → 120 → 56 ↑ 194 ↑ 46	105 → 13 →			429 → 480 → 140 → 269 ↑ 106 ↑ 11	28 → 0 → 0 ↑ 127	0 → 58 →	697 →	
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.	
384 → 1218 ← 189 ← 1 ← 239	163 → 929 → 366 ← 387 ← 111 ← 56	← 22 ← 493 ← 27	126 → 1055 → 180 ← 157 ← 238 ← 112	135 → 1040 → 215 ← 148 ← 203 ← 110	201 → 795 → 190 ← 145 ← 703 ← 161	97 → 1092 → 193 ← 142 ← 538 ← 100	76 → 1167 → 218 ← 96 ← 267 ← 244	
← 606 ← 1576	709 → 708 → 489 → 172 ↑ 1086 ↑ 83	278 → 737 → 142 → 61 ↑ 25 ↑ 30	106 → 231 → 126 → 85 ↑ 939 ↑ 70	108 → 265 → 169 → 194 ↑ 826 ↑ 105	264 → 985 → 287 → 341 ↑ 675 ↑ 141	217 → 988 → 306 → 218 ↑ 854 ↑ 139	150 → 342 → 200 → 215 ↑ 1070 ↑ 197	
	33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.	
	69 → 1332 → 171 ← 154 ← 8 ← 43	133 → 1273	117 → 1261	34 → 1197 → 126 ← 88 ← 39 ← 63	106 → 772 → 333 ← 233 ← 410 ← 213	54 → 863 → 173 ← 140 ← 136 ← 200	147 → 899 → 1 ← 1 ← 1 ← 1	
	118 → 8 → 29 → 53 ↑ 1150 ↑ 117	106 → 1320	97 → 1320	129 → 36 → 40 → 139 ↑ 1081 ↑ 62	123 → 498 → 171 → 171 ↑ 809 ↑ 208	65 → 188 → 48 → 48 ↑ 1001 ↑ 169	211 → 1 → 141 → 123 ↑ 982 ↑ 1	
40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.		
25 → 1125 → 53 ← 3 ← 5 ← 14	374 → 1147 → 58 ← 53 ← 115 ← 5	232 → 640 → 467 ← 145 ← 898 ← 91	78 → 341 → 60 ← 41 ← 671 ← 69	82 → 401 → 77 ← 54 ← 401 ← 37	149 → 251 → 105 ← 171 ← 811 ← 161	140 → 759 → 282 ← 133 ← 810 ← 463		
135 → 2 → 204 → 4 ↑ 894 ↑ 17	267 → 70 → 252 → 51 ↑ 792 ↑ 2	263 → 1241 → 311 → 267 ↑ 444 ↑ 109	97 → 813 → 218 → 101 ↑ 354 ↑ 62	88 → 528 → 181 → 122 ↑ 349 ↑ 40	153 → 917 → 208 → 130 ↑ 223 ↑ 186	207 → 578 → 332 → 306 ↑ 623 ↑ 346		

EXHIBIT 6-8

OPENING YEAR CUMULATIVE (2018) WITH PROJECT SATURDAY MID-DAY PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.
102 / 226 / 502	20 / 0 / 68 / 82 / 1425	57 / 85 / 66 / 101 / 1414 / 128	61 / 291 / 227 / 1644	126 / 147 / 110 / 69 / 1342 / 27	145 / 862 / 231 / 205 / 606 / 293	163 / 649 / 213 / 216 / 737 / 13	162 / 470 / 297 / 299 / 131 / 17
702 / 80	16 / 1027 / 231 / 128 / 27 / 92	89 / 1400 / 101 / 158 / 169 / 119	48 / 1424	99 / 1472 / 419 / 296 / 113 / 15	218 / 560 / 82 / 43 / 832 / 264	195 / 1000 / 464 / 482 / 614 / 16	104 / 214 / 143 / 45 / 520 / 30
9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.
NOT AN ANALYSIS LOCATION	0 / 0 / 0 / 0 / 244 / 43	56 / 285 / 55 / 57 / 260 / 51	91 / 278 / 220 / 107 / 1038 / 216	99 / 448 / 78 / 140 / 703 / 34	45 / 375 / 91 / 93 / 296 / 79	53 / 389 / 27 / 24 / 0 / 3	NOT AN ANALYSIS LOCATION
	0 / 344 / 0 / 16 / 0 / 47	47 / 314 / 137 / 93 / 305 / 59	96 / 1115 / 92 / 256 / 301 / 255	110 / 991 / 89 / 137 / 499 / 63	88 / 332 / 65 / 67 / 435 / 73	94 / 0 / 56 / 51 / 409 / 4	
17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.
64 / 105 / 178 / 224 / 322 / 79	118 / 129 / 117 / 24	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	277 / 532 / 63 / 5 / 340 / 36	34 / 109	0 / 190 / 179 / 52	103 / 1103 / 666
14 / 338 / 136 / 73 / 191 / 35	128 / 24			178 / 245 / 32 / 149 / 363 / 48	31 / 0 / 0 / 163	0 / 70	1001
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.
433 / 1076 / 159 / 3 / 215	213 / 737 / 342 / 479 / 232 / 109	39 / 682 / 52	112 / 1238 / 108 / 129 / 192 / 110	111 / 1017 / 45 / 115 / 162 / 99	257 / 751 / 157 / 147 / 697 / 168	75 / 1070 / 181 / 123 / 408 / 71	97 / 1233 / 201 / 122 / 246 / 237
774 / 1544	697 / 799 / 608 / 221 / 1142 / 136	354 / 675 / 248 / 138 / 37 / 66	84 / 158 / 108 / 60 / 1307 / 84	129 / 211 / 127 / 146 / 1041 / 101	334 / 847 / 311 / 469 / 746 / 119	148 / 628 / 342 / 347 / 987 / 280	216 / 233 / 160 / 212 / 1301 / 243
33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.	
73 / 1516 / 80 / 166 / 11 / 45	174 / 1424	159 / 1400	32 / 1396 / 104 / 61 / 21 / 47	143 / 940 / 404 / 326 / 638 / 206	105 / 870 / 210 / 159 / 118 / 132	226 / 898 / 1 / 1 / 1 / 1	
150 / 11 / 36 / 65 / 1487 / 99	136 / 1650	132 / 1650	163 / 39 / 59 / 178 / 1399 / 66	128 / 275 / 168 / 235 / 1145 / 180	66 / 109 / 48 / 35 / 1178 / 94	163 / 1 / 27 / 45 / 976 / 1	
40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.	
68 / 833 / 106 / 3 / 2 / 4	300 / 746 / 15 / 13 / 29 / 1	195 / 453 / 397 / 269 / 1035 / 140	61 / 300 / 77 / 59 / 438 / 68	103 / 270 / 42 / 38 / 408 / 68	135 / 255 / 85 / 172 / 805 / 254	95 / 337 / 241 / 126 / 838 / 274	
150 / 2 / 105 / 11 / 898 / 2	227 / 18 / 135 / 37 / 676 / 1	154 / 964 / 81 / 191 / 481 / 139	59 / 752 / 134 / 141 / 358 / 59	124 / 469 / 155 / 116 / 317 / 36	115 / 756 / 114 / 127 / 231 / 130	220 / 546 / 211 / 195 / 421 / 199	

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Saturday mid-day peak hour intersection turning movement volumes for Opening Year Cumulative (2018) With Project traffic conditions.

6.4 INTERSECTION OPERATIONS ANALYSIS

LOS calculations were conducted for the study intersections to evaluate their operations under Opening Year Cumulative (2018) conditions with existing roadway and intersection geometrics consistent with Exhibit 3-1 and Section 6.1 *Roadway Improvements*. The intersection analysis results are summarized in Table 6-1 which indicates that the following intersection locations will experience unacceptable LOS during one or more peak hours for Opening Year Cumulative (2018) With Project traffic conditions:

ID	Intersection Location
1	I-215 Southbound Ramps / Cactus Avenue – LOS “F” PM peak hour only
2	I-215 Northbound Ramps / Cactus Avenue – LOS “F” AM and PM peak hours
3	Elsworth Street / Cactus Avenue – LOS “F” AM and PM peak hours
4	Frederick Street / Cactus Avenue – LOS “F” PM peak hour only
5	Graham Street / Cactus Avenue – LOS “E” AM and Saturday peak hours; LOS “F” PM peak hour
15	Indian Street / Gentian Avenue – LOS “F” Saturday peak hour only
21	Indian Street / Harley Knox Boulevard – LOS “F” AM and PM peak hours
24	SR-60 Eastbound Off-Ramp / Sunnymead Boulevard – LOS “E” PM peak hour only
26	Perris Boulevard / Sunnymead Boulevard – LOS “E” PM and Saturday peak hours
27	SR-60 Eastbound On-Ramp / Sunnymead Boulevard – LOS “F” AM, PM and Saturday peak hours
31	Perris Boulevard / Cactus Avenue – LOS “E” PM peak hour only
36	Perris Boulevard / Santiago Drive – LOS “F” AM, PM and Saturday peak hours
37	Perris Boulevard / Iris Avenue – LOS “E” Saturday peak hour only
38	Perris Boulevard / Krameria Avenue – LOS “E” AM and PM peak hours; LOS “F” Saturday peak hour
41	Perris Boulevard / Harley Knox Boulevard – LOS “F” AM and PM peak hours
42	Perris Boulevard / Ramona Expressway – LOS “F” AM peak hour only
43	Kitching Street / Cactus Avenue – LOS “D” AM peak hour only
44	Kitching Street / John F. Kennedy Drive – LOS “F” AM peak hour; LOS “D” PM and Saturday peak hours

Exhibit 6-9 summarizes the weekday AM, weekday PM and Saturday mid-day peak hour study area intersection LOS under Opening Year Cumulative (2018) Without Project traffic conditions, consistent with the summary provided in Table 6-1. Exhibit 6-10 summarizes the weekday AM, weekday PM and Saturday

Table 6-1
Page 1 of 2

Intersection Analysis for Opening Year Cumulative (2018) Conditions

#	Intersection	Traffic Control [2]	OY Cumulative (2018) Without Project						OY Cumulative (2018) With Project					
			Delay [1] (secs.)			Level of Service			Delay[1] (secs.)			Level of Service		
			AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
1	I-215 SB Ramps / Cactus Av	TS	21.8	**110.0**	20.9	C	**F**	C	21.8	**110.1**	20.9	C	**F**	C
2	I-215 NB Ramps / Cactus Av	TS	**174.3**	**84.9**	10.6	**F**	**F**	B	**174.9**	**86.8**	10.7	**F**	**F**	B
3	Elsworth St / Cactus Av	TS	**>200.0**	**>200.0**	53.4	**F**	**F**	D	**>200.0**	**>200.0**	54.3	**F**	**F**	D
4	Frederick St / Cactus Av	TS	23.7	**127.4**	18.1	C	**F**	B	23.8	**130.0**	18.7	C	**F**	B
5	Graham St / Cactus Av	TS	**77.1**	**198.4**	53.8	**E**	**F**	D	**78.5**	**>200.0**	**56.1**	**E**	**F**	**E**
6	Heacock St / Alessandro Bl	TS	38.2	39.5	43.7	D	D	D	38.6	40.0	44.8	D	D	D
7	Heacock St / Cactus Av	TS	51.2	51.6	43.9	D	D	D	51.7	51.9	45.1	D	D	D
8	Heacock St / John F. Kennedy Dr	TS	35.0	38.6	40.1	D	D	D	35.4	38.7	40.1	D	D	D
9	Heacock St / Gentian Av		Not an Analysis Location						Not an Analysis Location					
10	Webster Av / Harley Knox Bl	CSS	15.2	17.1	12.5	C	C	B	13.1	14.4	12.8	B	B	B
11	Indian St / Cottonwood Av	TS	29.8	26.8	26.2	C	C	C	29.9	27.0	26.4	C	C	C
12	Indian St / Alessandro Bl	TS	38.2	46.6	53.0	D	D	D	38.3	47.5	54.9	D	D	D
13	Indian St / Cactus Av	TS	32.9	46.5	31.3	C	D	C	33.0	48.0	31.7	C	D	C
14	Indian St / John F. Kennedy Dr	TS	27.9	25.9	26.7	C	C	C	28.0	26.0	26.8	C	C	C
15	Indian St / Gentian Av	CSS	21.8	19.1	**72.6**	C	C	**F**	22.0	19.4	**79.3**	C	C	**F**
16	Indian St / Santiago Dr		Not an Analysis Location						Not an Analysis Location					
17	Indian St / Iris Av	TS	51.3	46.6	36.7	D	D	D	51.5	47.3	37.2	D	D	D
18	Indian St / Krameria Av	CSS	17.6	14.3	13.1	C	B	B	17.8	14.6	13.4	C	B	B
19	Indian St / San Michele Rd		Not an Analysis Location						Not an Analysis Location					
20	Indian St / Nandina Av		Not an Analysis Location						Not an Analysis Location					
21	Indian St / Harley Knox Bl	TS	**>200.0**	**157.6**	46.3	**F**	**F**	D	**>200.0**	**168.2**	48.5	**F**	**F**	D
22	Driveway 1 / Gentian Av	**CSS**	Not an Analysis Location						8.6	8.9	9.0	A	A	A
23	Driveway 2 / Santiago Dr	**CSS**	Not an Analysis Location						10.1	10.9	11.5	B	B	B
24	SR-60 EB Off-Ramp / Sunnymead Bl	TS	20.5	**70.0**	26.2	C	**E**	C	20.5	**70.0**	26.2	C	**E**	C
25	Perris Bl / SR-60 WB Ramps	TS	28.9	27.6	26.7	C	C	C	29.1	27.9	27.2	C	C	C
26	Perris Bl / Sunnymead Bl	TS	46.6	**55.2**	**59.5**	D	**E**	**E**	46.6	**55.3**	**59.7**	D	**E**	**E**
27	SR-60 EB On-Ramp / Sunnymead Bl	CSS	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
28	Perris Bl / Eucalyptus Av	TS	39.2	36.5	38.8	D	D	D	39.8	36.9	39.8	D	D	D
29	Perris Bl / Cottonwood Av	TS	39.2	38.9	37.5	D	D	D	39.9	40.6	38.5	D	D	D
30	Perris Bl / Alessandro Bl	TS	28.3	40.7	43.4	C	D	D	29.2	45.9	49.4	C	D	D
31	Perris Bl / Cactus Av	TS	42.5	47.1	42.5	D	D	D	45.3	**57.0**	52.5	D	**E**	D
32	Perris Bl / John F. Kennedy Dr	TS	37.9	30.0	31.3	D	C	C	40.9	33.8	35.4	D	C	D
33	Perris Bl / Gentian Av	TS	20.5	22.3	19.9	C	C	B	17.3	23.1	21.8	B	C	C
34	Perris Bl / Driveway 3	**CSS**	Not an Analysis Location						10.7	14.4	17.2	B	B	C
35	Perris Bl / Driveway 4	**CSS**	Not an Analysis Location						10.9	14.0	16.6	B	B	C
36	Perris Bl / Santiago Dr	CSS	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
37	Perris Bl / Iris Av	TS	49.8	43.4	51.9	D	D	D	51.3	47.2	**64.5**	D	D	**E**
38	Perris Bl / Krameria Av	TS	**57.4**	**57.0**	**89.8**	**E**	**E**	**F**	**61.8**	**65.8**	**110.1**	**E**	**E**	**F**
39	Perris Bl / San Michele Rd	TS	39.9	37.9	36.2	D	D	D	40.2	38.5	36.6	D	D	D
40	Perris Bl / Nandina Av	TS	41.5	36.5	38.7	D	D	D	41.9	37.0	39.4	D	D	D
41	Perris Bl / Harley Knox Bl	TS	**>200.0**	**121.4**	19.7	**F**	**F**	B	**>200.0**	**140.2**	24.2	**F**	**F**	C

Table 6-1
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Intersection Analysis for Opening Year Cumulative (2018) Conditions

#	Intersection	Traffic Control [2]	OY Cumulative (2018) Without Project						OY Cumulative (2018) With Project					
			Delay [1] (secs.)			Level of Service			Delay[1] (secs.)			Level of Service		
			AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
42	Perris Bl / Ramona Expressway	TS	**94.9**	49.9	43.6	**F**	D	D	**96.4**	52.0	45.6	**F**	D	D
43	Kitching St / Cactus Av	TS	**36.0**	31.6	29.4	**D**	C	C	**36.2**	32.0	29.9	**D**	C	C
44	Kitching St / John F. Kennedy Dr	TS	**90.0**	**50.6**	34.5	**F**	**D**	C	**94.0**	**53.7**	**36.7**	**F**	**D**	**D**
45	Kitching St / Iris Av	TS	27.2	28.6	27.6	C	C	C	27.6	29.1	28.1	C	C	C
46	Lasselle St / Iris Av	TS	41.1	45.1	37.7	D	D	D	41.3	45.5	38.0	D	D	D

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

[1] Per the 2000 Highway Capacity Manual, 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. The I-215 ramp locations at Cactus Avenue and SR-60 ramp locations at Perris Boulevard have been analyzed using the Synchro software (Version 8).

[2] CSS = Cross-street Stop; TS = Traffic Signal; AWS= All-way stop

EXHIBIT 6-9

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR OPENING YEAR CUMULATIVE (2018) WITHOUT PROJECT CONDITIONS

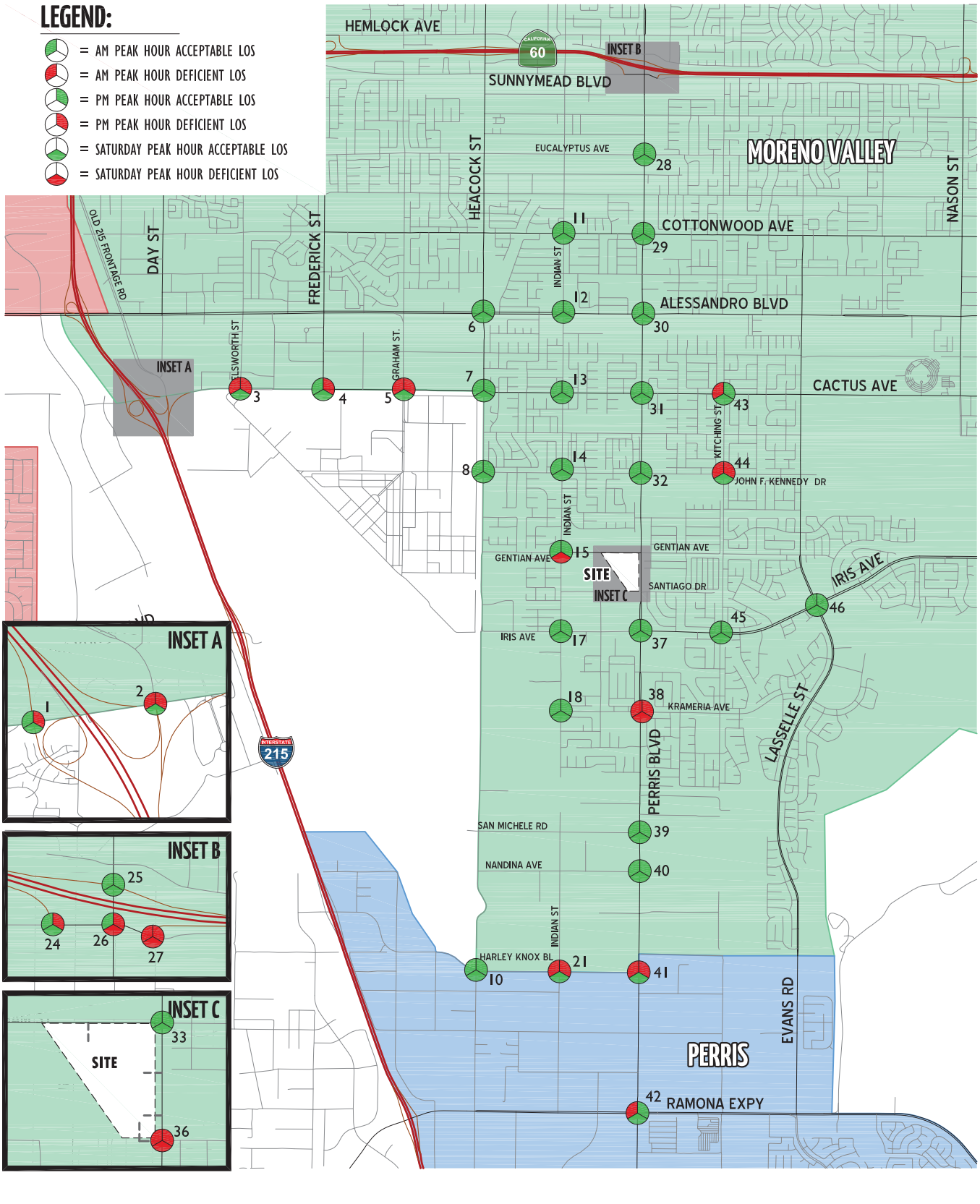
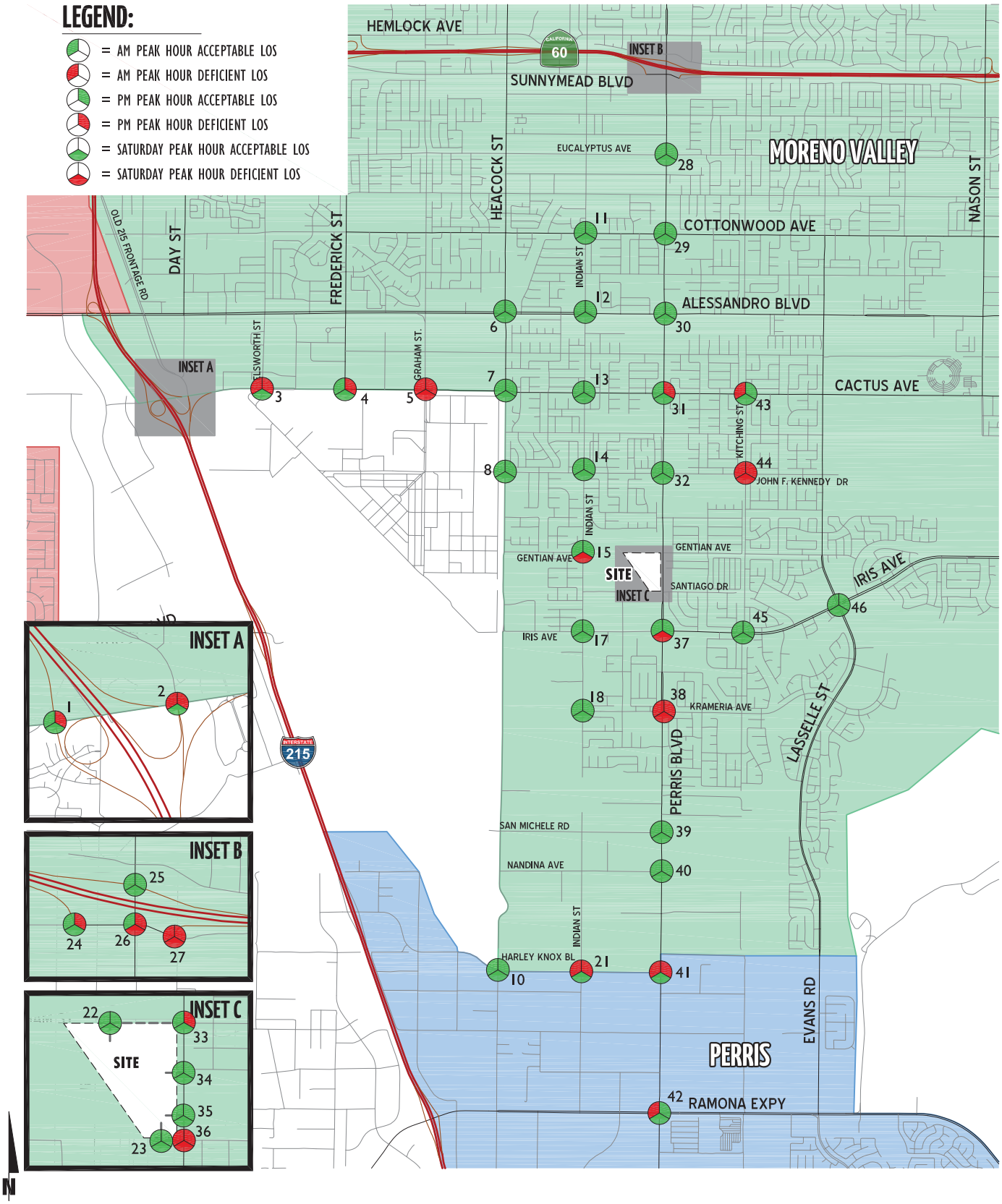


EXHIBIT 6-10

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR OPENING YEAR CUMULATIVE (2018) WITH PROJECT CONDITIONS



mid-day peak hour study area intersection LOS under Opening Year Cumulative (2018) With Project traffic conditions, consistent with the summary provided in Table 6-1.

The intersection operations analysis worksheets for Opening Year Cumulative (2018) Without Project conditions are included in Appendix "6.1" of this TIA. The intersection operations analysis worksheets for Opening Year Cumulative (2018) With Project conditions are included in Appendix "6.2" of this TIA. Measures to address near-term cumulative impacts for Opening Year Cumulative (2018) traffic conditions are discussed in Section 6.8 *Near-Term Cumulative Impacts and Recommended Improvements*.

6.5 ROADWAY SEGMENT CAPACITY ANALYSIS

As shown on Table 6-2, the following roadway segments are anticipated to operate at unacceptable LOS (based solely on daily roadway segment capacities) under Opening Year Cumulative (2018) With Project conditions:

ID	Roadway Segments
18	Cactus Avenue, I-215 SB Ramps to NB Ramps – LOS "F"
19	Cactus Avenue, East of I-215 NB Ramps – LOS "F"
20	Cactus Avenue, West of Elsworth Street – LOS "F"
21	Cactus Avenue, East of Elsworth Street – LOS "F"
22	Cactus Avenue, West of Frederick Street – LOS "F"
23	Cactus Avenue, East of Frederick Street – LOS "F"
24	Cactus Avenue, West of Graham Street – LOS "F"
25	Cactus Avenue, East of Graham Street – LOS "E"
70	Harley Knox Boulevard, West of Webster Avenue – LOS "F"
71	Harley Knox Boulevard, East of Webster Avenue – LOS "F"
72	Harley Knox Boulevard, West of Indian Street – LOS "F"
109	Indian Street, North of Harley Knox Boulevard – LOS "E"
142	Kitching Street, South of John F. Kennedy Drive – LOS "D"

Notwithstanding the calculated segment deficiencies noted above, roadway segment functional performance is determined in this case by the performance of controlling intersections. To this end, peak hour assessment of intersections located on either side of potentially deficient study area roadway segments has been conducted to determine if peak hour traffic flows can be accommodated by the roadway segment in question.

The peak hour intersection analysis presented herein substantiates that study area intersections along potentially deficient roadway segments are anticipated to operate at acceptable LOS with the incorporation of the intersection improvements detailed herein. In instances where intersection improvements require additional through lanes, corresponding roadway segment widening has been

Opening Year Cumulative (2018) Conditions
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	2018 NP	V/C	LOS	2018 WP	V/C	LOS	Acceptable LOS
1	Sunnymead Boulevard	West of SR-60 EB Off-Ramp	4D	37,500	13,445	0.36	A	13,445	0.36	A	D
2		SR-60 EB Off-Ramp to Perris Boulevard	4D	37,500	27,565	0.74	C	27,565	0.74	C	D
3		Perris Boulevard to SR-60 EB On-Ramp	4D	37,500	21,348	0.57	A	21,444	0.57	A	D
4		East of SR-60 EB On-Ramp	4D	37,500	16,616	0.44	A	16,616	0.44	A	D
5	Eucalyptus Avenue	West of Perris Boulevard	2U	12,500	6,851	0.55	A	6,851	0.55	A	C
6		East of Perris Boulevard	2U	12,500	8,222	0.66	B	8,414	0.67	B	C
7	Cottonwood Avenue	West of Indian Street	2D	18,750	10,878	0.58	A	11,070	0.59	A	C
8		East of Indian Street	2D	18,750	8,814	0.47	A	9,198	0.49	A	C
9		West of Perris Boulevard	2D	18,750	8,608	0.46	A	9,186	0.49	A	C
10		East of Perris Boulevard	2U	12,500	9,332	0.75	C	9,620	0.77	C	C
11	Alessandro Boulevard	West of Heacock Street	5D	46,900	31,940	0.68	B	32,325	0.69	B	D
12		East of Heacock Street	6D	56,300	29,918	0.53	A	30,591	0.54	A	D
13		West of Indian Street	6D	56,300	27,333	0.49	A	28,007	0.50	A	D
14		East of Indian Street	6D	56,300	26,382	0.47	A	27,152	0.48	A	D
15		West of Perris Boulevard	6D	56,300	25,596	0.45	A	26,462	0.47	A	D
16		East of Perris Boulevard	4D	37,500	22,289	0.59	A	22,577	0.60	A	D
17	Cactus Avenue	West of I-215 Freeway	4D	37,500	27,804	0.74	C	27,900	0.74	C	D
18		I-215 SB Ramps to I-215 NB Ramps	4D	37,500	**42,604**	**1.14**	**F**	**42,796**	**1.14**	**F**	D
19		East of I-215 NB Ramps[2]	5D	46,900	**50,212**	**1.07**	**F**	**50,500**	**1.08**	**F**	D
20		West of Elsworth Street[2]	5D	46,900	**57,312**	**1.22**	**F**	**57,600**	**1.23**	**F**	D
21		East of Elsworth Street[2]	6D	56,300	**53,212**	**0.95**	**E**	**53,500**	**0.95**	**E**	D
22		West of Frederick Street	5D	46,900	**54,812**	**1.17**	**F**	**55,100**	**1.17**	**F**	D
23		East of Frederick Street	5D	46,900	**55,620**	**1.19**	**F**	**56,100**	**1.20**	**F**	D
24		West of Graham Street	5D	46,900	**53,718**	**1.15**	**F**	**54,200**	**1.16**	**F**	D
25		East of Graham Street	5D	46,900	42,418	0.90	D	**42,900**	**0.91**	**E**	D
26		West of Heacock Street	5D	46,900	38,371	0.82	D	38,853	0.83	D	D
27		East of Heacock Street	4D	37,500	28,027	0.75	C	28,605	0.76	C	C
28		West of Indian Street	4D	37,500	25,148	0.67	B	25,726	0.69	B	C
29		East of Indian Street	4D	37,500	22,999	0.61	B	23,769	0.63	B	C
30		West of Perris Boulevard	4D	37,500	20,522	0.55	A	21,292	0.57	A	C
31		East of Perris Boulevard	4D	37,500	19,696	0.53	A	19,984	0.53	A	C
32		West of Kitching Street	4D	37,500	18,257	0.49	A	18,257	0.49	A	C
33		East of Kitching Street	4D	37,500	15,229	0.41	A	15,517	0.41	A	C
34	John F. Kennedy Drive	West of Heacock Street	4D	37,500	9,414	0.25	A	9,510	0.25	A	D
35		East of Heacock Street	3D	28,150	11,089	0.39	A	11,185	0.40	A	C
36		West of Indian Street	4D	37,500	10,830	0.29	A	11,022	0.29	A	C
37		East of Indian Street	4D	37,500	11,036	0.29	A	11,420	0.30	A	C
38		West of Perris Boulevard	4D	37,500	11,481	0.31	A	11,963	0.32	A	C
39		East of Perris Boulevard	4D	37,500	12,099	0.32	A	13,061	0.35	A	C
40		West of Kitching Street	4D	37,500	11,096	0.30	A	12,058	0.32	A	C
41		East of Kitching Street	4D	37,500	8,210	0.22	A	8,498	0.23	A	C
42	Gentian Avenue	East of Heacock Street	2U	12,500	Not an Analysis Location			Not an Analysis Location			
43		West of Indian Street	4U	25,000	1,870	0.07	A	1,966	0.08	A	C
44		Indian Street to Driveway 1[3]	2U	12,500	0	0.00	A	0	0.00	A	C
45		Driveway 1 to Perris Boulevard[3]	2U	12,500	0	0.00	A	1,444	0.12	A	C
46		East of Perris Boulevard	2U	12,500	2,675	0.21	A	2,867	0.23	A	C
47	Santiago Drive	East of Indian St.	2U	12,500	Not an Analysis Location			Not an Analysis Location			
48		West of Driveway 2	2U	12,500	166	0.01	A	166	0.01	A	C
49		Driveway 2 to Perris Boulevard	2U	12,500	168	0.01	A	1,853	0.15	A	C
50		East of Perris Boulevard	2U	12,500	3,140	0.25	A	3,332	0.27	A	C

Opening Year Cumulative (2018) Conditions
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	2018 NP	V/C	LOS	2018 WP	V/C	LOS	Acceptable LOS
51	Iris Avenue	West of Indian Street	2U	12,500	10,997	0.88	D	11,189	0.90	D	D
52		East of Indian Street	3D	28,150	13,988	0.50	A	14,372	0.51	A	D
53		West of Perris Boulevard	4D	37,500	14,392	0.38	A	14,970	0.40	A	D
54		East of Perris Boulevard	4D	37,500	17,459	0.47	A	18,807	0.50	A	D
55		West of Kitching Street	4D	37,500	20,967	0.56	A	22,121	0.59	A	C
56		East of Kitching Street	6D	56,300	22,059	0.39	A	23,021	0.41	A	C
57		West of Lasselle Street	6D	56,300	19,988	0.36	A	20,757	0.37	A	C
58		East of Lasselle Street	6D	56,300	23,298	0.41	A	23,683	0.42	A	C
59	Krameria Avenue	East of Indian Street	2D	18,750	3,406	0.18	A	3,502	0.19	A	C
60		West of Perris Boulevard	2U	12,500	4,482	0.36	A	4,578	0.37	A	C
61		East of Perris Boulevard	4D	37,500	9,042	0.24	A	9,234	0.25	A	D
62	San Michele Road	West of Indian Street	4D	37,500	Not an Analysis Location			Not an Analysis Location			
63		East of Indian Street	3D	28,150	Not an Analysis Location			Not an Analysis Location			
64		West of Perris Boulevard	2D	18,750	12,046	0.64	B	12,046	0.64	B	D
65		East of Perris Boulevard	2U	12,500	100	0.01	A	100	0.01	A	D
66	Nandina Avenue	West of Indian Street	3D	28,150	Not an Analysis Location			Not an Analysis Location			
67		East of Indian Street	2D	18,750	Not an Analysis Location			Not an Analysis Location			
68		West of Perris Boulevard	2D	18,750	1,527	0.08	A	1,527	0.08	A	D
69		East of Perris Boulevard	2U	12,500	586	0.05	A	586	0.05	A	D
70	Harley Knox Boulevard	West of Webster Avenue	2D	18,750	**32,903**	**1.75**	**F**	**33,191**	**1.77**	**F**	D
71		East of Webster Avenue	2D	18,750	**32,925**	**1.76**	**F**	**33,501**	**1.79**	**F**	D
72		West of Indian Street	3D	28,150	**31,100**	**1.10**	**F**	**31,678**	**1.13**	**F**	D
73		East of Indian Street	3D	28,150	12,600	0.45	A	13,274	0.47	A	D
74		West of Perris Boulevard	2D	18,750	12,600	0.67	B	13,274	0.71	C	D
75	Ramona Expressway	West of Perris Boulevard	6D	56,300	37,300	0.66	B	37,492	0.67	B	D
76		East of Perris Boulevard	6D	56,300	34,500	0.61	B	34,885	0.62	B	D
77	Old Frontage Road	North of Cactus Avenue	2U	12,500	3,400	0.27	A	3,400	0.27	A	D
78	Elsworth Street	North of Cactus Avenue	4D	37,500	8,600	0.23	A	8,600	0.23	A	D
79		South of Cactus Avenue	4U	25,000	9,500	0.38	A	9,500	0.38	A	D
80	Frederick Street	North of Cactus Avenue	4D	37,500	11,508	0.31	A	11,700	0.31	A	D
81	Graham Street	North of Cactus Avenue	4D	37,500	9,721	0.26	A	9,721	0.26	A	D
82		South of Cactus Avenue	6D	56,300	15,100	0.27	A	15,100	0.27	A	D
83	Heacock Street	North of Alessandro Boulevard	4D	37,500	16,932	0.45	A	17,220	0.46	A	C
84		South of Alessandro Boulevard	4D	37,500	13,162	0.35	A	13,162	0.35	A	D
85		North of Cactus Avenue	4D	37,500	12,561	0.33	A	12,657	0.34	A	D
86		South of Cactus Avenue	4D	37,500	20,882	0.56	A	20,882	0.56	A	D
87		North of John F. Kennedy Drive	4D	37,500	19,516	0.52	A	19,516	0.52	A	D
88		South of John F. Kennedy Drive	4D	37,500	17,256	0.46	A	17,256	0.46	A	D
89		North of Gentian Avenue	3D	28,150	Not an Analysis Location			Not an Analysis Location			
90		South of Gentian Avenue	2U	12,500	Not an Analysis Location			Not an Analysis Location			
91	Webster Avenue	South of Harley Knox Boulevard	2U	12,500	120	0.01	A	408	0.03	A	D
92	Indian Street	North of Cottonwood Avenue	2U	12,500	8,651	0.69	B	8,843	0.71	C	C
93		South of Cottonwood Avenue	4U	25,000	10,028	0.40	A	10,028	0.40	A	C
94		North of Alessandro Boulevard	3D	28,150	11,651	0.41	A	11,747	0.42	A	D
95		South of Alessandro Boulevard	4D	37,500	11,432	0.30	A	11,432	0.30	A	D
96		North of Cactus Avenue	4D	37,500	12,424	0.33	A	12,616	0.34	A	C
97		South of Cactus Avenue	4D	37,500	10,399	0.28	A	10,399	0.28	A	C
98		North of John F. Kennedy Drive	4D	37,500	8,058	0.21	A	8,058	0.21	A	C
99		South of John F. Kennedy Drive	4D	37,500	9,156	0.24	A	9,348	0.25	A	C
100		North of Gentian Avenue	2U	12,500	7,176	0.57	A	7,272	0.58	A	C

Opening Year Cumulative (2018) Conditions
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	2018 NP	V/C	LOS	2018 WP	V/C	LOS	Acceptable LOS
101	Indian Street	Gentian Avenue to Santiago Drive	4D	37,500	7,714	0.21	A	7,714	0.21	A	D
102		Santiago Drive to Iris Avenue	2U	12,500	8,181	0.65	B	8,181	0.65	B	D
103		South of Iris Avenue	2U	12,500	5,194	0.42	A	5,386	0.43	A	D
104		North of Krameria Avenue	2U	12,500	5,656	0.45	A	5,848	0.47	A	D
105		South of Krameria Avenue	2U	12,500	3,382	0.27	A	3,478	0.28	A	D
106		North of San Michele Road	3D	28,150	Not an Analysis Location			Not an Analysis Location			
107		San Michele Road to Nandina Avenue	2D	18,750	Not an Analysis Location			Not an Analysis Location			
108		South of Nandina Avenue	2D	18,750	Not an Analysis Location			Not an Analysis Location			
109		North of Harley Knox Boulevard	2D	18,750	**18,700**	**1.00**	**E**	**18,700**	**1.00**	**E**	D
110		South of Harley Knox Boulevard	4D	37,500	7,700	0.21	A	7,796	0.21	A	D
111	Perris Boulevard	North of SR-60 WB Ramps	6D	56,300	34,739	0.62	B	34,931	0.62	B	D
112		SR-60 WB Ramps to Sunnymead Boulevard	7D	65,683	38,972	0.59	A	39,260	0.60	A	D
113		South of Sunnymead Boulevard	4D	37,500	28,304	0.75	C	28,688	0.77	C	D
114		North of Eucalyptus Avenue	4D	37,500	24,363	0.65	B	24,748	0.66	B	D
115		South of Eucalyptus Avenue	4D	37,500	23,121	0.62	B	23,698	0.63	B	D
116		North of Cottonwood Avenue	4D	37,500	27,326	0.73	C	28,000	0.75	C	D
117		South of Cottonwood Avenue	4D	37,500	24,413	0.65	B	25,953	0.69	B	D
118		North of Alessandro Boulevard	4D	37,500	22,515	0.60	A	24,055	0.64	B	D
119		South of Alessandro Boulevard	4D	37,500	22,744	0.61	B	25,438	0.68	B	D
120		North of Cactus Avenue	4D	37,500	21,088	0.56	A	23,879	0.64	B	D
121		South of Cactus Avenue	6D	56,300	22,206	0.39	A	26,055	0.46	A	D
122		North of John F. Kennedy Drive	6D	56,300	19,704	0.35	A	23,554	0.42	A	D
123		South of John F. Kennedy Drive	6D	56,300	23,886	0.42	A	29,180	0.52	A	D
124		North of Gentian Avenue	6D	56,300	20,952	0.37	A	26,246	0.47	A	D
125		Gentian Avenue to Driveway 3	6D	56,300	20,799	0.37	A	25,805	0.46	A	D
126		Driveway 3 to Driveway 4	6D	56,300	20,727	0.37	A	24,385	0.43	A	D
127		Driveway 4 to Santiago Drive	6D	56,300	20,727	0.37	A	24,144	0.43	A	D
128		Santiago Drive to Iris Avenue	6D	56,300	20,255	0.36	A	24,201	0.43	A	D
129		South of Iris Avenue	6D	56,300	20,634	0.37	A	22,656	0.40	A	D
130		North of Krameria Avenue	6D	56,300	19,513	0.35	A	21,533	0.38	A	D
131		South of Krameria Avenue	6D	56,300	20,382	0.36	A	22,114	0.39	A	D
132		North of San Michele Road	6D	56,300	21,605	0.38	A	23,145	0.41	A	D
133		San Michele Road to Nandina Avenue	6D	56,300	21,152	0.38	A	22,692	0.40	A	D
134		South of Nandina Avenue	6D	56,300	26,908	0.48	A	28,448	0.51	A	D
135		North of Harley Knox Boulevard	6D	56,300	30,600	0.54	A	32,140	0.57	A	D
136		South of Harley Knox Boulevard[4]	6D	56,300	26,100	0.46	A	26,966	0.48	A	D
137		North of Ramona Expressway[4]	6D	56,300	24,300	0.43	A	25,165	0.45	A	D
138		South of Ramona Expressway	5D	46,916	25,500	0.54	A	25,788	0.55	A	D
139	Kitching Street	North of Cactus Avenue	4D	37,500	7,915	0.21	A	8,107	0.22	A	C
140		South of Cactus Avenue	2U	12,500	9,287	0.74	C	9,767	0.78	C	C
141		North of John F. Kennedy Drive	2U	12,500	8,821	0.71	C	9,303	0.74	C	C
142		South of John F. Kennedy Drive	2U	12,500	9,968	0.80	C	**10,160**	**0.81**	**D**	C
143		North of Iris Avenue	4D	37,500	7,405	0.20	A	7,501	0.20	A	C
144		South of Iris Avenue	4U	25,000	9,231	0.37	A	9,327	0.37	A	C
145	Lasselle Street	North of Iris Avenue	4D	37,500	20,373	0.54	A	20,565	0.55	A	D
146		South of Iris Avenue	4D	37,500	28,129	0.75	C	28,321	0.76	C	C

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

[1] These maximum roadway capacities have been extracted from the City of Moreno Valley's Transportation Division's Traffic Impact Analysis Preparation Guidelines (August 2007).

[2] Assumes the widening of Cactus Avenue with a third eastbound through lane (City CIP improvement project). Completed in Summer 2014.

[3] Assumes proposed downgrade of Gentian Avenue to a Collector.

[4] Includes City of Perris widening of Perris Boulevard, south of Harley Knox Bouelvard. Completed at end of 2014.

recommended for Opening Year Cumulative (2018) traffic conditions.

More specifically, as shown on Table 6-1 and Table 6-4, the peak hour analysis indicates that the adjacent study area intersections of each of these deficient roadway segments are anticipated to operate at acceptable LOS with the recommended improvements discussed in Section 6.8 *Near-Term Cumulative Impacts and Recommended Improvements*. It should be noted that in some cases, the recommended intersection improvements discussed in Section 6.8 *Near-Term Cumulative Impacts and Recommended Improvements* includes the addition of through lanes. No additional roadway segment widening is recommended beyond those identified and discussed in Section 6.8 *Near-Term Cumulative Impacts and Recommended Improvements*.

6.6 TRAFFIC SIGNAL WARRANTS ANALYSIS

For Opening Year Cumulative (2018) Without and With Project conditions, there are no traffic signals that appear to be warranted (see Appendix "6.3" and Appendix "6.4") in addition to the intersection previously identified under E+P traffic conditions.

6.7 PROGRESSION ANALYSIS

A progression analysis was also performed for southbound and northbound off-ramps at the I-215/Cactus Avenue interchange and the eastbound and westbound off-ramps at the SR-60/Perris Boulevard interchange to assess vehicle queues for the off ramps that may potentially impact peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-215 or SR-60 Freeway mainline for Opening Year Cumulative (2018) traffic conditions. Progression analysis findings are presented in Table 6-3. As shown on Table 6-3, the following movement is anticipated to experience potential queuing issues under for both Opening Year Cumulative (2018) Without and With Project traffic conditions:

Intersection Location	Movement
I-215 Northbound Ramps / Cactus Avenue	Northbound Left – AM peak hour only

Review of the 50th percentile queues indicates that the northbound left turn movement at the I-215 Northbound Ramps at Cactus Avenue may potentially experience queuing issues during the AM peak hour only. It is important to note that although the stacking analysis results identifies potential queuing impacts during the PM peak hour only based on the 50th percentile queues, these potential queues are less than the anticipated 95th percentile queues.

There is approximately 810-feet of stacking distance available currently between Cactus Avenue and the I-215 Northbound off-ramp split for the I-215 Northbound free-right turn lane onto Cactus Avenue, which is followed by an additional 840-feet of storage before the I-215 Freeway mainline (for a total of 1,650 feet of

Table 6-3

Opening Year Cumulative (2018) Conditions
AM/PM Peak Hour Stacking Length Summary at I-215/Cactus Avenue and SR-60/Perris Boulevard

Intersection	Movement	Stacking Distance (Feet)	Opening Year Cumulative (2018) Without Project						Opening Year Cumulative (2018) With Project					
			95th Percentile Stacking Distance Required (Feet)			Acceptable?[1]			95th Percentile Stacking Distance Required (Feet)			Acceptable?[1]		
			AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM	PM	SAT	AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM	PM	SAT
I-215 SB Ramps / Cactus Av.	SBR	1,115	332	39	0	Yes	Yes	Yes	332	39	0	Yes	Yes	Yes
I-215 NB Ramps / Cactus Av.	NBL	145	566 [2]	98	90	**No**	Yes	Yes	566 [2]	98	90	**No**	Yes	Yes
	NBT	1,650	86	57	53	Yes	Yes	Yes	86	57	54	Yes	Yes	Yes
SR-60 EB Off-Ramp / Sunnymead Bl.	SBL	1,295	228	596 [2]	489 [2]	Yes	Yes	Yes	228	596 [2]	489 [2]	Yes	Yes	Yes
Perris Bl. / SR-60 WB Ramps	WBL-T-R	1,230	375	385	325	Yes	Yes	Yes	382	394	334	Yes	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.

stacking). The 95th percentile queues for both the northbound left turn and northbound through lanes is not anticipated to exceed the existing storage available between Cactus Avenue and the I-215 Northbound off-ramp split for the I-215 Northbound free-right turn lane onto Cactus Avenue during the AM peak hour. As shown on Table 6-3, there are no additional queuing issues anticipated with the addition of Project traffic in addition to those previously identified for Opening Year Cumulative (2018) Without Project conditions.

Worksheets for Opening Year Cumulative (2018) Without and With Project conditions queuing analysis is provided in Appendix "6.5" and Appendix "6.6" respectively.

6.8 NEAR-TERM CUMULATIVE IMPACTS AND RECOMMENDED IMPROVEMENTS

Improvement strategies have been recommended at intersections that have been identified as cumulatively impacted in an effort to reduce each location's peak hour delay and improve the associated LOS grade to LOS "D" or better. The effectiveness of the recommended improvement strategies discussed below to address Opening Year Cumulative (2018) cumulative traffic impacts are presented in Table 6-4. The improvements that were previously required to address LOS deficiencies for E+P traffic conditions are shown in *italics*. New improvements for Opening Year Cumulative (2018) With Project traffic conditions are shown in **bold**.

6.8.1 RECOMMENDED IMPROVEMENTS TO ADDRESS OPENING YEAR CUMULATIVE (2018) CUMULATIVE IMPACTS AT INTERSECTIONS

The following recommended improvements are recommended to reduce near-term Opening Year Cumulative (2018) cumulative impacts to "less-than-significant":

Recommended Improvement – I-215 Southbound Ramps / Cactus Avenue (#1) – The following improvement is necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd westbound left turn lane.**

Recommended Improvement – I-215 Northbound Ramps / Cactus Avenue (#2) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd northbound left turn lane.**
- **Construct a 3rd eastbound through lane.**
- **Construct a 3rd westbound through lane.**

Recommended Improvement – Elsworth Street / Cactus Avenue (#3) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

Table 6-4
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Recommended Improvements for Opening Year Cumulative (2018) With Project Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)			Level of Service		
			Northbound			Southbound			Eastbound			Westbound								
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	Sat	AM	PM	Sat
1	I-215 SB Ramps / Cactus Av																			
	- Without Improvements	TS	0	0	0	0	0	1	0	2	1	1	2	0	21.8	**110.1**	20.9	C	**F**	C
	- With Improvements	TS	0	0	0	0	0	1	0	2	1	**2**	2	0	38.1	42.6	23.3	D	D	C
2	I-215 NB Ramps / Cactus Av																			
	- Without Improvements	TS	1	1	0	1	1	0	1	3	0	0	2	0	**174.9**	**86.8**	10.7	**F**	**F**	B
	- With Improvements	TS	**2**	1	0	1	1	0	1	**3**	0	0	**3**	0	20.7	8.5	7.5	C	A	A
3	Elsworth St / Cactus Av																			
	- Without Improvements	TS	1	1	0	1	1	1>	1	**3**	1>>	1	3	1	**>200.0**	**>200.0**	54.3	**F**	**F**	D
	- With Improvements[5]	TS	**2**	1	0	1	1	1>	1	**3**	1>>	1	3	1	53.0	53.4	33.0	D	D	C
4	Frederick St / Cactus Av																			
	- Without Improvements	TS	0	0	0	2	0	1>	1	2	0	0	3	1>	23.8	**130.0**	18.7	C	**F**	B
	- With Improvements	TS	0	0	0	2	0	1>	1	**3**	0	0	3	1>	22.5	49.8	17.0	C	D	B
5	Graham St / Cactus Av																			
	- Without Improvements	TS	2	2	0	1	2	1>	1	2	1>>	1	3	0	**78.5**	**>200.0**	**56.1**	**E**	**F**	**E**
	- With Improvements	TS	2	2	0	**2**	2	1>	**2**	**3**	1>>	1	3	0	54.1	53.5	36.1	D	D	D
15	Indian St / Gentian Av																			
	- Without Improvements	CSS	0	1	0	0	1	0	1	0	1	0	**1**	0	22.0	19.4	**79.3**	C	C	**F**
	- With Improvements[6]	**TS**	**1**	1	0	**1**	1	0	1	**1**	**0**	0	**1**	0	19.9	19.5	21.8	B	B	C
21	Indian St / Harley Knox Bl																			
	- Without Improvements	TS	2	2	1	1	2	0	1	1	1	2	2	0	**>200.0**	**168.2**	48.5	**F**	**F**	D
	- With Improvements	TS	2	2	1	**2**	2	**1>**	**2**	**2**	1	2	2	0	44.9	50.8	28.4	D	D	C
24	SR-60 EB Off-Ramp / Sunnymead Bl																			
	- Without Improvements	TS	0	0	0	1	1	0	0	2	0	0	2	0	20.5	**70.0**	26.2	C	**E**	C
	- With Improvements	TS	0	0	0	**2**	**0**	**1**	0	2	0	0	2	0	19.3	47.4	22.6	B	D	C
26	Perris Bl / Sunnymead Bl																			
	- Without Improvements	TS	1	3	0	2	2	1>	2	2	1	1	2	0	46.6	**55.3**	**59.7**	D	**E**	**E**
	- With Improvements	TS	1	3	0	2	2	1>	2	2	**1>**	1	2	0	45.7	54.0	53.5	D	D	D
27	SR-60 EB On-Ramp / Sunnymead Bl																			
	- Without Improvements	CSS	0	1	0	0	0	0	1	2	0	1	2	0	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
	- With Improvements[7]	**RA**	0	1	0	0	0	0	1	2	**1**	1	2	0	10.6	4.9	10.6	B	A	B
31	Perris Bl / Cactus Av																			
	- Without Improvements	TS	1	3	0	1	2	1	1	2	0	1	2	0	45.3	**57.0**	52.5	D	**E**	D
	- With Improvements	TS	1	3	0	1	2	1	1	2	**1>**	1	2	0	44.4	42.4	38.4	D	D	D
36	Perris Bl / Santiago Dr																			
	- Without Improvements	CSS	1	3	0	1	3	0	0	1	0	0	1	0	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
	- With Improvements	**TS**	1	3	0	1	3	0	**1**	1	0	0	1	0	22.0	24.5	24.9	C	C	C
37	Perris Bl / Iris Av																			
	- Without Improvements	TS	1	3	1	1	3	0	1	2	0	1	2	0	51.3	47.2	**64.5**	D	D	**E**
	- With Improvements	TS	1	3	**1>**	1	3	0	1	2	0	1	2	0	44.5	42.4	54.4	D	D	D
38	Perris Bl / Krameria Av																			
	- Without Improvements	TS	1	3	0	1	3	0	0	1	1	1	1	1	**61.8**	**65.8**	**110.1**	**E**	**E**	**F**
	- With Improvements[8]	TS	1	3	0	1	3	0	**1**	1	**0**	1	1	1	42.4	41.4	42.8	D	D	D

Table 6-4
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Recommended Improvements for Opening Year Cumulative (2018) With Project Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)			Level of Service		
			Northbound			Southbound			Eastbound			Westbound								
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	Sat	AM	PM	Sat
41	Perris Bl / Harley Knox Bl																			
	- Without Improvements	TS	1	1	0	0	1	1	1	0	1	0	0	0	**>200.0**	**140.2**	24.2	**F**	**F**	C
	- With Improvements	TS	1	**2**	0	**1**	**2**	**1>**	**2**	**1**	**0**	**1**	**1**	0	28.8	30.5	21.9	C	C	C
42	Perris Bl / Ramona Expressway																			
	- Without Improvements	TS	2	2	1	2	2	1	2	3	1	2	3	0	**96.4**	52.0	45.6	**F**	D	D
	- With Improvements	TS	2	2	1	2	2	**1>**	2	3	1	2	3	**1>**	54.6	49.8	41.3	D	D	D
43	Kitching St / Cactus Av																			
	- Without Improvements	TS	1	2	0	1	1	1	1	2	0	1	2	0	**36.2**	32.0	29.9	**D**	C	C
	- With Improvements	TS	1	2	0	1	**2**	1	1	2	0	1	2	0	32.1	28.2	27.1	C	C	C
44	Kitching St / John F. Kennedy Dr																			
	- Without Improvements	TS	0	1	0	0	1	0	1	2	0	1	2	d	**94.0**	**53.7**	**36.7**	**F**	**D**	**D**
	- With Improvements[9]	TS	**1**	**2**	0	**1**	**2**	0	1	2	0	1	2	d	28.8	24.5	22.7	C	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; > = Right-Turn Overlap Phasing; >> = Free-Right Turn Lane; d= Defacto Right Turn Lane; **1** = Improvement

2 Per the 2000 Highway Capacity Manual, 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 CSS = Cross-street Stop; AWS = All-Way Stop; TS = Traffic Signal; RA = Roundabout

4 Volume-to-capacity ratio is greater than 1.00; Intersection unstable; Level of Service "F".

5 Recommendation includes removal of the existing southbound crosswalk (on west leg). Third eastbound through lane is consistent with planned City of Moreno Valley Capital Improvement Plan (CIP) project which will widen Cactus Avenue between the I-215 Freeway and Veterans Way. Construction was completed in Summer 2014.

6 Although the intersection does not appear to warrant a traffic signal, no other geometric improvements are anticipated to result in acceptable peak hour operations. As such, it is recommended that the intersection be monitored and a traffic signal be installed at the City Traffic Engineer's discretion.

7 Based on discussions with City staff, it is our understanding that the City has just recently been awarded a Highway Safety Grant for this intersection, which will be utilized to construct a roundabout.

8 Restripe the eastbound approach and implement protected left turn phasing for the eastbound and westbound approaches.

9 Implement protected left turn phasing for the northbound and southbound approaches.

- **Construct a 2nd northbound left turn lane.**
- **Remove the southbound (west leg) crosswalk.**

Recommended Improvement – Frederick Street / Cactus Avenue (#4) – The following improvement is necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 3rd eastbound through lane.**

Recommended Improvement – Graham Street / Cactus Avenue (#5) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd southbound left turn lane.**
- **Construct a 2nd eastbound left turn lane.**
- **Construct a 3rd eastbound through lane.**

Recommended Improvement – Indian Street / Gentian Avenue (#15) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Install a traffic signal. Although the intersection does not appear to warrant a traffic signal, no other geometric improvements are anticipated to result in acceptable peak hour operations. As such, it is recommended that the intersection be monitored and a traffic signal be installed at the City Traffic Engineer's discretion.**
- **Construct a northbound left turn lane.**
- **Construct a southbound left turn lane.**
- **Restripe the eastbound right turn lane as a shared through-right turn lane.**
- **Construct a westbound shared left-through-right turn lane.**

Recommended Improvement – Indian Street / Harley Knox Boulevard (#21) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd southbound left turn lane.**
- **Construct a southbound right turn lane and modify the traffic signal to implement overlap phasing.**
- **Construct a 2nd eastbound left turn lane.**
- **Construct a 2nd eastbound through lane.**

Recommended Improvement – SR-60 Eastbound Off-Ramp / Sunnymead Boulevard (#24) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Restripe the southbound shared left-right turn lane as a 2nd left turn lane.**

- **Construct a southbound right turn lane.**

Recommended Improvement – Perris Boulevard / Sunnymead Boulevard (#26) – The following improvement is necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Implement overlap phasing on the eastbound right turn lane.**

Recommended Improvement – SR-60 Eastbound On-Ramp / Sunnymead Boulevard (#27) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a roundabout. Based on discussions with City staff, it is our understanding that the City has just recently been awarded a Highway Safety Grant for this intersection, which will be utilized to construct a roundabout.**
- **Construct an eastbound right turn lane.**

Recommended Improvement – Perris Boulevard / Cactus Avenue (#31) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct an eastbound right turn lane and modify the traffic signal to implement overlap phasing.**

Recommended Improvement – Perris Boulevard / Santiago Drive (#36) – The following improvement is necessary to reduce the cumulative impact to ***"less-than-significant"***:

- *Install a traffic signal.*

Recommended Improvement – Perris Boulevard / Iris Avenue (#37) – The following improvement is necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Modify the existing traffic signal and implement overlap phasing on the northbound right turn lane.**

Recommended Improvement – Perris Boulevard / Krameria Avenue (#38) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Restripe the eastbound approach to provide a left turn lane and a shared through right turn lane.**
- **Modify the traffic signal to implement protected left turn phasing for the eastbound and westbound approaches.**

Recommended Improvement – Perris Boulevard / Harley Knox Boulevard (#41) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd northbound through lane.**
- **Construct a southbound left turn lane.**
- **Construct a 2nd southbound through lane.**
- **Modify the traffic signal and implement overlap phasing on the southbound right turn lane.**
- **Construct a 2nd eastbound left turn lane.**
- **Restripe the eastbound right turn lane as a shared through-right turn lane.**
- **Construct a westbound left turn lane.**
- **Construct a westbound shared through-right turn lane.**

Recommended Improvement – Perris Boulevard / Ramona Expressway (#42) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Modify the traffic signal and implement overlap phasing on the southbound right turn lane.**
- **Construct a westbound right turn lane and modify the traffic signal to implement overlap phasing.**

Recommended Improvement – Kitching Street / Cactus Avenue (#43) – The following improvement is necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd southbound through lane.**

Recommended Improvement – Kitching Street / John F. Kennedy Drive (#44) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a northbound left turn lane.**
- **Construct a 2nd northbound through lane.**
- **Construct a southbound left turn lane.**
- **Construct a 2nd southbound through lane.**
- **Modify the traffic signal and implement protected left turn phasing for the northbound and southbound approaches.**

The applicant shall participate in the funding of off-site improvements, including traffic signals that are needed to serve cumulative traffic conditions through the payment of Western Riverside County Transportation Uniform Mitigation Fees (TUMF), City of Moreno Valley Development Impact Fees (DIF) or a fair share contribution as directed by the City. These fees are collected as part of a funding

mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases. Each of the improvements discussed above have been identified as being included as part of TUMF funding program, City DIF funding program or fair share contribution in Section 9.0 *Local and Regional Funding Mechanisms* of this TIA.

It should be noted that a *Project Study Report (PSR) to Request Conceptual Approval for Interstate I-215/Cactus Avenue Interchange (EA: OE760)*, dated December 30, 2008, has been prepared and the City of Moreno Valley has included in its Capital Improvement Program (CIP) the construction of a third eastbound through lane between the I-215 Freeway interchange to Veterans Way along Cactus Avenue which is anticipated to be fully constructed by Summer 2014. The improvements discussed above are consistent with the PSR, City's CIP and the findings in the March LifeCare Campus Specific Plan traffic analysis.

Worksheets for Opening Year Cumulative (2018) With Project conditions, with improvements, HCM calculations are provided in Appendix "6.7".

It is important to note that with the implementation of the recommended intersection improvements discussed above, which are necessary to reduce cumulative impacts to less-than-significant, there are no potential queuing issues anticipated for Opening Year Cumulative (2018) With Project conditions (see Table 6-5). As such, no "spill back" onto the I-215 Freeway northbound mainline is anticipated. Worksheets for Opening Year Cumulative (2018) With Project conditions, with improvements, queuing analysis is provided in Appendix "6.8".

6.8.2 Recommended Improvements to Address Opening Year Cumulative (2018) Cumulative Impacts along Roadway Segments

Improvement strategies have been recommended along roadway segments that have been identified as cumulatively impacted to reduce each segment's volume-to-capacity (v/c) ratio through the addition of through lanes, consistent with the intersection operations analysis. The effectiveness of the recommended roadway segment improvement strategies discussed below to address Opening Year Cumulative (2018) traffic impacts and are presented in Table 6-6.

Consistent with the peak hour intersection analysis and recommended improvements shown previously on Table 6-4, the following roadway segment improvements are recommended:

ID	Roadway Segments
19	Cactus Avenue, East of I-215 NB Ramps – Widen to 6-lane divided roadway
20	Cactus Avenue, West of Elsworth Street – Widen to 6-lane divided roadway
21	Cactus Avenue, East of Elsworth Street – Widen to 6-lane divided roadway
22	Cactus Avenue, West of Frederick Street – Widen to 6-lane divided roadway

ID	Roadway Segments
23	Cactus Avenue, East of Frederick Street – Widen to 6-lane divided roadway
24	Cactus Avenue, West of Graham Street – Widen to 6-lane divided roadway
25	Cactus Avenue, East of Graham Street – Widen to 6-lane divided roadway
26	Cactus Avenue, West of Heacock Street – Widen to 6-lane divided roadway
74	Harley Knox Boulevard, West of Perris Boulevard – Widen to 4-lane divided roadway
140	Kitching Street, South of Cactus Avenue – Widen to 4-lane divided roadway
141	Kitching Street, North of John F. Kennedy Drive – Widen to 4-lane divided roadway
142	Kitching Street, South of John F. Kennedy Drive – Widen to 4-lane divided roadway

Even with the improvements to six-travel lanes on Cactus Avenue, General Plan LOS "D" standard will not be achieved under Opening Year Cumulative (2018) traffic conditions for the roadway segments along Cactus Avenue from west of Elsworth Street to west of Graham Street. However, it is important to note that the intersections adjacent to the deficient roadway segments are anticipated to operate at an acceptable LOS with the recommended intersection improvements discussed in Section 6.8.1 *Recommended Improvements to Address Opening Year Cumulative (2018) Cumulative Impacts at Intersections* and thus do not require any additional roadway widening beyond six-travel lanes.

Table 6-5

Opening Year Cumulative (2018) Conditions With Recommended Improvements
AM/PM Peak Hour Stacking Length Summary at I-215/Cactus Avenue

Intersection	Movement	Stacking Distance (Feet)	Opening Year Cumulative (2018) With Project						Opening Year Cumulative (2018) With Project, With Improvements					
			95th Percentile Stacking Distance Required (Feet)			Acceptable?[1]			95th Percentile Stacking Distance Required (Feet)			Acceptable?[1]		
			AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM	PM	SAT	AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM	PM	SAT
I-215 SB Ramps / Cactus Av.														
	SBR	1,115	332	39	0	Yes	Yes	Yes	584 [2]	20	50	Yes	Yes	Yes
I-215 NB Ramps / Cactus Av.														
	NBL	**350**	566 [2]	98	90	**No**	Yes	Yes	273	359 [2]	75	Yes	Yes	Yes
	NBT	1,650	86	57	54	Yes	Yes	Yes	131	417	95	Yes	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.

Table 6-6

Opening Year Cumulative (2018) Conditions With Recommended Improvements
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	2018 WP	V/C	LOS	Acceptable LOS
19	Cactus Avenue	East of I-215 NB Ramps	6D	56,300	50,500	0.90	D	D
20		West of Elsworth Street	6D	56,300	**57,600**	**1.02**	**F**	D
21		East of Elsworth Street	6D	56,300	**53,500**	**0.95**	**E**	D
22		West of Frederick Street	6D	56,300	**55,100**	**0.98**	**E**	D
23		East of Frederick Street	6D	56,300	**56,100**	**1.00**	**E**	D
24		West of Graham Street	6D	56,300	**54,200**	**0.96**	**E**	D
25		East of Graham Street	6D	56,300	42,900	0.76	C	D
26		West of Heacock Street	6D	56,300	38,853	0.69	B	D
74	Harley Knox Boulevard	West of Perris Boulevard	4D	37,500	13,274	0.35	A	D
140	Kitching Street	South of Cactus Avenue	4D	37,500	9,767	0.26	A	C
141		North of John F. Kennedy Drive	4D	37,500	9,303	0.25	A	C
142		South of John F. Kennedy Drive	4D	37,500	10,160	0.27	A	C

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

2018 WP = Opening Year Cumulative (2018) With Project

[1] These maximum roadway capacities have been extracted from the City of Moreno Valley's Transportation Division's Traffic Impact Analysis Preparation Guidelines (August 2007).

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7.0 GENERAL PLAN BUILDOUT (POST-2035) TRAFFIC ANALYSIS

This section discusses the methods used to develop General Plan Buildout (Post-2035) traffic forecasts for Without and With Project conditions and the resulting intersection operations, roadway segment analyses and traffic signal warrants. The General Plan Buildout (Post-2035) traffic conditions analysis has been utilized to identify potential long-range cumulative traffic impacts.

7.1 ROADWAY IMPROVEMENTS

Similar to Opening Year Cumulative (2018) conditions, the lane configurations and traffic controls assumed to be in place for General Plan Buildout (Post-2035) conditions is consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- A third eastbound through lane is proposed to be constructed along Cactus Avenue between the I-215 Freeway and Veterans Way. Based on discussions with City staff, this widening project is identified as a Capital Improvement Plan (CIP) project and funding for the widening project has been secured. It is anticipated that the third eastbound through lane would be constructed by Summer 2014. As such, the third eastbound through lane has been assumed as part of the base condition (i.e., "without improvements").
- At project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for General Plan Buildout (Post-2035) With Project conditions only (e.g., intersection turn lane improvements at the Project driveways).

7.2 GENERAL PLAN BUILDOUT (POST-2035) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-processed volumes obtained from a version of RivTAM modified to represent General Plan Buildout conditions for the City of Moreno Valley. The weekday ADT volumes which can be expected for General Plan Buildout (Post-2035) Without Project traffic conditions are shown on Exhibit 7-1. Exhibits 7-2, 7-3 and 7-4 show the AM, PM and Saturday mid-day peak hour intersection turning movement volumes for General Plan Buildout (Post-2035) Without Project traffic conditions.

7.3 GENERAL PLAN BUILDOUT (POST-2035) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-processed volumes obtained from a version of RivTAM modified to represent General Plan Buildout conditions for the City of Moreno Valley with the addition of Project traffic. The weekday ADT volumes which can be expected for General Plan Buildout (Post-2035) With Project traffic conditions are shown on Exhibit 7-5. Exhibits 7-6, 7-7 and 7-8 show the AM, PM and Saturday mid-

EXHIBIT 7-1

GENERAL PLAN BUILDOUT (POST-2035) WITHOUT PROJECT AVERAGE DAILY TRAFFIC (ADT)

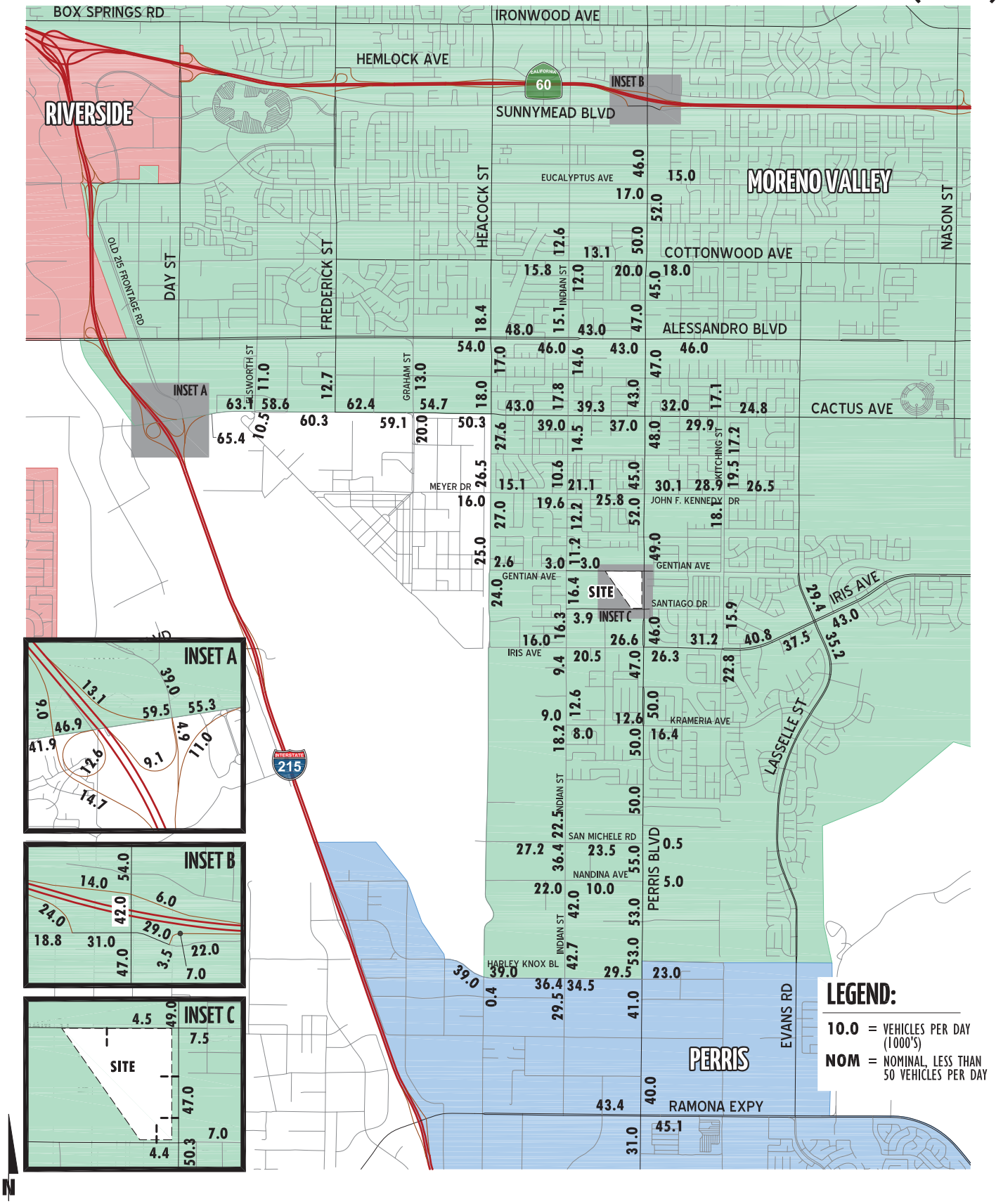
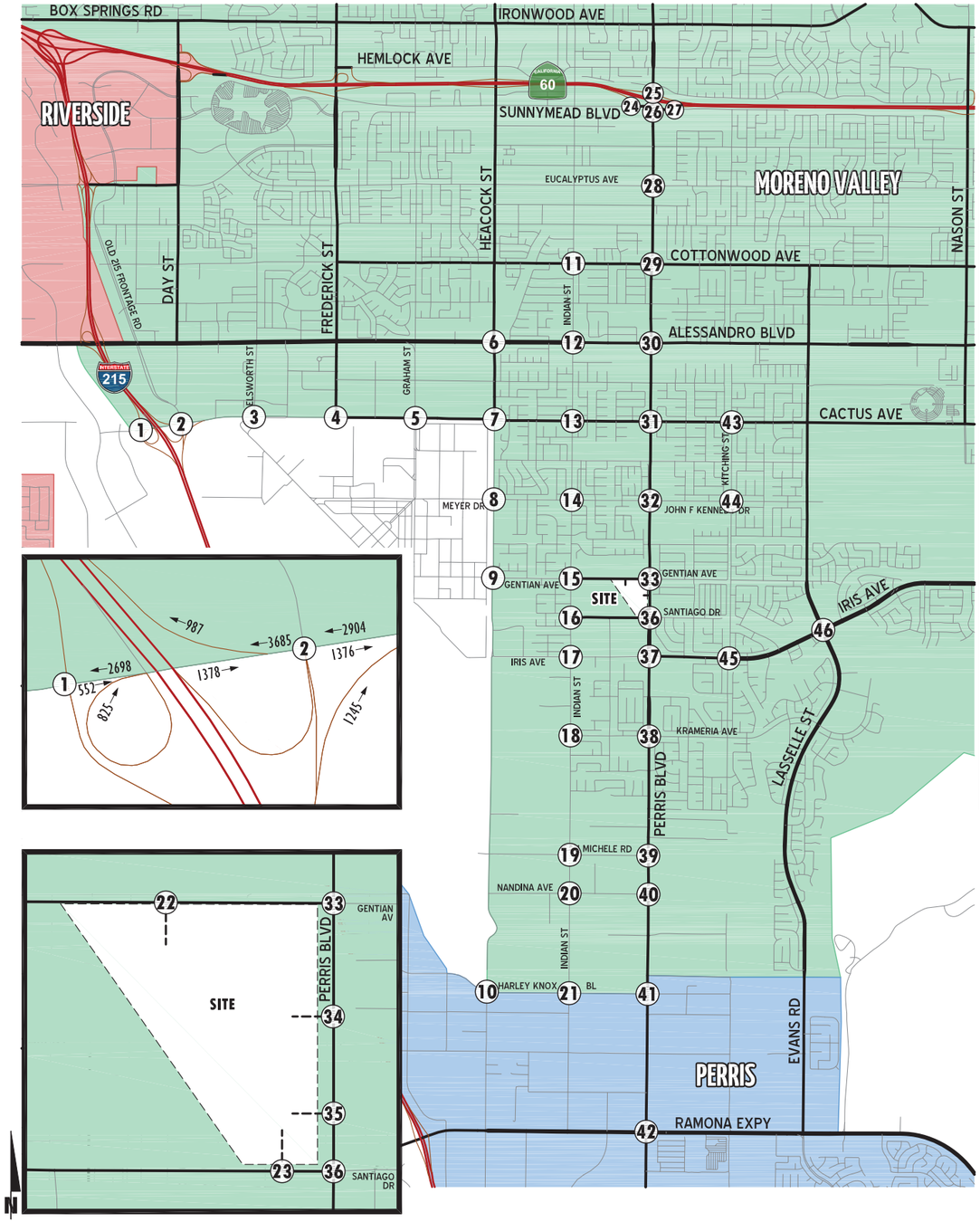


EXHIBIT 7-2

GENERAL PLAN BUILDOUT (POST-2035) WITHOUT PROJECT AM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.
528 ← 2065 ← 633	384 → 0 → 132 ← 311 ← 2593	141 → 152 → 103 ← 155 ← 2796 ← 118	71 → 203 ← 195 ← 2833	111 → 140 → 105 ← 192 ← 2592 ← 29	161 → 208 → 173 ← 216 ← 1951 ← 49	57 → 347 → 75 ← 148 ← 1747 ← 17	32 → 325 → 172 ← 326 ← 181 ← 79
552 → 395 →	86 → 1204 → 88 → ← 708 ← 362 ← 40	114 → 1997 → 384 → ← 58 ← 28 ← 21	105 → 1888 →	187 → 1721 → 289 → ← 390 ← 202 ← 18	154 → 1087 → 92 → ← 223 ← 501 ← 72	162 → 1097 → 464 → ← 959 ← 711 ← 10	15 → 93 → 175 → ← 140 ← 153 ← 61

9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.
591 → 90 → ← 136 ← 5	0 → 0 → 0 ← 0 ← 1465 ← 6	86 → 289 → 65 ← 102 ← 477 ← 61	129 → 290 → 104 ← 146 ← 1828 ← 110	50 → 429 → 103 ← 159 ← 1625 ← 79	41 → 252 → 224 ← 201 ← 819 ← 193	43 → 340 → 10 ← 10 ← 0 ← 0	587 → 35 → ← 136 ← 270
← 1128 ← 5	0 → 935 → 5 → ← 5 ← 0 ← 9	60 → 280 → 160 → ← 130 ← 301 ← 46	91 → 1008 → 139 → ← 188 ← 286 ← 100	50 → 939 → 140 → ← 140 ← 519 ← 48	39 → 678 → 85 → ← 73 ← 375 ← 217	31 → 10 → 80 → ← 87 ← 647 ← 10	← 770 ← 22

17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.
19 → 414 → 366 ← 499 ← 736 ← 31	61 → 334 → 237 ← 322 ← 150 ← 92	52 → 403 → 125 ← 339 ← 696 ← 198	51 → 622 → 107 ← 108 ← 85 ← 188	481 → 636 → 229 ← 438 ← 1123 ← 108	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	99 → 719 → ← 945
36 → 445 → 79 → ← 154 ← 321 ← 20	14 → 32 → 165 → ← 339 ← 458 ← 140	57 → 158 → 304 → ← 1026 ← 804 ← 295	26 → 40 → 290 → ← 465 ← 1806 ← 333	1019 → 590 → 254 → ← 125 ← 1119 ← 100			481 →

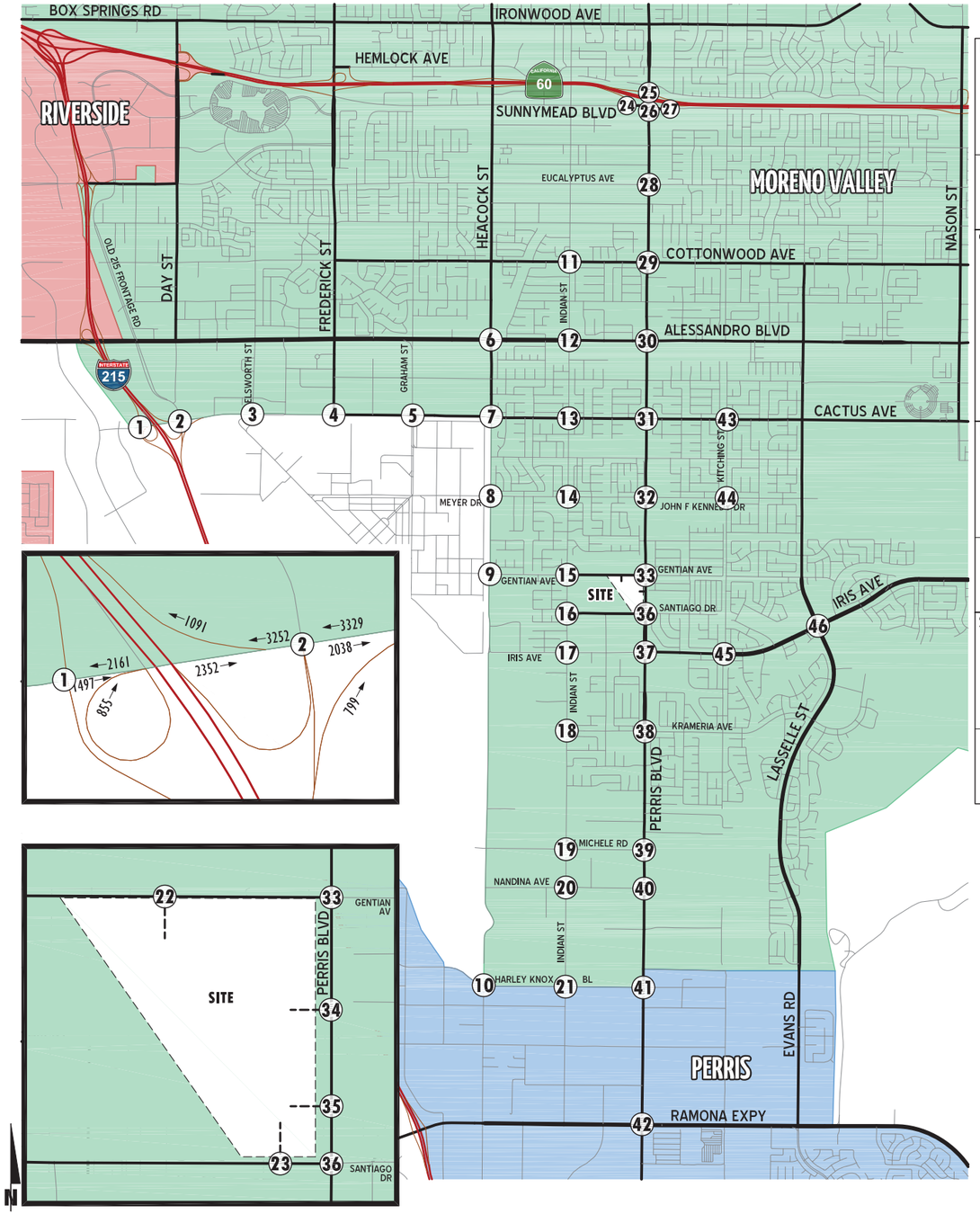
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.
536 → 1722 → ← 275 ← 0 ← 328	337 → 1122 → 591 → ← 662 ← 369 ← 83	← 82 ← 1074 ← 63	113 → 1419 → 213 → ← 291 ← 487 ← 137	255 → 1212 → 209 → ← 255 ← 444 ← 157	249 → 688 → 294 → ← 258 ← 1595 ← 276	293 → 1152 → 228 → ← 143 ← 1132 ← 267	258 → 1061 → 402 → ← 315 ← 634 ← 494
← 685 ← 1635	405 → 438 → 357 → ← 239 ← 1254 ← 214	407 → 814 → 22 → ← 40 ← 29 ← 32	91 → 194 → 134 → ← 129 ← 1203 ← 82	197 → 275 → 136 → ← 161 ← 894 ← 116	194 → 789 → 198 → ← 410 ← 800 ← 250	262 → 675 → 297 → ← 394 ← 1121 ← 293	282 → 590 → 342 → ← 433 ← 1365 ← 454

33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.
46 → 587 → 139 ← 239 ← 23 ← 88	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	68 → 1555 → 76 ← 171 ← 110 ← 78	184 → 1013 → 303 ← 286 ← 721 ← 367	61 → 1345 → 136 ← 238 ← 415 ← 360	271 → 1648 → 5 ← 5 ← 5 ← 5
90 → 5 → 25 → ← 3 ← 168 ← 26			63 → 31 → 50 → ← 85 ← 1504 ← 148	287 → 510 → 193 → ← 312 ← 1029 ← 329	81 → 277 → 215 → ← 121 ← 1413 ← 313	305 → 5 → 237 → ← 260 ← 1579 ← 5

40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.
160 → 1643 → 68 ← 41 ← 46 ← 73	409 → 1170 → 149 ← 225 ← 244 ← 71	310 → 618 → 332 ← 537 ← 1663 ← 220	224 → 521 → 96 ← 154 ← 949 ← 78	222 → 480 → 178 ← 236 ← 921 ← 77	226 → 452 → 126 ← 175 ← 953 ← 700	188 → 859 → 222 ← 149 ← 1264 ← 544
90 → 6 → 128 → ← 295 ← 1819 ← 125	374 → 103 → 118 → ← 186 ← 1541 ← 22	418 → 774 → 149 → ← 417 ← 822 ← 210	164 → 807 → 297 → ← 287 ← 582 ← 88	219 → 935 → 249 → ← 339 ← 635 ← 62	160 → 847 → 202 → ← 289 ← 314 ← 397	214 → 829 → 456 → ← 382 ← 753 ← 426

EXHIBIT 7-3

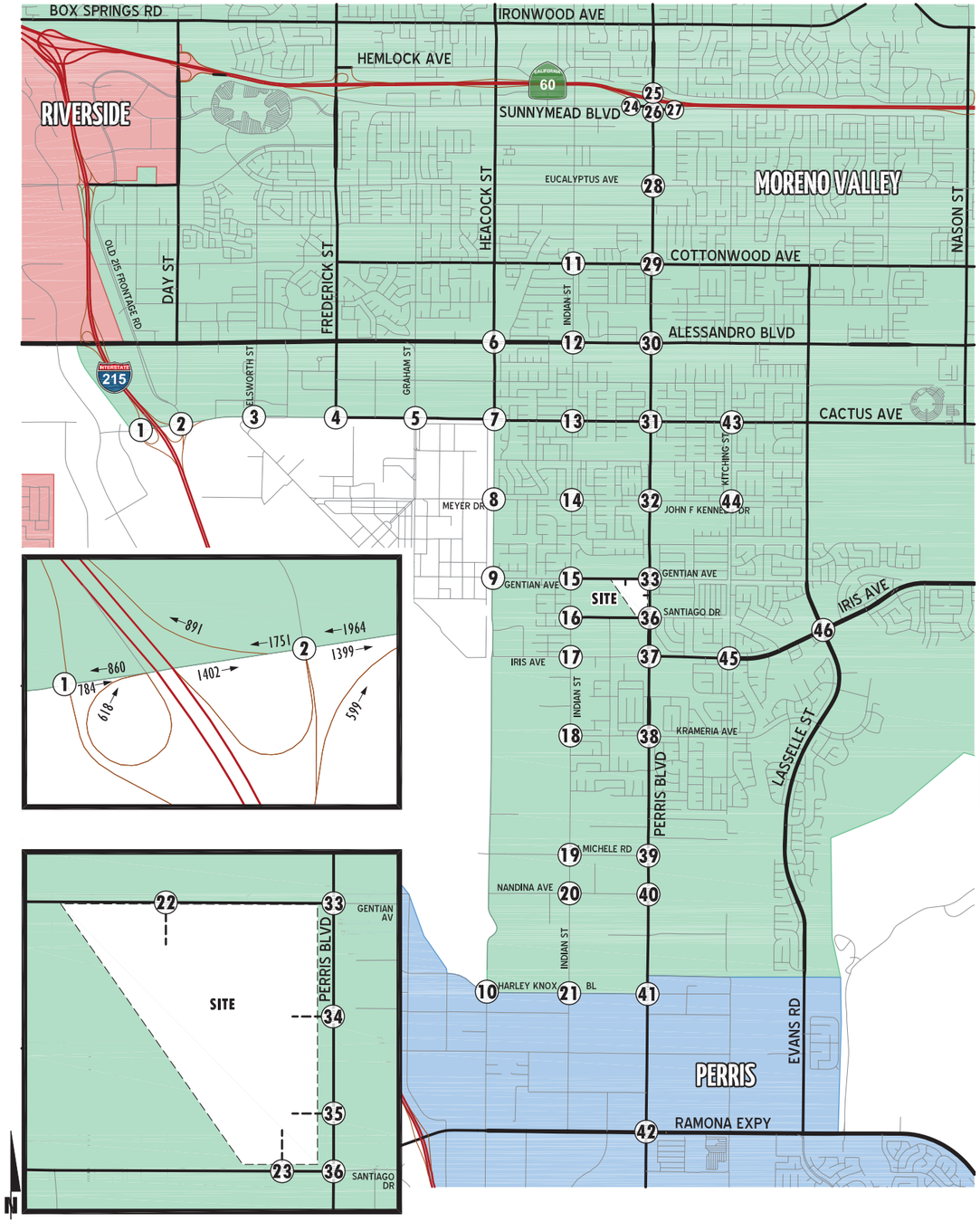
GENERAL PLAN BUILDOUT (POST-2035) WITHOUT PROJECT PM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.
236 / 1056 / 1105	250 / 5 / 265 / 480 / 2849	188 / 27 / 199 / 217 / 2203 / 33	163 / 471 / 232 / 2238	356 / 264 / 259 / 119 / 1612 / 25	233 / 530 / 296 / 262 / 1553 / 63	141 / 732 / 146 / 130 / 920 / 21	78 / 1023 / 497 / 301 / 165 / 47
1497 / 591	193 / 1748 / 411 / 153 / 151 / 25	226 / 2554 / 36 / 482 / 125 / 165	67 / 2765	240 / 2943 / 873 / 353 / 139 / 28	175 / 2224 / 182 / 187 / 402 / 61	152 / 2016 / 1123 / 600 / 573 / 8	48 / 284 / 293 / 204 / 556 / 112
9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.
1418 / 120 / 55 / 5	0 / 0 / 0 / 0 / 1170 / 17	74 / 406 / 66 / 79 / 373 / 64	103 / 437 / 279 / 194 / 1545 / 120	82 / 711 / 232 / 178 / 988 / 48	34 / 553 / 83 / 49 / 261 / 116	75 / 565 / 10 / 10 / 0 / 0	469 / 10 / 10 / 10
758 / 13	0 / 1650 / 0 / 5 / 0 / 14	75 / 656 / 180 / 103 / 396 / 88	208 / 1912 / 228 / 260 / 470 / 190	69 / 2033 / 137 / 140 / 570 / 60	28 / 436 / 161 / 108 / 372 / 84	47 / 10 / 79 / 38 / 482 / 10	578 / 10
17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.
57 / 276 / 345 / 282 / 395 / 121	52 / 493 / 183 / 78 / 59 / 200	93 / 865 / 432 / 230 / 231 / 262	142 / 599 / 117 / 12 / 65 / 403	865 / 1375 / 633 / 366 / 907 / 126	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	128 / 1289 / 833
34 / 604 / 140 / 91 / 397 / 77	105 / 179 / 467 / 259 / 543 / 184	87 / 721 / 1042 / 407 / 773 / 177	79 / 172 / 877 / 473 / 1119 / 351	454 / 1333 / 199 / 285 / 1086 / 172			908
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.
428 / 1730 / 243 / 1 / 297	295 / 1098 / 634 / 687 / 233 / 96	34 / 952 / 29	236 / 1333 / 220 / 231 / 356 / 165	207 / 1358 / 321 / 261 / 321 / 158	257 / 1086 / 285 / 234 / 1149 / 363	260 / 1671 / 248 / 190 / 712 / 160	108 / 1957 / 225 / 140 / 275 / 301
695 / 2168	769 / 917 / 510 / 305 / 1407 / 126	398 / 1126 / 153 / 64 / 27 / 32	195 / 442 / 214 / 154 / 1303 / 81	233 / 507 / 270 / 226 / 1000 / 130	330 / 1685 / 446 / 532 / 768 / 346	350 / 1270 / 499 / 293 / 1190 / 229	145 / 419 / 276 / 325 / 1519 / 221
	33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.
	77 / 2146 / 286 / 188 / 27 / 85	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	75 / 2115 / 140 / 111 / 64 / 90	248 / 1378 / 494 / 323 / 560 / 349	84 / 1470 / 223 / 171 / 184 / 314	266 / 1808 / 5 / 5 / 5 / 5
	103 / 77 / 99 / 65 / 1889 / 257			50 / 61 / 91 / 65 / 2050 / 100	263 / 599 / 226 / 251 / 1446 / 339	93 / 242 / 136 / 113 / 1840 / 227	369 / 5 / 407 / 286 / 1884 / 5
40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.	
94 / 2276 / 177 / 11 / 19 / 40	468 / 1564 / 255 / 145 / 157 / 58	246 / 951 / 528 / 334 / 1028 / 204	118 / 414 / 121 / 93 / 708 / 91	123 / 560 / 127 / 100 / 444 / 64	213 / 392 / 205 / 292 / 1061 / 626	210 / 990 / 386 / 218 / 1243 / 545	
289 / 40 / 364 / 57 / 2090 / 163	570 / 335 / 266 / 165 / 1375 / 90	433 / 1434 / 322 / 294 / 836 / 152	260 / 1062 / 276 / 129 / 525 / 91	119 / 590 / 235 / 131 / 493 / 68	217 / 1180 / 289 / 188 / 301 / 655	322 / 1082 / 446 / 418 / 810 / 452	

EXHIBIT 7-4

GENERAL PLAN BUILDOUT (POST-2035) WITHOUT PROJECT SATURDAY MID-DAY PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.
112 ← 320 ← 540	81 → 0 ↓ 188 ← 435 ← 1529	56 → 93 ↓ 89 ← 195 ← 1547 ← 139	78 → 333 ← 257 ← 2079	265 → 195 ↓ 230 ← 82 ← 1546 ← 30	176 → 1156 ↓ 265 ← 257 ← 882 ← 355	267 → 785 ↓ 278 ← 232 ← 945 ← 15	180 → 646 ↓ 413 ← 401 ← 192 ← 41
784 → 88 ↓	97 → 1052 → 254 ↓ ← 141 ← 62 ← 100	168 → 1525 → 108 ↓ ← 169 ← 183 ← 128	57 → 1606 →	122 → 1819 → 625 ↓ ← 353 ← 125 ← 67	299 → 927 → 97 ↓ ← 48 ← 1112 ← 309	220 → 1299 → 552 ↓ ← 573 ← 711 ← 19	129 → 238 → 167 ↓ ← 112 ← 695 ← 70
9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.
858 → 93 ↓ ← 126 ← 15	0 → 0 ↓ 0 ← 0 ← 514 ← 33	71 → 370 ↓ 68 ← 61 ← 342 ← 86	122 → 328 ↓ 265 ← 174 ← 1605 ← 331	105 → 523 ↓ 126 ← 142 ← 986 ← 38	50 → 509 ↓ 102 ← 133 ← 371 ← 113	115 → 601 ↓ 10 ← 10 ← 0 ← 10	588 → 10 ↓ ← 10 ← 10
874 → 40 ↓	0 → 829 → 0 ↓ ← 20 ← 0 ← 68	58 → 584 → 163 ↓ ← 109 ← 418 ← 113	141 → 1596 → 128 ↓ ← 302 ← 457 ← 255	121 → 1203 → 126 ↓ ← 223 ← 661 ← 76	127 → 410 → 88 ↓ ← 109 ← 599 ← 99	102 → 10 → 62 ↓ ← 70 ← 651 ← 10	↓ ← 699 ← 10
17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.
105 → 189 ↓ 254 ← 325 ← 390 ← 121	39 → 356 ↓ 142 ← 129 ← 44 ← 148	70 → 549 ↓ 324 ← 123 ← 159 ← 262	142 → 1178 ↓ 234 ← 62 ← 43 ← 138	390 → 978 ↓ 156 ← 22 ← 553 ← 157	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	132 → 169 ↓ ← 1198
19 → 392 → 148 ↓ ← 110 ← 391 ← 48	79 → 134 → 350 ↓ ← 194 ← 392 ← 138	65 → 480 → 738 ↓ ← 488 ← 673 ← 148	90 → 85 → 482 ↓ ← 594 ← 1017 ← 351	188 → 524 → 46 ↓ ← 158 ← 1667 ← 703			1109 →
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.
481 → 1622 ↓ ← 204 ← 4 ← 382	372 → 1039 ↓ 593 ← 851 ← 433 ← 175	← 53 ← 1265 ← 55	210 → 1559 ↓ 132 ← 190 ← 288 ← 157	221 → 1281 ↓ 267 ← 253 ← 256 ← 134	328 → 990 ↓ 236 ← 237 ← 1139 ← 371	201 → 1567 ↓ 232 ← 164 ← 539 ← 100	137 → 1984 ↓ 207 ← 178 ← 254 ← 263
↓ ← 941 ← 2102	715 → 932 → 631 ↓ ← 393 ← 1477 ← 200	481 → 955 → 289 ↓ ← 194 ← 39 ← 68	155 → 302 → 183 ↓ ← 110 ← 1816 ← 96	279 → 404 → 176 ↓ ← 157 ← 1321 ← 120	404 → 1207 → 428 ↓ ← 736 ← 834 ← 279	239 → 807 → 546 ↓ ← 426 ← 1351 ← 317	208 → 285 → 191 ↓ ← 311 ← 1827 ← 259
	33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.
	10 → 2005 ↓ 134 ← 203 ← 10 ← 90	NOT AN ANALYSIS LOCATION	NOT AN ANALYSIS LOCATION	75 → 1927 ↓ 103 ← 77 ← 21 ← 166	336 → 1465 ↓ 592 ← 420 ← 899 ← 338	134 → 1443 ↓ 252 ← 241 ← 160 ← 208	409 → 1547 ↓ 5 ← 5 ← 5 ← 5
	10 → 10 → 10 ↓ ← 10 ← 2066 ← 217			50 → 61 → 182 ↓ ← 65 ← 2166 ← 106	254 → 331 → 222 ↓ ← 343 ← 1661 ← 292	143 → 141 → 136 ↓ ← 84 ← 1746 ← 121	284 → 5 → 78 ↓ ← 104 ← 1517 ← 5
40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.	
116 → 1364 ↓ 254 ← 11 ← 6 ← 12	357 → 1123 ↓ 64 ← 36 ← 39 ← 15	207 → 614 ↓ 583 ← 440 ← 1185 ← 314	93 → 359 ↓ 156 ← 134 ← 462 ← 69	129 → 377 ↓ 70 ← 70 ← 447 ← 119	190 → 399 ↓ 166 ← 295 ← 1035 ← 441	233 → 440 ↓ 330 ← 207 ← 1165 ← 323	
269 → 40 → 188 ↓ ← 143 ← 1447 ← 18	332 → 84 → 89 ↓ ← 119 ← 1142 ← 23	242 → 1114 → 84 ↓ ← 211 ← 699 ← 194	159 → 921 → 169 ↓ ← 181 ← 528 ← 80	142 → 520 → 181 ↓ ← 120 ← 547 ← 61	198 → 956 → 190 ↓ ← 182 ← 311 ← 457	338 → 1011 → 276 ↓ ← 258 ← 548 ← 260	

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EXHIBIT 7-5

GENERAL PLAN BUILDOUT (POST-2035) WITH PROJECT AVERAGE DAILY TRAFFIC (ADT)

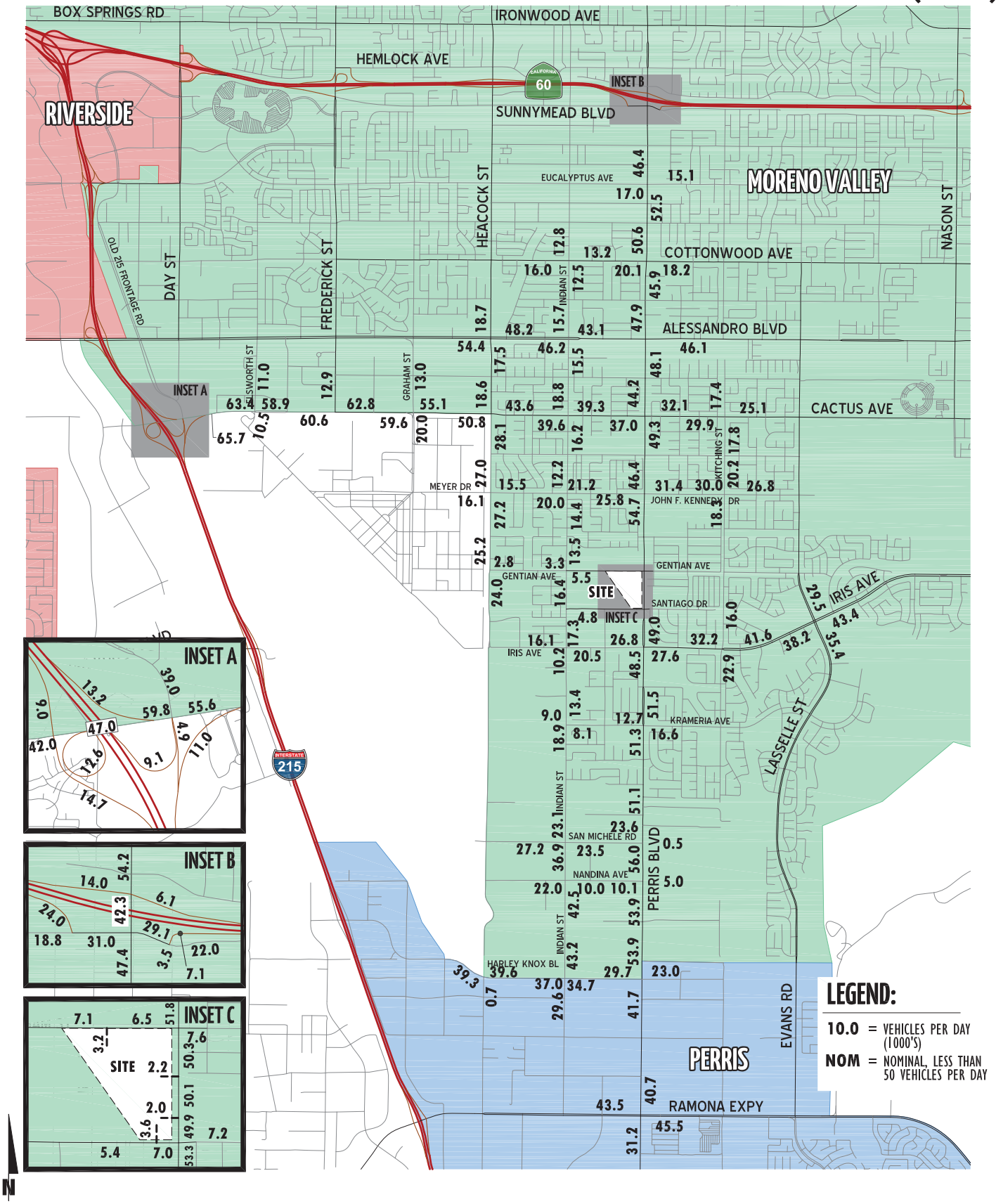

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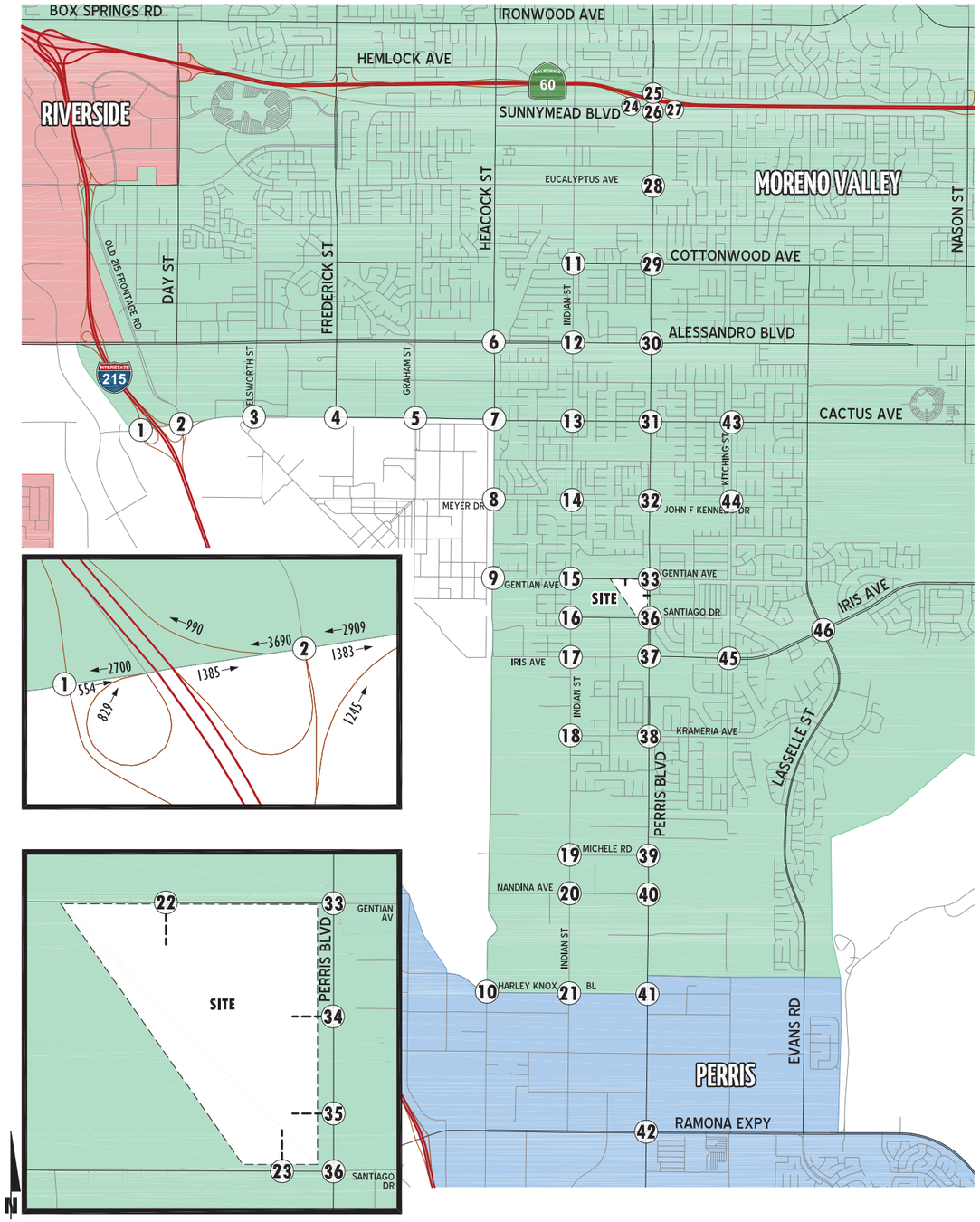
EXHIBIT 7-6

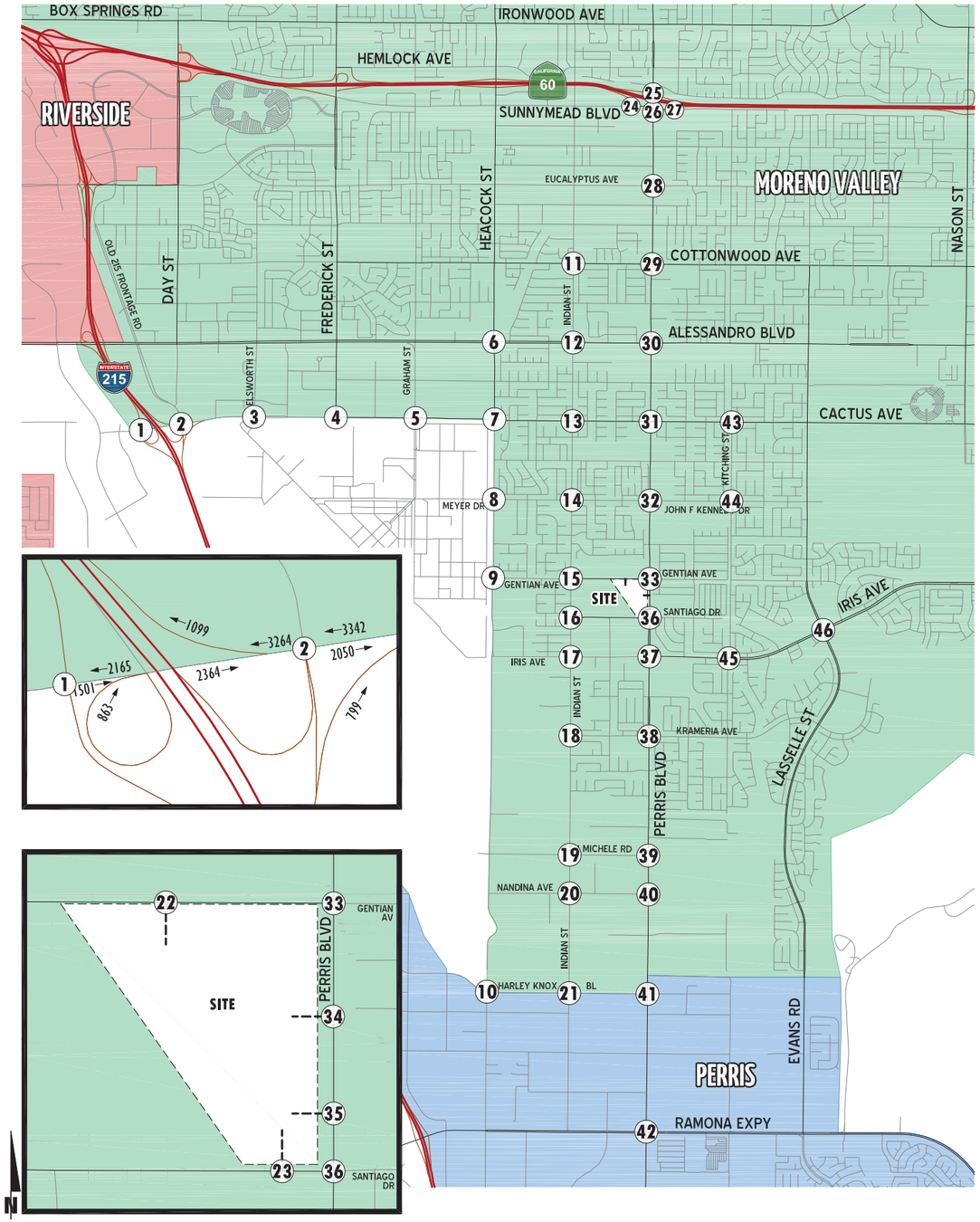
GENERAL PLAN BUILDOUT (POST-2035) WITH PROJECT AM PEAK HOUR INTERSECTION VOLUMES



1	I-215 SB Ramps & Cactus Av.	528	2067	633	554	395		2	I-215 NB Ramps & Cactus Av.	384	0	132	311	2598	86	121	88	708	362	40
3	Elsworth St. & Cactus Av.	141	152	103	155	2801	118	114	2004	384	58	28	21							
4	Frederick St. & Cactus Av.	71	207	198	2838	105	1895													
5	Graham St. & Cactus Av.	111	140	105	192	2601	29	187	1732	289	390	202	18							
6	Heacock St. & Alessandro Bl.	161	215	173	216	1954	49	154	1091	96	226	506	72							
7	Heacock St. & Cactus Av.	57	354	82	153	1752	17	162	1104	468	962	716	10							
8	Heacock St. & John F. Kennedy Dr.	32	327	181	333	181	79	15	93	177	142	1155	61							
9	Heacock St. & Gentian Av.	591	94	139	5	1128	5													
10	Heacock St. & Harley Knox Bl.	0	0	0	0	1470	11	0	942	5	5	0	16							
11	Indian St. & Cottonwood Av.	86	293	65	102	477	63	60	280	164	133	304	48							
12	Indian St. & Alessandro Bl.	129	303	104	146	1828	112	91	1008	143	191	296	102							
13	Indian St. & Cactus Av.	50	453	103	159	1625	79	50	939	153	150	538	48							
14	Indian St. & John F. Kennedy Dr.	41	289	224	201	819	195	39	678	96	87	404	219							
15	Indian St. & Gentian Av.	43	340	60	49	15	10	31	17	80	87	647	10							
16	Indian St. & Santiago Dr.	587	35	136	287	770	44													
17	Indian St. & Iris Av.	21	428	366	499	736	31	38	445	79	154	338	20							
18	Indian St. & Krameria Av.	61	346	239	324	150	92	14	32	165	339	473	140							
19	Indian St. & San Michele	52	411	127	341	696	198	57	158	304	1026	815	295							
20	Indian St. & Nandina Av.	51	630	107	108	85	188	26	40	290	465	1817	333							
21	Indian St. & Harley Knox Bl.	488	638	229	438	1126	108	1028	594	254	125	1121	100							
22	Driveway 1 & Gentian Av.	109	24	142	37	37	27													
23	Driveway 2 & Santiago Dr.	17	44	61	264	22	144													
24	SR-60 EB Off-Ramp & Sunnymead Bl.	99	719	945	481															
25	Perris Bl. & SR-60 WB Ramps	536	1726	275	0	332	685	1638												
26	Perris Bl. & Sunnymead Bl.	337	1131	591	662	369	83	405	438	357	239	1257	217							
27	SR-60 EB On-Ramp & Sunnymead Bl.	82	1074	63	410	814	22	40	29	32										
28	Perris Bl. & Eucalyptus Av.	113	1428	213	291	487	139	91	194	134	129	1210	84							
29	Perris Bl. & Cottonwood Av.	255	1225	209	255	444	161	197	275	138	163	904	119							
30	Perris Bl. & Alessandro Bl.	249	708	294	258	1595	278	194	789	200	412	815	252							
31	Perris Bl. & Cactus Av.	293	1178	228	143	1132	269	262	675	297	394	1141	295							
32	Perris Bl. & John F. Kennedy Dr.	258	1094	402	315	634	522	282	590	342	433	1390	476							
33	Perris Bl. & Gentian Av.	57	1639	139	239	25	88	107	7	55	50	1713	26							
34	Perris Bl. & Driveway 3	52	1730	36	1790															
35	Perris Bl. & Driveway 4	74	1692	61	1790															
36	Perris Bl. & Santiago Dr.	68	1599	85	171	114	78	95	34	59	142	1515	148							
37	Perris Bl. & Iris Av.	187	1040	325	314	721	367	291	510	193	312	1064	329							
38	Perris Bl. & Krameria Av.	63	1367	139	242	415	360	83	277	215	121	1441	313							
39	Perris Bl. & San Michele Rd.	273	1665	5	5	5	5	307	5	237	260	1601	5							
40	Perris Bl. & Nandina Av.	162	1658	68	41	46	73	92	6	128	295	1839	125							
41	Perris Bl. & Harley Knox Bl.	412	1182	149	225	244	71	378	103	18	186	1556	22							
42	Perris Bl. & Ramona Exwy.	312	621	339	546	1663	220	420	774	149	417	826	210							
43	Kitching St & Cactus Av.	224	528	96	154	949	85	164	807	297	287	587	93							
44	Kitching St & John F. Kennedy Dr.	237	480	178	236	928	77	231	940	252	343	635	62							
45	Kitching St & Iris Av.	228	452	126	175	973	700	162	862	204	291	314	397							
46	Laselle St. & Iris Av.	190	859	222	149	1273	544	216	836	459	386	753	426							

EXHIBIT 7-7

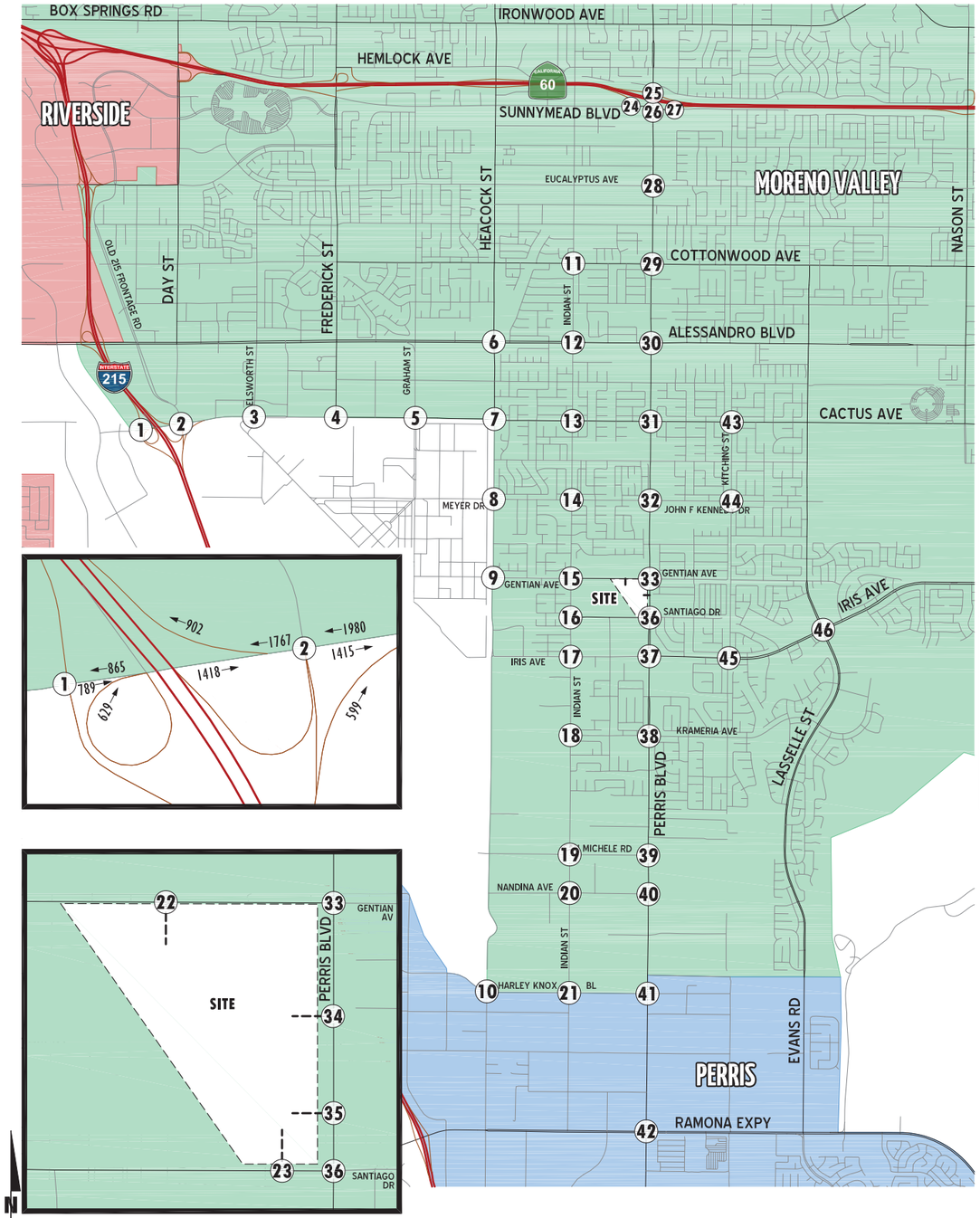
GENERAL PLAN BUILDOUT (POST-2035) WITH PROJECT PM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Cactus Av.	2 I-215 NB Ramps & Cactus Av.	3 Elsworth St. & Cactus Av.	4 Frederick St. & Cactus Av.	5 Graham St. & Cactus Av.	6 Heacock St. & Alessandro Bl.	7 Heacock St. & Cactus Av.	8 Heacock St. & John F. Kennedy Dr.	
236 ← 1060 ← 1105	250 → 5 ← 265 ← 480 ← 2862	188 → 27 ← 199 ← 217 ← 2216 ← 33	163 → 479 ← 240 ← 2251	356 → 264 ← 259 ← 119 ← 1633 ← 25	233 → 542 ← 296 ← 262 ← 1561 ← 63	141 → 744 ← 158 ← 143 ← 933 ← 21	78 → 1027 ← 513 ← 318 ← 165 ← 47	
1501 → 591 →	193 → 1760 → 411 → 153 ← 151 ← 25	226 → 2566 → 36 → 482 ← 125 ← 165	67 → 2777 →	240 → 2964 → 873 → 353 ← 139 ← 28	175 → 2232 → 190 → 195 ← 415 ← 61	152 → 2028 → 1131 → 608 ← 586 ← 8	48 → 284 → 297 → 208 ← 560 ← 112	
9 Heacock St. & Gentian Av.	10 Heacock St. & Harley Knox Bl.	11 Indian St. & Cottonwood Av.	12 Indian St. & Alessandro Bl.	13 Indian St. & Cactus Av.	14 Indian St. & John F. Kennedy Dr.	15 Indian St. & Gentian Av.	16 Indian St. & Santiago Dr.	
1418 → 128 → 63 ← 5	0 → 0 → 0 → 0 ← 1183 ← 30	74 → 414 ← 66 ← 79 ← 373 ← 68	103 → 462 ← 279 ← 194 ← 1545 ← 124	82 → 756 ← 232 ← 178 ← 988 ← 48	34 → 623 ← 83 ← 49 ← 261 ← 120	75 → 565 ← 105 ← 107 ← 23 ← 10	469 → 10 ← 10 ← 52	
758 ← 13	0 → 1662 → 0 → 5 ← 0 ← 26	75 → 656 → 188 → 111 ← 404 ← 92	208 → 1912 → 236 → 268 ← 495 ← 194	69 → 2033 → 162 → 165 ← 617 ← 60	28 → 436 → 182 → 129 ← 444 ← 88	47 → 22 → 79 → 38 ← 482 ← 10	578 ← 51	
17 Indian St. & Iris Av.	18 Indian St. & Krameria Av.	19 Indian St. & San Michele	20 Indian St. & Nandina Av.	21 Indian St. & Harley Knox Bl.	22 Driveway 1 & Gentian Av.	23 Driveway 2 & Santiago Dr.	24 SR-60 EB Off-Ramp & Sunnymead Bl.	
61 → 310 ← 345 ← 282 ← 395 ← 121	52 → 523 ← 187 ← 82 ← 59 ← 200	93 → 886 ← 436 ← 234 ← 231 ← 262	142 → 620 ← 117 ← 12 ← 65 ← 403	882 → 1379 ← 633 ← 366 ← 916 ← 126	← 190 ← 45	42 → 110 ← 115 ← 204	128 → 1289 ← 833	
38 → 604 → 140 → 91 ← 430 ← 77	105 → 179 → 467 → 259 ← 572 ← 184	87 → 721 → 1042 → 407 ← 794 ← 177	79 → 172 → 877 → 473 ← 1140 ← 351	470 → 1341 → 199 → 285 ← 1090 ← 172	320 → 70 → 93 ← 68	41 → 202 →	908 →	
25 Perris Bl. & SR-60 WB Ramps	26 Perris Bl. & Sunnymead Bl.	27 SR-60 EB On-Ramp & Sunnymead Bl.	28 Perris Bl. & Eucalyptus Av.	29 Perris Bl. & Cottonwood Av.	30 Perris Bl. & Alessandro Bl.	31 Perris Bl. & Cactus Av.	32 Perris Bl. & John F. Kennedy Dr.	
428 → 1738 → 243 ← 1 ← 305	295 → 1114 ← 634 ← 687 ← 233 ← 96	34 ← 952 ← 29	236 → 1349 ← 220 ← 231 ← 356 ← 169	207 → 1383 ← 321 ← 261 ← 321 ← 166	257 → 1123 ← 285 ← 234 ← 1149 ← 367	260 → 1720 ← 248 ← 190 ← 712 ← 164	108 → 2019 ← 225 ← 140 ← 275 ← 354	
695 ← 2176	769 → 917 → 510 → 305 ← 1415 ← 134	406 → 1126 → 153 → 64 ← 27 ← 32	195 → 442 → 214 → 154 ← 1320 ← 85	233 → 507 → 274 → 240 ← 1025 ← 138	330 → 1685 → 450 → 536 ← 806 ← 350	350 → 1270 → 499 → 293 ← 1241 ← 233	145 → 419 → 276 → 325 ← 1582 ← 276	
33 Perris Bl. & Gentian Av.	34 Perris Bl. & Driveway 3	35 Perris Bl. & Driveway 4	36 Perris Bl. & Santiago Dr.	37 Perris Bl. & Iris Av.	38 Perris Bl. & Krameria Av.	39 Perris Bl. & San Michele Rd.		
98 → 2245 ← 286 ← 188 ← 31 ← 85	99 → 2392	96 → 2385	75 → 2225 ← 161 ← 111 ← 72 ← 90	256 → 1446 ← 549 ← 376 ← 560 ← 349	88 → 1525 ← 231 ← 179 ← 184 ← 314	270 → 1850 ← 5 ← 5 ← 5 ← 5		
145 → 81 → 161 → 107 ← 1969 ← 257	89 → 2333	76 → 2333	130 → 69 → 112 → 172 ← 2071 ← 100	271 → 599 → 226 → 251 ← 1512 ← 339	97 → 242 → 136 → 113 ← 1893 ← 227	373 → 5 → 407 → 286 ← 1925 ← 5		
40 Perris Bl. & Nandina Av.	41 Perris Bl. & Harley Knox Bl.	42 Perris Bl. & Ramona Exwy.	43 Kitching St & Cactus Av.	44 Kitching St & John F. Kennedy Dr.	45 Kitching St & Iris Av.	46 Laselle St. & Iris Av.		
98 → 2314 ← 177 ← 11 ← 19 ← 40	477 → 1594 ← 255 ← 145 ← 157 ← 58	250 → 959 ← 545 ← 350 ← 1028 ← 204	118 → 426 ← 121 ← 93 ← 708 ← 103	152 → 560 ← 127 ← 100 ← 456 ← 64	217 → 392 ← 205 ← 292 ← 1098 ← 626	214 → 990 ← 386 ← 218 ← 1259 ← 545		
293 → 40 → 364 → 57 ← 2127 ← 163	578 → 335 → 266 → 165 ← 1404 ← 90	437 → 1434 → 322 → 294 ← 844 ← 152	260 → 1062 → 276 → 129 ← 538 ← 104	149 → 603 → 243 → 139 ← 493 ← 68	221 → 1218 → 293 → 192 ← 301 ← 655	326 → 1099 → 454 → 426 ← 810 ← 452		

EXHIBIT 7-8

GENERAL PLAN BUILDOUT (POST-2035) WITH PROJECT SATURDAY MID-DAY PEAK HOUR INTERSECTION VOLUMES



1	I-215 SB Ramps & Cactus Av.					2	I-215 NB Ramps & Cactus Av.					3	Elsworth St. & Cactus Av.					4	Frederick St. & Cactus Av.				
112		325	540			81	0	188		435	1545	56	93	89		195	1563	139	78	344		268	2095
789	88					97	1068	254	141	62	100	168	1541	108	169	183	128		57	1622			
5	Graham St. & Cactus Av.					6	Heacock St. & Alessandro Bl.					7	Heacock St. & Cactus Av.					8	Heacock St. & John F. Kennedy Dr.				
265	195	230		82	1573	30	176	1172	265		257	893	355	267	801	294		248	961	15	180	651	435		423	192	41
122	1846	625	353	125	67		299	938	108	59	1128	309		220	1315	563	584	727	19		129	238	172	117	700	70
9	Heacock St. & Gentian Av.					10	Heacock St. & Harley Knox Bl.					11	Indian St. & Cottonwood Av.					12	Indian St. & Alessandro Bl.				
858	104		137	15		0	0	0		0	530	49	71	381	68		61	342	91	122	361	265		174	1605	336
			874	40		0	845	0	20	0	84		58	584	174	120	429	118		141	1596	139	313	490	260
13	Indian St. & Cactus Av.					14	Indian St. & John F. Kennedy Dr.					15	Indian St. & Gentian Av.					16	Indian St. & Santiago Dr.				
105	583	126		142	986	38	50	601	102		133	371	118	115	601	135		135	26	10	588	10		10	64	
121	1203	159	256	721	76		127	410	115	136	691	104		102	26	62	70	651	10				699	64		
17	Indian St. & Iris Av.					18	Indian St. & Krameria Av.					19	Indian St. & San Michele					20	Indian St. & Nandina Av.				
110	232	254		325	390	121	39	394	147		134	44	148	70	576	329		128	159	262	142	1205	234		62	43	138
24	392	148	110	434	48		79	134	350	194	430	138		65	480	738	488	700	148		90	85	482	594	1044	351
21	Indian St. & Harley Knox Bl.					22	Driveway 1 & Gentian Av.					23	Driveway 2 & Santiago Dr.					24	SR-60 EB Off-Ramp & Sunnymead Bl.				
412	983	156		22	564	157					57	60		54	141			152	161		132	1169				1198
210	535	46	158	1672	703		84	92		119	87		54	293							1109					
25	Perris Bl. & SR-60 WB Ramps					26	Perris Bl. & Sunnymead Bl.					27	SR-60 EB On-Ramp & Sunnymead Bl.					28	Perris Bl. & Eucalyptus Av.				
481	1633		204	4	393		372	1061	593		851	433	175				53	1265	55	210	1581	132		190	288	162
			941	2113			715	932	631	393	1488	211		492	955	289	194	39	68		155	302	183	110	1838	101
29	Perris Bl. & Cottonwood Av.					30	Perris Bl. & Alessandro Bl.					31	Perris Bl. & Cactus Av.					32	Perris Bl. & John F. Kennedy Dr.				
221	1314	267		253	256	145	328	1039	236		237	1139	376	201	1632	232		164	539	105	137	2065	207		178	254	334
279	404	181	162	1354	131		404	1207	433	741	883	284		239	807	546	426	1416	322		208	285	191	311	1908	330
33	Perris Bl. & Gentian Av.					34	Perris Bl. & Driveway 3					35	Perris Bl. & Driveway 4					36	Perris Bl. & Santiago Dr.				
37	2135	134		203	15	90	130	2186					132	2168				75	2068	130		77	32	166
64	15	91	64	2169	217		114			2450			105			2450		153	72	209	206	2193	106	
37	Perris Bl. & Iris Av.					38	Perris Bl. & Krameria Av.					39	Perris Bl. & San Michele Rd.					40	Perris Bl. & Nandina Av.				
347	1552	663		491	899	338	139	1514	263		252	160	208	414	1601	5		5	5	5	121	1413	254		11	6	12
265	331	222	343	1748	292		148	141	136	84	1817	121		289	5	78	104	1571	5		274	40	188	143	1496	18
41	Perris Bl. & Harley Knox Bl.					42	Perris Bl. & Ramona Exwy.					43	Kitching St & Cactus Av.					44	Kitching St & John F. Kennedy Dr.				
368	1161	64		36	39	15	212	625	605		462	1185	314	93	375	156		134	462	85	167	377	70		70	463	119
343	84	89	119	1180	23		247	1114	84	211	710	194		159	921	169	181	544	96		180	536	192	131	547	61
45	Kitching St & Iris Av.					46	Laselle St. & Iris Av.																			
195	399	166		295	1084	441	238	440	330		207	1187	323													
203	1005	195	187	311	457		343	1033	287	269	548	260														

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day peak hour intersection turning movement volumes for General Plan Buildout (Post-2035) With Project traffic conditions.

7.4 INTERSECTION OPERATIONS ANALYSIS

LOS calculations were conducted for the study intersections to evaluate their operations under General Plan Buildout (Post-2035) Without and With Project conditions with Existing (2013) roadway and intersection geometrics consistent with Exhibit 3-1 and Section 7.1 *Roadway Improvements*. The intersection analysis results are summarized in Table 7-1 which indicates that the following intersection locations will experience unacceptable LOS during one or more peak hours:

ID	Intersection Location
1	I-215 Southbound Ramps / Cactus Avenue – LOS “F” AM and PM peak hours
2	I-215 Northbound Ramps / Cactus Avenue – LOS “F” AM and PM peak hours
3	Elsworth Street / Cactus Avenue – LOS “F” AM and PM peak hours; LOS “E” Saturday peak hour
4	Frederick Street / Cactus Avenue – LOS “F” PM peak hour only
5	Graham Street / Cactus Avenue – LOS “F” AM, PM and Saturday peak hours
6	Heacock Street / Alessandro Boulevard – LOS “F” AM and PM peak hours; LOS “E” Saturday peak hour
7	Heacock Street / Cactus Avenue – LOS “F” AM, PM and Saturday peak hours
9	Heacock Street / Gentian Avenue – LOS “F” AM peak hour; LOS “E” PM and Saturday peak hours
10	Webster Avenue / Harley Knox Boulevard – LOS “F” AM and PM peak hours
12	Indian Street / Alessandro Boulevard – LOS “E” AM peak hour; LOS “F” PM and Saturday peak hours
13	Indian Street / Cactus Avenue – LOS “F” PM peak hour only
14	Indian Street / John F. Kennedy Drive – LOS “D” AM peak hour only
15	Indian Street / Gentian Avenue – LOS “F” AM, PM and Saturday peak hours
17	Indian Street / Iris Avenue – LOS “F” AM and PM peak hours, LOS “E” Saturday peak hour
18	Indian Street / Krameria Avenue – LOS “F” AM, PM and Saturday peak hours
19	Indian Street / San Michele Road – LOS “F” AM, PM and Saturday peak hours
20	Indian Street / Nandina Avenue – LOS “F” AM, PM and Saturday peak hours
21	Indian Street / Harley Knox Boulevard – LOS “F” AM, PM and Saturday peak hours
24	SR-60 Eastbound Off-Ramp / Sunnymead Boulevard – LOS “F” PM peak hour only
25	Perris Boulevard / SR-60 Westbound Ramps – LOS “F” AM, PM and Saturday peak hours
26	Perris Boulevard / Sunnymead Boulevard – LOS “F” AM, PM and Saturday peak hours
27	SR-60 Eastbound On-Ramp / Sunnymead Boulevard – LOS “F” AM, PM and Saturday peak hours

ID	Intersection Location
28	Perris Boulevard / Eucalyptus Avenue – LOS “E” AM and PM peak hours; LOS “F” Saturday peak hour
29	Perris Boulevard / Cottonwood Avenue – LOS “E” AM and PM peak hours; LOS “F” Saturday peak hour
30	Perris Boulevard / Alessandro Boulevard – LOS “F” AM, PM and Saturday peak hours
31	Perris Boulevard / Cactus Avenue – LOS “F” AM, PM and Saturday peak hours
32	Perris Boulevard / John F. Kennedy Drive – LOS “F” AM, PM and Saturday peak hours
33	Perris Boulevard / Gentian Avenue – LOS “F” PM and Saturday peak hours
36	Perris Boulevard / Santiago Drive – LOS “F” AM, PM and Saturday peak hours
37	Perris Boulevard / Iris Avenue – LOS “F” AM, PM and Saturday peak hours
38	Perris Boulevard / Krameria Avenue – LOS “F” AM, PM and Saturday peak hours
39	Perris Boulevard / San Michele Road – LOS “F” AM, PM and Saturday peak hours
40	Perris Boulevard / Nandina Avenue – LOS “F” AM, PM and Saturday peak hours
41	Perris Boulevard / Harley Knox Boulevard – LOS “F” AM, PM and Saturday peak hours
42	Perris Boulevard / Ramona Expressway – LOS “F” AM and Saturday peak hours; LOS “E” PM peak hour
43	Kitching Street / Cactus Avenue – LOS “F” AM peak hour; LOS “D” PM and Saturday peak hours
44	Kitching Street / John F. Kennedy Drive – LOS “F” AM and PM peak hours; LOS “E” Saturday peak hour
45	Kitching Street / Iris Avenue – LOS “F” AM, PM and Saturday peak hours
46	Lasselle Street / Iris Avenue – LOS “E” AM peak hour; LOS “F” PM peak hour

Exhibit 7-9 summarizes the weekday AM, weekday PM and Saturday mid-day peak hour study area intersection LOS under General Plan Buildout (Post-2035) Without Project traffic conditions, consistent with the summary provided in Table 7-1. Exhibit 7-10 summarizes the weekday AM, weekday PM and Saturday mid-day peak hour study area intersection LOS under General Plan Buildout (Post-2035) With Project traffic conditions, consistent with the summary provided in Table 7-1.

The intersection operations analysis worksheets for General Plan Buildout (Post-2035) Without Project conditions are included in Appendix “7.1” of this TIA. The intersection operations analysis worksheets for General Plan Buildout (Post-2035) With Project conditions are included in Appendix “7.2” of this TIA. Measures to address long-range cumulative impacts for General Plan Buildout (Post-2035) traffic conditions are discussed in Section 7.8 *Long-Range Cumulative Impacts and Recommended Improvements*.

Table 7-1
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Intersection Analysis for General Plan Buildout (Post-2035) Conditions

#	Intersection	Traffic Control [2]	Post-2035 Without Project						Post-2035 With Project					
			Delay [1] (secs.)			Level of Service			Delay[1] (secs.)			Level of Service		
			AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
1	I-215 SB Ramps / Cactus Av	TS	**30.6**	**130.9**	21.8	**F[3]**	**F**	C	**30.6**	**131.1**	21.8	**F[3]**	**F**	C
2	I-215 NB Ramps / Cactus Av	TS	**>200.0**	**>200.0**	24.0	**F**	**F**	C	**>200.0**	**>200.0**	24.8	**F**	**F**	C
3	Elsworth St / Cactus Av	TS	**>200.0**	**>200.0**	**77.3**	**F**	**F**	**E**	**>200.0**	**>200.0**	**79.7**	**F**	**F**	**E**
4	Frederick St / Cactus Av	TS	41.6	**>200.0**	21.1	D	**F**	C	41.9	**>200.0**	21.3	D	**F**	C
5	Graham St / Cactus Av	TS	**162.5**	**>200.0**	**109.1**	**F**	**F**	**F**	**164.2**	**>200.0**	**112.5**	**F**	**F**	**F**
6	Heacock St / Alessandro Bl	TS	**79.5**	**107.8**	**59.4**	**E**	**F**	**E**	**80.3**	**108.3**	**60.1**	**F**	**F**	**E**
7	Heacock St / Cactus Av	TS	**89.9**	**117.4**	**83.9**	**F**	**F**	**F**	**91.6**	**120.7**	**89.0**	**F**	**F**	**F**
8	Heacock St / John F. Kennedy Dr	TS	42.7	51.9	51.0	D	D	D	43.7	54.2	54.9	D	D	D
9	Heacock St / Gentian Av	CSS	**55.1**	**39.8**	**44.6**	**F**	**E**	**E**	**56.9**	**39.9**	**48.5**	**F**	**E**	**E**
10	Webster Av / Harley Knox Bl	CSS	**78.1**	**>100.0**	28.9	**F**	**F**	D	**63.7**	**>100.0**	32.6	**F**	**F**	D
11	Indian St / Cottonwood Av	TS	31.0	35.5	32.9	C	D	C	31.1	35.8	33.2	C	D	C
12	Indian St / Alessandro Bl	TS	**73.8**	**109.8**	**125.5**	**E**	**F**	**F**	**74.4**	**109.9**	**128.3**	**E**	**F**	**F**
13	Indian St / Cactus Av	TS	38.4	**106.6**	42.4	D	**F**	D	39.5	**120.4**	47.3	D	**F**	D
14	Indian St / John F. Kennedy Dr	TS	**39.3**	27.6	29.0	**D**	C	C	**39.4**	28.5	30.5	**D**	C	C
15	Indian St / Gentian Av	CSS	**51.6**	**56.9**	**>100.0**	**F**	**F**	**F**	**97.9**	**>100.0**	**>100.0**	**F**	**F**	**F**
16	Indian St / Santiago Dr	TS	21.2	11.6	12.8	C	B	B	21.5	12.3	13.4	C	B	B
17	Indian St / Iris Av	TS	**82.6**	**93.6**	53.3	**F**	**F**	D	**83.1**	**98.6**	**56.9**	**F**	**F**	**E**
18	Indian St / Krameria Av	CSS	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
19	Indian St / San Michele Rd	AWS	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
20	Indian St / Nandina Av	AWS	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
21	Indian St / Harley Knox Bl	TS	**>200.0**	**>200.0**	**105.2**	**F**	**F**	**F**	**>200.0**	**>200.0**	**114.8**	**F**	**F**	**F**
22	Driveway 1 / Gentian Av	**CSS**	Not an Analysis Location						10.3	15.6	11.9	B	C	B
23	Driveway 2 / Santiago Dr	**CSS**	Not an Analysis Location						12.4	15.3	19.3	B	C	C
24	SR-60 EB Off-Ramp / Sunnymead Bl	TS	22.3	**81.7**	31.2	C	**F**	C	22.3	**81.7**	31.2	C	**F**	C
25	Perris Bl / SR-60 WB Ramps	TS	**50.8**	**47.0**	**64.3**	**F[3]**	**F[3]**	**F[3]**	**51.3**	**48.3**	**65.2**	**F[3]**	**F[3]**	**F[3]**
26	Perris Bl / Sunnymead Bl	TS	**123.0**	**111.0**	**151.0**	**F**	**F**	**F**	**124.5**	**113.7**	**154.6**	**F**	**F**	**F**
27	SR-60 EB On-Ramp / Sunnymead Bl	CSS	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
28	Perris Bl / Eucalyptus Av	TS	**61.9**	**62.3**	**96.2**	**E**	**E**	**F**	**62.6**	**63.7**	**100.6**	**E**	**E**	**F**
29	Perris Bl / Cottonwood Av	TS	**56.4**	**76.2**	**82.7**	**E**	**E**	**F**	**57.4**	**79.6**	**87.1**	**E**	**E**	**F**
30	Perris Bl / Alessandro Bl	TS	52.8	**165.8**	**156.4**	D	**F**	**F**	53.8	**170.2**	**161.6**	D	**F**	**F**
31	Perris Bl / Cactus Av	TS	**117.0**	**160.5**	**128.0**	**F**	**F**	**F**	**119.4**	**165.3**	**133.2**	**F**	**F**	**F**
32	Perris Bl / John F. Kennedy Dr	TS	**134.8**	**66.3**	51.2	**F**	**F[3]**	D	**143.7**	**77.3**	**64.0**	**F**	**F[3]**	**F[3]**
33	Perris Bl / Gentian Av	TS	36.3	**189.8**	32.7	D	**F**	C	23.6	**63.7**	**29.6**	C	**F[3]**	**F[3]**
34	Perris Bl / Driveway 3	**CSS**	Not an Analysis Location						14.6	24.8	25.0	B	C	C
35	Perris Bl / Driveway 4	**CSS**	Not an Analysis Location						15.3	23.3	23.7	C	C	C
36	Perris Bl / Santiago Dr	CSS	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
37	Perris Bl / Iris Av	TS	**88.3**	**111.2**	**>200.0**	**F**	**F**	**F**	**98.1**	**128.1**	**>200.0**	**F**	**F**	**F**
38	Perris Bl / Krameria Av	TS	**153.9**	**>200.0**	**>200.0**	**F**	**F**	**F**	**160.8**	**>200.0**	**>200.0**	**F**	**F**	**F**
39	Perris Bl / San Michele Rd	TS	**114.9**	**154.3**	**95.7**	**F**	**F**	**F**	**117.3**	**162.2**	**104.1**	**F**	**F**	**F**
40	Perris Bl / Nandina Av	TS	**102.5**	**>200.0**	**100.5**	**F**	**F**	**F**	**105.8**	**>200.0**	**107.8**	**F**	**F**	**F**
41	Perris Bl / Harley Knox Bl	TS	**>200.0**	**>200.0**	**>200.0**	**F**	**F**	**F**	**>200.0**	**>200.0**	**>200.0**	**F**	**F**	**F**

Table 7-1
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Intersection Analysis for General Plan Buildout (Post-2035) Conditions

#	Intersection	Traffic Control [2]	Post-2035 Without Project						Post-2035 With Project					
			Delay [1] (secs.)			Level of Service			Delay[1] (secs.)			Level of Service		
			AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
42	Perris Bl / Ramona Expressway	TS	**132.8**	**76.3**	**90.3**	**F**	**E**	**F**	**134.3**	**79.1**	**95.5**	**F**	**E**	**F**
43	Kitching St / Cactus Av	TS	**63.9**	**42.4**	**37.0**	**E**	**D**	**D**	**64.8**	**43.3**	**37.8**	**F[3]**	**D**	**D**
44	Kitching St / John F. Kennedy Dr	TS	**>200.0**	**116.9**	**67.2**	**F**	**F**	**E**	**>200.0**	**126.2**	**75.8**	**F**	**F**	**E**
45	Kitching St / Iris Av	TS	**117.9**	**154.2**	**67.3**	**F**	**F**	**F[3]**	**119.6**	**157.3**	**70.4**	**F**	**F**	**F[3]**
46	Lasselle St / Iris Av	TS	**57.3**	**66.9**	47.4	**E**	**E**	D	**57.8**	**68.2**	48.4	**E**	**F[3]**	D

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

1 Per the 2000 Highway Capacity Manual, 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. The I-215 ramp locations at Cactus Avenue and SR-60 ramp locations at Perris Boulevard have been analyzed using the Synchro software (Version 8).

2 CSS = Cross-street Stop; TS = Traffic Signal; AWS= All-way stop

3 Volume-to-capacity ratio is greater than 1.00; Intersection unstable; Level of Service "F".

EXHIBIT 7-9

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR GENERAL PLAN BUILDOUT (POST-2035) WITHOUT PROJECT CONDITIONS

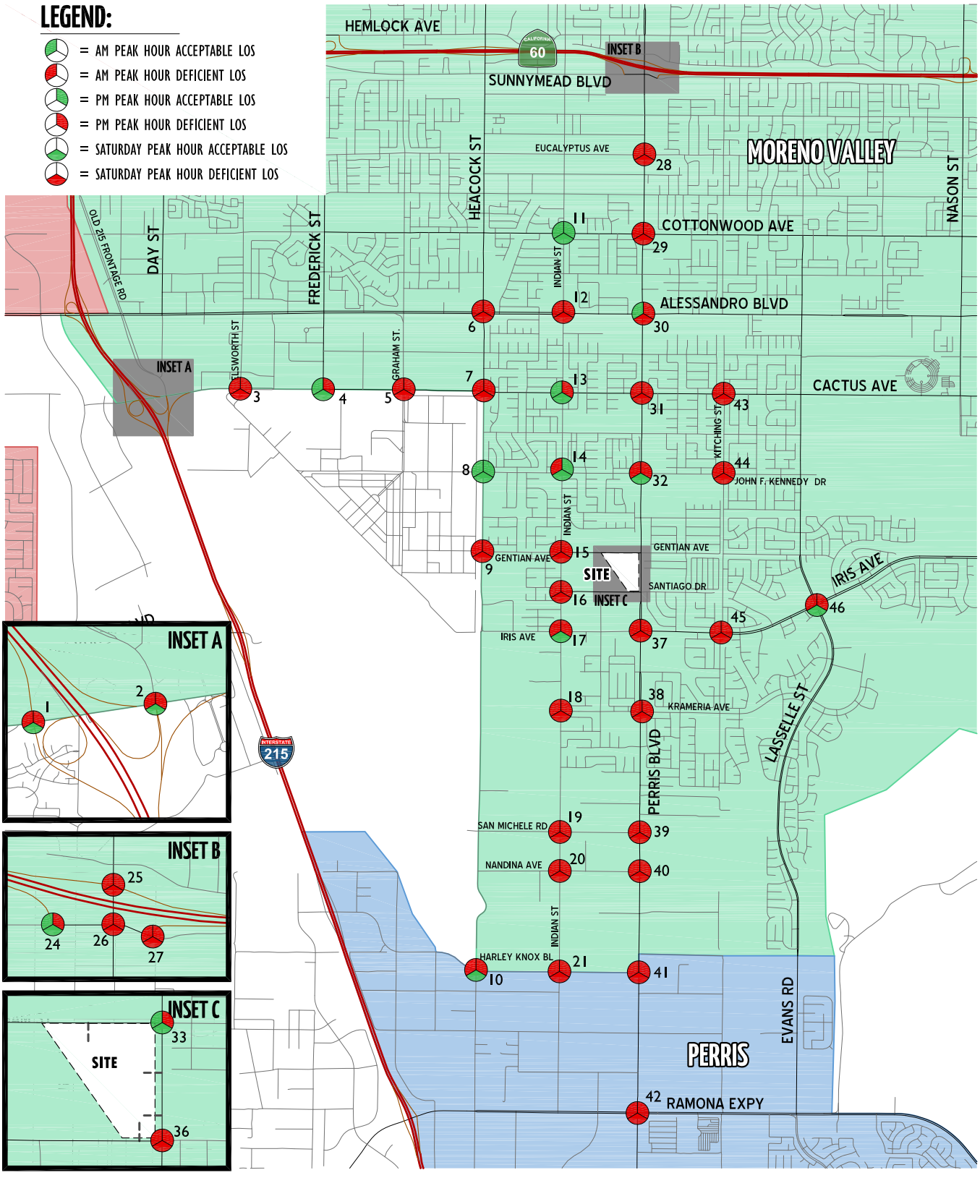
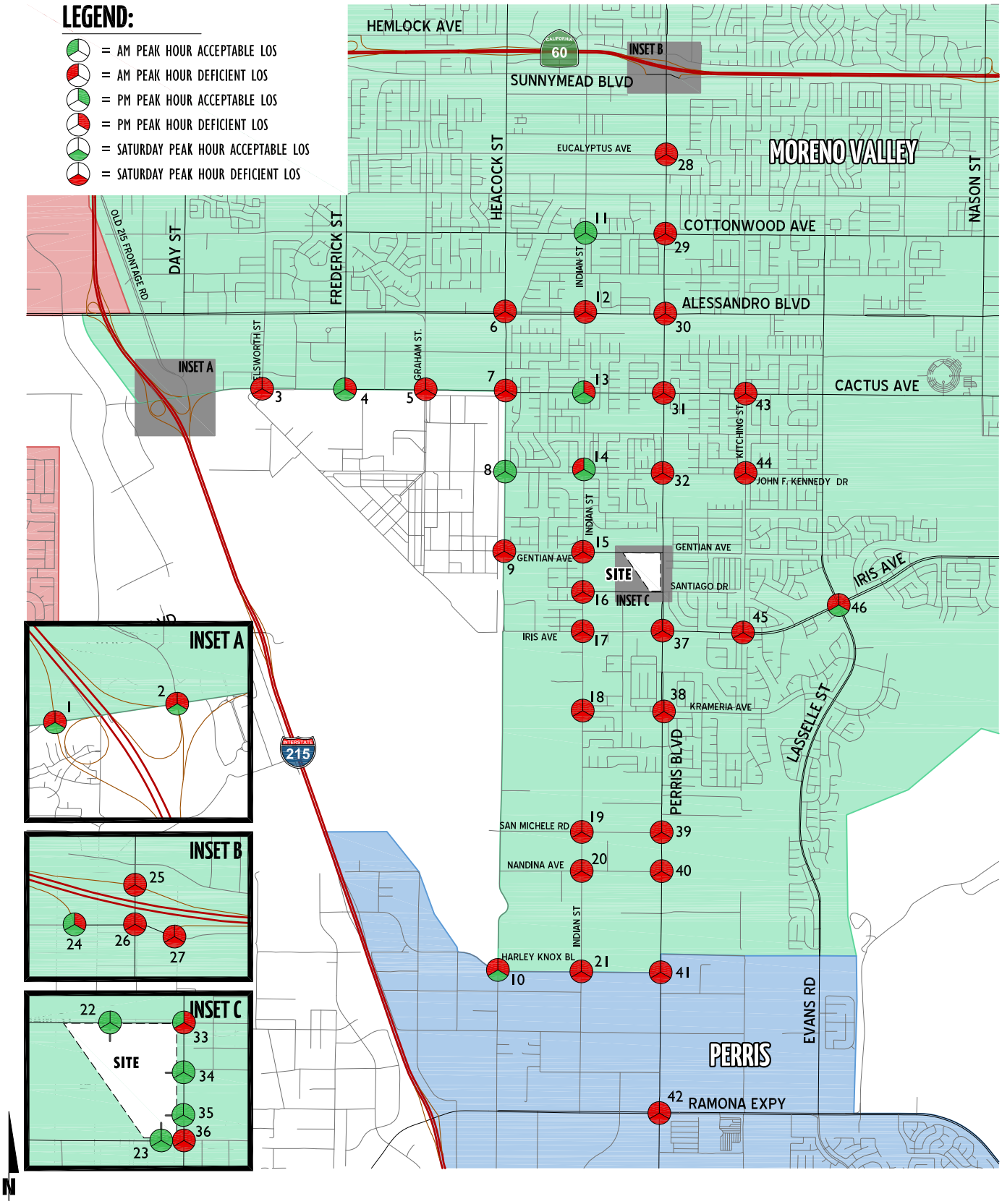


EXHIBIT 7-10

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR GENERAL PLAN BUILDOUT (POST-2035) WITH PROJECT CONDITIONS



7.5 ROADWAY SEGMENT CAPACITY ANALYSIS

As noted previously, the roadway segment capacities are approximate figures only, and are typically used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet future forecasted traffic demand. Table 7-2 provides a summary of the General Plan Buildout (Post-2035) conditions roadway segment capacity analysis based on the City of Moreno Valley General Plan Circulation Element Roadway Segment Capacity/(LOS) Thresholds identified previously on Table 2-3. As shown on Table 7-2, the following roadway segments are anticipated to operate at unacceptable LOS (based on daily roadway segment capacities) under General Plan Buildout (Post-2035) With Project conditions:

ID	Roadway Segments
5	Eucalyptus Avenue, West of Perris Boulevard – LOS “F”
6	Eucalyptus Avenue, East of Perris Boulevard – LOS “F”
7	Cottonwood Avenue, West of Indian Street – LOS “D”
9	Cottonwood Avenue, West of Perris Boulevard – LOS “F”
10	Cottonwood Avenue, East of Perris Boulevard – LOS “F”
11	Alessandro Boulevard, West of Heacock Street – LOS “F”
16	Alessandro Boulevard, East of Perris Boulevard – LOS “F”
17	Cactus Avenue, West of I-215 Freeway – LOS “F”
18	Cactus Avenue, I-215 SB Ramps to NB Ramps – LOS “F”
19	Cactus Avenue, East of I-215 NB Ramps – LOS “F”
20	Cactus Avenue, West of Elsworth Street – LOS “F”
21	Cactus Avenue, East of Elsworth Street – LOS “F”
22	Cactus Avenue, West of Frederick Street – LOS “F”
23	Cactus Avenue, East of Frederick Street – LOS “F”
24	Cactus Avenue, West of Graham Street – LOS “F”
25	Cactus Avenue, East of Graham Street – LOS “F”
26	Cactus Avenue, West of Heacock Street – LOS “F”
27	Cactus Avenue, East of Heacock Street – LOF “F”
28	Cactus Avenue, West of Indian Street – LOS “F”
29	Cactus Avenue, East of Indian Street – LOS “F”
30	Cactus Avenue, West of Perris Boulevard – LOS “E”
31	Cactus Avenue, East of Perris Boulevard – LOS “D”
39	John F. Kennedy Drive, East of Perris Boulevard – LOS “D”
51	Iris Avenue, West of Indian Street – LOS “F”
55	Iris Avenue, West of Kitching Street – LOS “D”
60	Krameria Avenue, West of Perris Boulevard – LOS “F”
64	San Michele Road, West of Perris Boulevard – LOS “F”

ID	Roadway Segments
70	Harley Knox Boulevard, West of Webster Avenue – LOS “F”
71	Harley Knox Boulevard, East of Webster Avenue – LOS “F”
72	Harley Knox Boulevard, West of Indian Street – LOS “F”
73	Harley Knox Boulevard, East of Indian Street – LOS “F”
74	Harley Knox Boulevard, West of Perris Boulevard – LOS “F”
77	Old Frontage Road, North of Cactus Avenue – LOS “F”
90	Heacock Street, South of Gentian Avenue – LOS “F”
92	Indian Street, North of Cottonwood Avenue – LOS “F”
100	Indian Street, North of Gentian Avenue – LOS “F”
102	Indian Street, Santiago Drive to Iris Avenue – LOS “F”
104	Indian Street, North of Krameria Avenue – LOS “F”
105	Indian Street, South of Krameria Avenue – LOS “F”
107	Indian Street, San Michele Road to Nandina Avenue – LOS “F”
108	Indian Street, North of Harley Knox Boulevard – LOS “F”
109	Indian Street, North of Harley Knox Boulevard – LOS “E”
111	Perris Boulevard, North of SR-60 WB Ramps – LOS “E”
113	Perris Boulevard, South of Sunnymead Boulevard – LOS “F”
114	Perris Boulevard, North of Eucalyptus Avenue – LOS “F”
115	Perris Boulevard, South of Eucalyptus Avenue – LOS “F”
116	Perris Boulevard, North of Cottonwood Avenue – LOS “F”
117	Perris Boulevard, South of Cottonwood Avenue – LOS “F”
118	Perris Boulevard, North of Alessandro Boulevard – LOS “F”
119	Perris Boulevard, South of Alessandro Boulevard – LOS “F”
120	Perris Boulevard, North of Cactus Avenue – LOS “F”
123	Perris Boulevard, South of John F. Kennedy Drive – LOS “E”
124	Perris Boulevard, North of Gentian Avenue – LOS “E”
130	Perris Boulevard, North of Krameria – LOS “E”
131	Perris Boulevard, South of Krameria – LOS “E”
132	Perris Boulevard, North of San Michele Road – LOS “E”
133	Perris Boulevard, San Michele Road to Nandina Avenue – LOS “E”
134	Perris Boulevard, South of Nandina Avenue – LOS “E”
135	Perris Boulevard, North of Harley Knox Boulevard – LOS “F”
140	Kitching Street, South of Cactus Avenue – LOS “F”
141	Kitching Street, North of John F. Kennedy Drive – LOS “F”
142	Kitching Street, South of John F. Kennedy Drive – LOS “F”
144	Kitching Street, South of Iris Avenue – LOS “E”
146	Lasselle Street, South of Iris Avenue – LOS “E”

General Plan Buildout (Post-2035) Conditions
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Post-2035 NP	V/C	LOS	Post-2035 WP	V/C	LOS	Acceptable LOS
1	Sunnymead Boulevard	West of SR-60 EB Off-Ramp	4D	37,500	18,750	0.50	A	18,750	0.50	A	D
2		SR-60 EB Off-Ramp to Perris Boulevard	4D	37,500	31,000	0.83	D	31,000	0.83	D	D
3		Perris Boulevard to SR-60 EB On-Ramp	4D	37,500	29,000	0.77	C	29,096	0.78	C	D
4		East of SR-60 EB On-Ramp	4D	37,500	22,000	0.59	A	22,000	0.59	A	D
5	Eucalyptus Avenue	West of Perris Boulevard	2U	12,500	**17,000**	**1.36**	**F**	**17,000**	**1.36**	**F**	C
6		East of Perris Boulevard	2U	12,500	**15,000**	**1.20**	**F**	**15,096**	**1.21**	**F**	C
7	Cottonwood Avenue	West of Indian Street	2D	18,750	**15,760**	**0.84**	**D**	**15,952**	**0.85**	**D**	C
8		East of Indian Street	2D	18,750	13,049	0.70	B	13,145	0.70	B	C
9		West of Perris Boulevard	2D	18,750	**20,000**	**1.07**	**F**	**20,096**	**1.07**	**F**	C
10		East of Perris Boulevard	2U	12,500	**18,000**	**1.44**	**F**	**18,192**	**1.46**	**F**	C
11	Alessandro Boulevard	West of Heacock Street	5D	46,900	**54,000**	**1.15**	**F**	**54,384**	**1.16**	**F**	D
12		East of Heacock Street	6D	56,300	48,000	0.85	D	48,192	0.86	D	D
13		West of Indian Street	6D	56,300	46,000	0.82	D	46,192	0.82	D	D
14		East of Indian Street	6D	56,300	43,000	0.76	C	43,096	0.77	C	D
15		West of Perris Boulevard	6D	56,300	43,000	0.76	C	43,096	0.77	C	D
16		East of Perris Boulevard	4D	37,500	**46,000**	**1.23**	**F**	**46,096**	**1.23**	**F**	D
17	Cactus Avenue	West of I-215 Freeway	4D	37,500	**41,904**	**1.12**	**F**	**42,000**	**1.12**	**F**	D
18		I-215 SB Ramps to I-215 NB Ramps	4D	37,500	**46,904**	**1.25**	**F**	**47,000**	**1.25**	**F**	D
19		East of I-215 NB Ramps[2]	5D	46,900	**65,412**	**1.39**	**F**	**65,700**	**1.40**	**F**	D
20		West of Elsworth Street[2]	5D	46,900	**63,112**	**1.35**	**F**	**63,400**	**1.35**	**F**	D
21		East of Elsworth Street[2]	6D	56,300	**58,162**	**1.03**	**F**	**58,450**	**1.04**	**F**	D
22		West of Frederick Street	5D	56,300	**60,293**	**1.07**	**F**	**60,581**	**1.08**	**F**	D
23		East of Frederick Street	5D	56,300	**62,358**	**1.11**	**F**	**62,838**	**1.12**	**F**	D
24		West of Graham Street	5D	56,300	**59,090**	**1.05**	**F**	**59,572**	**1.06**	**F**	D
25		East of Graham Street	5D	56,300	**54,660**	**0.97**	**F**	**55,142**	**0.98**	**F**	D
26		West of Heacock Street	5D	56,300	**50,288**	**0.89**	**F**	**50,768**	**0.90**	**F**	D
27		East of Heacock Street	4D	37,500	**42,979**	**1.15**	**F**	**43,555**	**1.16**	**F**	C
28		West of Indian Street	4D	37,500	**38,986**	**1.04**	**F**	**39,564**	**1.06**	**F**	C
29		East of Indian Street	4D	37,500	**39,331**	**1.05**	**F**	**39,331**	**1.05**	**F**	C
30		West of Perris Boulevard	4D	37,500	**37,000**	**0.99**	**E**	**37,000**	**0.99**	**E**	C
31		East of Perris Boulevard	4D	37,500	**32,000**	**0.85**	**D**	**32,096**	**0.86**	**D**	C
32		West of Kitching Street	4D	37,500	29,856	0.80	C	29,856	0.80	C	C
33		East of Kitching Street	4D	37,500	24,829	0.66	B	25,117	0.67	B	C
34	John F. Kennedy Drive	West of Heacock Street	4D	37,500	16,000	0.43	A	16,096	0.43	A	D
35		East of Heacock Street	3D	28,150	15,066	0.54	A	15,451	0.55	A	C
36		West of Indian Street	4D	37,500	19,562	0.52	A	20,044	0.53	A	C
37		East of Indian Street	4D	37,500	21,104	0.56	A	21,200	0.57	A	C
38		West of Perris Boulevard	4D	37,500	25,800	0.69	B	25,800	0.69	B	C
39		East of Perris Boulevard	4D	37,500	30,100	0.80	C	**31,352**	**0.84**	**D**	C
40		West of Kitching Street	4D	37,500	28,872	0.77	C	30,026	0.80	C	C
41		East of Kitching Street	4D	37,500	26,536	0.71	C	26,824	0.72	C	C
42	Gentian Avenue	East of Heacock Street	2U	12,500	2,592	0.21	A	2,784	0.22	A	D
43		West of Indian Street	4U	25,000	3,000	0.12	A	3,288	0.13	A	C
44		Indian Street to Driveway 1[3]	2U	12,500	3,000	0.24	A	5,502	0.44	A	C
45		Driveway 1 to Perris Boulevard[3]	2U	12,500	4,500	0.36	A	6,424	0.51	A	C
46		East of Perris Boulevard	2U	12,500	7,500	0.60	A	7,596	0.61	B	C
47	Santiago Drive	East of Indian St.	2U	12,500	3,848	0.31	A	4,810	0.38	A	C
48		West of Driveway 2	2U	12,500	4,372	0.35	A	5,334	0.43	A	C
49		Driveway 2 to Perris Boulevard	2U	12,500	4,372	0.35	A	5,624	0.45	A	C
50		East of Perris Boulevard	2U	12,500	7,006	0.56	A	7,198	0.58	A	C

General Plan Buildout (Post-2035) Conditions
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Post-2035 NP	V/C	LOS	Post-2035 WP	V/C	LOS	Acceptable LOS
51	Iris Avenue	West of Indian Street	2U	12,500	**15,951**	**1.28**	**F**	**15,951**	**1.28**	**F**	D
52		East of Indian Street	3D	28,150	20,480	0.73	C	20,576	0.73	C	D
53		West of Perris Boulevard	4D	37,500	26,600	0.71	C	26,792	0.71	C	D
54		East of Perris Boulevard	4D	37,500	26,319	0.70	B	27,571	0.74	C	D
55		West of Kitching Street	4D	37,500	**31,148**	**0.83**	**D**	**32,206**	**0.86**	**D**	C
56		East of Kitching Street	6D	56,300	40,764	0.72	C	41,630	0.74	C	C
57		West of Lasselle Street	6D	56,300	37,500	0.67	B	38,173	0.68	B	C
58		East of Lasselle Street	6D	56,300	43,000	0.76	C	43,385	0.77	C	C
59	Krameria Avenue	East of Indian Street	2D	18,750	8,000	0.43	A	8,096	0.43	A	C
60		West of Perris Boulevard	2U	12,500	**12,593**	**1.01**	**F**	**12,689**	**1.02**	**F**	C
61		East of Perris Boulevard	4D	37,500	16,429	0.44	A	16,621	0.44	A	D
62	San Michele Road	West of Indian Street	4D	37,500	27,208	0.73	C	27,208	0.73	C	D
63		East of Indian Street	3D	28,150	23,400	0.83	D	23,496	0.83	D	D
64		West of Perris Boulevard	2D	18,750	**23,500**	**1.25**	**F**	**23,596**	**1.26**	**F**	D
65		East of Perris Boulevard	2U	12,500	500	0.04	A	500	0.04	A	D
66	Nandina Avenue	West of Indian Street	3D	28,150	22,000	0.78	C	22,000	0.78	C	D
67		East of Indian Street	2D	18,750	10,000	0.53	A	10,000	0.53	A	D
68		West of Perris Boulevard	2D	18,750	10,000	0.53	A	10,096	0.54	A	D
69		East of Perris Boulevard	2U	12,500	5,000	0.40	A	5,000	0.40	A	D
70	Harley Knox Boulevard	West of Webster Avenue	2D	18,750	**39,000**	**2.08**	**F**	**39,288**	**2.10**	**F**	D
71		East of Webster Avenue	2D	18,750	**39,000**	**2.08**	**F**	**39,576**	**2.11**	**F**	D
72		West of Indian Street	3D	28,150	**36,410**	**1.29**	**F**	**36,988**	**1.31**	**F**	D
73		East of Indian Street	3D	28,150	**34,500**	**1.23**	**F**	**34,694**	**1.23**	**F**	D
74		West of Perris Boulevard	2D	18,750	**29,500**	**1.57**	**F**	**29,694**	**1.58**	**F**	D
75	Ramona Expressway	West of Perris Boulevard	6D	56,300	43,400	0.77	C	43,496	0.77	C	D
76		East of Perris Boulevard	6D	56,300	45,100	0.80	C	45,485	0.81	D	D
77	Old Frontage Road	North of Cactus Avenue	2U	12,500	**39,000**	**3.12**	**F**	**39,000**	**3.12**	**F**	D
78	Elsworth Street	North of Cactus Avenue	4D	37,500	11,000	0.29	A	11,000	0.29	A	D
79		South of Cactus Avenue	4U	25,000	10,500	0.42	A	10,500	0.42	A	D
80	Frederick Street	North of Cactus Avenue	4D	37,500	12,659	0.34	A	12,851	0.34	A	D
81	Graham Street	North of Cactus Avenue	4D	37,500	13,000	0.35	A	13,000	0.35	A	D
82		South of Cactus Avenue	6D	56,300	20,000	0.36	A	20,000	0.36	A	D
83	Heacock Street	North of Alessandro Boulevard	4D	37,500	18,403	0.49	A	18,691	0.50	A	C
84		South of Alessandro Boulevard	4D	37,500	17,000	0.45	A	17,480	0.47	A	D
85		North of Cactus Avenue	4D	37,500	18,000	0.48	A	18,576	0.50	A	D
86		South of Cactus Avenue	4D	37,500	27,600	0.74	C	28,080	0.75	C	D
87		North of John F. Kennedy Drive	4D	37,500	26,514	0.71	C	26,995	0.72	C	D
88		South of John F. Kennedy Drive	4D	37,500	27,000	0.72	C	27,192	0.73	C	D
89		North of Gentian Avenue	3D	28,150	25,000	0.89	D	25,192	0.89	D	D
90		South of Gentian Avenue	2U	12,500	**24,000**	**1.92**	**F**	**24,000**	**1.92**	**F**	D
91	Webster Avenue	South of Harley Knox Boulevard	2U	12,500	401	0.03	A	689	0.06	A	D
92	Indian Street	North of Cottonwood Avenue	2U	12,500	**12,570**	**1.01**	**F**	**12,762**	**1.02**	**F**	C
93		South of Cottonwood Avenue	4U	25,000	11,981	0.48	A	12,461	0.50	A	C
94		North of Alessandro Boulevard	3D	28,150	15,087	0.54	A	15,665	0.56	A	D
95		South of Alessandro Boulevard	4D	37,500	14,641	0.39	A	15,507	0.41	A	D
96		North of Cactus Avenue	4D	37,500	17,785	0.47	A	18,843	0.50	A	C
97		South of Cactus Avenue	4D	37,500	14,536	0.39	A	16,172	0.43	A	C
98		North of John F. Kennedy Drive	4D	37,500	10,590	0.28	A	12,226	0.33	A	C
99		South of John F. Kennedy Drive	4D	37,500	12,178	0.32	A	14,392	0.38	A	C
100		North of Gentian Avenue	2U	12,500	**11,244**	**0.90**	**D**	**13,458**	**1.08**	**F**	C

General Plan Buildout (Post-2035) Conditions
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Post-2035 NP	V/C	LOS	Post-2035 WP	V/C	LOS	Acceptable LOS
101	Indian Street	Gentian Avenue to Santiago Drive	4D	37,500	10,296	0.27	A	10,296	0.27	A	D
102		Santiago Drive to Iris Avenue	2U	12,500	**16,332**	**1.31**	**F**	**17,294**	**1.38**	**F**	D
103		South of Iris Avenue	2U	12,500	9,425	0.75	C	10,194	0.82	D	D
104		North of Krameria Avenue	2U	12,500	**12,600**	**1.01**	**F**	**13,368**	**1.07**	**F**	D
105		South of Krameria Avenue	2U	12,500	**18,200**	**1.46**	**F**	**18,872**	**1.51**	**F**	D
106		North of San Michele Road	3D	28,150	22,500	0.80	C	23,076	0.82	D	D
107		San Michele Road to Nandina Avenue	2D	18,750	**36,400**	**1.94**	**F**	**36,880**	**1.97**	**F**	D
108		South of Nandina Avenue	2D	18,750	**42,000**	**2.24**	**F**	**42,480**	**2.27**	**F**	D
109		North of Harley Knox Boulevard	2D	18,750	**42,680**	**2.28**	**F**	**43,160**	**2.30**	**F**	D
110		South of Harley Knox Boulevard	4D	37,500	29,500	0.79	C	29,596	0.79	C	D
111	Perris Boulevard	North of SR-60 WB Ramps	6D	56,300	**54,000**	**0.96**	**E**	**54,192**	**0.96**	**E**	D
112		SR-60 WB Ramps to Sunnymead Boulevard	7D	65,683	42,000	0.64	B	42,288	0.64	B	D
113		South of Sunnymead Boulevard	4D	37,500	**47,000**	**1.25**	**F**	**47,384**	**1.26**	**F**	D
114		North of Eucalyptus Avenue	4D	37,500	**46,000**	**1.23**	**F**	**46,385**	**1.24**	**F**	D
115		South of Eucalyptus Avenue	4D	37,500	**52,000**	**1.39**	**F**	**52,481**	**1.40**	**F**	D
116		North of Cottonwood Avenue	4D	37,500	**50,000**	**1.33**	**F**	**50,578**	**1.35**	**F**	D
117		South of Cottonwood Avenue	4D	37,500	**45,000**	**1.20**	**F**	**45,866**	**1.22**	**F**	D
118		North of Alessandro Boulevard	4D	37,500	**47,000**	**1.25**	**F**	**47,866**	**1.28**	**F**	D
119		South of Alessandro Boulevard	4D	37,500	**47,000**	**1.25**	**F**	**48,058**	**1.28**	**F**	D
120		North of Cactus Avenue	4D	37,500	**43,000**	**1.15**	**F**	**44,155**	**1.18**	**F**	D
121		South of Cactus Avenue	6D	56,300	48,000	0.85	D	49,251	0.87	D	D
122		North of John F. Kennedy Drive	6D	56,300	45,000	0.80	C	46,444	0.82	D	D
123		South of John F. Kennedy Drive	6D	56,300	**52,000**	**0.92**	**E**	**54,696**	**0.97**	**E**	D
124		North of Gentian Avenue	6D	56,300	49,000	0.87	D	**51,792**	**0.92**	**E**	D
125		Gentian Avenue to Driveway 3	6D	56,300	47,000	0.83	D	50,658	0.90	D	D
126		Driveway 3 to Driveway 4	6D	56,300	47,000	0.83	D	49,887	0.89	D	D
127		Driveway 4 to Santiago Drive	6D	56,300	47,000	0.83	D	49,888	0.89	D	D
128		Santiago Drive to Iris Avenue	6D	56,300	50,297	0.89	D	53,281	0.95	D	D
129		South of Iris Avenue	6D	56,300	47,000	0.83	D	48,541	0.86	D	D
130		North of Krameria Avenue	6D	56,300	50,000	0.89	D	**51,540**	**0.92**	**E**	D
131		South of Krameria Avenue	6D	56,300	50,000	0.89	D	**51,541**	**0.92**	**E**	D
132		North of San Michele Road	6D	56,300	50,000	0.89	D	**51,060**	**0.91**	**E**	D
133		San Michele Road to Nandina Avenue	6D	56,300	**55,000**	**0.98**	**E**	**55,964**	**0.99**	**E**	D
134		South of Nandina Avenue	6D	56,300	**53,000**	**0.94**	**E**	**53,868**	**0.96**	**E**	D
135		North of Harley Knox Boulevard	2D	18,750	**53,000**	**2.83**	**F**	**53,868**	**2.87**	**F**	D
136		South of Harley Knox Boulevard[4]	6D	56,300	41,000	0.73	C	41,674	0.74	C	D
137		North of Ramona Expressway[4]	6D	56,300	40,000	0.71	C	40,673	0.72	C	D
138		South of Ramona Expressway	5D	46,916	31,000	0.66	B	31,192	0.66	B	D
139	Kitching Street	North of Cactus Avenue	4D	37,500	17,130	0.46	A	17,418	0.46	A	C
140		South of Cactus Avenue	2U	12,500	**17,235**	**1.38**	**F**	**17,811**	**1.42**	**F**	C
141		North of John F. Kennedy Drive	2U	12,500	**19,543**	**1.56**	**F**	**20,217**	**1.62**	**F**	C
142		South of John F. Kennedy Drive	2U	12,500	**18,085**	**1.45**	**F**	**18,277**	**1.46**	**F**	C
143		North of Iris Avenue	4D	37,500	15,903	0.42	A	15,999	0.43	A	C
144		South of Iris Avenue	4U	25,000	**22,790**	**0.91**	**E**	**22,886**	**0.92**	**E**	C
145	Lasselle Street	North of Iris Avenue	4D	37,500	29,380	0.78	C	29,476	0.79	C	D
146		South of Iris Avenue	4D	37,500	**35,200**	**0.94**	**E**	**35,392**	**0.94**	**E**	C

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

[1] These maximum roadway capacities have been extracted from the City of Moreno Valley's Transportation Division's Traffic Impact Analysis Preparation Guidelines (August 2007).

[2] Assumes the widening of Cactus Avenue with a third eastbound through lane (City CIP improvement project). Anticipated completion: Summer 2014.

[3] Assumes proposed downgrade of Gentian Avenue to a Collector.

[4] Includes City of Perris widening of Perris Boulevard, south of Harley Knox Bouelvard. Anticipated completion: by end of 2014.

As previously discussed in Section 3.8 *Existing Conditions Roadway Segment Capacity Analysis*, a peak hour assessment of intersections located on either side of a deficient roadway segment has been conducted to determine if peak hour traffic flows can be accommodated by the potentially deficient roadway segment. If it is determined that peak traffic flows can be accommodated at the City's stated LOS thresholds, then roadway segment widening is typically not recommended.

As shown on Table 7-1 and Table 7-4, the peak hour analysis indicates that the adjacent study area intersections of each of these deficient roadway segments are anticipated to operate at acceptable LOS with the mitigation measures discussed in Section 7.8 *Long-Range Cumulative Impacts and Recommended Improvements*. It should be noted that in some cases, the recommended intersection improvements discussed in Section 7.8 *Long-Range Cumulative Impacts and Recommended Improvements* includes the addition of through lanes. No additional roadway segment widening is recommended beyond those identified and discussed in Section 7.8 *Long-Range Cumulative Impacts and Recommended Improvements*.

7.6 TRAFFIC SIGNAL WARRANTS ANALYSIS

For General Plan Buildout (Post-2035) Without Project traffic conditions, the intersection of Indian Street at Krameria Avenue is anticipated to warrant a traffic signal in addition to the intersection previously identified under E+P traffic conditions (see and Appendix "7.3"). For General Plan Buildout (Post-2035) With Project conditions, there are no traffic signals that appear to be warranted in addition to the location warranted under General Plan Buildout (Post-2035) Without Project traffic conditions (see and Appendix "7.4").

7.7 PROGRESSION ANALYSIS

A progression analysis was also performed for southbound and northbound off-ramps at the I-215/Cactus Avenue interchange and the eastbound and westbound off-ramps at the SR-60/Perris Boulevard interchange to assess vehicle queues for the off ramps that may potentially impact peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-215 or SR-60 Freeway mainline for General Plan Buildout (Post-2035) traffic conditions. Progression analysis findings are presented in Table 7-3. As shown on Table 7-3, the following movement is anticipated to experience potential queuing issues under for both General Plan Buildout (Post-2035) Without and With Project traffic conditions:

Intersection Location	Movement
I-215 Northbound Ramps / Cactus Avenue	Northbound Left – AM peak hour only

Review of the 50th percentile queues indicates that the northbound left turn movement at the I-215 Northbound Ramps at Cactus Avenue may potentially experience queuing issues during the AM peak hour. It is important to note that although the stacking analysis results identifies potential queuing impacts during

Table 7-3

General Plan Buildout (Post-2035) Conditions
AM/PM Peak Hour Stacking Length Summary at I-215/Cactus Avenue and SR-60/Perris Boulevard

Intersection	Movement	Stacking Distance (Feet)	Opening Year Cumulative (2018) Without Project						Opening Year Cumulative (2018) With Project					
			95th Percentile Stacking Distance Required (Feet)			Acceptable?[1]			95th Percentile Stacking Distance Required (Feet)			Acceptable?[1]		
			AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM	PM	SAT	AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM	PM	SAT
I-215 SB Ramps / Cactus Av.	SBR	1,115	375	92	0	Yes	Yes	Yes	375	93	0	Yes	Yes	Yes
I-215 NB Ramps / Cactus Av.	NBL	145	668 [2]	145 [2]	96	**No**	Yes	Yes	668 [2]	145 [2]	96	**No**	Yes	Yes
	NBT	1,650	231	99	74	Yes	Yes	Yes	231	99	75	Yes	Yes	Yes
SR-60 EB Off-Ramp / Sunnymead Bl.	SBL	1,295	269	673 [2]	554 [2]	Yes	Yes	Yes	269	673 [2]	554 [2]	Yes	Yes	Yes
Perris Bl. / SR-60 WB Ramps	WBL-T-R	1,230	726 [2]	622 [2]	693 [2]	Yes	Yes	Yes	730 [2]	635 [2]	712 [2]	Yes	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.

the PM peak hour only based on the 50th percentile queues, these potential queues are less than the anticipated 95th percentile queues.

There is approximately 810-feet of stacking distance available currently between Cactus Avenue and the I-215 Northbound off-ramp split for the I-215 Northbound free-right turn lane onto Cactus Avenue, which is followed by an additional 840-feet of storage before the I-215 Freeway mainline (for a total of 1,650 feet of stacking). The 95th percentile queues for both the northbound left turn and northbound through lanes is anticipated to exceed the existing storage available between Cactus Avenue and the I-215 Northbound off-ramp split for the I-215 Northbound free-right turn lane onto Cactus Avenue by approximately 89-feet during the AM peak hour only. However, in review of the potential 50th percentile queues for both the northbound left turn and northbound through lanes it is anticipated that the storage currently available between Cactus Avenue and the I-215 Northbound off-ramp split for the I-215 Northbound free-right turn lane onto Cactus Avenue would be sufficient to accommodate anticipated 50th percentile queues during the AM peak hour. As shown on Table 7-3, there are no additional queuing issues anticipated with the addition of Project traffic in addition to those previously identified for General Plan Buildout (Post-2035) Without Project conditions.

Worksheets for General Plan Buildout (Post-2035) Without and With Project conditions queuing analysis is provided in Appendix "7.5" and Appendix "7.6" respectively.

7.8 LONG-RANGE CUMULATIVE IMPACTS AND RECOMMENDED IMPROVEMENTS

Improvements have been recommended at intersections that have been identified as cumulatively impacted to reduce each location's peak hour delay and improve the associated LOS grade to LOS "D" or better. The effectiveness of the recommended improvements discussed below to address General Plan Buildout (Post-2035) cumulative traffic impacts are presented in Table 7-4. The improvements that were previously required to address LOS deficiencies for E+P and Opening Year Cumulative (2018) With Project traffic conditions are shown in *italics*. New improvements for General Plan Buildout (Post-2035) With Project traffic conditions are shown in **bold**.

7.8.1 RECOMMENDED IMPROVEMENTS TO ADDRESS GENERAL PLAN BUILDOUT (POST-2035) CUMULATIVE IMPACTS AT INTERSECTIONS

The following improvements are recommended to reduce long-range cumulative impacts identified at transportation facilities under General Plan Buildout (Post-2035) to "less-than-significant":

Recommended Improvement – I-215 Southbound Ramps / Cactus Avenue (#1) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a southbound free-right turn lane.**
- *Construct a 2nd westbound left turn lane.*

Table 7-4

Recommended Improvements for General Plan Buildout (Post-2035) With Project Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1] Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R	Delay[2] (secs.) AM	PM	Sat	Level of Service AM	PM	Sat
1	I-215 SB Ramps / Cactus Av																			
	- Without Improvements	TS	0	0	0	0	0	1	0	2	1	1	2	0	**30.6**	**131.1**	21.8	**F[2]**	**F**	C
	- With Improvements	TS	0	0	0	0	0	**1>>**	0	2	1	**2**	2	0	6.9	19.2	13.1	A	B	B
2	I-215 NB Ramps / Cactus Av																			
	- Without Improvements	TS	1	1	0	1	1	0	1	2	0	0	2	0	**>200.0**	**>200.0**	24.8	**F**	**F**	C
	- With Improvements	TS	**2**	**2**	0	1	1	**1>**	1	**3**	**1**	0	**4**	**1**	26.1	29.4	17.0	C	C	B
3	Elsworth St / Cactus Av																			
	- Without Improvements	TS	1	1	0	1	1	1>	1	2	1>>	1	3	1	**>200.0**	**>200.0**	**79.7**	**F**	**F**	**E**
	- With Improvements[5, 6]	TS	**2**	1	0	1	1	1>	1	**4**	1>>	1	**4**	1	32.7	54.5	32.8	C	D	C
4	Frederick St / Cactus Av																			
	- Without Improvements	TS	0	0	0	2	0	1>	1	2	0	0	3	1>	41.9	**>200.0**	21.3	D	**F**	C
	- With Improvements	TS	0	0	0	2	0	1>	1	**4**	0	0	3	1>	38.2	21.2	19.0	D	C	B
5	Graham St / Cactus Av																			
	- Without Improvements	TS	2	2	0	1	2	1>	1	2	1>>	1	3	0	**164.2**	**>200.0**	**112.5**	**F**	**F**	**F**
	- With Improvements	TS	2	2	0	**2**	2	1>	**2**	**4**	1>>	1	3	0	45.9	31.7	28.2	D	C	C
6	Heacock St / Alessandro Bl																			
	- Without Improvements	TS	1	2	d	1	2	1>	1	3	1>	1	3	d	**80.3**	**108.3**	**60.1**	**F**	**F**	**E**
	- With Improvements	TS	**2**	2	d	**2**	2	1>	1	**4**	1>	1	3	d	52.5	42.5	49.8	D	D	D
7	Heacock St / Cactus Av																			
	- Without Improvements	TS	2	2	0	1	2	0	1	2	1>	1	2	0	**91.6**	**120.7**	**89.0**	**F**	**F**	**F**
	- With Improvements	TS	2	2	0	**2**	2	0	**2**	**3**	**2>**	1	**3**	0	45.8	51.7	48.2	D	D	D
9	Heacock St / Gentian Av																			
	- Without Improvements	CSS	0	1	1	1	1	0	0	0	0	0	1	0	**56.9**	**39.9**	**48.5**	**F**	**E**	**E**
	- With Improvements	**TS**	0	**2**	1	1	**2**	0	0	0	0	0	1	0	19.5	23.4	18.5	B	C	B
10	Webster Av / Harley Knox Bl																			
	- Without Improvements	CSS	0	1	0	0	0	0	0	1	0	1	1	0	**63.7**	**>100.0**	32.6	**F**	**F**	D
	- With Improvements[7]	**TS**	0	1	0	0	0	0	0	**2**	0	1	**2**	0	20.6	13.7	12.4	C	B	B
12	Indian St / Alessandro Bl																			
	- Without Improvements	TS	1	2	0	1	2	0	1	3	d	1	3	d	**74.4**	**109.9**	**128.3**	**E**	**F**	**F**
	- With Improvements	TS	**2**	2	0	**2**	2	0	1	**4**	**0**	**2**	3	**1**	53.5	51.8	49.9	D	D	D
13	Indian St / Cactus Av																			
	- Without Improvements	TS	1	2	0	1	2	0	1	2	0	1	2	0	**39.5**	**120.4**	47.3	**D**	**F**	D
	- With Improvements	TS	1	2	0	1	2	0	1	**3**	0	1	2	0	38.8	48.3	38.2	D	D	D
14	Indian St / John F. Kennedy Dr																			
	- Without Improvements	TS	1	2	0	1	2	0	1	2	d	1	2	d	**39.4**	28.5	30.5	**D**	C	C
	- With Improvements	TS	1	2	**1**	**2**	2	0	1	2	d	1	2	d	33.2	28.1	29.3	C	C	C
15	Indian St / Gentian Av																			
	- Without Improvements	CSS	0	1	0	0	1	0	1	0	1	0	**1**	0	**97.9**	**>100.0**	**>100.0**	**F**	**F**	**F**
	- With Improvements	**TS**	**1**	1	0	**1**	1	0	1	**1**	**0**	0	**1**	0	31.7	21.1	23.2	C	C	C
17	Indian St / Iris Av																			
	- Without Improvements	TS	1	1	0	1	1	1	1	1	0	1	1	1	**83.1**	**98.6**	**56.9**	**F**	**F**	**E**
	- With Improvements	TS	1	**2**	0	1	**2**	1	1	**2**	0	1	**2**	1	51.5	41.8	35.7	D	D	D

Table 7-4

Recommended Improvements for General Plan Buildout (Post-2035) With Project Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1] Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R	Delay[2] (secs.) AM	PM	Sat	Level of Service AM	PM	Sat
18	Indian St / Krameria Av																			
	- Without Improvements	CSS	0	1	0	1	1	0	0	0	0	1	0	1	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
	- With Improvements	**TS**	**1**	**2**	0	1	**2**	0	**1**	**1**	**1>**	1	**1**	**0**	49.8	38.8	32.0	D	D	C
19	Indian St / San Michele Rd																			
	- Without Improvements	AWS	0	1	0	0	2	0	0	1	0	0	1	0	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
	- With Improvements	**TS**	**2**	**2**	**1**	**2**	2	**1**	**1**	**2**	**2>**	**1**	**2**	**1**	44.9	51.6	37.7	D	D	D
20	Indian St / Nandina Av																			
	- Without Improvements	AWS	0	2	1	0	2	0	1	1	1	0	1	0	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
	- With Improvements	**TS**	**2**	2	**1>**	**1**	**3**	**1**	1	1	**2>**	**2**	1	0	43.6	43.0	34.0	D	D	C
21	Indian St / Harley Knox Bl																			
	- Without Improvements	TS	2	2	1	1	2	0	1	1	1	2	2	0	**>200.0**	**>200.0**	**114.8**	**F**	**F**	**F**
	- With Improvements	TS	2	**3**	1	**2**	2	**1>**	**2**	**3**	1	2	**3**	**1>**	52.2	54.1	32.4	D	D	C
24	SR-60 EB Off-Ramp / Sunnymead Bl																			
	- Without Improvements	TS	0	0	0	1	1	0	0	2	0	0	2	0	22.3	**81.7**	31.2	C	**F**	C
	- With Improvements	TS	0	0	0	**2**	**0**	**1**	0	2	0	0	2	0	18.4	54.9	24.4	B	D	C
25	Perris Bl / SR-60 WB Ramps																			
	- Without Improvements	TS	2	2	0	0	3	1	0	0	0	0	1	0	**51.3**	**48.3**	**65.2**	**F[2]**	**F[2]**	**F[2]**
	- With Improvements	TS	2	2	0	0	3	1	0	0	0	**1**	1	0	36.4	31.6	41.7	D	C	D
26	Perris Bl / Sunnymead Bl																			
	- Without Improvements	TS	1	3	0	2	2	1>	2	2	1	1	2	0	**124.5**	**113.7**	**154.6**	**F**	**F**	**F**
	- With Improvements	TS	**2**	3	**1**	2	**3**	1>	2	2	**1>**	1	2	**2>**	37.8	40.4	47.9	D	D	D
27	SR-60 EB On-Ramp / Sunnymead Bl																			
	- Without Improvements	CSS	0	1	0	0	0	0	1	2	0	1	2	0	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
	- With Improvements	**RA**	**1**	1	0	0	0	0	1	**3**	0	1	**3**	0	4.1	4.9	6.0	A	A	A
28	Perris Bl / Eucalyptus Av																			
	- Without Improvements	TS	1	2	1	1	2	1	1	1	1	1	1	1	**62.6**	**63.7**	**100.6**	**E**	**E**	**F**
	- With Improvements	TS	1	**3**	1	1	**3**	1	1	1	1	1	1	1	43.1	44.6	43.5	D	D	D
29	Perris Bl / Cottonwood Av																			
	- Without Improvements	TS	1	2	1	1	2	1	1	1	1	1	1	1	**57.4**	**79.6**	**87.1**	**E**	**E**	**F**
	- With Improvements	TS	1	**3**	1	1	**3**	1	1	1	1	1	1	1	44.7	52.5	53.0	D	D	D
30	Perris Bl / Alessandro Bl																			
	- Without Improvements	TS	1	2	1	1	2	1	1	2	1	1	3	d	**53.8**	**170.2**	**161.6**	**D**	**F**	**F**
	- With Improvements	TS	**2**	**3**	1	1	**3**	**1>**	**2**	**3**	**1>**	**2**	3	**1**	34.8	47.2	38.4	C	D	D
31	Perris Bl / Cactus Av																			
	- Without Improvements	TS	1	3	0	1	2	1	1	2	0	1	2	0	**119.4**	**165.3**	**133.2**	**F**	**F**	**F**
	- With Improvements	TS	**2**	3	0	1	**3**	1	**2**	**3**	**1>**	1	2	**1**	48.3	41.9	43.0	D	D	D
32	Perris Bl / John F. Kennedy Dr																			
	- Without Improvements	TS	1	3	0	1	3	0	1	2	d	1	2	d	**143.7**	**77.3**	**64.0**	**F**	**F[2]**	**F[2]**
	- With Improvements	TS	**2**	3	**1**	**2**	3	0	1	2	d	**2**	2	**1**	53.3	40.1	37.4	D	D	D
33	Perris Bl / Gentian Av																			
	- Without Improvements	TS	0	3	0	1	3	0	0	0	0	0	1	0	23.6	**63.7**	**29.6**	C	**F[2]**	**F[2]**
	- With Improvements	TS	**1**	3	0	1	3	0	**1**	**1**	0	**1**	1	0	26.6	41.9	31.9	C	D	C

Recommended Improvements for General Plan Buildout (Post-2035) With Project Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1] Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R	Delay[2] (secs.) AM	PM	Sat	Level of Service AM	PM	Sat
36	Perris Bl / Santiago Dr																			
	- Without Improvements	CSS	1	3	0	1	3	0	0	1	0	0	1	0	**>100.0**	**>100.0**	**>100.0**	**F**	**F**	**F**
	- With Improvements	**TS**	1	3	0	1	3	0	**1**	1	0	**1**	1	0	25.7	29.3	35.2	C	C	D
37	Perris Bl / Iris Av																			
	- Without Improvements	TS	1	3	1	1	3	0	1	2	0	1	2	0	**98.1**	**128.1**	**>200.0**	**F**	**F**	**F**
	- With Improvements	TS	**2**	3	**1>**	**2**	3	**1>**	**2**	**3**	**1>**	**2**	**3**	**1>**	37.0	40.6	53.6	D	D	D
38	Perris Bl / Krameria Av																			
	- Without Improvements	TS	1	3	0	1	3	0	0	1	1	1	1	1	**160.8**	**>200.0**	**>200.0**	**F**	**F**	**F**
	- With Improvements[8]	TS	**2**	3	**1**	**2**	3	**1**	**1**	**2**	1	**2**	**2**	1	38.5	43.1	41.7	D	D	D
39	Perris Bl / San Michele Rd																			
	- Without Improvements	TS	1	3	0	1	3	0	1	1	0	1	1	1	**117.3**	**162.2**	**104.1**	**F**	**F**	**F**
	- With Improvements	TS	1	3	0	1	3	**1**	1	1	**1>**	1	1	1	41.5	54.3	34.7	D	D	C
40	Perris Bl / Nandina Av																			
	- Without Improvements	TS	1	3	0	1	3	1>	1	2	0	1	1	1	**105.8**	**>200.0**	**107.8**	**F**	**F**	**F**
	- With Improvements	TS	1	3	0	1	3	1>	**2**	2	**1>**	1	1	1	32.7	39.4	34.2	C	D	C
41	Perris Bl / Harley Knox Bl																			
	- Without Improvements	TS	1	1	0	0	1	1	1	0	1	0	0	0	**>200.0**	**>200.0**	**>200.0**	**F**	**F**	**F**
	- With Improvements	TS	1	**3**	0	**2**	**3**	**1>**	**2**	**2**	1	**1**	**2**	0	31.6	31.8	22.2	C	C	C
42	Perris Bl / Ramona Expressway																			
	- Without Improvements	TS	2	2	1	2	2	1	2	3	1	2	3	0	**134.3**	**79.1**	**95.5**	**F**	**E**	**F**
	- With Improvements	TS	2	3	1	2	3	**1>**	2	3	1	2	3	**1>**	38.8	38.7	37.3	D	D	D
43	Kitching St / Cactus Av																			
	- Without Improvements	TS	1	2	0	1	1	1	1	2	0	1	2	0	**64.8**	**43.3**	**37.8**	**F[2]**	**D**	**D**
	- With Improvements	TS	**2**	2	0	1	**2**	1	1	2	**1**	1	2	**1**	32.6	31.8	29.8	C	C	C
44	Kitching St / John F. Kennedy Dr																			
	- Without Improvements	TS	0	1	0	0	1	0	1	2	0	1	2	d	**>200.0**	**126.2**	**75.8**	**F**	**F**	**E**
	- With Improvements[9]	TS	**2**	**2**	0	**1**	**2**	0	1	2	0	1	2	d	34.2	28.6	25.8	C	C	C
45	Kitching St / Iris Av																			
	- Without Improvements	TS	1	2	0	1	2	0	1	2	0	1	2	1>	**119.6**	**157.3**	**70.4**	**F**	**F**	**F[2]**
	- With Improvements	TS	**2**	2	**1>**	**2**	2	**1**	**2**	**3**	**1**	**2**	**3**	1>	28.1	34.7	24.6	C	C	C
46	Lasselle St / Iris Av																			
	- Without Improvements	TS	2	2	1>	2	2	d	2	3	d	2	3	0	**57.8**	**68.2**	48.4	**E**	**F[2]**	D
	- With Improvements	TS	2	2	1>	2	2	d	2	3	**1>**	2	3	**1**	43.0	51.2	33.0	D	D	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; > = Right-Turn Overlap Phasing; >> = Free-Right Turn Lane; d= Defacto Right Turn Lane; **1** = Improvement

2 Per the 2000 Highway Capacity Manual, 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 CSS = Cross-street Stop; AWS = All-Way Stop; TS = Traffic Signal; RA = Roundabout

4 Volume-to-capacity ratio is greater than 1.00; Intersection unstable; Level of Service "F".

5 Recommendation includes removal of the existing southbound crosswalk (on west leg) and implement protected left turn phasing FOR the northbound and southbound approaches.

6 Third eastbound through lane is consistent with planned City of Moreno Valley Capital Improvement Plan (CIP) project which will widen Cactus Avenue between the I-215 Freeway and Veterans Way. Construction is anticipated to be completed by Summer 2014.

7 Although the intersection does not appear to warrant a traffic signal, no other geometric improvements are anticipated to result in acceptable peak hour operations. As such, it is recommended that the intersection be monitored and a traffic signal be installed at the City Traffic Engineer's discretion.

8 Implement protected left turn phasing for the eastbound and westbound approaches.

9 Implement protected left turn phasing for the northbound and southbound approaches.

Recommended Improvement – I-215 Northbound Ramps / Cactus Avenue (#2) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- *Construct a 2nd northbound left turn lane.*
- **Construct a 2nd northbound through lane.**
- **Construct a southbound right turn lane and modify the traffic signal to implement overlap phasing on the southbound right turn lane.**
- *Re-stripe the existing eastbound shared through-right turn lane as the 3rd through lane.*
- **Construct an eastbound right turn lane.**
- *Construct a 3rd westbound through lane.*
- **Construct a 4th westbound through lane (to trap as the westbound right turn lane onto the I-215 Northbound ramp).**
- **Construct a westbound right turn lane.**

Recommended Improvement – Elsworth Street / Cactus Avenue (#3) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- *Construct a 2nd northbound left turn lane.*
- *Remove the southbound (west leg) crosswalk.*
- *Construct a 3rd eastbound through lane. The 3rd eastbound through lane is consistent with the planned City of Moreno Valley Capital Improvement Plan (CIP) project, which will widen Cactus Avenue between the I-215 Freeway and Veterans Way. Construction is anticipated to be completed by Summer 2014.*
- **Construct a 4th eastbound through lane.**
- **Construct a 4th westbound through lane.**
- **Modify the traffic signal and implement protected left turn phasing for the northbound and southbound approaches.**

Recommended Improvement – Frederick Street / Cactus Avenue (#4) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- *Construct a 3rd eastbound through lane.*
- **Construct a 4th eastbound through lane.**

Recommended Improvement – Graham Street / Cactus Avenue (#5) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- *Construct a 2nd southbound left turn lane.*
- *Construct a 2nd eastbound left turn lane.*

- *Construct a 3rd eastbound through lane.*
- **Construct a 4th eastbound through lane.**

Recommended Improvement – Heacock Street / Alessandro Boulevard (#6) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd northbound left turn lane.**
- **Construct a 2nd southbound left turn lane.**
- **Construct a 4th eastbound through lane.**

Recommended Improvement – Heacock Street / Cactus Avenue (#7) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd southbound left turn lane.**
- **Construct a 2nd eastbound left turn lane.**
- **Construct a 3rd eastbound through lane.**
- **Construct a 2nd eastbound right turn lane and modify the traffic signal to implement overlap phasing.**
- **Construct 3rd westbound through lane.**

Recommended Improvement – Heacock Street / Gentian Avenue (#9) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Install a traffic signal.**
- **Construct a 2nd northbound through lane.**
- **Construct a 2nd southbound through lane.**

Recommended Improvement – Webster Avenue / Harley Knox Boulevard (#10) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Install a traffic signal. Although the intersection does not appear to warrant a traffic signal, no other geometric improvements are anticipated to result in acceptable peak hour operations. As such, it is recommended that the intersection be monitored and a traffic signal be installed at the City Traffic Engineer's discretion.**
- **Construct a 2nd eastbound through lane.**
- **Construct a 2nd westbound through lane.**

Recommended Improvement – Indian Street / Alessandro Boulevard (#12) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd northbound left turn lane.**
- **Construct a 2nd southbound left turn lane.**
- **Construct a 4th eastbound through lane.**
- **Construct a 2nd westbound left turn lane.**
- **Construct a westbound right turn lane.**

Recommended Improvement – Indian Street / Cactus Avenue (#13) – The following improvement is necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 3rd eastbound through lane.**

Recommended Improvement – Indian Street / John F. Kennedy Drive (#14) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a northbound right turn lane.**
- **Construct a 2nd southbound left turn lane.**

Recommended Improvement – Indian Street / Gentian Avenue (#15) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- *Install a traffic signal.*
- *Construct a northbound left turn lane.*
- *Construct a southbound left turn lane.*
- *Restripe the eastbound right turn lane as a shared through-right turn lane.*
- *Construct a westbound shared left-through-right turn lane.*

Recommended Improvement – Indian Street / Iris Avenue (#17) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd northbound through lane.**
- **Construct a 2nd southbound through lane.**
- **Construct a 2nd eastbound through lane.**
- **Construct a 2nd westbound through lane.**

Recommended Improvement – Indian Street / Krameria Avenue (#18) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Install a traffic signal.**
- **Construct a northbound left turn lane.**
- **Construct a 2nd northbound through lane.**

- **Construct a 2nd southbound through lane.**
- **Construct an eastbound left turn lane.**
- **Construct an eastbound through lane.**
- **Construct an eastbound right turn lane with overlap phasing.**
- **Restripe the westbound right turn lane as a shared through-right turn lane.**

Recommended Improvement – Indian Street / San Michele Road (#19) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Operation of installed traffic signal. Although the signal heads have been installed at this intersection, they are all currently flashing red for an all-way stop operation.**
- **Construct 2 northbound left turn lanes.**
- **Construct a 2nd northbound through lane.**
- **Construct a northbound right turn lane.**
- **Construct 2 southbound left turn lanes.**
- **Construct a southbound right turn lane.**
- **Construct an eastbound left turn lane.**
- **Construct a 2nd eastbound through lane.**
- **Construct 2 eastbound right turn lanes and modify the traffic signal to implement overlap phasing.**
- **Construct a westbound left turn lane.**
- **Construct a 2nd westbound through lane.**
- **Construct a westbound right turn lane.**

Recommended Improvement – Indian Street / Nandina Avenue (#20) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Operation of installed traffic signal. Although the signal heads have been installed at this intersection, they are all currently flashing red for an all-way stop operation.**
- **Construct 2 northbound left turn lanes.**
- **Modify the traffic signal and implement overlap phasing on the northbound right turn lane.**
- **Construct a southbound left turn lane.**
- **Construct a 3rd southbound through lane.**
- **Construct a southbound right turn lane.**
- **Construct a 2nd eastbound right turn lane and modify the traffic signal to implement overlap phasing.**
- **Construct 2 westbound left turn lanes.**

Recommended Improvement – Indian Street / Harley Knox Boulevard (#21) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 3rd northbound through lane.**
- *Construct a 2nd southbound left turn lane.*
- *Construct a southbound right turn lane and modify the traffic signal to implement overlap phasing.*
- *Construct a 2nd eastbound left turn lane.*
- *Construct a 2nd eastbound through lane.*
- **Construct a 3rd eastbound through lane.**
- **Construct a 3rd westbound through lane.**
- **Construct a westbound right turn lane and modify the traffic signal to implement overlap phasing.**

Recommended Improvement – SR-60 Eastbound Off-Ramp / Sunnymead Boulevard (#24) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- *Restripe the southbound shared left-right turn lane as a 2nd left turn lane.*
- *Construct a southbound right turn lane.*

Recommended Improvement – Perris Boulevard / SR-60 Westbound Ramps (#25) – The following improvement is necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a westbound left turn lane.**

Recommended Improvement – Perris Boulevard / Sunnymead Boulevard (#26) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd northbound left turn lane.**
- **Construct a northbound right turn lane.**
- **Construct a 3rd southbound through lane.**
- *Implement overlap phasing on the eastbound right turn lane.*
- **Construct 2 westbound right turn lanes and modify the traffic signal to implement overlap phasing.**

Recommended Improvement – SR-60 Eastbound On-Ramp / Sunnymead Boulevard (#27) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- *Construct a roundabout. Based on discussions with City staff, it is our understanding that the City has just recently been awarded a Highway Safety Grant for this intersection, which will be utilized to construct a roundabout.*
- **Construct a northbound left turn lane.**
- **Construct a 3rd eastbound through lane.**
- **Construct a 3rd westbound through lane.**

Recommended Improvement – Perris Boulevard / Eucalyptus Avenue (#28) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 3rd northbound through lane.**
- **Construct a 3rd southbound through lane.**

Recommended Improvement – Perris Boulevard / Cottonwood Avenue (#29) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 3rd northbound through lane.**
- **Construct a 3rd southbound through lane.**

Recommended Improvement – Perris Boulevard / Alessandro Boulevard (#30) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd northbound left turn lane.**
- **Construct a 3rd northbound through lane.**
- **Construct a 3rd southbound through lane.**
- **Construct a 2nd eastbound left turn lane.**
- **Construct a 3rd eastbound through lane.**
- **Construct a 2nd westbound left turn lane.**
- **Construct a westbound right turn lane.**
- **Modify the traffic signal and implement overlap phasing on the southbound and eastbound right turn lanes.**

Recommended Improvement – Perris Boulevard / Cactus Avenue (#31) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd northbound left turn lane.**
- **Construct a 3rd southbound through lane.**
- **Construct a 2nd eastbound left turn lane.**
- **Construct a 3rd eastbound through lane.**

- *Construct an eastbound right turn lane and modify the traffic signal to implement overlap phasing.*
- **Construct a westbound right turn lane.**

Recommended Improvement – Perris Boulevard / John F. Kennedy Drive (#32) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd northbound left turn lane.**
- **Construct a northbound right turn lane.**
- **Construct a 2nd southbound left turn lane.**
- **Construct a 2nd westbound left turn lane.**
- **Construct a westbound right turn lane.**

Recommended Improvement – Perris Boulevard / Gentian Avenue (#33) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- *Construct a northbound left turn lane.*
- *Construct an eastbound left turn lane.*
- *Construct an eastbound shared through-right turn lane.*
- **Construct a westbound left turn lane.**

Recommended Improvement – Perris Boulevard / Santiago Drive (#36) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- *Install a traffic signal.*
- **Construct a northbound right turn lane.**

Recommended Improvement – Perris Boulevard / Iris Avenue (#37) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a northbound left turn lane.**
- *Modify the traffic signal to implement overlap phasing on the northbound right turn lane.*
- **Construct a 2nd southbound left turn lane.**
- **Construct a southbound right turn lane and modify the traffic signal to implement overlap phasing.**
- **Construct a 2nd eastbound left turn lane.**
- **Construct a 3rd eastbound through lane.**
- **Construct an eastbound right turn lane and modify the traffic signal to implement overlap phasing.**
- **Construct a 2nd westbound left turn lane.**

- **Construct a 3rd westbound through lane.**
- **Construct a westbound right turn lane and modify the traffic signal to implement overlap phasing.**

Recommended Improvement – Perris Boulevard / Krameria Avenue (#38) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd northbound left turn lane.**
- **Construct a northbound right turn lane.**
- **Construct a 2nd southbound left turn lane.**
- **Construct a southbound right turn lane.**
- *Construct an eastbound left turn lane.*
- **Construct a 2nd eastbound through lane.**
- **Construct a 2nd westbound left turn lane.**
- **Construct a 2nd westbound through lane.**
- *Modify the traffic signal to implement protected left turn phasing for the eastbound and westbound approaches.*

Recommended Improvement – Perris Boulevard / San Michele Road (#39) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a southbound right turn lane.**
- **Construct an eastbound right turn lane and modify the traffic signal to implement overlap phasing.**

Recommended Improvement – Perris Boulevard / Nandina Avenue (#40) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd eastbound left turn lane.**
- **Construct an eastbound right turn lane and modify the traffic signal to implement overlap phasing.**

Recommended Improvement – Perris Boulevard / Harley Knox Boulevard (#41) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- *Construct a 2nd northbound through lane.*
- **Construct a 3rd northbound through lane.**
- *Construct a southbound left turn lane.*
- **Construct a 2nd southbound left turn lane.**
- *Construct a 2nd southbound through lane.*

- **Construct a 3rd southbound through lane.**
- *Modify the traffic signal and implement overlap phasing on the southbound right turn lane.*
- *Construct a 2nd eastbound left turn lane.*
- **Construct 2 eastbound through lanes.**
- *Construct a westbound left turn lane.*
- *Construct a westbound shared through-right turn lane.*
- **Construct a 2nd westbound through lane.**

Recommended Improvement – Perris Boulevard / Ramona Expressway (#42) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 3rd northbound through lane.**
- **Construct a 3rd southbound through lane.**
- *Modify the traffic signal and implement overlap phasing on the southbound right turn lane.*
- *Construct a westbound right turn lane and modify the traffic signal to implement overlap phasing.*

Recommended Improvement – Kitching Street / Cactus Avenue (#43) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd northbound left turn lane.**
- **Construct a 2nd southbound through lane.**
- **Construct an eastbound right turn lane.**
- **Construct a westbound right turn lane.**

Recommended Improvement – Kitching Street / John F. Kennedy Drive (#44) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct 2 northbound left turn lanes.**
- *Construct a 2nd northbound through lane.*
- *Construct a southbound left turn lane.*
- *Construct a 2nd southbound through lane.*
- *Modify the traffic signal and implement protected left turn phasing for the northbound and southbound approaches.*

Recommended Improvement – Kitching Street / Iris Avenue (#45) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct a 2nd northbound left turn lane.**

- **Construct a northbound right turn lane and modify the traffic signal to implement overlap phasing.**
- **Construct a 2nd southbound left turn lane.**
- **Construct a southbound right turn lane.**
- **Construct a 2nd eastbound left turn lane.**
- **Construct a 3rd eastbound through lane.**
- **Construct an eastbound right turn lane.**
- **Construct a 2nd westbound left turn lane.**
- **Construct a 3rd westbound through lane.**

Recommended Improvement – Lasselle Street / Iris Avenue (#46) – The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- **Construct an eastbound right turn lane and modify the traffic signal to implement overlap phasing.**
- **Construct a westbound right turn lane.**

The applicant shall participate in the funding of off-site improvements, including traffic signals that are needed to serve General Plan Buildout (Post-2035) traffic conditions through the payment of Western Riverside County Transportation Uniform Mitigation Fees (TUMF), City of Moreno Valley Development Impact Fees (DIF) or a fair share contribution as directed by the City. These fees are collected as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases. Each of the improvements discussed above have been identified as being included as part of TUMF funding program, City DIF funding program or fair share contribution as described in Section 9.0 *Local and Regional Funding Mechanisms* of this TIA.

Worksheets for General Plan Buildout (Post-2035) with Project conditions, with mitigation, HCM calculations are provided in Appendix "7.7".

It is important to note that with the implementation of the recommended intersection improvements discussed above, which are necessary to reduce cumulative impacts to less-than-significant, there are no potential queuing issues anticipated for General Plan Buildout (Post-2035) With Project conditions (see Table 7-5). Worksheets for General Plan Buildout (Post-2035) With Project conditions, with improvements, queuing analysis is provided in Appendix "7.8".

7.8.2 RECOMMENDED IMPROVEMENTS TO ADDRESS GENERAL PLAN BUILDOUT (POST-2035) CUMULATIVE IMPACTS ALONG ROADWAY SEGMENTS

Improvement strategies have been recommended along roadway segments that have been identified as cumulatively impacted to reduce each segment's volume-to-capacity (v/c) ratio through the addition

Table 7-5

General Plan Buildout (Post-2035) Conditions With Recommended Improvements
AM/PM Peak Hour Stacking Length Summary at I-215/Cactus Avenue

Intersection	Movement	Stacking Distance (Feet)	Post-2035 With Project						Post-2035 With Project, With Improvements					
			95th Percentile Stacking Distance Required (Feet)			Acceptable?[1]			95th Percentile Stacking Distance Required (Feet)			Acceptable?[1]		
			AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM	PM	SAT	AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM	PM	SAT
I-215 SB Ramps / Cactus Av.	SBR	1,115	375	93	0	Yes	Yes	Yes	0	0	0	Yes	Yes	Yes
I-215 NB Ramps / Cactus Av.	NBL	**350**	668 [2]	145 [2]	96	**No**	Yes	Yes	340 [2]	82	75	Yes	Yes	Yes
	NBT	1,650	231	99	75	Yes	Yes	Yes	153	88	48	Yes	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.

of through lanes, consistent with the intersection operations analysis. The effectiveness of the recommended roadway segment improvement strategies discussed below to address General Plan Buildout (Post-2035) cumulative traffic impacts are presented in Table 7-4. It should be noted that roadway segment improvements are consistent with or within the City of Moreno Valley General Plan roadway cross-sections.

Consistent with the peak hour intersection analysis, the recommended roadway segment improvements are shown on Table 7-6. As indicated in Table 7-6, with completion of the required roadway segment improvements, LOS standards based solely on lane capacities would be achieved for all study area roadway segments, with the exception of roadway segments #28, #29, #70, #71, #108, #109, #115, and #135. Along roadway segments #28, #29, #70, #71, #108, #109, #115, and #135 cumulative daily traffic volumes under General Plan Buildout (Post-2035) With Project traffic conditions would exceed calculated lane capacities even with the implementation of required roadway segment improvements. However, the controlling intersections along these roadway segments are anticipated to operate at acceptable LOS with the recommended intersection improvements discussed in Section 7.8.1 *Recommended Improvements to Address General Plan Buildout (Post-2035) Cumulative Impacts at Intersections*, indicating that intervening roadway segments would also operate acceptably, and thus do not require any additional roadway widening beyond six-travel lanes.

General Plan Buildout (Post-2035) Conditions With Recommended Improvements
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Post-2035 WP	V/C	LOS	Acceptable LOS
11	Alessandro Boulevard	West of Heacock Street	7D	65,700	54,384	0.83	D	D
12		East of Heacock Street	7D	65,700	48,192	0.73	C	D
13		West of Indian Street	7D	65,700	46,192	0.70	B	D
14		East of Indian Street	7D	65,700	43,096	0.66	B	D
16		East of Perris Boulevard	6D	56,300	46,096	0.82	D	D
18	Cactus Avenue	I-215 SB Ramps to I-215 NB Ramps	7D	65,700	47,000	0.72	C	D
19		East of I-215 NB Ramps	8D	75,100	65,700	0.87	D	D
20		West of Elsworth Street	8D	75,100	63,400	0.84	D	D
21		East of Elsworth Street	8D	75,100	58,450	0.78	C	D
22		West of Frederick Street	7D	75,100	60,581	0.81	D	D
23		East of Frederick Street	7D	75,100	62,838	0.84	D	D
24		West of Graham Street	7D	75,100	59,572	0.79	C	D
25		East of Graham Street	7D	75,100	55,142	0.73	C	D
26		West of Heacock Street	6D	56,300	50,768	0.90	D	D
27		East of Heacock Street	6D	56,300	43,555	0.77	C	C
28		West of Indian Street	5D	46,900	**39,564**	**0.84**	**D**	C
29		East of Indian Street	5D	46,900	**39,331**	**0.84**	**D**	C
30		West of Perris Boulevard	5D	46,900	37,000	0.79	C	C
31		East of Perris Boulevard	5D	46,900	32,096	0.68	B	C
51	Iris Avenue	West of Indian Street	4D	37,500	15,951	0.43	A	D
52		East of Indian Street	4D	37,500	20,576	0.55	A	D
53		West of Perris Boulevard	6D	56,300	26,792	0.48	A	D
54		East of Perris Boulevard	6D	56,300	27,571	0.49	A	D
55		West of Kitching Street	6D	56,300	32,206	0.57	A	C
60	Krameria Avenue	West of Perris Boulevard	4D	37,500	12,689	0.34	A	C
61		East of Perris Boulevard	4D	37,500	16,621	0.44	A	D
63	San Michele Road	East of Indian Street	4D	37,500	23,496	0.63	B	D
64		West of Perris Boulevard	4D	37,500	23,596	0.63	B	D
70	Harley Knox Boulevard	West of Webster Avenue	4D	37,500	**39,288**	**1.05**	**F**	D
71		East of Webster Avenue	4D	37,500	**39,576**	**1.06**	**F**	D
72		West of Indian Street	6D	56,300	36,988	0.66	B	D
73		East of Indian Street	6D	56,300	34,694	0.62	B	D
74		West of Perris Boulevard	4D	37,500	29,694	0.79	C	D
89	Heacock Street	North of Gentian Avenue	4D	37,500	25,192	0.67	B	D
90		South of Gentian Avenue	4D	37,500	24,000	0.64	B	D
102	Indian Street	Santiago Drive to Iris Avenue	4D	37,500	17,294	0.46	A	D
103		South of Iris Avenue	4D	37,500	10,194	0.27	A	D
104		North of Krameria Avenue	4D	37,500	13,368	0.36	A	D
105		South of Krameria Avenue	4D	37,500	18,872	0.50	A	D
106		North of San Michele Road	4D	37,500	23,076	0.62	B	D
107		San Michele Road to Nandina Avenue	5D	46,900	36,880	0.79	C	D
108		South of Nandina Avenue	5D	46,900	**42,480**	**0.91**	**E**	D
109		North of Harley Knox Boulevard	5D	46,900	**43,160**	**0.92**	**E**	D
110		South of Harley Knox Boulevard	5D	46,900	29,596	0.63	B	D
113	Perris Boulevard	South of Sunnymead Boulevard	6D	56,300	47,384	0.84	D	D
114		North of Eucalyptus Avenue	6D	56,300	46,385	0.82	D	D
115		South of Eucalyptus Avenue	6D	56,300	**52,481**	**0.93**	**E**	D
116		North of Cottonwood Avenue	6D	56,300	50,578	0.90	D	D
117		South of Cottonwood Avenue	6D	56,300	45,866	0.81	D	D
118		North of Alessandro Boulevard	6D	56,300	47,866	0.85	D	D
119		South of Alessandro Boulevard	6D	56,300	48,058	0.85	D	D
120		North of Cactus Avenue	6D	56,300	44,155	0.78	C	D
135		North of Harley Knox Boulevard	6D	56,300	**53,868**	**0.96**	**E**	D
138		South of Ramona Expressway	6D	56,300	31,192	0.55	A	D

General Plan Buildout (Post-2035) Conditions With Recommended Improvements
Roadway Volume/Capacity Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Post-2035 WP	V/C	LOS	Acceptable LOS
140	Kitching Street	South of Cactus Avenue	**4D**	**37,500**	17,811	0.47	A	C
141		North of John F. Kennedy Drive	**4D**	**37,500**	20,217	0.54	A	C
142		South of John F. Kennedy Drive	**4D**	**37,500**	18,277	0.49	A	C

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

[1] These maximum roadway capacities have been extracted from the City of Moreno Valley's Transportation Division's Traffic Impact Analysis Preparation Guidelines (August 2007).

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8.0 ON-SITE CIRCULATION AND SITE ACCESS

This section summarizes Project site access and on-site circulation recommendations.

The Project is proposed to have access on Gentian Avenue, Perris Boulevard and Santiago Drive. All Project access points are proposed to be full-access, with the exception of Driveway 3 and Driveway 4 on Perris Boulevard which are proposed for right-in/right-out access only. Regional access to the Project site will be provided by the I-215 Freeway (located to the west) via Cactus Avenue and Harley Knox Boulevard and by the SR-60 Freeway (located to the north) via Perris Boulevard.

8.1 ON-SITE ROADWAY IMPROVEMENTS

The recommended site-adjacent roadway improvements for the Project are described below. Exhibit 8-1 illustrates the site-adjacent roadway improvement recommendations.

Gentian Avenue – Gentian Avenue is an east-west oriented roadway located along the Project's northern boundary. Construct Gentian Avenue at its ultimate half-section width as a modified Minor Arterial Highway (88-foot right-of-way) between the Project's western boundary and Perris Boulevard. Gentian Avenue will be constructed with a wide raised median in conjunction with a reduction in the number of through lanes (one lane in each direction) from the standard Minor Arterial Highway cross-section. Improvements along the Project's frontage (south side of Gentian Avenue) would be those required by final conditions of approval for the proposed Project and applicable City of Moreno Valley standards.

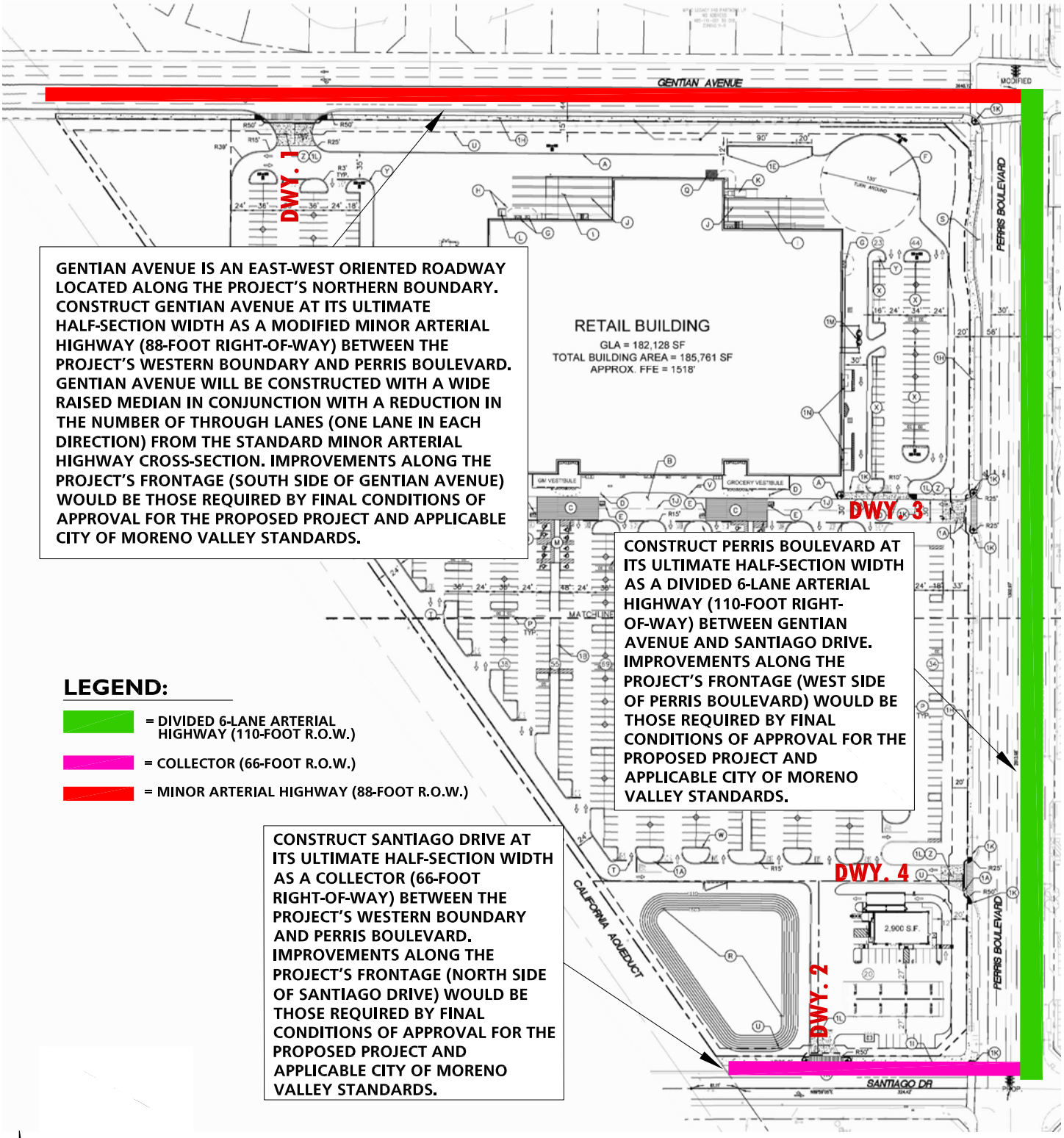
Perris Boulevard – Perris Boulevard is a north-south oriented roadway located along the Project's eastern boundary. Construct Perris Boulevard at its ultimate half-section width as a Divided 6-Lane Arterial Highway (110-foot right-of-way) between Gentian Avenue and Santiago Drive. Improvements along the Project's frontage (west side of Perris Boulevard) would be those required by final conditions of approval for the proposed Project and applicable City of Moreno Valley standards.

Santiago Drive – Santiago Drive is an east-west oriented roadway located along the Project's southern boundary. Construct Santiago Drive at its ultimate half-section width as a Collector (66-foot right-of-way) between the Project's western boundary and Perris Boulevard. Improvements along the Project's frontage (north side of Santiago Drive) would be those required by final conditions of approval for the proposed Project and applicable City of Moreno Valley standards.

Wherever necessary, roadways adjacent to the Project, site access points and site-adjacent intersections will be constructed to be consistent with or within the recommended roadway classifications and respective cross-sections in the City of Moreno Valley General Plan Circulation Element.

EXHIBIT 8-1

SITE ADJACENT ROADWAY RECOMMENDATIONS



8.2 SITE ACCESS IMPROVEMENTS

The recommended site access driveway improvements for the Project are described below. Exhibit 8-2 illustrates the on-site and site adjacent recommended roadway lane improvements. Construction of on-site and site adjacent improvements shall occur in conjunction with adjacent Project development activity or as needed for Project access purposes. Turn pocket storage length recommendations have been based on the site adjacent progression analysis results using the 95th percentile queues from SimTraffic (see Appendix "8.1").

Driveway 1 / Gentian Avenue – Install a stop control on the northbound approach and construct the intersection with the following geometrics:
Northbound Approach: One shared left-right turn lane.
Southbound Approach: N/A
Eastbound Approach: One shared through-right turn lane.
Westbound Approach: One shared left-through lane.

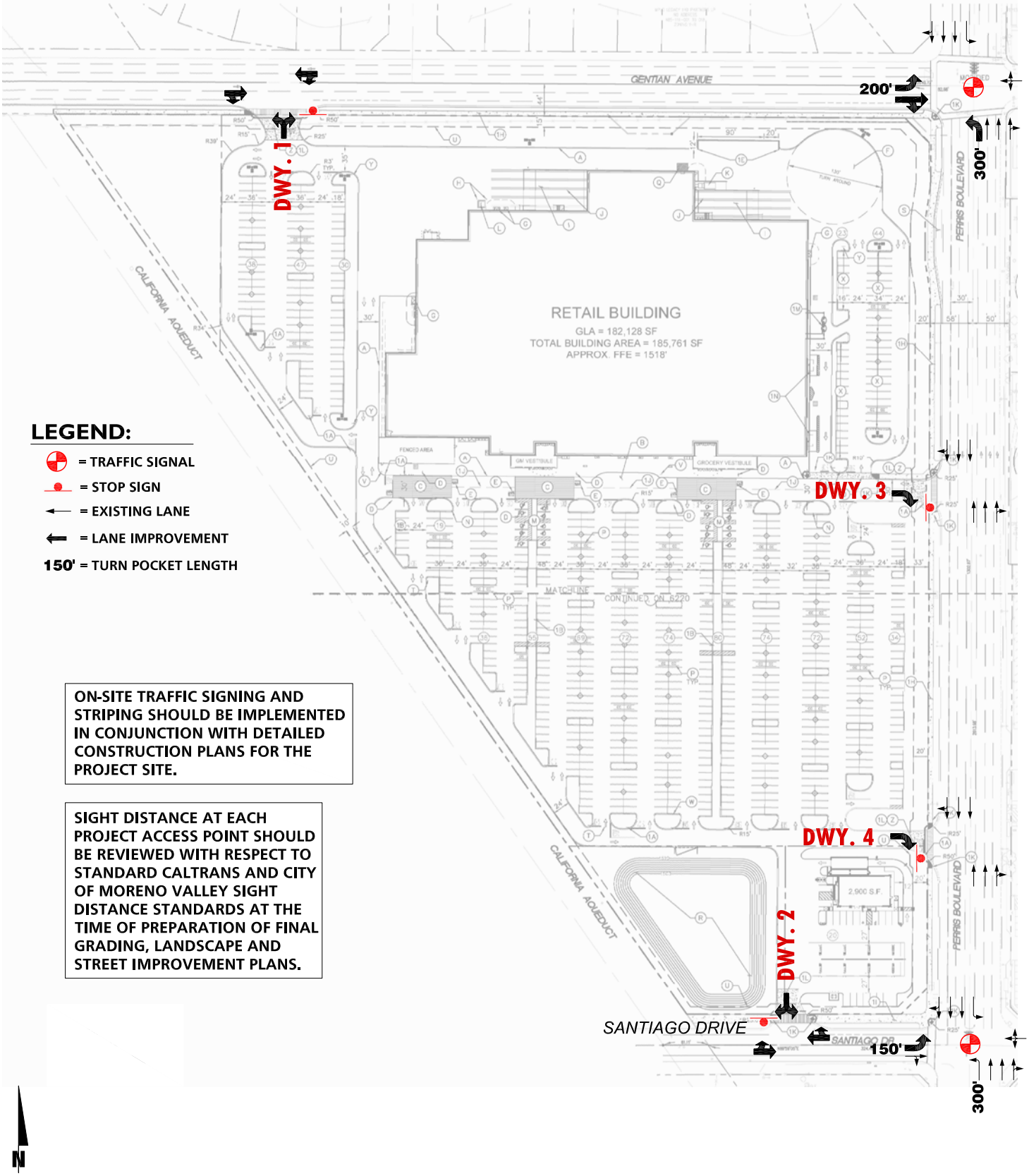
Driveway 2 / Santiago Drive – Install a stop control on the southbound approach and construct the intersection with the following geometrics:
Northbound Approach: N/A
Southbound Approach: One shared left-right turn lane.
Eastbound Approach: One shared left-through lane.
Westbound Approach: One shared through-right turn lane.

Perris Boulevard / Gentian Avenue – Maintain the existing traffic signal; however, install signal heads for the eastbound approach, and construct the intersection with the following geometrics:
Northbound Approach: One left turn lane (to provide a minimum of 300-feet of storage), two through lanes and one shared through-right turn lane.
Southbound Approach: One southbound left turn lane, two through lanes and one shared through-right turn lane.
Eastbound Approach: One left turn lane (to provide a minimum of 200-feet of storage) and a shared through-right turn lane.
Westbound Approach: One shared left-through-right turn lane.

Perris Boulevard / Driveway 3 – Install a stop control on the eastbound approach and construct the intersection with the following geometrics:
Northbound Approach: Three through lanes.
Southbound Approach: Two through lanes and one shared through-right turn lane.
Eastbound Approach: One right turn lane.
Westbound Approach: N/A

EXHIBIT 8-2

ON-SITE CIRCULATION RECOMMENDATIONS



Perris Boulevard / Driveway 4 – Install a stop control on the eastbound approach and construct the intersection with the following geometrics:
Northbound Approach: Three through lanes.
Southbound Approach: Two through lanes and one shared through-right turn lane.
Eastbound Approach: One right turn lane.
Westbound Approach: N/A

Perris Boulevard / Santiago Drive – Install a traffic signal and construct the intersection with the following geometrics:
Northbound Approach: One left turn lane (to provide a minimum of 300-feet of storage), two though lanes and one shared through-right turn lane.
Southbound Approach: One left turn lane, two through lanes and one shared through-right turn lane.
Eastbound Approach: One left turn lane (to provide a minimum of 150-feet of storage) and a shared through-right turn lane.
Westbound Approach: One shared left-through-right turn lane.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the Project site.

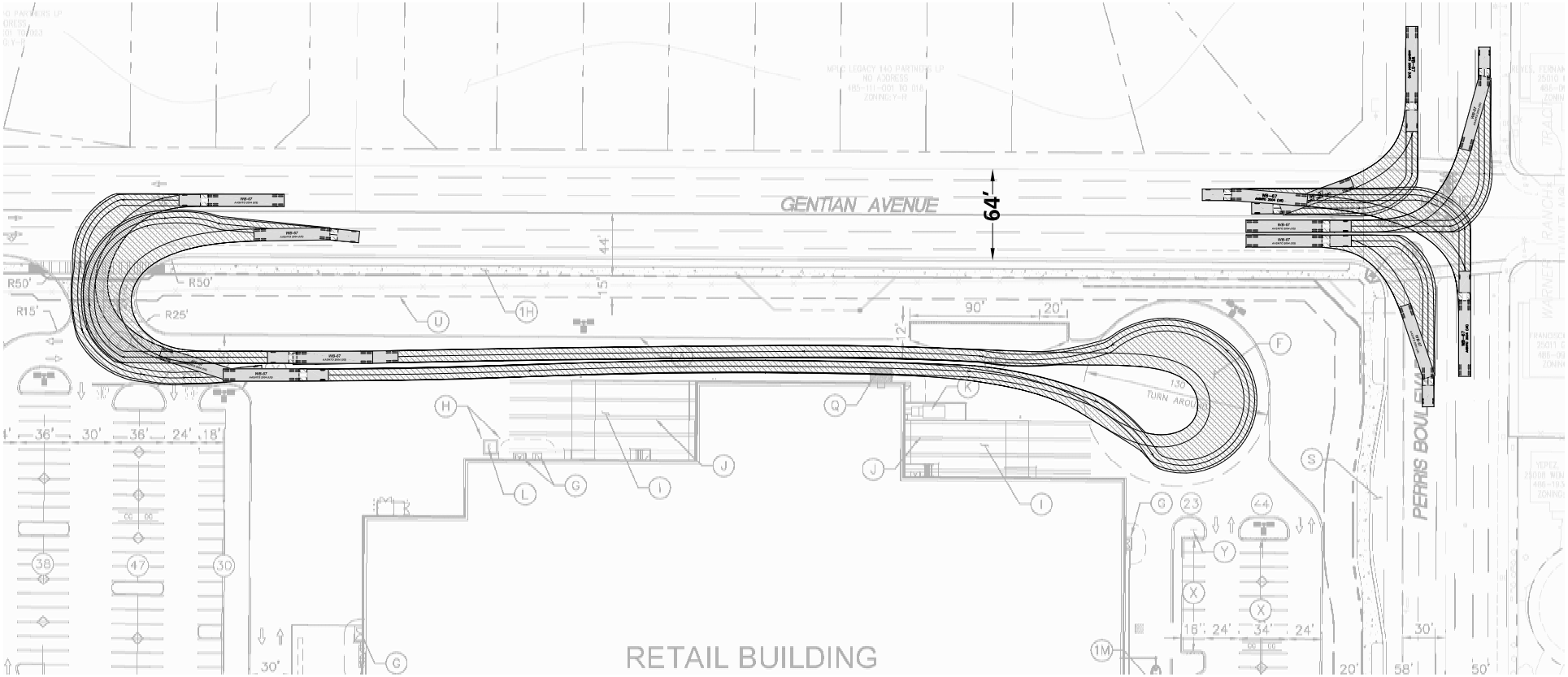
Sight distance at each project access point should be reviewed with respect to standard Caltrans and City of Moreno Valley sight distance standards at the time of preparation of final grading, landscape and street improvement plans.

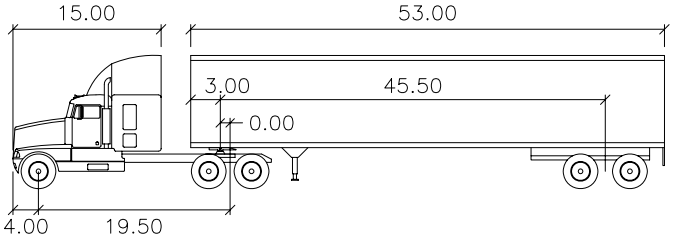
8.3 TRUCK ACCESS AND CIRCULATION

Exhibits 8-3 and 8-4 illustrate delivery truck access for the site and circulation for each of the applicable Project driveways. Due to the typical wide turning radius of these large delivery trucks, a truck turning template has been overlaid on the site plan at each Project driveway anticipated to have heavy trucks in order to determine appropriate curb radii and to verify that delivery trucks will have sufficient space to execute turning maneuvers to pull into and out of loading docks. Typically, Walmart stores receive their deliveries from Walmart distribution centers which utilize large delivery trucks, such as the WB-67 class. The deliveries for outparcels typically originate from local distribution centers and are traditionally served by WB-50 class or smaller box trucks. However, it is anticipated that the WB-50 class trucks would utilize the same access points as the WB-67 class for deliveries, which are smaller in size as compared to the WB-67 class. As such, to be most conservative, each applicable Project access point is discussed below identifies the necessary curb radii to accommodate a WB-67 delivery truck.

EXHIBIT 8-3

TRUCK ACCESS AND INTERNAL CIRCULATION ALONG GENTIAN AVENUE





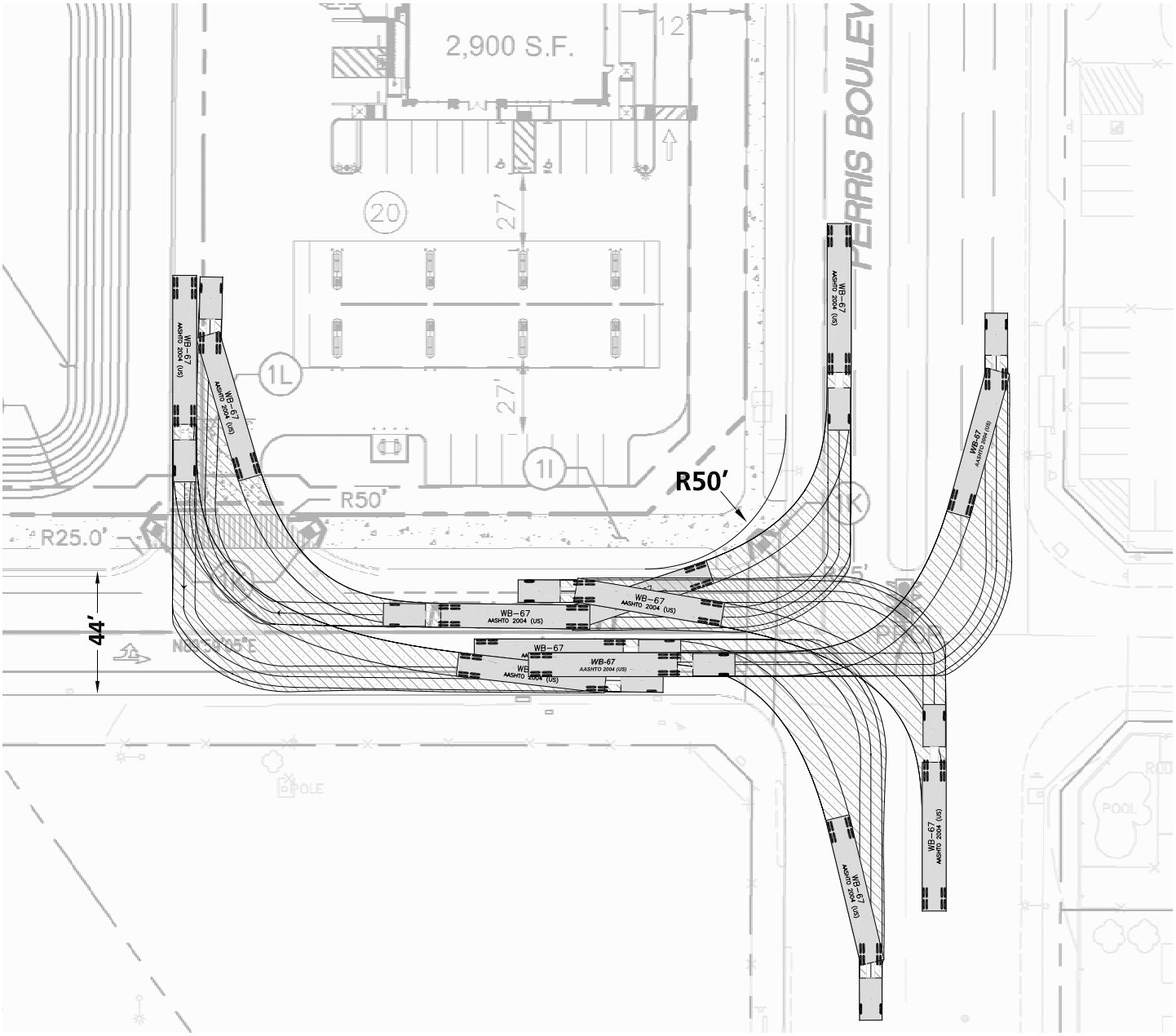
WB−67 feet

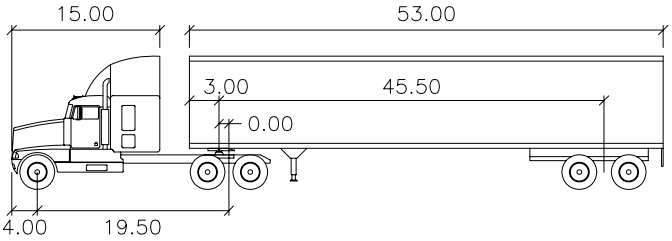
Tractor Width	: 8.00	Lock to Lock Time	: 6.00
Trailer Width	: 8.50	Steering Angle	: 28.40
Tractor Track	: 8.00	Articulating Angle	: 75.00
Trailer Track	: 8.50		

N

EXHIBIT 8-4

TRUCK ACCESS AND INTERNAL CIRCULATION ALONG SANTIAGO DRIVE





WB−67 feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.00
Trailer Width	: 8.50	Steering Angle	: 28.40
Tractor Track	: 8.00	Articulating Angle	: 75.00
Trailer Track	: 8.50		

N

Driveway 1 and Gentian Avenue – Exhibit 8-3 illustrates the truck access circulation at the intersection of Driveway 1 and Gentian Avenue. It is anticipated that this driveway would be utilized by WB-67 trucks making deliveries to the proposed Walmart as it provides direct access to the proposed Walmart store and would minimize large trucks from having to navigate through the site. Due to the typical wide turning radius of these large delivery trucks, a turning template for a WB-67 truck has been overlaid on the site plan at Driveway 1 and Gentian Avenue in order to determine appropriate curb radii and to verify that WB-67 class trucks will have sufficient space to execute turning maneuvers to pull into and out of loading docks. A curb radius of 50-feet on the southeast corner appears to be sufficient to accommodate the northbound right turn movement of a WB-67 truck. However, the driveway is recommended to be widened by 20-feet in order to accommodate the ingress of a WB-67 truck while another WB-67 truck is in the northbound lane. Gentian Avenue is anticipated provide sufficient roadway width to accommodate the anticipated wide turns.

Perris Boulevard and Gentian Avenue – Exhibit 8-3 illustrates the truck access circulation at Perris Boulevard and Gentian Avenue. It is anticipated that this intersection would be utilized by WB-67 trucks. A curb radius of 35-feet on the northwest corner appears to be sufficient to accommodate the southbound right turn movement of a WB-67 truck. A curb radius of 35-feet on the southwest corner appears to be sufficient to accommodate the eastbound right turn movement of a WB-67 truck. It appears that both Perris Boulevard and Gentian Avenue provide sufficient roadway width to accommodate the anticipated wide turns.

Driveway 2 and Santiago Drive – Exhibit 8-4 also illustrates the truck access circulation at Driveway 2 and Santiago Drive. Driveway 2 on Santiago Drive has been assumed to be utilized for deliveries to the convenience market and gas station, and would minimize large trucks from having to navigate through the site. As such, this driveway should be designed with appropriate curb cuts to allow for the ingress and egress of large trucks. A curb radius of 50-feet on the northeast corner is recommended to accommodate the ingress of a WB-67 truck. However, the driveway is recommended to be widened by 5-feet in order to accommodate the ingress of a WB-67 truck while another WB-67 truck is in the southbound lane. It appears that Santiago Drive is anticipated to provide sufficient roadway width to accommodate the anticipated wide turns.

Perris Boulevard and Santiago Drive – Exhibit 8-4 illustrates the truck access circulation at the intersection of Perris Boulevard and Santiago Drive. It is anticipated that this intersection would be utilized by WB-67 trucks (or smaller). A curb radius of 50-feet on the northwest corner appears to be sufficient to accommodate the southbound right turn movement of a WB-67 truck. A curb radius of 50-feet on the southwest corner appears to be sufficient to accommodate the eastbound right turn movement of a WB-67 truck. It appears that both Perris Boulevard and Santiago Drive provide sufficient roadway width to accommodate the anticipated wide turns.

9.0 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements throughout Riverside County are funded through a combination of direct project mitigation, fair share contributions or development impact fee programs. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors.

Table 9-1 lists the incremental improvements that are required by General Plan Buildout (Post-2035) traffic conditions to mitigate the long-range cumulative traffic impacts. The regional and local transportation impact fee programs have each been reviewed and compared to the recommended improvements for each impacted facility. Recommended improvements already identified and included in one of the pre-existing fee programs (i.e., TUMF and City of Moreno Valley DIF) are clearly denoted. If an impacted facility was found to require improvements beyond those already identified within one of the pre-existing regional or local fee programs, the project may be required to contribute the associated intersection or roadway fair-share percentage toward the costs of the recommended improvements. The fair-share calculations, also presented in Table 9-1, indicate that the project contributes approximately between 0.5% and 6.6% of new vehicle trips to the study area intersections.

The improvements listed in Table 9-1 are comprised of lane additions, installation of signals and signal modifications. As noted, the identified improvements are covered either by the TUMF Program, the City of Moreno Valley DIF Program or as a fair-share contribution if not covered by a fee program. Lane additions are shown as the number of lanes required and the direction of travel, for example, "1.EBT" indicates one additional eastbound through lane. Depending on the width of the existing pavement and right-of-way, these improvements may involve only striping modifications or they may involve construction of additional pavement width. Additional discussion of the relevant pre-existing transportation impact fee programs is provided below.

9.1 TRANSPORTATION UNIFORM MITIGATION FEE (TUMF) PROGRAM

The TUMF program is administered by Western Riverside Council of Governments (WRCOG) based upon a regional Nexus Study completed in early 2003 and updated in 2009 to address major changes in right of way acquisition and improvement cost factors. TUMF identifies a network of backbone and local roadways that are needed to accommodate growth through 2035. This regional program was put into place to ensure that development pays its fair share and that funding is in place for construction of facilities needed to maintain the requisite level of service and critical to mobility in the region.

TUMF fees are imposed on new residential, industrial, and commercial development through application of the TUMF fee ordinance and fees are collected at the building or occupancy permit stage. The fee for commercial use is $10.49 per square foot (applicable to the proposed project). In addition, an annual inflation adjustment is considered each year in January. In this way, TUMF fees

Table 9-1
Page 1 of 2

Summary of Transportation Impact Fee Program Improvements for General Plan Buildout (Post-2035) Conditions

#	Intersection Location	Total Recommended Improvements	Project Mitigation	Program Improvements[1]	Non-Program Improvements	Fair Share[2]
1	I-215 SB Ramps / Cactus Av	1.SBFR, 1.WBL	N/A	1.SBFR, 1.WBL (TUMF Interchange)	None	--
2	I-215 NB Ramps / Cactus Av	1.NBL, 1.NBT, 1.SBR w/ overlap, 1.EBT, 1. EBR, 2.WBT, 1.WBR	N/A	1.NBL, 1.EBT, 1.EBR 1.WBT, 1.WBR (TUMF Interchange)	None	--
3	Elsworth St / Cactus Av	1.NBL, 2.EBT, 2.WBT , Removal of SB crosswalk, Protected NBL/SBL	N/A	1.NBL, 1.EBT, 1.WBT (TUMF, and/or DIF)	1.EBT, 1.WBT , Removal of SB crosswalk, Protected NBL/SBL	0.8%
4	Frederick St / Cactus Av	2.EBT	N/A	1.EBT (TUMF and/or DIF)	1.EBT	1.3%
5	Graham St / Cactus Av	1.SBL, 1.EBL, 2.EBT	N/A	1.SBL, 1.EBL, 1.EBT (TUMF and/or DIF)	1.EBT	1.0%
6	Heacock St / Alessandro Bl	1.NBL, 1.SBL, 1.EBT	N/A	1.NBL, 1.SBL (TUMF and/or DIF)	1.EBT	2.0%
7	Heacock St / Cactus Av	1.SBL, 1.EBL, 1.EBT, 1.EBR w/ overlap, 1.WBT	N/A	1.SBL, 1.EBL(TUMF and/or DIF)	1.EBT, 1.EBR w/ overlap, 1.WBT	1.4%
9	Heacock St / Gentian Av	Install traffic signal, 1.NBT, 1.SBT	N/A	Install traffic signal, 1.NBT, 1.SBT (TUMF and/or DIF)	None	--
10	Webster Av / Harley Knox Bl	Install traffic signal, 1.EBT, 1.WBT	N/A	Install traffic signal, 1.EBT, 1.WBT (TUMF and/or DIF)	None	--
12	Indian St / Alessandro Bl	1.NBL, 1.SBL, 1.EBT, 1.WBT, 1.WBR	N/A	1.NBL, 1.SBT, 1.WBT, 1.WBR (TUMF and/or DIF)	1.EBT	2.9%
13	Indian St / Cactus Av	1.EBT	N/A	None	1.EBT	4.4%
14	Indian St / John F. Kennedy Dr	1.NBR, 1.SBL	N/A	1.NBR, 1.SBL (TUMF and/or DIF)	None	--
15	Indian St / Gentian Av	Install traffic signal, 1.NBL, 1.SBL, restripe 1.EBR as 1.EBT/R, 1.WBL/T/R	N/A	Install traffic signal, 1.NBL, 1.SBL, restripe 1.EBR and 1.EBT/R, 1.WBL/T/R (TUMF and/or DIF)	None	--
17	Indian St / Iris Av	1.NBT, 1.SBT, 1.EBT, 1.WBT	N/A	1.NBT, 1.SBT, 1.EBT, 1.WBT (TUMF and/or DIF)	None	--
18	Indian St / Krameria Av	Install traffic signal, 1.NBL, 1.NBT, 1.SBT, 1.EBL, 1.EBT, 1.EBR w/ overlap, restripe 1.WBR as 1.WBT/R	N/A	Install traffic signal, 1.NBL, 1.NBT, 1.SBT, 1.EBL, 1.EBT, restripe 1.WBR as 1.WBT/R (TUMF and/or DIF)	1.EBR w/ overlap	1.8%
19	Indian St / San Michele Rd	Install traffic signal, 2.NBL, 1.NBT, 2.SBL, 1.SBR, 1.EBL, 1.EBT, 2.EBR w/ overlap, 1.WBL, 1.WBT, 1.WBR	N/A	Install traffic signal, 2.NBL, 1.NBT, 2.SBL, 1.SBR, 1.EBL, 1.EBT, 1.WBL, 1.WBT, 1.WBR (TUMF and/or DIF)	2.EBR w/ overlap	0.5%
20	Indian St / Nandina Av	Install traffic signal, 2.NBL, overlap on NBR, 1.SBL, 1.SBT, 1.SBR, 1.EBR w/ overlap, 2.WBL	N/A	Install traffic signal, 1.NBL, 1.SBL, 1.SBR, 1.EBL, 1.WBL (TUMF and/or DIF)	1.NBL, overlap on NBR, 1.SBT, 1.EBR w/ overlap, 1.WBL	0.8%
21	Indian St / Harley Knox Bl	1.NBT, 1.SBL, 1.SBR w/ overlap, 1.EBL, 2.EBT, 1.WBT, 1.WBR w/ overlap	N/A	1.SBL, 1.EBL, 2.EBT, 1.WBT (TUMF and/or DIF)	1.NBT, 1.SBR w/ overlap, 1.WBR w/ overlap	0.9%
24	SR-60 EB Off-Ramp / Sunnymead Bl	Restripe 1.SBL/R as 1.SBL, 1.SBR	N/A	Restripe 1.SBL/R as 1.SBL, 1.SBR (TUMF Interchange)	None	--
25	Perris Bl / SR-60 WB Ramps	1.WBL	N/A	1.WBL (TUMF Interchange)	None	--
26	Perris Bl / Sunnymead Bl	1.NBL, 1.NBR, 1.SBT, overlap on EBR, 2.WBR w/ overlap	N/A	1.NBL, 1.NBR, 1.SBT (TUMF and/or DIF)	Overlap on EBR, 2.WBR w/ overlap	1.2%

Summary of Transportation Impact Fee Program Improvements for General Plan Buildout (Post-2035) Conditions

#	Intersection Location	Total Recommended Improvements	Project Mitigation	Program Improvements[1]	Non-Program Improvements	Fair Share[2]
27	SR-60 EB On-Ramp / Sunnymead Bl	Construct roundabout, 1.NBL, 1.EBT, 1.WBT	N/A	Construct roundabout, 1.NBL, 1.EBT, 1.WBT (TUMF Interchange)	None	--
28	Perris Bl / Eucalyptus Av	1.NBT, 1.SBT	N/A	1.NBT, 1.SBT (TUMF and/or DIF)	None	--
29	Perris Bl / Cottonwood Av	1.NBT, 1.SBT	N/A	1.NBT, 1.SBT (TUMF and/or DIF)	None	--
30	Perris Bl / Alessandro Bl	1.NBL, 1.NBT, 1.SBT, overlap on SBR, 1.EBL, 1.EBT, overlap on EBR, 1.WBL, 1.WBR	N/A	1.NBL, 1.NBT, 1.SBT, 1.EBL, 1.EBT, 1.WBL, 1.WBR (TUMF and/or DIF)	Overlap on SBR, overlap on EBR	2.1%
31	Perris Bl / Cactus Av	1.NBL, 1.SBT, 1.EBL, 1.EBT, 1.EBR w/ overlap, 1.WBR	N/A	1.NBL, 1.SBT, 1.EBL, 1.WBR (TUMF and/or DIF)	1.EBT, 1.EBR w/ overlap	2.4%
32	Perris Bl / John F. Kennedy Dr	1.NBL, 1.NBR, 1.SBL, 1.WBL, 1.WBR	N/A	1.NBL, 1.NBR, 1.SBL, 1.WBL, 1.WBR (TUMF and/or DIF)	None	--
33	Perris Bl / Gentian Av	1.SBL, 1.EBL, 1.EBT/R, 1.WBL	N/A	1.SBL, 1.EBL, 1.EBT/R, 1.WBL (TUMF and/or DIF)	None	--
36	Perris Bl / Santiago Dr	Install traffic signal, 1.EBL, 1.WBL	Install traffic signal, 1.EBL	1.WBL (TUMF and/or DIF)	None	--
37	Perris Bl / Iris Av	1.NBL, overlap on NBR, 1.SBL, 1.SBR w/ overlap, 1.EBL, 1.EBT, 1.EBR w/ overlap, 1.WBL, 1.WBT, 1.WBR w/ overlap	N/A	1.NBL, 1.SBL, 1.EBL, 1.EBT, 1.WBL, 1.WBT (TUMF and/or DIF)	Overlap on NBR, 1.SBR w/ overlap, 1.EBR w/ overlap, 1.WBR w/ overlap	6.6%
38	Perris Bl / Krameria Av	1.NBL, 1.NBR, 1.SBL, 1.SBR, 1.EBL, 1.EBT, 1.WBL, 1.WBT	N/A	1.NBL, 1.NBR, 1.SBL, 1.SBR, 1.EBL, 1.EBT, 1.WBL, 1.WBT (TUMF and/or DIF)	None	--
39	Perris Bl / San Michele Rd	1.SBR, 1.EBR w/ overlap	N/A	1.SBR (TUMF and/or DIF)	1.EBR w/ overlap	2.5%
40	Perris Bl / Nandina Av	1.EBL, 1.EBR w/ overlap	N/A	1.EBL (TUMF and/or DIF)	1.EBR w/ overlap	1.9%
41	Perris Bl / Harley Knox Bl	2.NBT, 2.SBL, 2.SBT, overlap on SBR, 1.EBL, 2.EBT, 1.WBL, 2.WBT	N/A	2.NBT, 2.SBL, 2.SBT, 1.EBL, 2.EBT, 1.WBL, 2.WBT (TUMF and/or DIF)	Overlap on SBR	1.9%
42	Perris Bl / Ramona Expressway	1.NBT, 1.SBT, overlap on SBR, 1.WBR w/ overlap	N/A	1.NBT, 1.SBT (TUMF and/or DIF)	Overlap on SBR, 1.WBR w/ overlap	0.8%
43	Kitching St / Cactus Av	1.SBT	N/A	1.SBT (TUMF and/or DIF)	None	--
44	Kitching St / John F. Kennedy Dr	2.NBL, 1.NBT, 1.SBL, 1.SBT	N/A	2.NBL, 1.NBT, 1.SBL, 1.SBT (TUMF and/or DIF)	None	--
45	Kitching St / Iris Av	1.NBL, 1.NBR w/ overlap, 1.SBL, 1.SBR, 1.EBL, 1.EBT, 1.EBR, 1.WBL, 1.WBT	1.EBR	1.NBL, 1.SBL, 1.SBR, 1.EBL, 1.EBT, 1.WBL, 1.WBT (TUMF and/or DIF)	1.NBR w/ overlap	2.5%
46	Lasselle St / Iris Av	1.EBR w/ overlap, 1.WBR	N/A	1.WBR (TUMF and/or DIF)	1.EBR w/ overlap	1.5%

[1] Improvements included in TUMF Nexus or City of Moreno Valley DIF programs.

[2] Program improvements constructed by project may be eligible for fee credit. In lieu fee payment is at discretion of City. Represents the fair share percentage for the Project during the most impacted peak hour.

are adjusted upwards on a regular basis to ensure that the development impact fees collected keep pace with construction and labor costs, etc.

As shown in Table 9-1, a number of the facilities forecast to be impacted by the proposed project are programmed for improvements through the TUMF program. The project applicant will be subject to the TUMF fee program and will pay the requisite TUMF fees at the rates then in effect pursuant to the TUMF Ordinance.

WRCOG has a successful track record funding and overseeing the construction of improvements funded through the TUMF program. In total, the TUMF program is anticipated to generate nearly $5 billion in transportation projects for Western Riverside County. The project's payment of TUMF fees appear to be sufficient to mitigate its fair share of cumulative impacted TUMF-funded facilities.

9.2 CITY OF MORENO VALLEY DEVELOPMENT IMPACT FEE (DIF) PROGRAM

The City of Moreno Valley has created its own local Development Impact Fee (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. 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.

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 implementing the improvements listed in its facilities list.

As shown in Table 9-1, a few of the facilities forecasted to be impacted by the project are planned for improvements through the City's DIF Program. The Project applicant will be subject to the City's DIF fee program, and will pay the requisite City DIF fees at the rates then in effect pursuant to the City's ordinance. The project applicant's payment of the requisite DIF fees at the rates then in effect pursuant to the DIF Program will mitigate its impacts to DIF-funded facilities.

9.3 FAIR SHARE CONTRIBUTION

Project mitigation 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. Table 9-1 presents improvements not included in an impact fee programs in the column labeled "Non-Program Improvements". Improvements constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate.

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 on Table 9-2.

Improvements included in a defined program and constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate. A rough order of magnitude cost should be prepared to determine the appropriate contribution value based upon the project's fair share of traffic as part of the project approval process. The cost basis should be determined by the City based upon physical and community constraints, current bidding experiences and engineering preferences.

Table 9-2
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Project Fair Share Calculations

#	Intersection		Existing	Project	2035 WP	Total New Traffic	Project % of New Traffic[1]
3	Elsworth St / Cactus Av						
		AM:	3,464	12	6,079	2,615	0.5%
		PM:	3,317	25	6,480	3,163	0.8%
		Saturday:	2,167	32	4,432	2,265	1.4%
4	Frederick St / Cactus Av						
		AM:	2,503	19	5,314	2,811	0.7%
		PM:	2,826	41	5,977	3,151	1.3%
		Saturday:	2,052	54	4,464	2,412	2.2%
5	Graham St / Cactus Av						
		AM:	2,768	20	5,996	3,228	0.6%
		PM:	3,039	42	7,253	4,214	1.0%
		Saturday:	2,244	54	5,513	3,269	1.7%
6	Heacock St / Alessandro Bl						
		AM:	2,721	26	4,913	2,192	1.2%
		PM:	3,365	57	6,225	2,860	2.0%
		Saturday:	2,862	76	5,959	3,097	2.5%
7	Heacock St / Cactus Av						
		AM:	2,867	43	5,837	2,970	1.4%
		PM:	3,016	91	6,653	3,637	2.5%
		Saturday:	2,322	118	6,014	3,692	3.2%
12	Indian St / Alessandro Bl						
		AM:	2,157	34	4,453	2,296	1.5%
		PM:	2,808	74	6,020	3,212	2.3%
		Saturday:	2,434	98	5,802	3,368	2.9%
13	Indian St / Cactus Av						
		AM:	1,925	66	4,347	2,422	2.7%
		PM:	2,166	142	5,390	3,224	4.4%
		Saturday:	1,551	186	4,516	2,965	6.3%
18	Indian St / Krameria Av						
		AM:	669	31	2,375	1,706	1.8%
		PM:	378	67	2,869	2,491	2.7%
		Saturday:	294	86	2,231	1,937	4.4%
19	Indian St / San Michele Rd						
		AM:	210	23	4,480	4,270	0.5%
		PM:	193	50	5,370	5,177	1.0%
		Saturday:	166	64	4,143	3,977	1.6%
20	Indian St / Nandina Av						
		AM:	409	19	4,160	3,751	0.5%
		PM:	424	42	5,451	5,027	0.8%
		Saturday:	313	54	4,470	4,157	1.3%
21	Indian St / Harley Knox Bl						
		AM:	980	27	6,249	5,269	0.5%
		PM:	1,074	58	7,859	6,785	0.9%
		Saturday:	540	76	5,618	5,078	1.5%

Table 9-2
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Project Fair Share Calculations

#	Intersection	Existing	Project	2035 WP	Total New Traffic	Project % of New Traffic[1]
26	Perris Bl / Sunnymead Bl					
	AM:	3,135	15	6,086	2,951	0.5%
	PM:	4,113	32	7,109	2,996	1.1%
	Saturday:	4,168	44	7,855	3,687	1.2%
30	Perris Bl / Alessandro Bl					
	AM:	2,657	43	6,044	3,387	1.3%
	PM:	3,177	91	7,572	4,395	2.1%
	Saturday:	2,996	118	7,307	4,311	2.7%
31	Perris Bl / Cactus Av					
	AM:	2,443	50	6,307	3,864	1.3%
	PM:	2,599	108	7,180	4,581	2.4%
	Saturday:	2,305	140	6,629	4,324	3.2%
37	Perris Bl / Iris Av					
	AM:	2,471	119	5,653	3,182	3.7%
	PM:	2,372	258	6,734	4,362	5.9%
	Saturday:	2,370	338	7,491	5,121	6.6%
39	Perris Bl / San Michele Rd					
	AM:	1,533	43	4,373	2,840	1.5%
	PM:	1,432	91	5,141	3,709	2.5%
	Saturday:	1,151	118	4,087	2,936	4.0%
40	Perris Bl / Nandina Av					
	AM:	1,460	39	4,533	3,073	1.3%
	PM:	1,362	83	5,703	4,341	1.9%
	Saturday:	1,084	108	3,976	2,892	3.7%
41	Perris Bl / Harley Knox Bl					
	AM:	1,478	34	4,646	3,168	1.1%
	PM:	1,511	76	5,524	4,013	1.9%
	Saturday:	1,080	98	3,521	2,441	4.0%
42	Perris Bl / Ramona Expressway					
	AM:	3,011	27	6,497	3,486	0.8%
	PM:	3,398	57	6,819	3,421	1.7%
	Saturday:	3,138	76	5,963	2,825	2.7%
45	Kitching St / Iris Av					
	AM:	2,013	43	4,884	2,871	1.5%
	PM:	2,073	91	5,710	3,637	2.5%
	Saturday:	1,834	118	4,938	3,104	3.8%
46	Lasselle St / Iris Av					
	AM:	2,996	27	6,313	3,317	0.8%
	PM:	3,354	57	7,179	3,825	1.5%
	Saturday:	2,246	76	5,465	3,219	2.4%

[1] Project percentage of new traffic between Existing (2013) and Horizon Year (2035) traffic conditions.

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