URBAN CROSSROADS

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FIRST INLAND LOGISTICS II

TRAFFIC IMPACT ANALYSIS (REVISED)

CITY OF MORENO VALLEY, CALIFORNIA

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FIRST INLAND LOGISTICS II
TRAFFIC IMPACT ANALYSIS
CITY OF MORENO VALLEY, CALIFORNIA

1.0 INTRODUCTION

This report presents the results of the traffic impact analysis (TIA) for the proposed First Inland Logistics Center II development (referred to as "Project"), which is generally located on the northwest corner of Perris Boulevard and Nandina 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 BACKGROUND AND PROJECT OVERVIEW

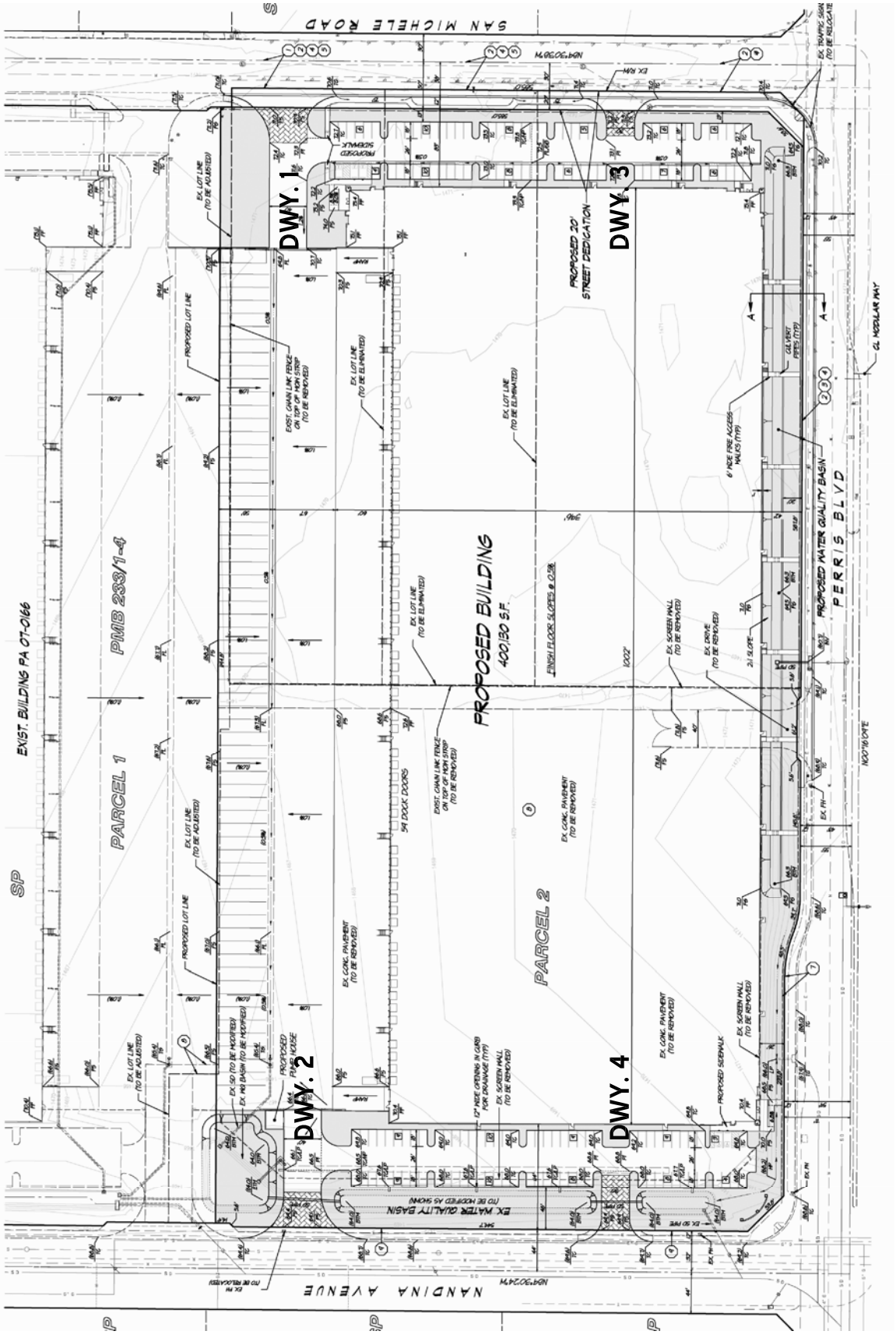
The proposed Project is subject to the Moreno Valley Industrial Area Plan (MVIAP), which designates the property as Industrial. In 2008, the City of Moreno Valley approved Tentative Parcel Map No. 35859 (PA07-0165) and two Building Plot Plans (PA07-1066 and PA07-0167) that covered the southern portion of the Project site and additional land area located to the immediate east. That approved project consisted of a 700,000 square foot warehouse building east of the currently proposed Project site and an 180,000 square foot warehouse building on the southern portion of the currently proposed Project site. Currently, the building to the east is constructed at 691,960 square feet. The building approved for the southern portion of the currently proposed Project site is not constructed and the site contains a truck trailer parking yard, approved by the City of Moreno Valley as an interim use in 2011 (PA11-0011). In September 2012, the City of Moreno Valley approved revised PA11-0011 to extend the interim truck trailer parking yard to the northern portion of the Project site.

This TIA evaluates a newly-submitted application for development of the 17.3-acre Project site with a "high cube" industrial warehouse building containing 400,130 square feet. Although the Project is anticipated to be built and occupied by late 2013, the City's traffic study guidelines require that the opening year have a five (5) year minimum horizon. As such, the Opening Year analysis will assess 2017 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 presented in ITE's most recent edition of *Trip Generation* (8th Edition, 2008). The Project is estimated to generate a net total of approximately 1,066

EXHIBIT 1-1

PRELIMINARY SITE PLAN



net passenger car equivalents (PCE) trip-ends per day on a typical weekday with approximately 67 net AM PCE peak hour trips and 74 net PM PCE 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 (2012) Conditions (1 scenario)
- Existing plus Project Conditions (1 scenario)
- Opening Year (2017), without and with Project (2 scenarios) – ambient growth only (EA and EAP)
- Opening Year Cumulative (2017), without and with Project (2 scenarios) – ambient growth and cumulative development projects (EAC and EAPC)

1.2.1 EXISTING (2012) CONDITIONS

Information for existing year (2012) 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 year (2012) plus project (E+P) analysis determines direct project-related traffic impacts that would occur on the existing roadway system in the theoretical scenario of the Project being placed upon Existing conditions. The E+P scenario is presented for informational purposes only as the City of Moreno Valley traffic study guidelines requires direct impacts to be identified through the analysis of Opening Year (2017) traffic conditions.

1.2.3 OPENING YEAR (2017) CONDITIONS

The Opening Year (2017) analysis determines the project-related traffic impacts based on a comparison of the Existing plus Ambient Growth plus Project (EAP) traffic conditions to Existing plus Ambient Growth (EA) conditions. To account for background traffic during this time, a total ambient growth from Existing (2012) conditions of 10.4% (2% per year x 5 years, compounded annually) is included for Opening Year (2017) conditions. Cumulative development projects are not included as part of the Opening Year (2017) analysis.

1.2.4 OPENING YEAR CUMULATIVE (2017) CONDITIONS

The Opening Year Cumulative (2017) 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 (Community Facilities District, etc.) can accommodate the 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, fifty-three (53) 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.

1.3 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).

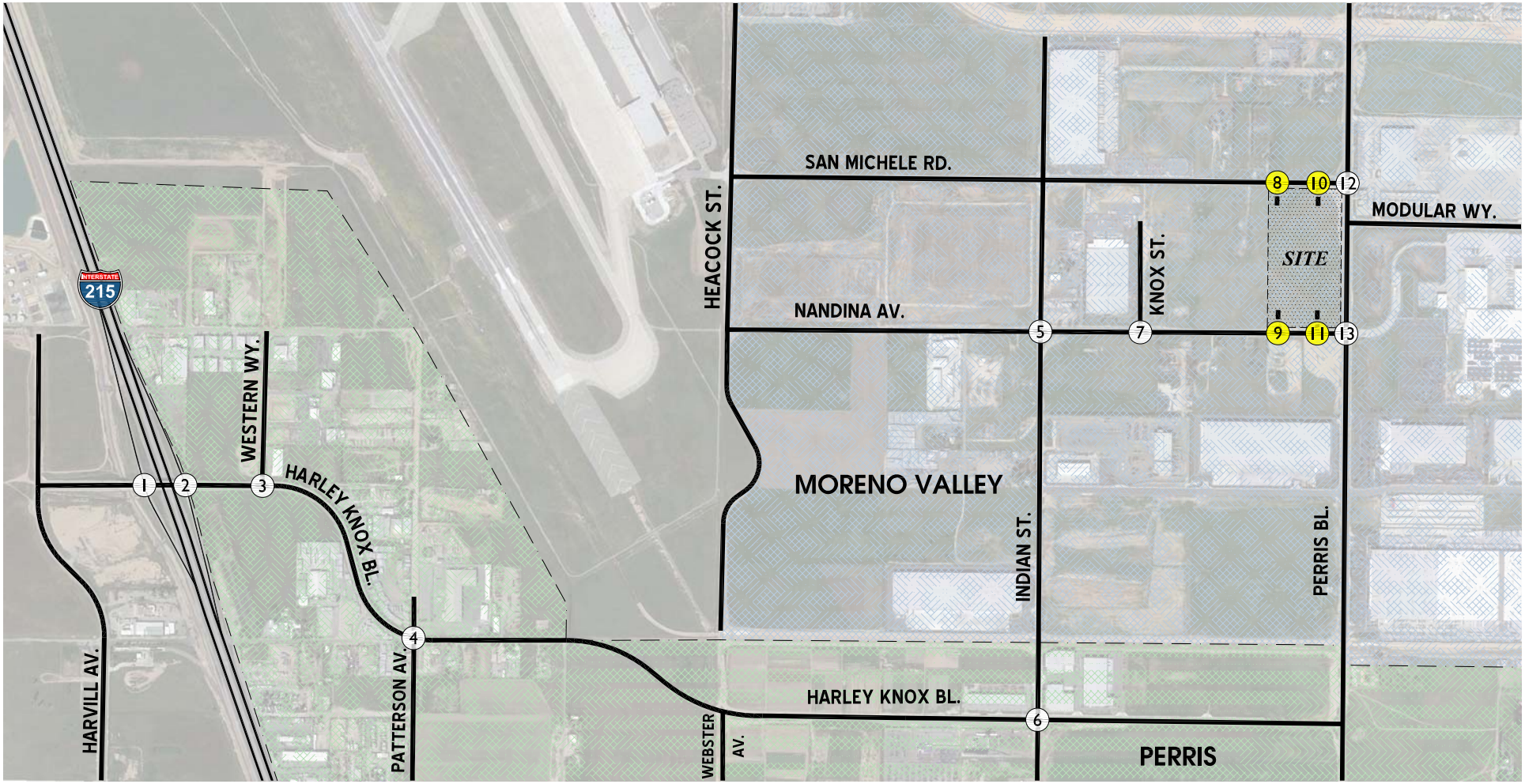
To ensure that this TIA satisfies the needs of the City of Moreno Valley and complies with the City's TIA preparation guidelines, Urban Crossroads, Inc. prepared a Project Traffic Study Scoping Agreement for review by City staff prior to the preparation of this TIA. The Agreement provides an outline 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 thirteen (13) Project study area intersection locations shown on Exhibit 1-2 and listed on

EXHIBIT 1-2

LOCATION MAP



LEGEND:

(1) = EXISTING INTERSECTION ANALYSIS LOCATION

(1) = FUTURE INTERSECTION ANALYSIS LOCATION

N

First Inland Logistics II
City of Moreno Valley, CA (JN - 08179:001.dwg)

URBAN CROSSROADS

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 / Harley Knox Boulevard	Caltrans
2	I-215 Northbound Ramps / Harley Knox Boulevard	Caltrans
3	Western Way / Harley Knox Boulevard	Perris
4	Patterson Avenue / Harley Knox Boulevard	Perris
5	Indian Street / Nandina Avenue	Moreno Valley
6	Indian Street / Harley Knox Boulevard	Perris
7	Knox Street / Nandina Avenue	Moreno Valley
8	*Driveway 1 / San Michele Road – Future Intersection*	*Moreno Valley*
9	*Driveway 2 / Nandina Avenue – Future Intersection*	*Moreno Valley*
10	*Driveway 3 / San Michele Road – Future Intersection*	*Moreno Valley*
11	*Driveway 4 / Nandina Avenue – Future Intersection*	*Moreno Valley*
12	Perris Boulevard / San Michele Road	Moreno Valley
13	Perris Boulevard / Nandina Avenue	Moreno Valley

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 twenty-eight (28) existing/future roadway segments. Table 1-2 provides a summary of the study area roadway segments.

Table 1-2 Roadway Segment Analysis Locations

ID	Roadway Segments	Jurisdiction
1	Harley Knox Boulevard, West of I-215 Freeway	County of Riverside
2	Harley Knox Boulevard, between I-215 SB and NB Ramps	Perris
3	Harley Knox Boulevard, between I-215 NB Ramps and Western Way	Perris
4	Harley Knox Boulevard, East of Western Way	Perris
5	Harley Knox Boulevard, West of Patterson Avenue	Perris
6	Harley Knox Boulevard, East of Patterson Avenue	Perris
7	Harley Knox Boulevard, West of Indian Street	Perris
8	Harley Knox Boulevard, East of Indian Street	Perris
9	Western Way, North of Harley Knox Boulevard	Perris

ID	Roadway Segments	Jurisdiction
10	Patterson Avenue, North of Harley Knox Boulevard	Perris
11	Patterson Avenue, South of Harley Knox Boulevard	Perris
12	Indian Street, North of Nandina Avenue	Moreno Valley
13	Indian Street, South of Nandina Avenue	Moreno Valley
14	Indian Street, North of Harley Knox Boulevard	Moreno Valley
15	Indian Street, South of Harley Knox Boulevard	Perris
16	Knox Street, North of Nandina Avenue	Moreno Valley
17	Perris Boulevard, North of San Michele Road	Moreno Valley
18	Perris Boulevard, South of San Michele Road	Moreno Valley
19	Perris Boulevard, North of Nandina Avenue	Moreno Valley
20	Perris Boulevard, South of Nandina Avenue	Moreno Valley
21	San Michele Road, West of Driveway 1	Moreno Valley
22	San Michele Road, between Driveway 1 and Driveway 3	Moreno Valley
23	San Michele Road, between Driveway 3 and Perris Boulevard	Moreno Valley
24	Nandina Avenue, West of Indian Street	Moreno Valley
25	Nandina Avenue, between Indian Street and Knox Street	Moreno Valley
26	Nandina Avenue, between Knox Street and Driveway 2	Moreno Valley
27	Nandina Avenue, between Driveway 2 and Driveway 4	Moreno Valley
28	Nandina Avenue, between Driveway 4 and Perris Boulevard	Moreno Valley

1.3.3 FREEWAY MAINLINE SEGMENTS

Consistent with Caltrans traffic study guidelines, the freeway mainline analysis locations include the segments on either side of the I-215 Freeway and Harley Knox Boulevard interchange where the proposed Project is anticipated to contribute 100 two-way peak hour trips on the segments. The study area freeway mainline analysis locations include four (4) I-215 freeway mainline segments for both northbound and southbound directions of flow as shown on Table 1-3:

Table 1-3 Freeway Mainline Segment Analysis Locations

ID	Freeway Mainline Segments
1	I-215 Freeway – Southbound, north of Harley Knox Boulevard
2	I-215 Freeway – Southbound, south of Harley Knox Boulevard
3	I-215 Freeway – Northbound, north of Harley Knox Boulevard
4	I-215 Freeway – Northbound, south of Harley Knox Boulevard

1.3.4 FREEWAY MERGE/DIVERGE RAMP JUNCTIONS

The study area freeway merge/diverge ramp junction analysis locations include four (4) I-215 freeway ramp junctions for both northbound and southbound directions of flow as shown on Table 1-4:

Table 1-4 Freeway Merge/Diverge Ramp Junction Analysis Locations

ID	Freeway Merge/Diverge Ramp Junctions
1	I-215 Freeway – Southbound, Off-Ramp at Harley Knox Boulevard (Diverge)
2	I-215 Freeway – Southbound, On-Ramp at Harley Knox Boulevard (Merge)
3	I-215 Freeway – Northbound, On-Ramp at Harley Knox Boulevard (Merge)
4	I-215 Freeway – Northbound, Off-Ramp at Harley Knox Boulevard (Diverge)

1.4 SUMMARY OF PROJECT IMPACTS AND RECOMMENDED IMPROVEMENTS

The comparison of Opening Year (2017) without Project to Opening Year (2017) with Project traffic conditions indicates that the addition of Project traffic is not anticipated to result in any deficient peak hour operations at the study area intersections, roadway segments or I-215 freeway mainline. Potential impacts at each of the study area intersections, roadway segments and freeway facilities resulting from the addition of project-related traffic were found to be less-than-significant.

1.5 SUMMARY OF CUMULATIVE IMPACTS AND RECOMMENDED IMPROVEMENTS

Based on the analysis performed for Opening Year Cumulative (2017) with Project traffic conditions, the following study area intersections are anticipated to be impacted, and the proposed Project's contribution to these impacted intersections is considered cumulatively considerable:

ID	Intersection Location	Jurisdiction
1	I-215 Southbound Ramps / Harley Knox Boulevard	Caltrans
2	I-215 Northbound Ramps / Harley Knox Boulevard	Caltrans
3	Western Way / Harley Knox Boulevard	Perris
4	Patterson Avenue / Harley Knox Boulevard	Perris
6	Indian Street / Harley Knox Boulevard	Perris

A summary of the recommended improvements to reduce cumulative impacts at study area intersections, roadway segments and freeway mainline facilities to less-than-significant are further described in detail within Section 7 *Opening Year Cumulative (2017) 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 would contribute to a cumulative impact.

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 or construction 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.

Intersection improvements that were identified in the analysis in Section 7 *Opening Year Cumulative (2017) Traffic Analysis* as necessary to maintain or improve the operational level of service of the street system in the vicinity of the Project site to address cumulative traffic impacts are shown on Table 1-5 and Table 1-6. Table 1-6 lists the total improvements that are required by Opening Year Cumulative (2017) 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 1-6 identifies which of the total Opening Year Cumulative (2017) improvements are not included in the TUMF or DIF programs, but may instead be covered by a fair-share contribution, if directed by the City. 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.

1.6 ON-SITE ROADWAY AND SITE ACCESS IMPROVEMENTS

The Project is proposed to have access on San Michele Road and Nandina Avenue. All Project access points are proposed to be full-access. Regional access to the Project site will be provided by the I-215 Freeway (located to the west) via Harley Knox Boulevard.

As part of the development, the Project will construct improvements on the site adjacent roadways of San Michele Road, Nandina Avenue and Perris Boulevard. 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.

Summary of Intersection Improvements

#	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	AM	PM
1	I-215 SB Ramps / Harley Knox Bl.																	
	- Existing (2012)	TS	0	0	0	0	1	1	0	2	d	1	2	0	23.7	26.8	C	C
	- Existing Plus Project	TS	0	0	0	0	1	1	0	2	d	1	2	0	25.7	28.5	C	C
	- EAP (2017)	TS	0	0	0	0	1	1	0	2	d	1	2	0	28.5	41.3	C	D
	- EAPC (2017)	TS	0	0	0	**2**	1	**0**	0	2	d	**2**	2	0	21.5	20.5	C	C
2	I-215 NB Ramps / Harley Knox Bl.																	
	- Existing (2012)	TS	0	1	1	0	0	0	1	2	0	0	2	d	17.7	18.1	B	B
	- Existing Plus Project	TS	0	1	1	0	0	0	1	2	0	0	2	d	17.6	18.0	C	B
	- EAP (2017)	TS	0	1	1	0	0	0	1	2	0	0	2	d	18.0	19.0	B	B
	- EAPC (2017)	TS	0	1	1	0	0	0	1	2	0	0	2	**1>>**	13.0	14.1	B	B
3	Western Wy. / Harley Knox Bl.																	
	- Existing (2012)	CSS	0	0	0	0	1	0	0	2	0	0	2	0	11.7	13.0	B	B
	- Existing Plus Project	CSS	0	0	0	0	1	0	0	2	0	0	2	0	11.9	13.5	B	B
	- EAP (2017)	CSS	0	0	0	0	1	0	0	2	0	0	2	0	12.6	14.7	B	B
	- EAPC (2017)	**TS**	0	0	0	**1**	**0**	**1**	**1**	2	0	0	2	0	26.2	15.7	C	B
4	Patterson Av. / Harley Knox Bl.																	
	- Existing (2012)	TS	0	1	0	0	1	0	1	1	1	1	1	0	17.9	17.6	B	B
	- Existing Plus Project	TS	0	1	0	0	1	0	1	1	1	1	1	0	18.2	18.0	B	B
	- EAP (2017)	TS	0	1	0	0	1	0	1	1	1	1	1	0	19.1	18.9	B	B
	- EAPC (2017)	TS	0	1	0	0	1	0	1	**2**	1	1	**2**	0	19.9	21.6	B	C
5	Indian St. / Nandina Av.																	
	- Existing (2012)	TS	1	2	0	1	2	0	1	1	1	1	1	0	23.3	23.4	C	C
	- Existing Plus Project	TS	1	2	0	1	2	0	1	1	1	1	1	0	23.8	25.3	C	C
	- EAP (2017)	TS	1	2	0	1	2	0	1	1	1	1	1	0	23.9	25.7	C	C
	- EAPC (2017)	TS	1	2	0	1	2	0	1	1	1	1	1	0	28.9	31.2	C	C
6	Indian St. / Harley Knox Bl.																	
	- Existing (2012)	TS	2	2	1	1	2	0>	1	1	1	2	2	0	30.8	29.3	C	C
	- Existing Plus Project	TS	2	2	1	1	2	0>	1	1	1	2	2	0	31.8	29.4	C	C
	- EAP (2017)	TS	2	2	1	1	2	0>	1	1	1	2	2	0	33.0	30.1	C	C
	- EAPC (2017)	TS	2	2	1	1	2	**2>**	**2**	**2**	1	2	2	0	34.2	27.7	C	C
7	Knox St. / Nandina Av.																	
	- Existing (2012)	CSS	0	0	0	1	0	1	1	1	0	0	1	0	9.1	9.3	A	A
	- Existing Plus Project	CSS	0	0	0	1	0	1	1	1	0	0	1	0	9.4	9.6	A	A
	- EAP (2017)	CSS	0	0	0	1	0	1	1	1	0	0	1	0	9.5	9.8	A	A
	- EAPC (2017)	CSS	0	0	0	1	0	1	1	1	0	0	1	0	11.5	11.9	B	B
12	Perris Bl. / San Michele Rd.																	
	- Existing (2012)	TS	1	2	1	1	1	1>	1	1	0	1	1	1	36.0	36.8	D	D
	- Existing Plus Project	TS	1	2	1	1	1	1>	1	1	**1**	1	1	1	36.2	36.9	D	D
	- EAP (2017)	TS	1	**3**	**0**	1	**3**	**0**	1	1	**1**	1	1	1	31.7	31.7	C	C
	- EAPC (2017)	TS	1	**3**	**0**	1	**3**	**0**	1	1	**1**	1	1	1	33.8	38.9	C	D

Summary of Intersection Improvements

#	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	AM	PM
13	Perris Bl. / Nandina Av.																	
	- Existing (2012)	TS	1	3	0	1	1	**1>**	1	2	0	1	1	1	37.1	46.6	D	D
	- Existing Plus Project	TS	1	3	0	1	1	**1>**	1	2	0	1	1	1	37.1	46.7	D	D
	- EAP (2017)	TS	1	3	0	1	**3**	**1>**	1	2	0	1	1	1	28.0	28.3	C	C
	- EAPC (2017)	TS	1	3	0	1	**3**	**1>**	1	2	0	1	1	1	29.8	33.2	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

Table 1-6

Summary of Transportation Impact Fee Program Improvements for Opening Year Cumulative (2017) Conditions

#	Intersection Location	EAPC (2017) Recommended Improvements	Program Improvements[1]	Non-Program Improvements	Fair Share[2]
1	I-215 SB Ramps / Harley Knox Bl.	1.SBL; 1.WBL; Re-stripe for 1.SBL and 1.SBT/R	1.SBL; 1.WBL; Re-stripe for 1.SBL and 1.SBT/R	None	--
2	I-215 NB Ramps / Harley Knox Bl.	1.WB Free Right; Re-stripe for 1.NBL/T/R	1.WB Free Right; Re-stripe for 1.NBL/T/R	None	--
3	Western Wy. / Harley Knox Bl.	Install Traffic Signal; 1.SBL; 1.EBL	None	Install Traffic Signal; 1.SBL; 1.EBL	3.3%
4	Patterson Av. / Harley Knox Bl.	1.EBT; 1.WBT	1.EBT, 1.WBT	None	--
6	Indian St. / Harley Knox Bl.	2.SBR w/ overlap phasing; 1.EBL; 1.EBT; Remove cross-walk on north leg (WB approach)	1.EBT	2.SBR w/ overlap phasing; 1.EBL; Remove cross-walk on north leg (WB approach)	3.5%

[1] Improvements included in TUMF Nexus (2006) or City of Moreno Valley DIF (2013) programs.

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

1.6.1 ON-SITE ROADWAY IMPROVEMENTS

The recommended site-adjacent roadway improvements for the Project are described below. Exhibit 1-3 illustrates the site-adjacent roadway improvement recommendations.

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 six-lane divided arterial highway (110-foot right-of-way) between San Michele Road and Nandina Avenue. The proposed Project would improve Perris Boulevard as required by final conditions of approval for the proposed Project and applicable City of Moreno Valley standards.

San Michele Road – San Michele Road is an east-west oriented roadway located along the Project's northern boundary. Construct San Michele Road at its ultimate half-section width as an arterial highway (100-foot right-of-way) between the Project's western boundary and Perris Boulevard. The proposed Project would improve San Michele Road as required by final conditions of approval for the proposed Project and applicable City of Moreno Valley standards.

Nandina Avenue – Nandina Avenue is an east-west oriented roadway located along the Project's southern boundary. Based on field observations, it appears that Nandina Avenue has been improved along the Project's southern boundary from the Project's western boundary to Perris Boulevard with a travel lane in each direction separated by a painted two-way-left-turn-lane. Field review indicates that sidewalk and curb-and-gutter improvements are currently in place along the northern side of Nandina Avenue along the Project's frontage. It is assumed that Nandina Avenue would be widened to its ultimate roadway cross-section as a four-lane divided roadway in conjunction with the future development on the southwest corner of Perris Boulevard at Nandina Road.

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.

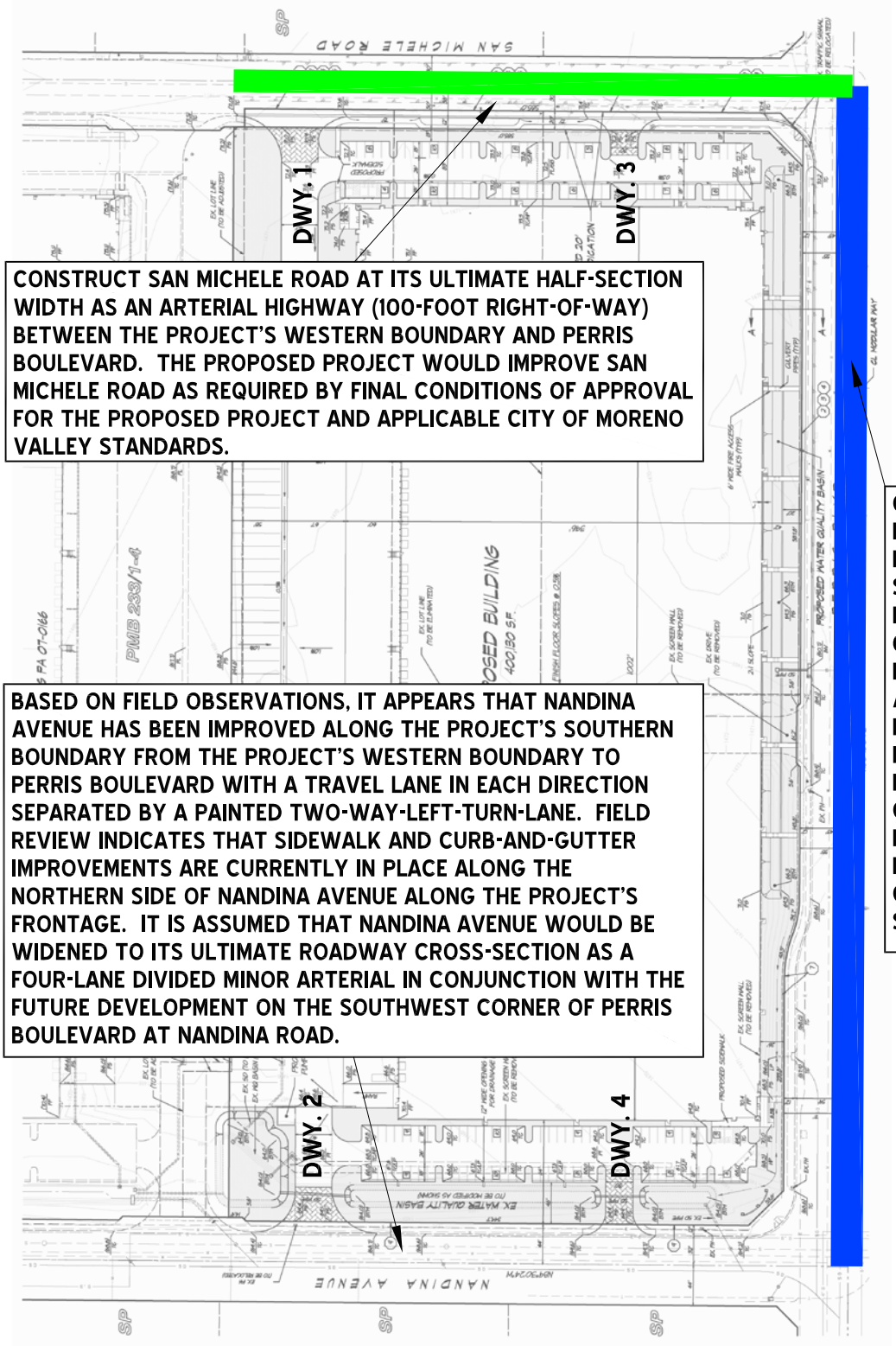
1.6.2 SITE ACCESS IMPROVEMENTS

The recommended site access driveway improvements for the Project are described below. Exhibit 1-4 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 / San Michele Road – Install a stop control on the northbound approach and construct the intersection with the following geometrics:

EXHIBIT 1-3

SITE ADJACENT ROADWAY RECOMMENDATIONS



CONSTRUCT SAN MICHELE ROAD AT ITS ULTIMATE HALF-SECTION WIDTH AS AN ARTERIAL HIGHWAY (100-FOOT RIGHT-OF-WAY) BETWEEN THE PROJECT'S WESTERN BOUNDARY AND PERRIS BOULEVARD. THE PROPOSED PROJECT WOULD IMPROVE SAN MICHELE ROAD AS REQUIRED BY FINAL CONDITIONS OF APPROVAL FOR THE PROPOSED PROJECT AND APPLICABLE CITY OF MORENO VALLEY STANDARDS.

BASED ON FIELD OBSERVATIONS, IT APPEARS THAT NANDINA AVENUE HAS BEEN IMPROVED ALONG THE PROJECT'S SOUTHERN BOUNDARY FROM THE PROJECT'S WESTERN BOUNDARY TO PERRIS BOULEVARD WITH A TRAVEL LANE IN EACH DIRECTION SEPARATED BY A PAINTED TWO-WAY-LEFT-TURN-LANE. FIELD REVIEW INDICATES THAT SIDEWALK AND CURB-AND-GUTTER IMPROVEMENTS ARE CURRENTLY IN PLACE ALONG THE NORTHERN SIDE OF NANDINA AVENUE ALONG THE PROJECT'S FRONTAGE. IT IS ASSUMED THAT NANDINA AVENUE WOULD BE WIDENED TO ITS ULTIMATE ROADWAY CROSS-SECTION AS A FOUR-LANE DIVIDED MINOR ARTERIAL IN CONJUNCTION WITH THE FUTURE DEVELOPMENT ON THE SOUTHWEST CORNER OF PERRIS BOULEVARD AT NANDINA ROAD.

CONSTRUCT PERRIS BOULEVARD AT ITS ULTIMATE HALF-SECTION WIDTH AS A SIX-LANE DIVIDED ARTERIAL HIGHWAY (110-FOOT RIGHT-OF-WAY) BETWEEN SAN MICHELE ROAD AND NANDINA AVENUE. THE PROPOSED PROJECT WOULD IMPROVE PERRIS BOULEVARD AS REQUIRED BY FINAL CONDITIONS OF APPROVAL FOR THE PROPOSED PROJECT AND APPLICABLE CITY OF MORENO VALLEY STANDARDS.

LEGEND:

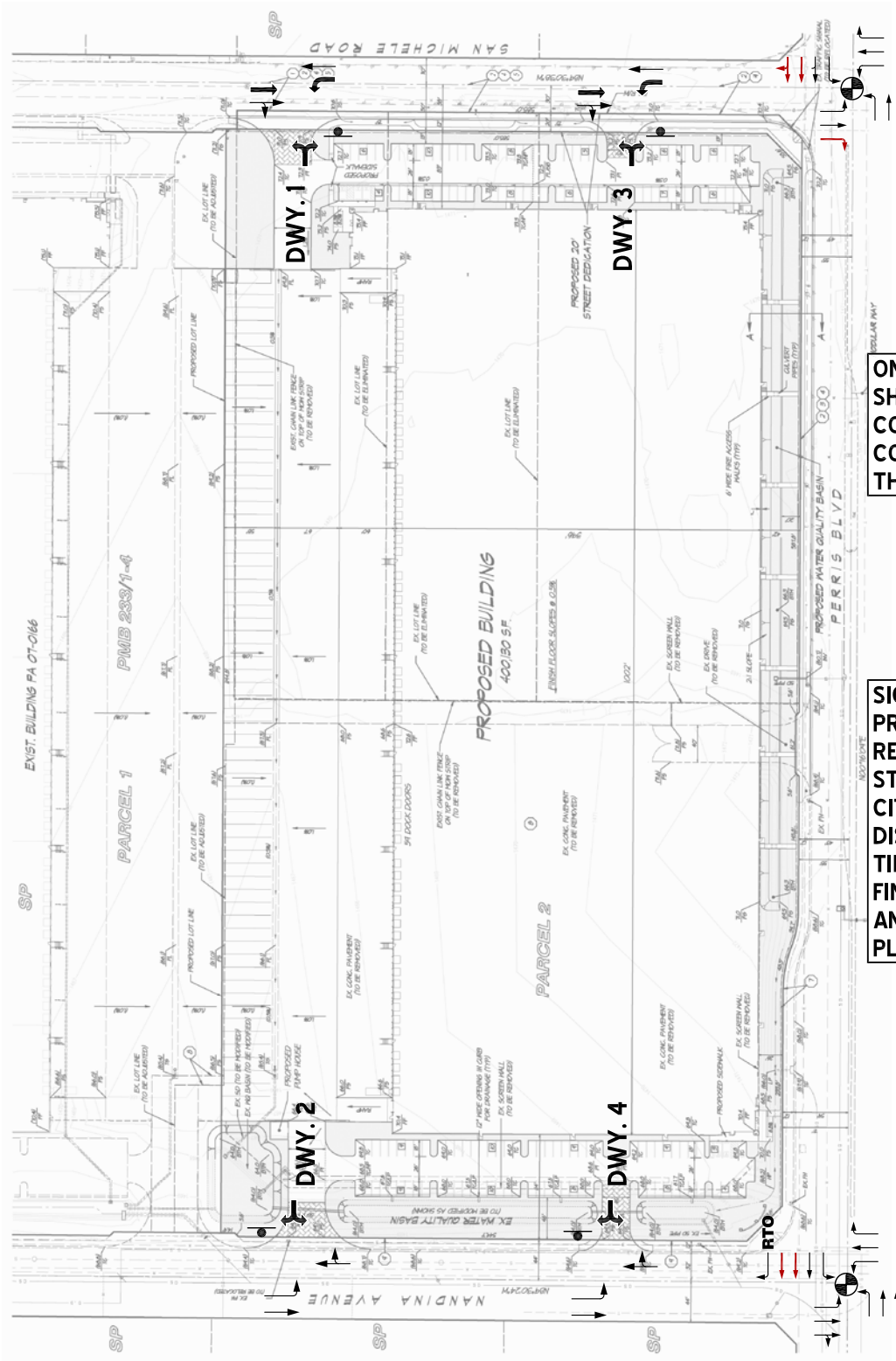
= DIVIDED ARTERIAL (6-LANE) (110-FOOT ROW)

= ARTERIAL (100-FOOT ROW)

N

EXHIBIT 1-4

ON-SITE CIRCULATION RECOMMENDATIONS



ON-SITE SIGNING AND STRIPING SHOULD BE IMPLEMENTED IN CONJUNCTION WITH DETAILED CONSTRUCTION PLANS FOR THE PROJECT SITE.

SIGHT DISTANCE AT EACH PROJECT POINT SHOULD BE REVIEWED WITH RESPECT TO STANDARD CALTRANS AND CITY MORENO VALLEY SIGHT DISTANCE STANDARDS AT THE TIME OF PREPARATION OF FINAL GRADING, LANDSCAPE AND STREET IMPROVEMENTS PLANS.

LEGEND:

- = TRAFFIC SIGNAL
- = STOP SIGN
- = EXISTING LANE
- = PROJECT IMPROVEMENT
- = IMPROVEMENTS TO BE IN PLACE BY YEAR 2013

RTO = RIGHT TURN OVERLAP

N

Northbound Approach: One shared left-right turn lane.
Southbound Approach: N/A
Eastbound Approach: One through lane and one shared through-right turn lane.
Westbound Approach: One left turn lane and one through lane.

Driveway 2 / Nandina Avenue – 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 left turn lane and one through lane.
Westbound Approach: One shared through-right turn lane.

Driveway 3 / San Michele Road – 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 through lane and one shared through-right turn lane.
Westbound Approach: One left turn lane and one through lane.

Driveway 4 / Nandina Avenue – 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 left turn lane and one through lane.
Westbound Approach: One shared through-right turn lane.

Perris Boulevard / San Michele Road – Based on discussions with City staff, the intersection will be constructed with the following geometrics by Year 2013:
Northbound Approach: One left turn lane, two through 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, one through lane and one right turn lane.
Westbound Approach: One left turn lane, one through lane and one right turn lane.

Perris Boulevard / Nandina Avenue – Based on discussions with City staff, the intersection will be constructed with the following geometrics by Year 2013:
Northbound Approach: One left turn lane, two through lanes and one shared through-right turn lane.
Southbound Approach: One left turn lane, three through lanes and one right turn lane with overlap phasing.
Eastbound Approach: One left turn lane, one through lane and one shared through-right turn lane.
Westbound Approach: One left turn lane, one through lane and one right lane.

A queuing analysis has been preformed for the site adjacent roadways of San Michele Road, Perris Boulevard and Nandina Avenue in an effort to determine if there are any queuing issues between the easterly full access driveways on San Michele Road and Nandina Avenue and Perris Boulevard (see Appendix "8.1"). Specifically, the queuing analysis indicates that the eastbound left-turn queues at Perris Boulevard on both San Michele Road and Nandina Avenue are not anticipated to stack beyond Driveway 3 and Driveway 4. As such, it is anticipated that Driveway 3 on San Michele Road and Driveway 4 on Nandina Avenue could provide full access. The painted median (two-way-left-turn lane) would be utilized as left-turn lanes for access into the Project site. It is also important to note that both Driveway 3 and Driveway 4 would only be utilized by passenger car vehicles (employees only, no heavy vehicles) and both intersections meet the City's minimum intersection spacing requirement for full access.
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.

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in February 2010, March 2011 and October 2011. Due to current roadway widening construction activity along Perris Boulevard within close proximity to the proposed Project, the City has allowed for the use of older count data in conjunction with the application of a two (2) percent annual growth rate to increase the count data to existing (2012) baseline conditions. 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)

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. All signalized study area intersections have utilized the Traffix software (Version 8.0 R1, 2008).

Table 2-1 Signalized Intersection LOS Thresholds

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 Opening Year Cumulative (2017) without and with Project traffic conditions. A PHF of 0.95 or higher has been used for Opening Year Cumulative (2017) without and with Project traffic conditions only.

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 Thresholds

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) and Table CE-2 of the City of Perris General Plan Circulation Element. 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 City of Perris requires Level of Service "D" capacities to be maintained on City roadways. The daily roadway segment capacities for each type of roadway for the City of Moreno Valley are summarized in Table 2-3. The daily roadway segment capacities for each type of roadway for the City of Perris are summarized in Table 2-4.

These roadway capacities are “rule of thumb” estimates for planning purposes and are 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 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 is 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.

Table 2-3 Moreno Valley Roadway Segment Capacity LOS Thresholds[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.

Table 2-4 Perris Roadway Segment Capacity LOS Thresholds[1]

Roadway Classification	Number of Lanes	Level of Service Capacity[1]				
		A	B	C	D	E
Collector	2	7,800	9,100	10,400	11,700	13,000
Collector	4	15,540	18,130	20,700	23,300	25,900
Arterial	2	10,800	12,600	14,400	16,200	18,000
Arterial	4	21,540	25,130	28,700	32,300	35,900
Arterial	6	32,340	37,730	43,100	48,500	53,900
Expressway	4	24,540	28,630	32,700	36,800	40,900
Expressway	6	36,780	42,910	49,000	55,200	61,300
Expressway	8	49,020	57,190	65,400	73,500	81,700
Freeway	4	45,900	53,550	61,200	68,900	76,500
Freeway	6	70,500	82,250	94,000	105,800	117,500
Freeway	8	96,300	112,350	128,400	144,500	160,500
Freeway	10	120,360	140,420	160,500	180,500	200,600

[1] Roadway capacities have been extracted from Table CE-2 of the City of Perris General Plan Circulation Element. All capacity thresholds are based on optimum conditions and are intended as guidelines for planning purposes only. Maximum two-way ADT values are based on the 1999 Modified Highway Capacity Manual level of Service Tables. The City of Perris requires Level of Service "D" capacities to be maintained on City roadways with the exception of SR-74 and Cajalco/Ramona Expressway, where the local road standard is Level of Service "E".

2.4 FREEWAY MAINLINE SEGMENT ANALYSIS

The freeway system in the study area, from north of and south of Harley Knox Boulevard, has been broken into segments defined by the freeway-to-arterial interchange locations. The freeway segments have been evaluated in this TIA based upon peak hour directional volumes. The freeway segment analysis is based on the methodology described in Chapter 23 of the HCM and performed using HCS+ software. The performance measure preferred by Caltrans to calculate LOS is density. Density is

expressed in terms of passenger cars per mile per lane. Table 2-5 illustrates the freeway segment LOS thresholds for each density range utilized for this analysis.

The number of lanes for existing baseline conditions has been obtained from field observations conducted by Urban Crossroads in May 2012. The Riverside County Transportation Commission (RCTC) has plans in place for the widening of I-215 Freeway through the study area; however, a schedule for the widening of Interstate 215 between Nuevo Road in the City of Perris and Box Springs Road in the City of Riverside has not been set, due to the state's ongoing budget challenges. The I-215 North Project will add a carpool lane (high-occupancy vehicle lane) in each direction to a 10.75-mile section of the I-215 freeway, the northernmost section of the RCTC's widening efforts along this freeway. Once project costs and funding are determined, project development will begin and last about three (3) years. As indicated on project documents found on the I-215 North Project website, final design will follow for about two and a half (2 ½) years, followed by three (3) years for construction. As such, the future expansion of the I-215 Freeway has been assumed for "with improvements" conditions only and not assumed as the base condition in the basic freeway segment analysis.

Table 2-5 Freeway Mainline LOS Thresholds

Level of Service	Description	Density Range (pc/mi/ln)[1]
A	Free-flow operations in which vehicles are relatively unimpeded in their ability to maneuver within the traffic stream. Effects of incidents are easily absorbed.	0.0 – 11.0
B	Relative free-flow operations in which vehicle maneuvers within the traffic stream are slightly restricted. Effects of minor incidents are easily absorbed.	11.1 – 18.0
C	Travel is still at relative free-flow speeds, but freedom to maneuver within the traffic stream is noticeably restricted. Minor incidents may be absorbed, but local deterioration in service will be substantial. Queues begin to form behind significant blockages.	18.1 – 26.0
D	Speeds begin to decline slightly and flows and densities begin to increase more quickly. Freedom to maneuver is noticeably limited. Minor incidents can be expected to create queuing as the traffic stream has little space to absorb disruptions.	26.1 – 35.0
E	Operation at capacity. Vehicles are closely spaced with little room to maneuver. Any disruption in the traffic stream can establish a disruption wave that propagates throughout the upstream traffic flow. Any incident can be expected to produce a serious disruption in traffic flow and extensive queuing.	35.1 – 45.0
F	Breakdown in vehicle flow.	>45.0

[1] *pc/mi/ln = passenger cars per mile per lane. Source: HCM 2000, Chapter 23*

2.5 FREEWAY MERGE/DIVERGE RAMP JUNCTION ANALYSIS

The freeway system in the study area has been broken into segments defined by freeway-to-arterial interchange locations resulting in four (4) existing on and off ramp locations. Although the HCM indicates the influence area for a merge/diverge junction is 1,500 feet, the analysis presented in this traffic study has been performed at all ramp locations with respect to the nearest on or off ramp at each interchange in an effort to be consistent with Caltrans guidance/comments on other projects Urban Crossroads has worked on along the I-215 corridor.

The merge/diverge analysis is based on the HCM Ramps and Ramp Junctions analysis method and performed using HCS+ software. The measure of effectiveness (reported in passenger car/mile/lane) are calculated based on the existing number of travel lanes, number of lanes at the on and off ramps both at the analysis junction and at upstream and downstream locations (if applicable) and acceleration/deceleration lengths at each merge/diverge point. Table 2-6 presents the merge/diverge area level of service thresholds for each density range utilized for this analysis.

Table 2-6 Freeway Merge and Diverge LOS Thresholds

Level of Service	Density Range (pc/mi/ln)[1]
A	0.0 – 11.0
B	11.1 – 18.0
C	18.1 – 26.0
D	26.1 – 35.0
E	35.1 – 45.0
F	>45.0

[1] *pc/mi/ln = passenger cars per mile per lane. Source: HCM 2000, Chapter 25*

2.6 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 (2012) 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 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 at or 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. It should be noted that pursuant to the City of Moreno Valley's traffic study guidelines, the peak hour warrant has been utilized at existing study area locations for each of the future conditions analyses.

Future (new) unsignalized intersections 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.

Traffic signal warrant analyses were performed at the following unsignalized study area intersections:

ID	Intersection Location
3	Western Way / Harley Knox Boulevard
7	Knox Street / Nandina Avenue
8	Driveway 1 / San Michele Road
9	Driveway 2 / Nandina Avenue
10	Driveway 3 / San Michele Road
11	Driveway 4 / Nandina Avenue

The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 3 *Area Conditions* of this report. The traffic signal warrant analysis for future conditions is presented in Section 5 *Existing plus Project Traffic Analysis*, Section 6 *Opening Year (2017) Traffic Analysis* and Section 7 *Opening Year Cumulative (2017) 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.

2.7 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.

The City of Perris, California Department of Transportation (Caltrans) and the County of Riverside have established explicit performance criteria for roadway and intersection operations within their jurisdictions. The performance criteria include standards related to determining the significance of project impacts on the roadway system. Generally, LOS "D" is considered to be the limit of acceptable traffic operations during the peak hour in these jurisdictions, with the exception of the following intersections which allow LOS "E" (per City of Perris General Plan Circulation Element Policy II.A):

ID	Intersection Location	Jurisdiction
1	I-215 Southbound Ramps / Harley Knox Boulevard	Caltrans
2	I-215 Northbound Ramps / Harley Knox Boulevard	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. RCTC has adopted LOS "E" as the minimum standard for intersections and segments along the CMP System of Highways and Roadways. Therefore, for the purposes of this traffic impact analysis, LOS "E" has been considered to be the limit of acceptable traffic operations for the I-215 Freeway mainline segments and ramp junctions.

2.8 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).

2.8.1 INTERSECTIONS/ROADWAYS

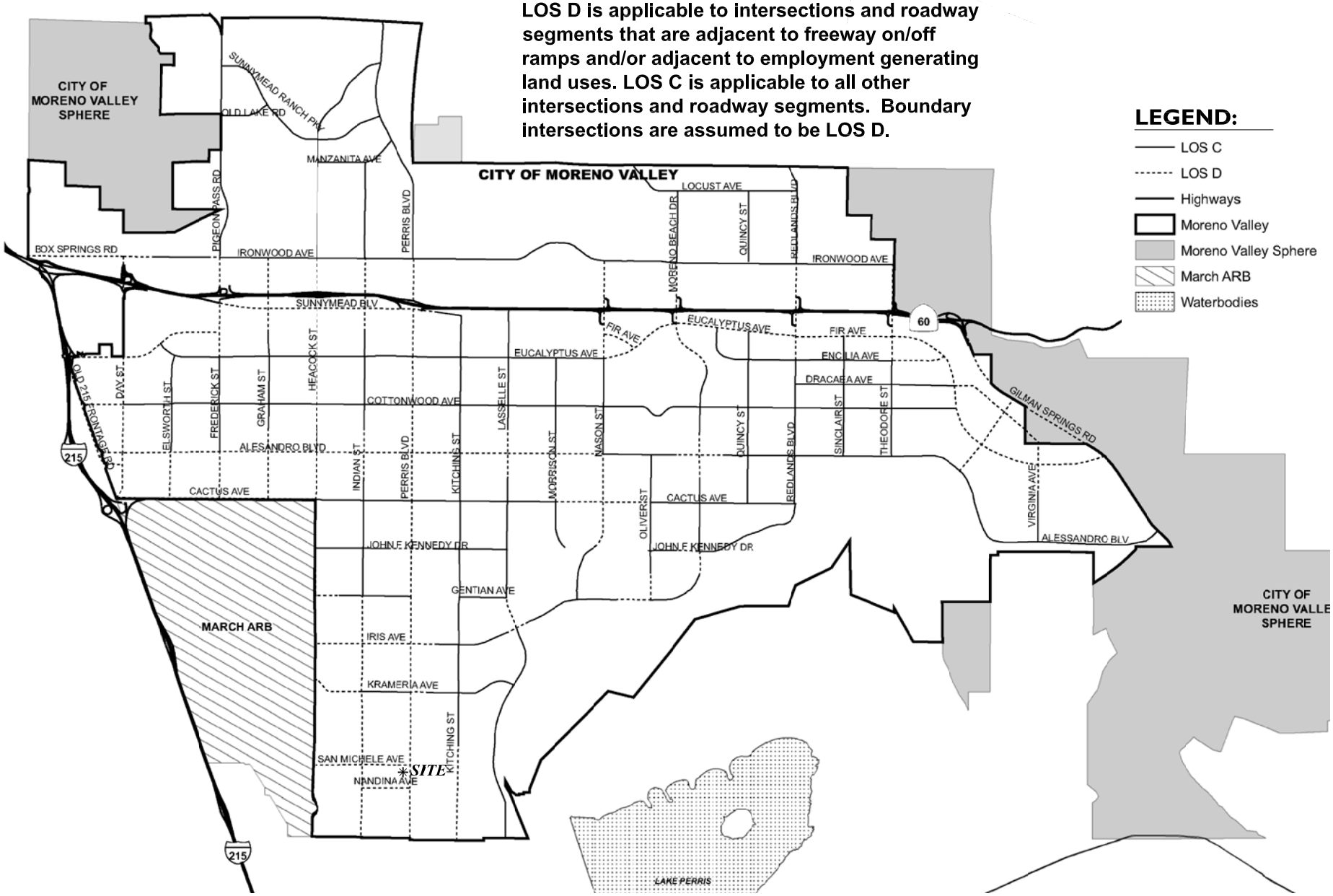
According to CEQA guidelines, a project is considered to cause a significant impact to the transportation system if it:

- 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

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.



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 Opening Year (2017) with Project (EAP) scenario causes an intersection that operates at an acceptable LOS under Opening Year (2017) without Project (EA) traffic conditions (i.e., LOS "D" or better) to fall to an unacceptable LOS (i.e., LOS "E" or "F"). Therefore, Opening Year (2017) with Project traffic conditions are compared to Opening Year (2017) without Project traffic conditions to identify significant project-related impacts.

A 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.

2.8.2 FREEWAY

RCTC has determined that freeway segments and ramp junctions that operate below LOS "E" should be identified and improved to an acceptable LOS, however, specific criteria to identify project-related impacts is not specified by RCTC or in the Caltrans Traffic Impact Study guidelines (December 2002).

For the purposes of this traffic impact analysis and in accordance with the adopted Riverside County CMP, if a freeway segment is projected to operate at an acceptable level of service (i.e., LOS "E" or better) without the project and the project is expected to cause the facility to operate at an unacceptable level of service (i.e., LOS "F"), the impact is considered significant.

2.9 PROJECT FAIR SHARE CALCULATION METHODOLOGY

In cases where this TIA identifies that the proposed Project would have a 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 traffic:

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

The project fair share contribution calculations are presented in Section 9 *Local and Regional Funding Mechanisms* of this TIA.

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.

The AM peak hour traffic volumes were determined by counting traffic volumes in the two hour period between 7:00 and 9:00 AM on January 12, 2010, March 10, 2011 and October 19, 2011. Similarly, the PM peak hour traffic volumes were identified by counting traffic volumes in the two hour period from 4:00 to 6:00 PM on January 12, 2010, March 10, 2011 and October 19, 2011. Due to current roadway widening construction activity along Perris Boulevard within close proximity to the proposed Project, the City has allowed for the use of older count data in conjunction with the application of a two (2) percent annual growth rate to increase the count data to existing (2012) baseline conditions.

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 thirteen (13) existing and future intersections as shown on Exhibit 1-2. Of these thirteen (13) intersections, the existing study area circulation network includes nine (9) 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 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.

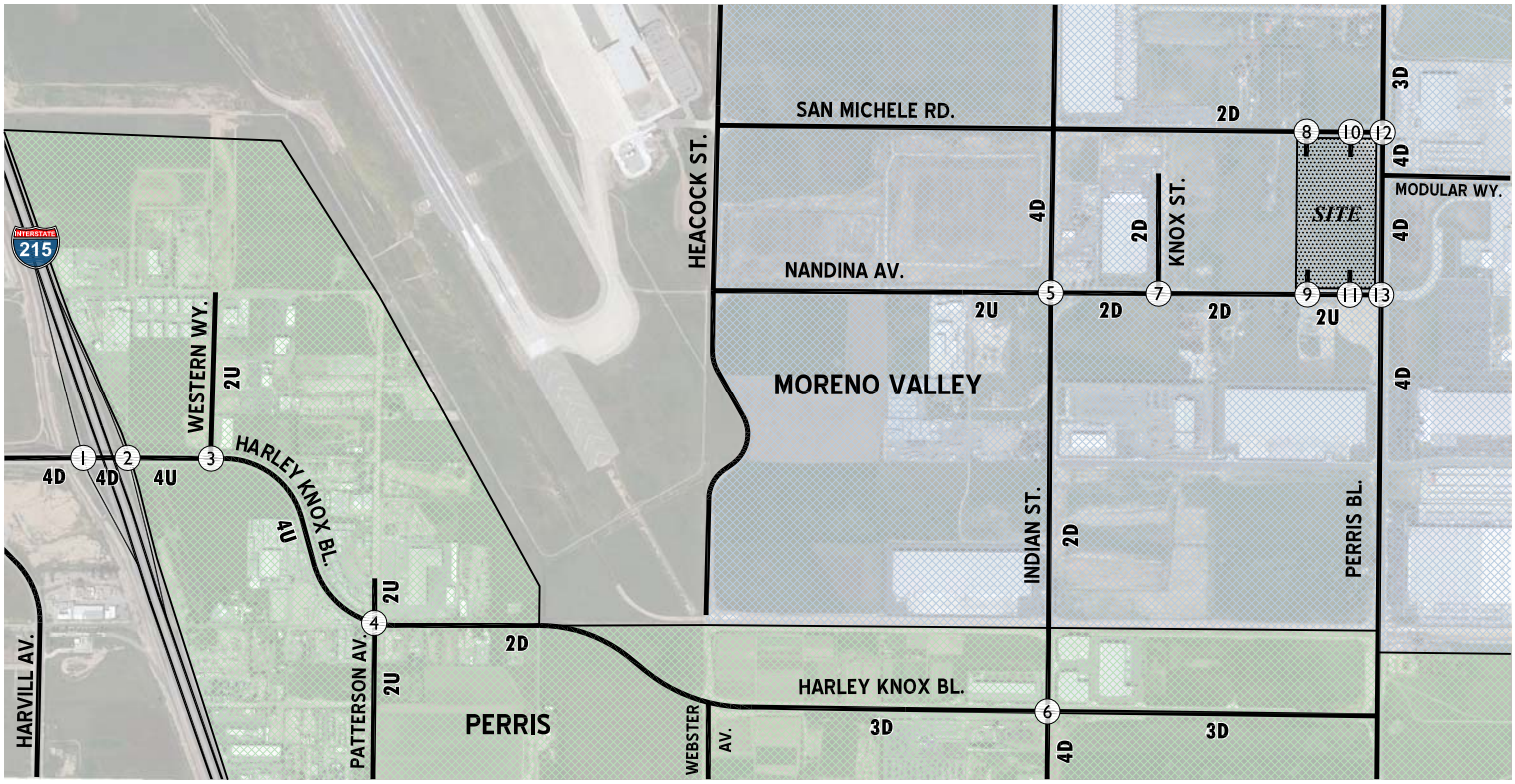
Exhibit 3-4 shows the City of Perris General Plan Circulation Element, and Exhibit 3-5 illustrates the City of Perris General Plan roadway cross-sections. Exhibit 3-6 shows the County of Riverside General Plan Circulation Element, and Exhibit 3-7 illustrates the County of Riverside General Plan roadway cross-sections.

3.3 TRANSIT SERVICE

The study area is currently served by the Riverside Transit Agency (RTA) with bus services along Perris Boulevard via Route 19. The transit service for Route 19 is illustrated on Exhibit 3-8. There is

EXHIBIT 3-1

EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS



1 I-215 SB Ramps & Harley Knox Bl.	2 I-215 NB Ramps & Harley Knox Bl.	3 Western Wy. & Harley Knox Bl.	4 Patterson Av. & Harley Knox Bl.	5 Indian St. & Nandina Av.
6 Indian St. & Harley Knox Bl.	7 Knox St. & Nandina Av.	8 Driveway 1 & San Michele Rd.	9 Driveway 2 & Nandina Av.	10 Driveway 3 & San Michele Rd.
11 Driveway 4 & Nandina Av.	12 Perris Bl. & San Michele Rd.	13 Perris Bl. & Nandina Av.		

Future Intersection

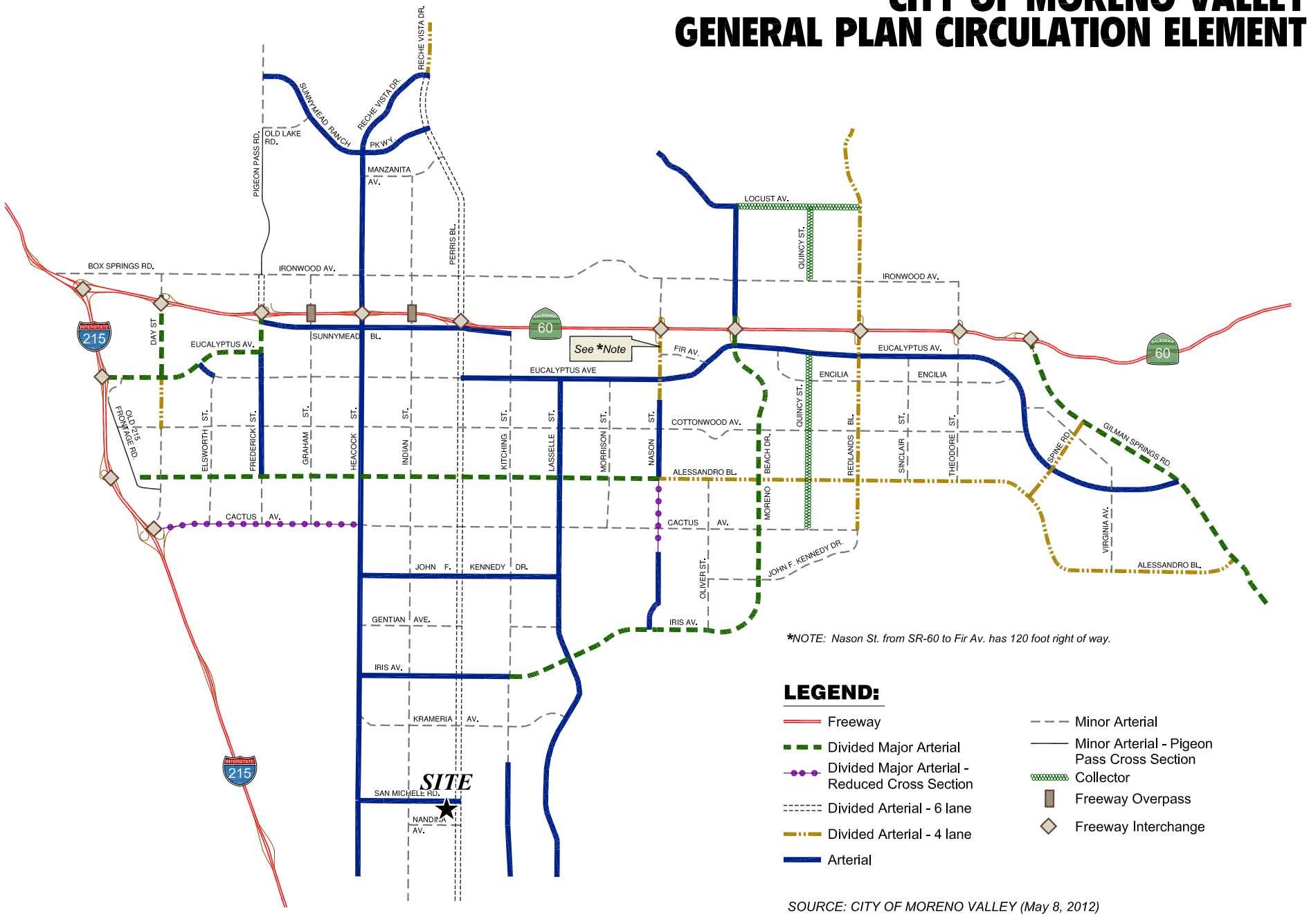
LEGEND:

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

N

EXHIBIT 3-2

CITY OF MORENO VALLEY
GENERAL PLAN CIRCULATION ELEMENT



*NOTE: Nason St. from SR-60 to Fir Av. has 120 foot right of way.

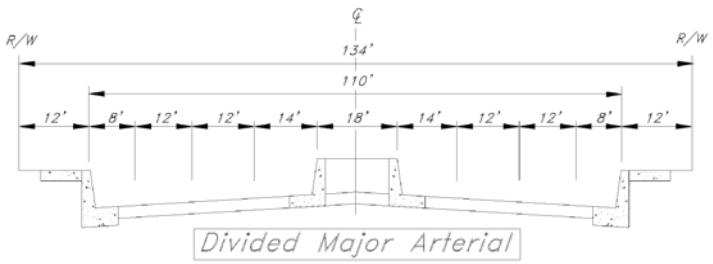
LEGEND:

- Freeway
- Divided Major Arterial
- Divided Major Arterial - Reduced Cross Section
- Divided Arterial - 6 lane
- Divided Arterial - 4 lane
- Arterial
- Minor Arterial
- Minor Arterial - Pigeon Pass Cross Section
- Collector
- Freeway Overpass
- Freeway Interchange

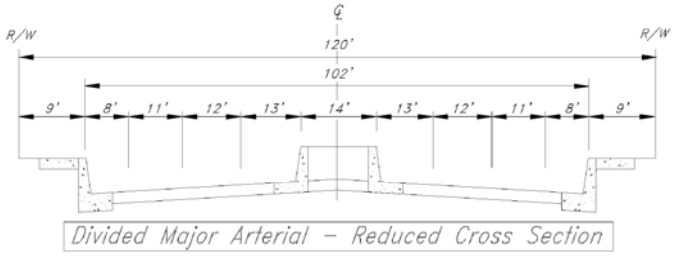
SOURCE: CITY OF MORENO VALLEY (May 8, 2012)

EXHIBIT 3-3

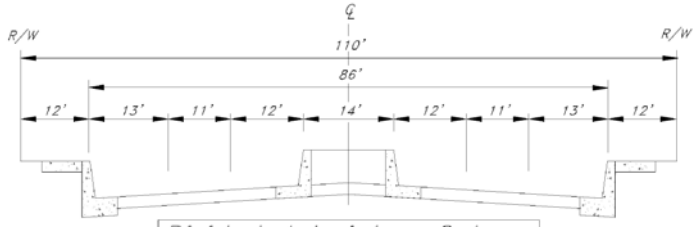
CITY OF MORENO VALLEY
GENERAL PLAN ROADWAY CROSS-SECTIONS



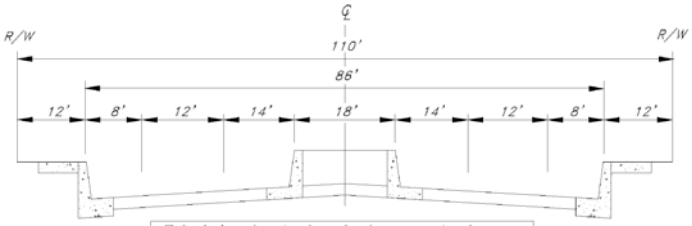
Divided Major Arterial



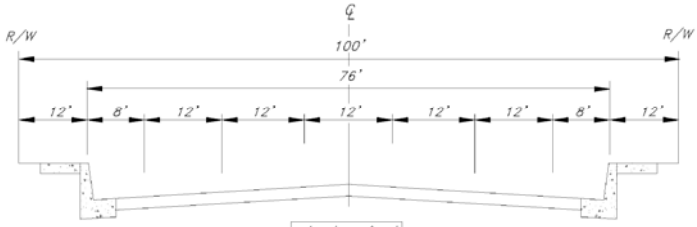
Divided Major Arterial – Reduced Cross Section



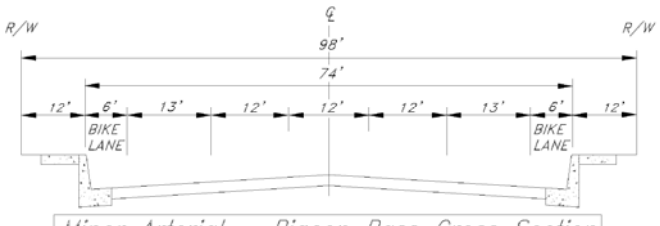
Divided Arterial – 6 Lane



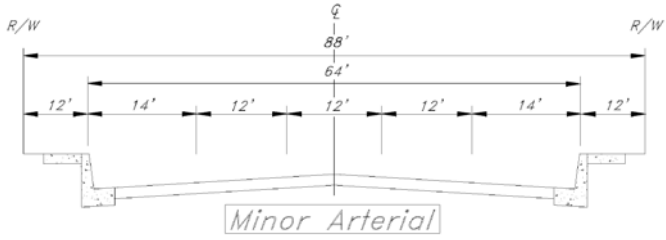
Divided Arterial – 4 Lane



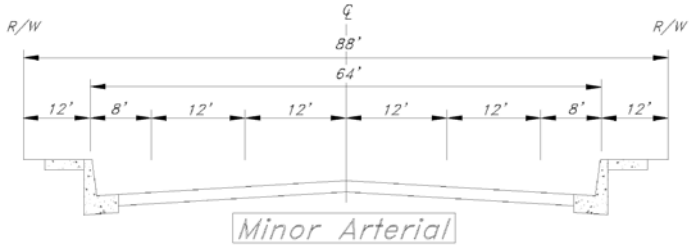
Arterial



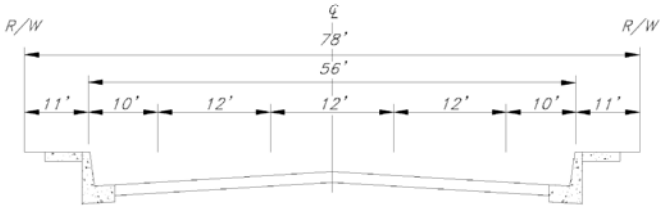
Minor Arterial – Pigeon Pass Cross Section



Minor Arterial



Minor Arterial



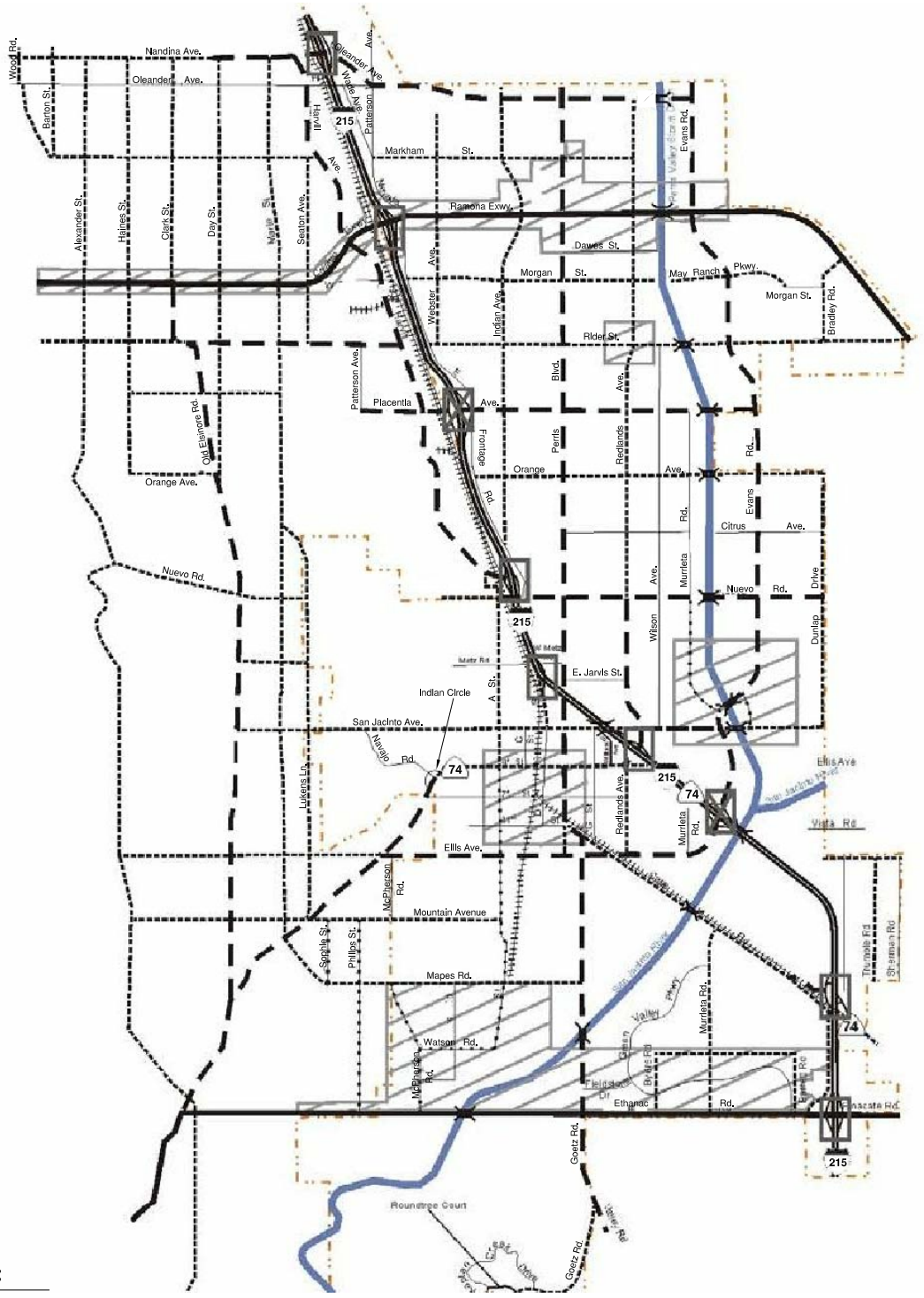
Industrial Collector

NOT TO SCALE

SOURCE: CITY OF Moreno Valley (July 11, 2006)

EXHIBIT 3-4

CITY OF PERRIS
GENERAL PLAN CIRCULATION ELEMENT



LEGEND:

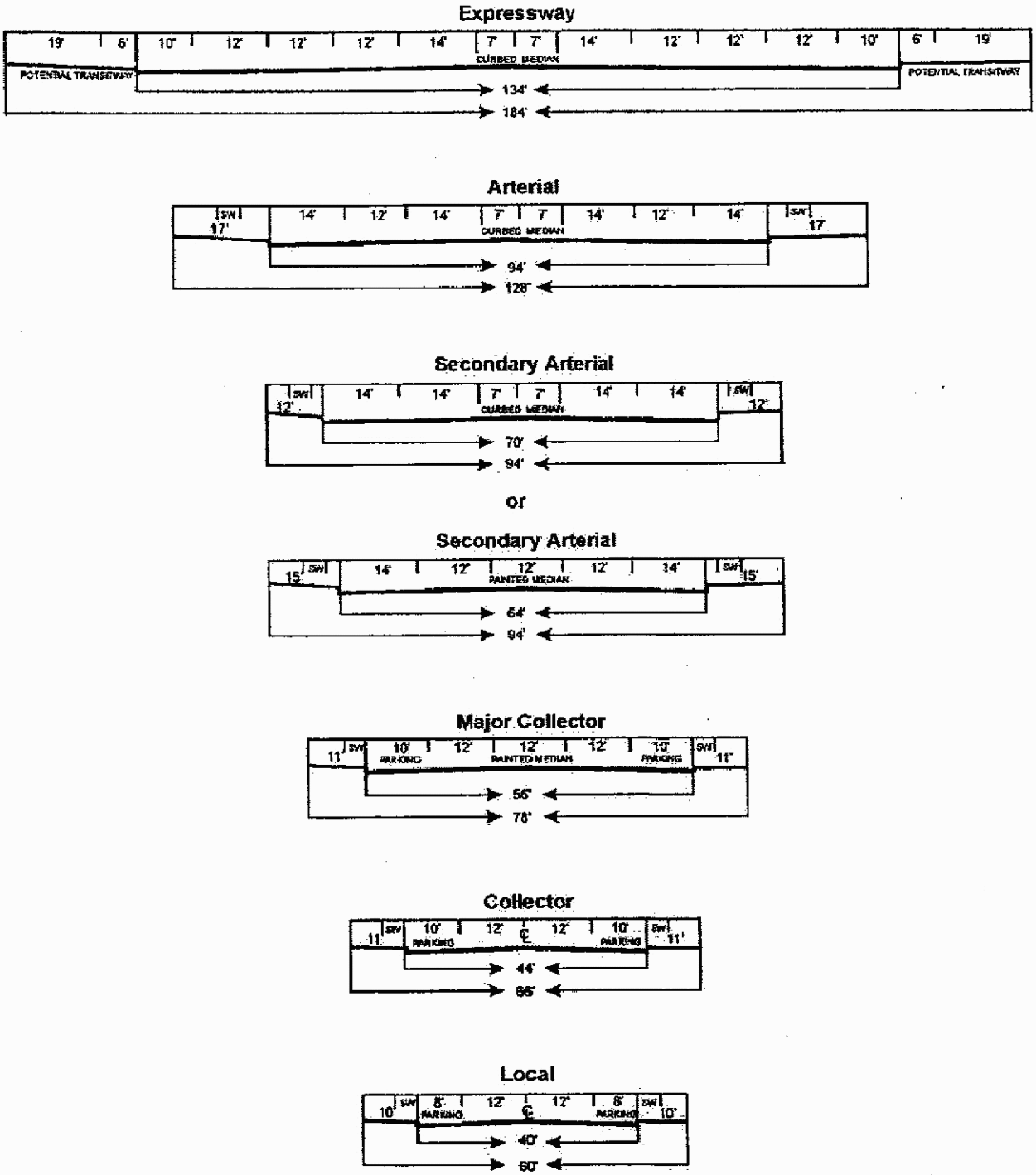
- Freeway
- Expressway (184' ROW)
- Arterial (128' ROW)
- Secondary Arterial (94' ROW)
- Major Collector (78' ROW)
- Collector (66' ROW)
- Railroad
- Bridge
- Water
- City Boundary
- Existing Interchange With Future Modifications
- Proposed Interchange
- Corridor Study Areas

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

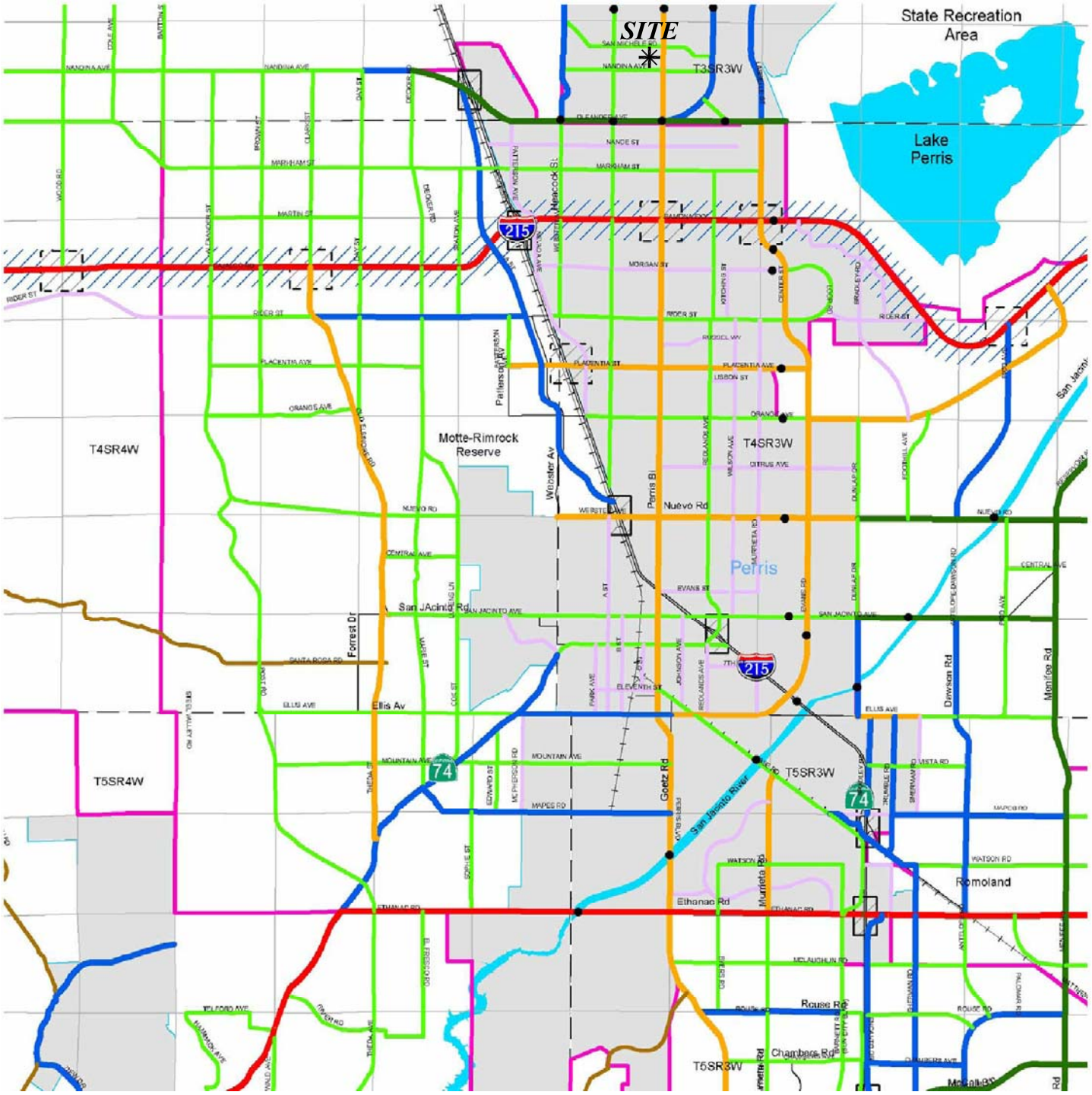
Legend

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

SOURCE: CITY OF PERRIS

EXHIBIT 3-6

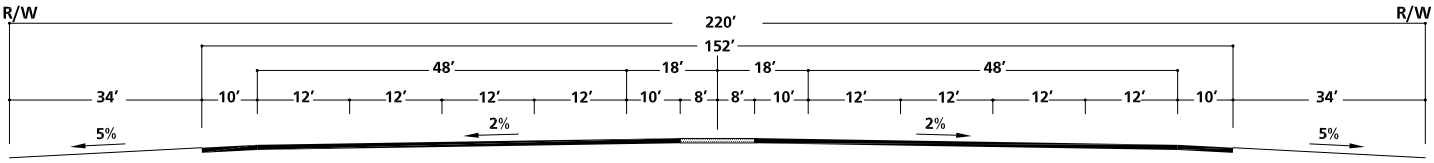
RIVERSIDE COUNTY GENERAL PLAN CIRCULATION ELEMENT



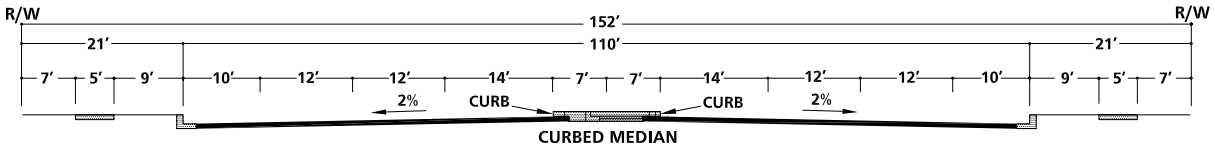
SOURCE: RIVERSIDE COUNTY INTEGRATED PROJECT (RCIP) (OCTOBER 7, 2003)

EXHIBIT 3-7

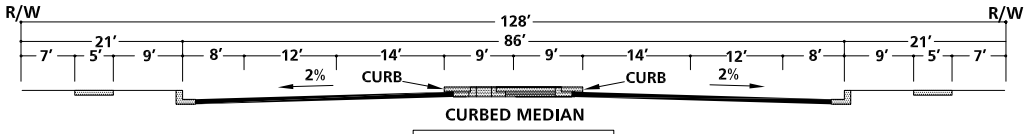
RIVERSIDE COUNTY GENERAL PLAN ROADWAY CROSS-SECTIONS



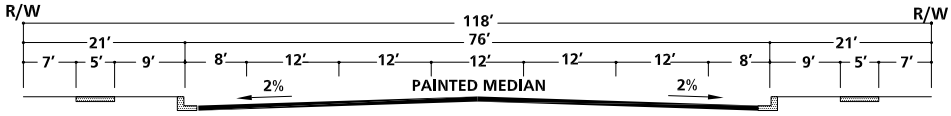
EXPRESSWAY - 8 LANES



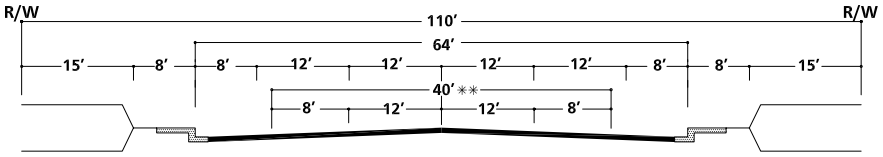
URBAN ARTERIAL HIGHWAY ✳



ARTERIAL HIGHWAY ✳

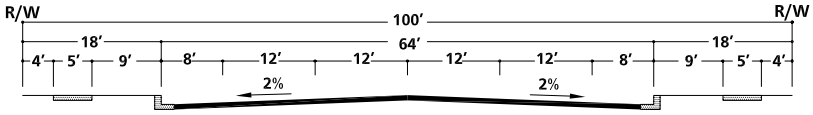


MAJOR HIGHWAY - 4 LANES

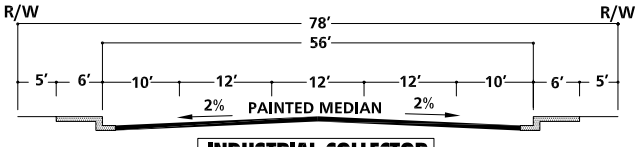


MOUNTAIN ARTERIAL - 2 TO 4 LANES

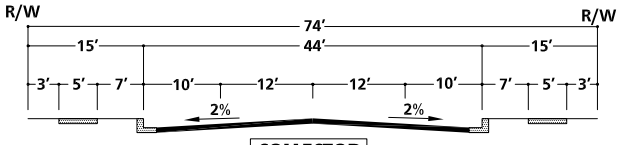
✳✳ 2 LANE SECTION



SECONDARY HIGHWAY



INDUSTRIAL COLLECTOR



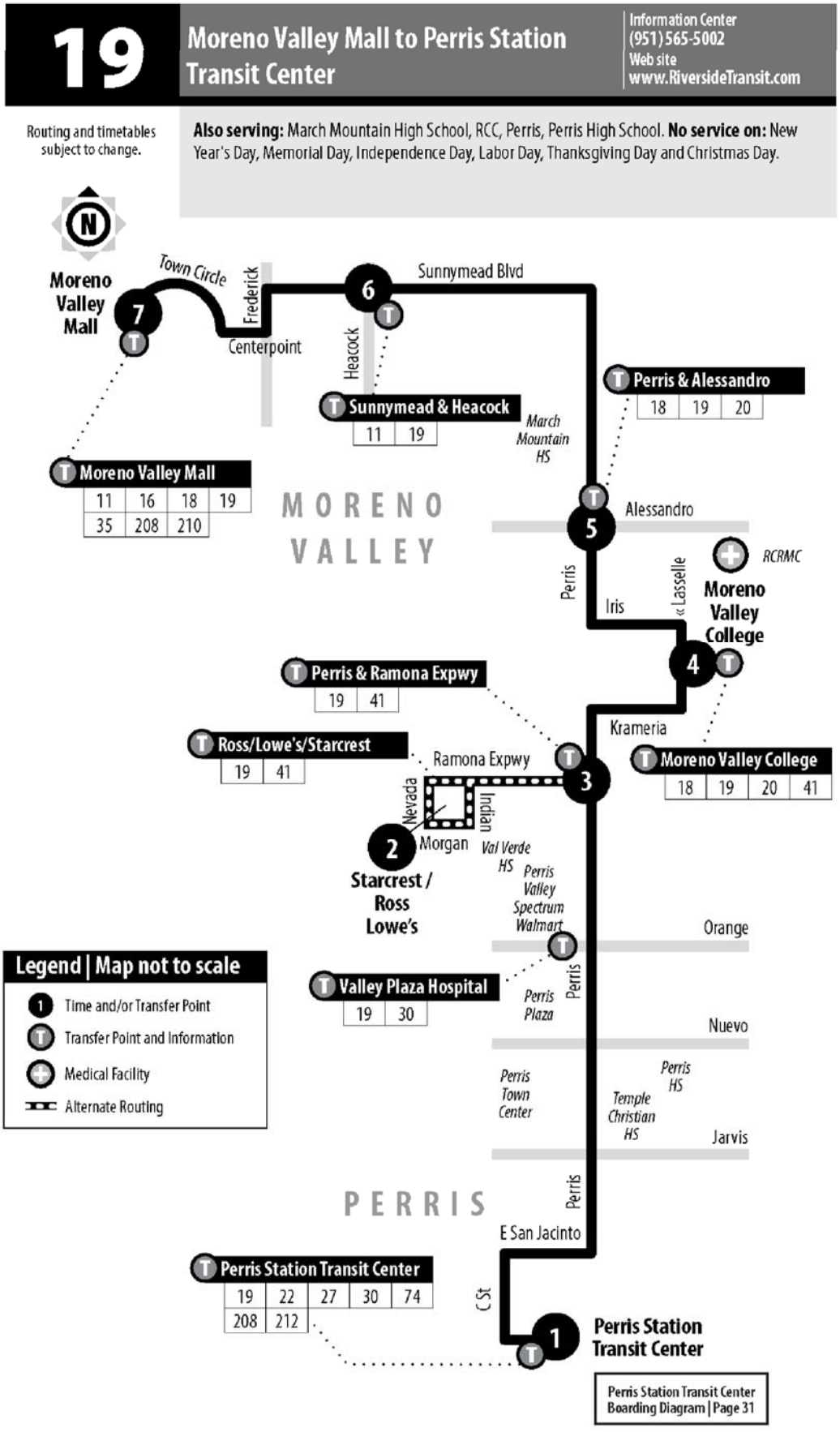
COLLECTOR

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

NOT TO SCALE

SOURCE: COUNTY OF RIVERSIDE

EXISTING TRANSIT SERVICES



currently a bus stop on Perris Boulevard, south of San Michele Road (for the southbound direction), north of Nandina Avenue (for the northbound direction) and south of Nandina Avenue (for the southbound direction).

3.4 PEDESTRIAN AND BICYCLE FACILITIES

Field observations conducted in May 2012 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 3-9 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. Exhibit 3-10 illustrates the proposed City of Moreno Valley Bikeway Plan. The following bikeways are planned within the vicinity of the study area:

- A Class III bikeway facility is proposed along Indian Street north of San Michele Road and along San Michele Road, west of Indian Street.

3.5 TRUCK ROUTES

The City of Moreno Valley designated truck route map is shown on Exhibit 3-11. The City of Perris designated truck route map is shown on Exhibit 3-12. Harley Knox Boulevard, Perris Boulevard, Indian Street, San Michele Road and Nandina Avenue are identified as designated truck routes. The designated truck route map has been utilized to route truck traffic from future cumulative development projects throughout the study area.

3.6 EXISTING TRAFFIC COUNTS

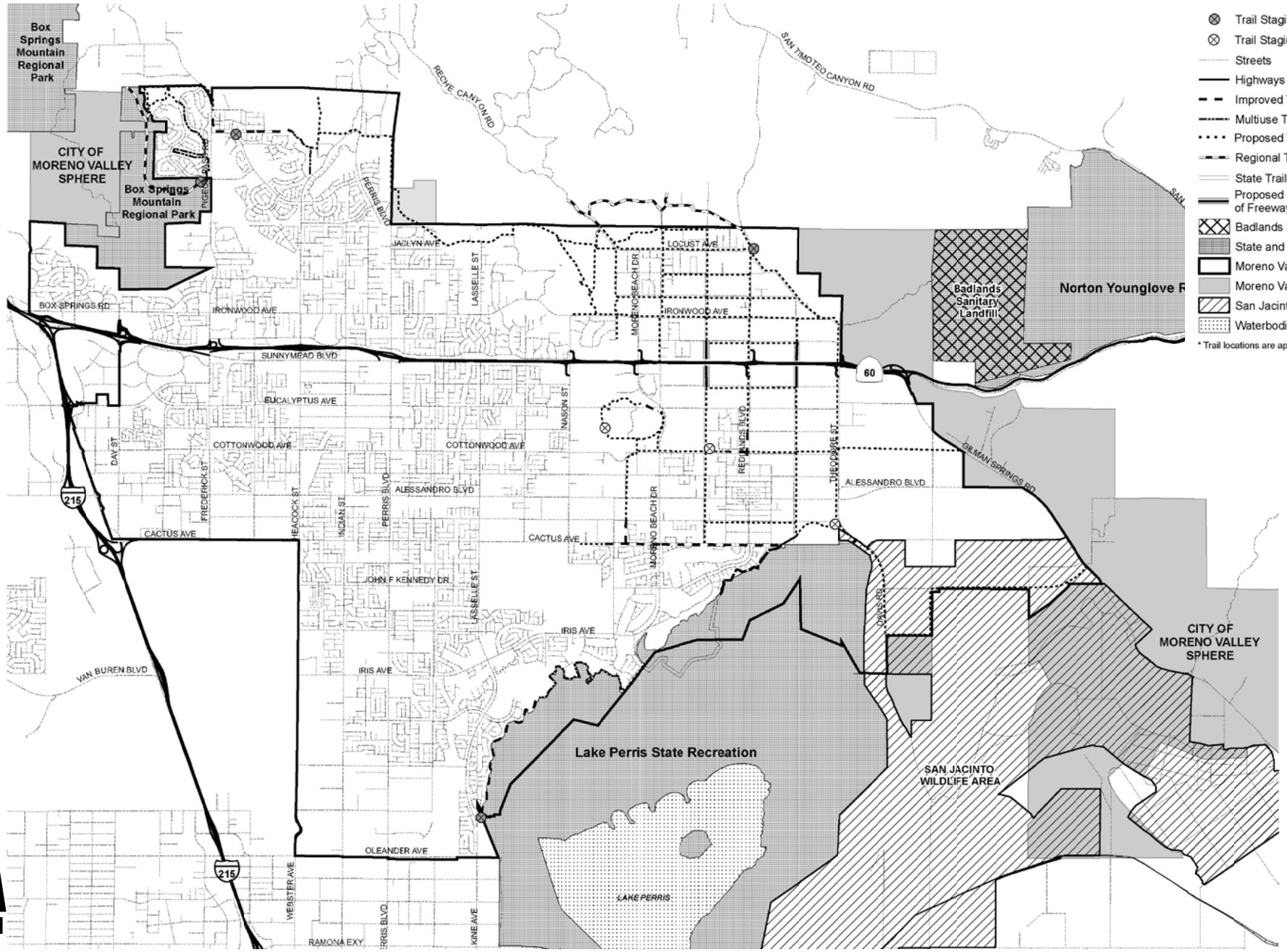
Manual AM and PM peak hour turning movement counts were conducted in January 2010, March 2011 and October 2011. The raw manual peak hour turning movement traffic count data sheets are included in Appendix "3.1" in conjunction with volume development worksheets. The traffic counts collected in January 2010, March 2011 and October 2011 include the vehicle classifications as shown below, per City of Moreno Valley TIA requirements:

- 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

EXHIBIT 3-9

CITY OF MORENO VALLEY MASTER PLAN OF TRAILS

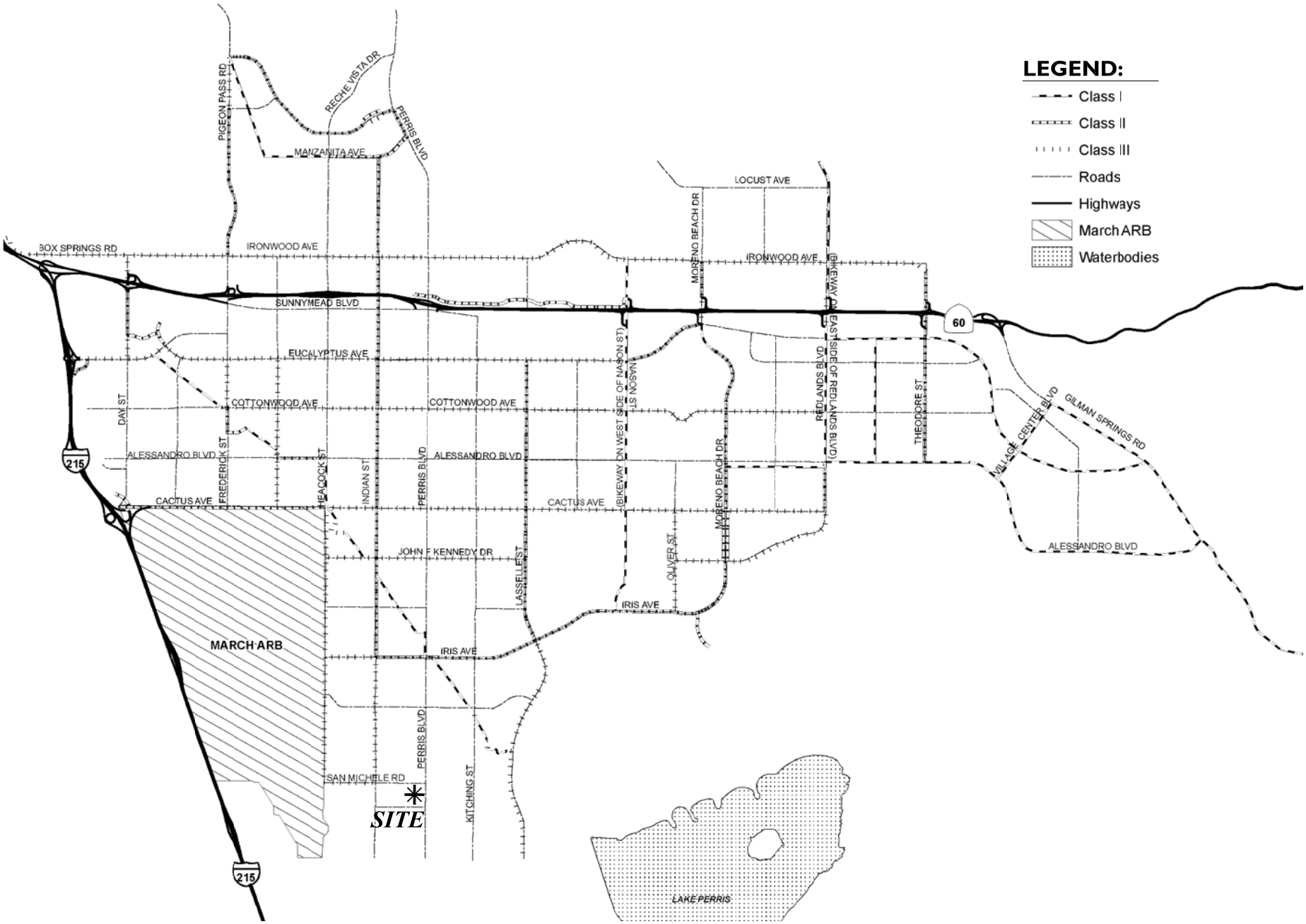


First Inland Logistics II
City of Moreno Valley, CA (JN - 08179:009)

URBAN CROSSROADS

EXHIBIT 3-10

CITY OF MORENO VALLEY BIKE PLAN



First Inland Logistics II
City of Moreno Valley, CA (JN - 08179:010)

URBAN CROSSROADS

EXHIBIT 3-11

CITY OF MORENO VALLEY TRUCK ROUTES

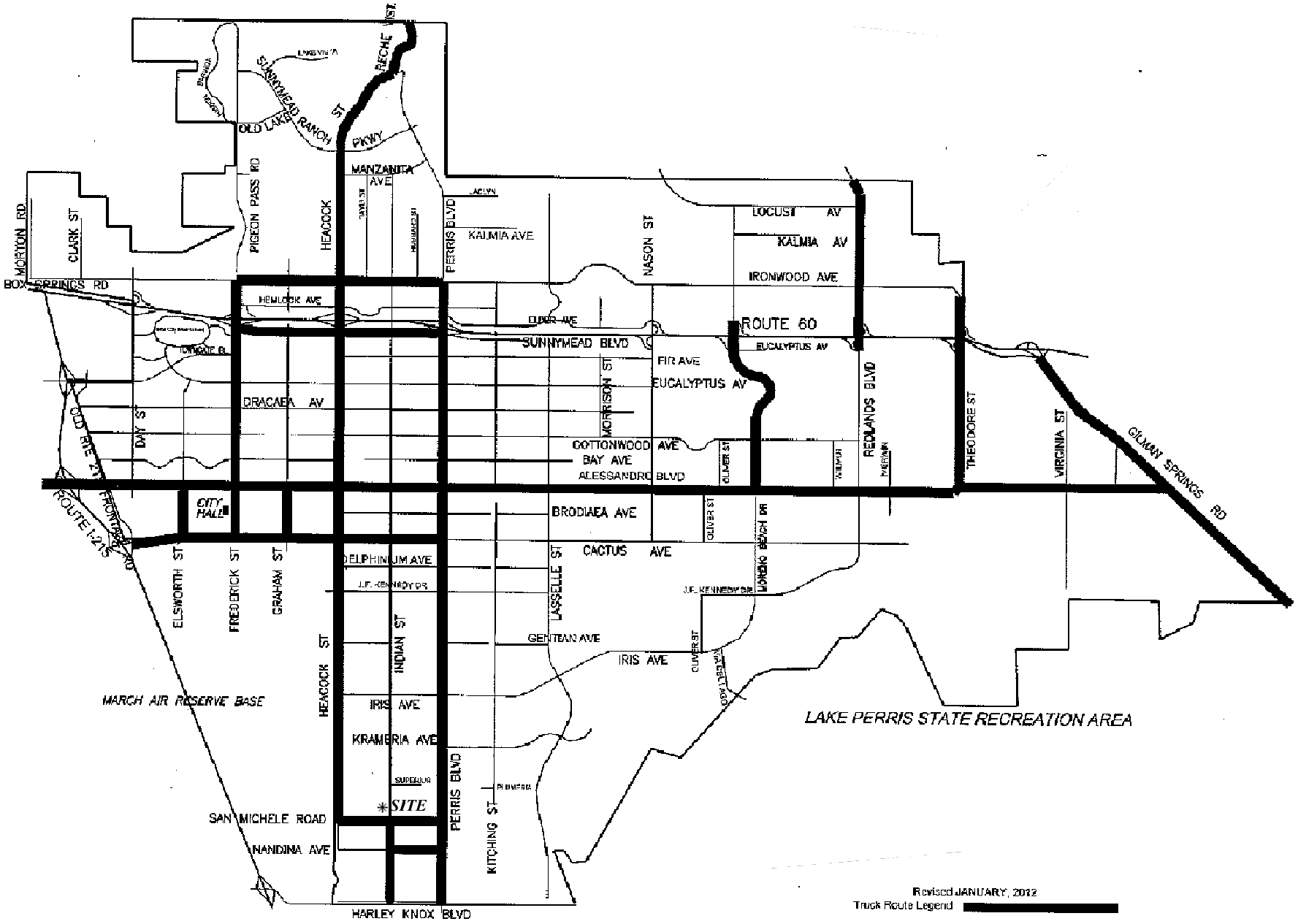
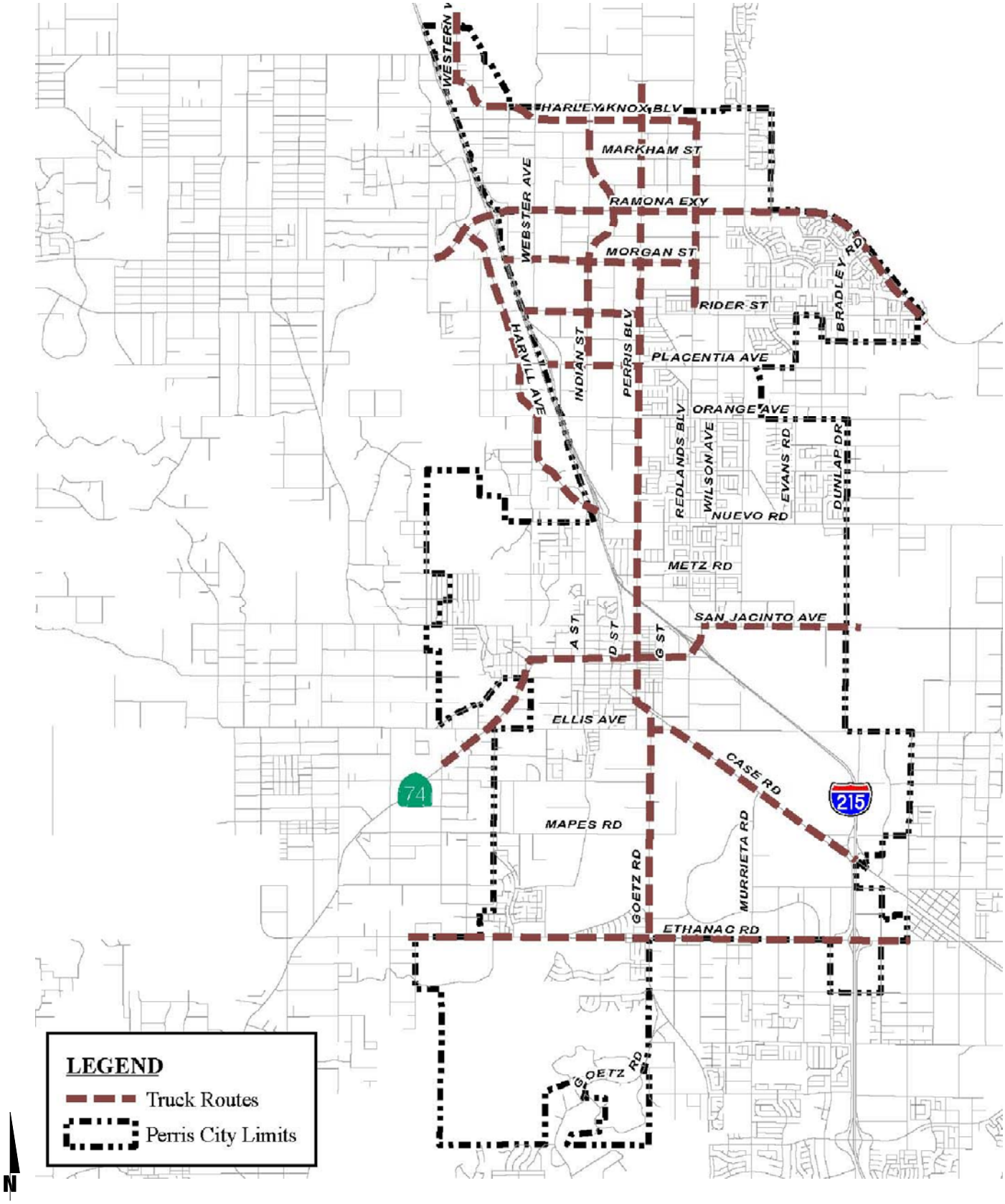


EXHIBIT 3-12

CITY OF PERRIS TRUCK ROUTES



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 (2012) average daily traffic (ADT) volumes on arterial highways throughout the study area are shown on Exhibit 3-13. Existing (2012) 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) 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., eight percent PM peak-to-daily relationship). Existing (2012) AM and PM peak hour intersection volumes are shown on Exhibits 3-14 and 3-15, respectively. All of the traffic volumes illustrated on the exhibits and used in the traffic analysis are shown in terms of PCE.

3.7 EXISTING CONDITIONS INTERSECTION OPERATIONS ANALYSIS

Existing (2012) 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 (2012) conditions operations analysis shows that the study area intersections currently operate at acceptable LOS (i.e., LOS "D" or better) during the peak hours.

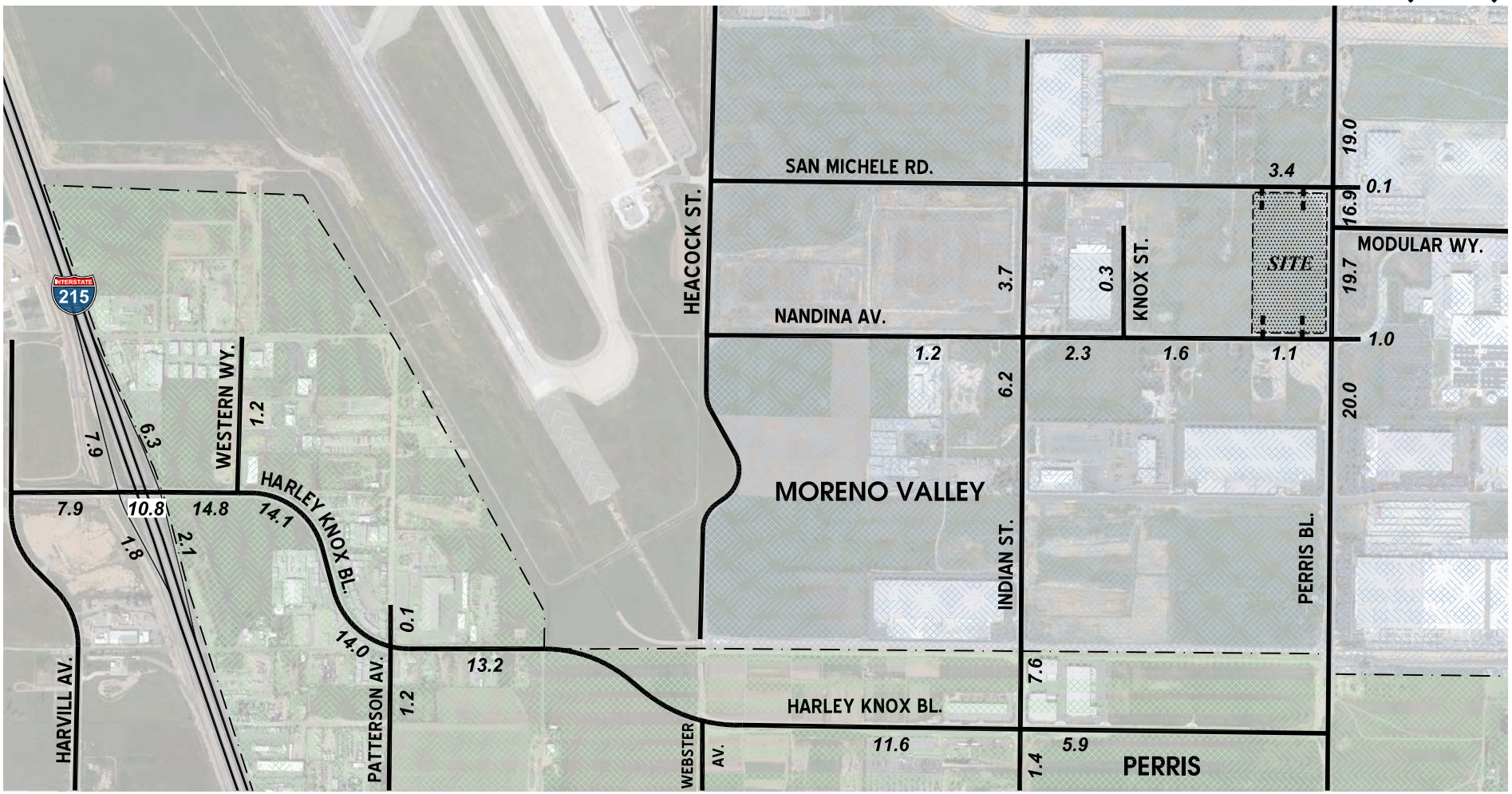
The intersection operations analysis worksheets are included in Appendix "3.2" of this TIA.

3.8 EXISTING CONDITIONS ROADWAY SEGMENT CAPACITY ANALYSIS

The City of Moreno Valley General Plan Circulation Element provides roadway volume capacity values presented previously on Table 2-2. The roadway segment capacities are approximate figures only, and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet traffic demand. Table 3-2 provides a summary of the Existing (2012) 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 2-2. As shown on Table 3-2, the study area roadway segments currently operate at acceptable LOS based on the City's planning level daily roadway capacity thresholds.

EXHIBIT 3-13

EXISTING (2012) AVERAGE DAILY TRAFFIC (ADT)



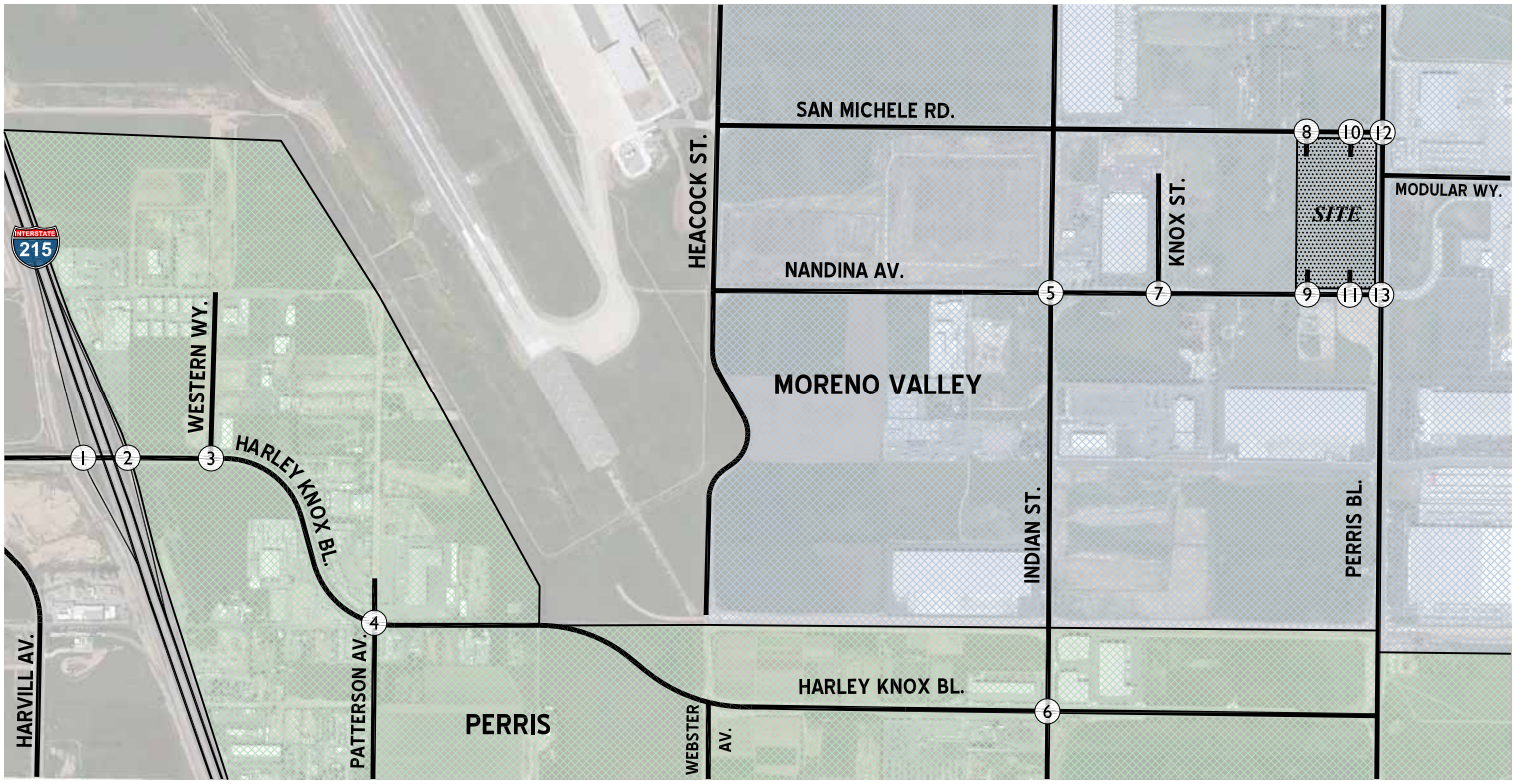
LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

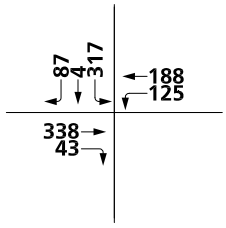
N

EXHIBIT 3-14

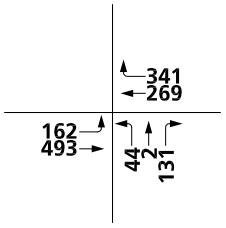
EXISTING (2012) AM PEAK HOUR INTERSECTION VOLUMES



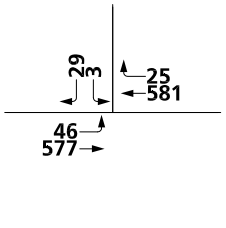
1 I-215 SB Ramps & Harley Knox Bl.



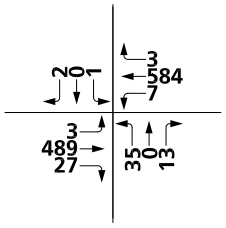
2 I-215 NB Ramps & Harley Knox Bl.



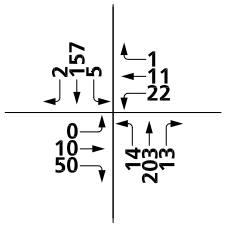
3 Western Wy. & Harley Knox Bl.



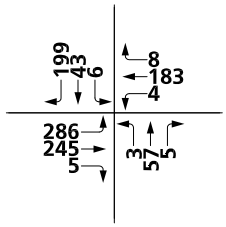
4 Patterson Av. & Harley Knox Bl.



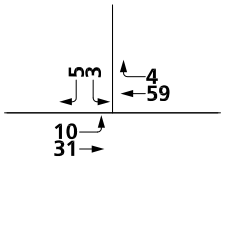
5 Indian St. & Nandina Av.



6 Indian St. & Harley Knox Bl.



7 Knox St. & Nandina Av.



8 Driveway 1 & San Michele Rd.

Future Intersection

9 Driveway 2 & Nandina Av.

Future Intersection

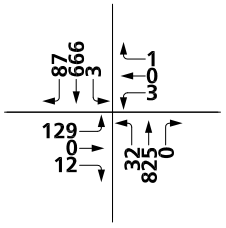
10 Driveway 3 & San Michele Rd.

Future Intersection

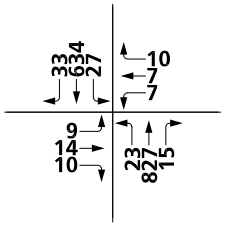
11 Driveway 4 & Nandina Av.

Future Intersection

12 Perris Bl. & San Michele Rd.



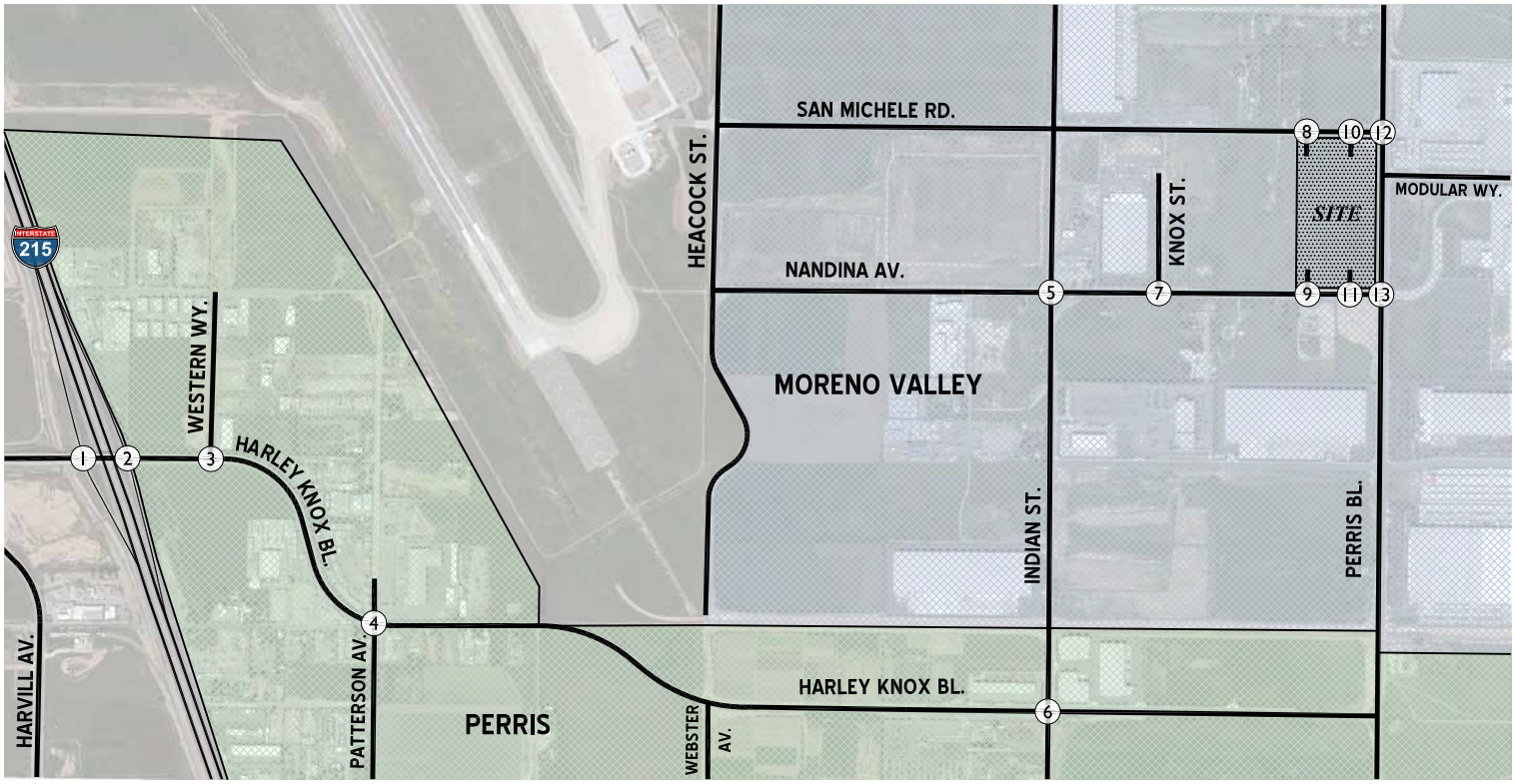
13 Perris Bl. & Nandina Av.



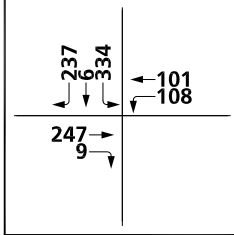
N

EXHIBIT 3-15

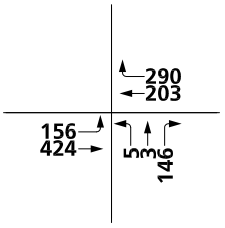
EXISTING (2012) PM PEAK HOUR INTERSECTION VOLUMES



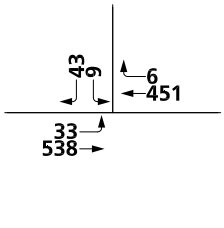
1 I-215 SB Ramps & Harley Knox Bl.



2 I-215 NB Ramps & Harley Knox Bl.



3 Western Wy. & Harley Knox Bl.



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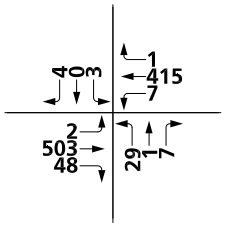

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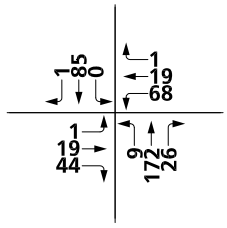

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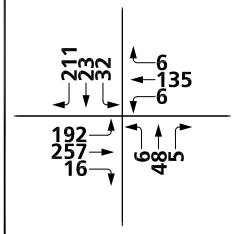

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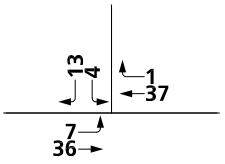


8 Driveway 1 & San Michele Rd.

Future Intersection

9 Driveway 2 & Nandina Av.

Future Intersection

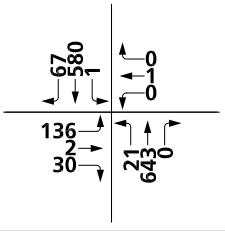
10 Driveway 3 & San Michele Rd.

Future Intersection

11 Driveway 4 & Nandina Av.

Future Intersection

12 Perris Bl. & San Michele Rd.



13 Perris Bl. & Nandina Av.

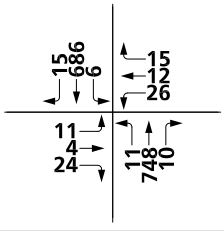


Table 3-1

Intersection Analysis for Existing (2012) Conditions

#	Intersection	Jurisdiction	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	AM	PM
1	I-215 SB Ramps / Harley Knox Bl.	Caltrans	TS	0	0	0	0	1	1	0	2	d	1	2	0	23.7	26.8	C	C
2	I-215 NB Ramps / Harley Knox Bl.	Caltrans	TS	0	1	1	0	0	0	1	2	0	0	2	d	17.7	18.1	B	B
3	Western Wy. / Harley Knox Bl.	Perris	CSS	0	0	0	0	1	0	0	2	0	0	2	0	11.7	13.0	B	B
4	Patterson Av. / Harley Knox Bl.	Perris	TS	0	1	0	0	1	0	1	1	1	1	1	0	17.9	17.6	B	B
5	Indian St. / Nandina Av.	MV	TS	1	2	0	1	2	0	1	1	1	1	1	0	23.3	23.4	C	C
6	Indian St. / Harley Knox Bl.	Perris	TS	2	2	1	1	2	0>	1	1	1	2	2	0	30.8	29.3	C	C
7	Knox St. / Nandina Av.	MV	CSS	0	0	0	1	0	1	1	1	0	0	1	0	9.1	9.3	A	A
8	Driveway 1 / San Michele Rd.	MV		Future Intersection															
9	Driveway 2 / Nandina Av.	MV		Future Intersection															
10	Driveway 3 / San Michele Rd.	MV		Future Intersection															
11	Driveway 4 / Nandina Av.	MV		Future Intersection															
12	Perris Bl. / San Michele Rd.	MV	TS	1	2	1	1	1	1>	1	1	0	1	1	1	36.0	36.8	D	D
13	Perris Bl. / Nandina Av.	MV	TS	1	3	0	1	1	**1**	1	2	0	1	1	1	37.1	46.6	D	D

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

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; 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.

[3] CSS = Cross-street Stop; AWS = All-Way Stop; TS = Traffic Signal

Table 3-2

Existing (2012) Conditions
Roadway Volume/Capacity Analysis[1]

#	Roadway	Segment Limits	Jurisdiction	Roadway Section	LOS Capacity[2,3]	Existing (2012)	V/C	LOS	Acceptable LOS
1	Harley Knox Boulevard	West of I-215 Freeway	Co. of Riv.	4D	35,900	7,884	0.22	A	D
2		I-215 SB Ramps to I-215 NB Ramps	Perris	4D	35,900	10,824	0.30	A	D
3		I-215 NB Ramps to Western Way	Perris	4U	25,900	14,844	0.57	A	D
4		East of Western Way	Perris	4U	25,900	14,052	0.54	A	D
5		West of Patterson Avenue	Perris	4U	25,900	13,992	0.54	A	D
6		East of Patterson Avenue	Perris	2D	18,000	13,152	0.73	C	D
7		West of Indian Street	Perris	3D	25,000	11,592	0.46	A	D
8		East of Indian Street	Perris	3D	25,000	5,856	0.23	A	D
9	Western Way	North of Harley Knox Boulevard	Perris	2U	13,000	1,200	0.09	A	D
10	Patterson Avenue	North of Harley Knox Boulevard	Perris	2U	13,000	132	0.01	A	D
11		South of Harley Knox Boulevard	Perris	2U	13,000	1,236	0.10	A	D
12	Indian Street	North of Nandina Avenue	MV	4D	37,500	3,672	0.10	A	D
13		South of Nandina Avenue	MV	2D	12,500	6,168	0.49	A	D
14		North of Harley Knox Boulevard	MV	2D	12,500	7,572	0.61	B	D
15		South of Harley Knox Boulevard	Perris	4D	35,900	1,428	0.04	A	D
16	Knox Street	North of Nandina Avenue	MV	2D	12,500	324	0.03	A	D
17	Perris Boulevard	North of San Michele Road	MV	3D	25,000	18,960	0.76	C	D
18		South of San Michele Road	MV	4D	37,500	16,932	0.45	A	D
19		North of Nandina Avenue	MV	4D	37,500	19,962	0.53	A	D
20		South of Nandina Avenue	MV	4D	37,500	19,956	0.53	A	D
21	San Michele Road	West of Driveway 1	MV	2D	12,500	3,444	0.28	A	D
22		Driveway 1 to Driveway 3	MV	2D	12,500	3,444	0.28	A	D
23		Driveway 3 to Perris Boulevard	MV	2D	12,500	3,444	0.28	A	D
24	Nandina Avenue	West of Indian Street	MV	2U	12,500	1,236	0.10	A	D
25		Indian Street to Knox Street	MV	2D	12,500	2,340	0.19	A	D
26		Knox Street to Driveway 2	MV	2D	12,500	1,608	0.13	A	D
27		Driveway 2 to Driveway 4	MV	2U	12,500	1,068	0.09	A	D
28		Driveway 4 to Perris Boulevard	MV	2U	12,500	1,068	0.09	A	D

[1] Per Figure 9-2: City of Moreno Valley Level of Service (LOS) Standards, City of Moreno Valley General Plan Circulation Element.

From Table CE-2 of the City of Perris General Plan Circulation Element.

[2] These maximum roadway capacities have been extracted from the City of Moreno Valley's Transportation Division's Traffic Impact Analysis Transportation Division's Traffic Impact Analysis 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 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.

[3] The City of Perris roadway standard capacity is LOS "D", with the exception of SR-74 and Cajalco/Ramona Expressway

which allows LOS "E" capacity. As such, the volumes shown in the table are based upon LOS "D" capacity with the exception of segments along SR-74 and Cajalco/Ramona Expressway which have been based upon LOS "E" capacity.

3.9 EXISTING CONDITIONS TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection volumes. For Existing conditions, there are no traffic signals that currently appear to be warranted (see Appendix "3.3").

3.10 EXISTING BASELINE CONDITIONS BASIC FREEWAY SEGMENT ANALYSIS

Existing (2012) baseline mainline directional volumes for the AM and PM peak hours are provided on Exhibit 3-16. As shown on Table 3-3, the I-215 Freeway segments analyzed for this study were found to operate at an acceptable LOS (i.e., LOS "E" or better) during the peak hours for Existing (2012) baseline traffic conditions. Existing (2012) baseline basic freeway segment analysis worksheets are provided in Appendix "3.4".

3.11 EXISTING BASELINE CONDITIONS FREEWAY MERGE/DIVERGE ANALYSIS

Ramp merge and diverge operations were also evaluated for existing (2011) baseline conditions and the results of this analysis are presented in Table 3-4. As shown in Table 3-4, the I-215 Freeway ramp merge and diverge areas at Harley Knox Boulevard currently operate at LOS "E" or better during the peak hours under Existing (2012) baseline traffic conditions. Existing (2012) baseline freeway ramp junction operations analysis worksheets are provided in Appendix "3.5".

EXHIBIT 3-16

EXISTING (2012) BASELINE I-215 FREEWAY MAINLINE VOLUMES

LEGEND:

100 (250) = AM (PM) PEAK HOUR VOLUMES

N

Table 3-3

Existing (2012) Baseline Conditions Basic Freeway Segment Analysis

Scenario	Direction	Mainline Segment	Volume		Truck %	Truck %	Lanes[1]	Density[2]		LOS	
			AM	PM	AM	PM		AM	PM	AM	PM
Existing (2012)	SB	North of Harley Knox Boulevard	2,578	3,837	3%	4%	3	14.1	21.1	B	C
		South of Harley Knox Boulevard	2,526	3,874	4%	4%	3	13.9	21.3	B	C
	NB	North of Harley Knox Boulevard	3,978	2,945	4%	4%	3	21.9	16.2	C	B
		South of Harley Knox Boulevard	3,766	2,633	4%	4%	3	20.7	14.5	C	B

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

Table 3-4

I-215 Freeway Ramp Junction Merge/Diverge Analysis
For Existing (2012) Baseline Conditions

Freeway	Direction	Ramp or Segment	Lanes on Freeway	AM Peak Hour		PM Peak Hour	
				Density[1]	LOS	Density[1]	LOS
I-215 Freeway	SB	Off-Ramp at Harley Knox Boulevard	3	19.2	B	25.9	C
		On-Ramp at Harley Knox Boulevard	3	16.7	B	23.2	C
	NB	On-Ramp at Harley Knox Boulevard	3	24.1	C	19.2	B
		Off-Ramp at Harley Knox Boulevard	3	24.9	C	18.7	B

[1] Density is measured by passenger cars per mile per lane (pc/mi/ln).

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 Project proposes a "high cube" industrial warehouse building containing 400,130 square feet. Although the Project is anticipated to be built and occupied by late 2013, the City's traffic study guidelines require that the opening year have a five (5) year minimum horizon. As such, the Opening Year analysis will assess 2017 traffic conditions.

The Project is proposed to have access on San Michele Road and Nandina Avenue. All Project access points are proposed to be full-access. Regional access to the Project site will be provided by the I-215 Freeway (located to the west) via Harley Knox Boulevard. As part of the development, the Project will construct improvements on the site adjacent roadways of San Michele Road, Nandina Avenue and Perris Boulevard.

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.

The ITE *Trip Generation* manual is a nationally recognized source for estimating site specific trip generation. ITE recently released an updated edition of the Trip Generation manual (8th Edition) in 2008, which included twelve (12) new land uses, one of which is high-cube warehouse land use (ITE Land Use Code 152). The Trip Generation manual is based on more than 4,800 trip generation studies submitted to ITE by public agencies, consulting firms, universities/colleges, developers, associations and local sections/districts/student chapters of ITE.

ITE defines high cube warehousing land use (Land Use 152) to consist of warehouses used for the storage of manufactured goods prior to their distribution to retail outlets. The facilities consist of large shells of steel buildings often subdivided for an individual tenant, with a typical ceiling height of 24 to 30 feet. They may be characterized by a small employment count due to a high level of mechanization, truck activities frequently outside of the peak hour of the adjacent street system, and good freeway access. The average square footage for the sites surveyed for high cube warehouse (Land Use 152) use was above 500,000 square feet. The number of sites observed in the compilation of this data ranges from 35-44 sites of which 5-6 sites exceed 1,000,000 square feet in gross floor area. The weighted average daily trip generation rate for high cube warehouse (Land Use 152) use is 1.44 trips per TSF.

The trip generation rates are based upon data collected by the Institute of Transportation Engineers (ITE) and presented in ITE's most recent edition of *Trip Generation*, (8th Edition, 2008) and the *City of Fontana*

Truck Trip Generation Study (August 2003) for purposes of determining vehicle-mix. The high-cube warehousing land use utilizes the Truck Terminal (LU 030) vehicle-mix from the Fontana study, consistent with other high-cube warehousing projects within the City limits.

Finally, Passenger Car Equivalents (PCE) factors have been applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles). As directed by the City of Moreno Valley and consistent with standard traffic engineering practice in Southern California, PCE factors have been utilized due to the expected heavy truck component for the proposed Project uses. PCE factors allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, for the purposes of capacity and level of service analyses. PCE factors are applied to large truck types such as large two-axles, three-axles, 4+-axles. A PCE factor of 1.5 has been applied to large 2-axle trucks, a factor of 2.0 for 3-axle trucks and a factor of 3.0 for 4+-axle trucks. These PCE factors are consistent with the values recommended by the San Bernardino Associated Governments (SANBAG) and are accepted factors in the County of Riverside and City of Moreno Valley.

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 Project is anticipated to generate a net total of approximately 1,066 trip-ends per day with 67 AM peak hour trips and 74 PM peak hour trips.

4.2 PROJECT TRIP DISTRIBUTION

Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. The Project trip distribution was developed based on anticipated travel patterns to and from the Project site for both passenger cars and truck traffic. The Project trip distribution was developed based on anticipated travel patterns to and from the Project site for both passenger cars and truck traffic. The truck trip distribution patterns have been developed based on the anticipated travel patterns for the high-cube warehousing trucks. In light of the Project's proximity to the Port of Long Beach, the following assumptions have been used to establish the Project truck traffic travel patterns:

Truck Outbound Trip Distribution

- 80% of the outbound truck trips head north on the I-215 Freeway (presumably to access the SR-60/I-10 Freeways)
- 20% of the outbound truck trips head south on the I-215 Freeway

Truck Inbound Trip Distribution

- 100% of the inbound warehouse related truck trips are assumed to originate from the Ports of Long Beach and Los Angeles and would be coming from the north on the I-215 Freeway

Table 4-1

Project Trip Generation Rates[1]

Land Use[1]	Units[3]	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			Inbound	Outbound	Total	Inbound	Outbound	Total	
High-Cube Warehouse[2]	TSF	152	0.06	0.03	0.09	0.03	0.07	0.10	1.44
46.0% Passenger Cars			0.027	0.014	0.041	0.015	0.031	0.046	0.662
6.1% 2-Axle Trucks (PCE = 1.5)			0.005	0.003	0.008	0.003	0.006	0.009	0.132
13.9% 3-Axle Trucks (PCE = 2.0)			0.016	0.009	0.025	0.009	0.019	0.028	0.400
34.0% 4-Axle+ Trucks (PCE = 3.0)			0.060	0.032	0.092	0.034	0.068	0.102	1.469

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eighth Edition (2008).

[2] Vehicle Mix Source: City of Fontana Truck Trip Generation Study for LU 030, August 2003. PCE rates are per SANBAG.

[3] TSF = thousand square feet

Table 4-2

Project Trip Generation Summary

Land Use	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Parcel 1 (High-Cube Warehouse)	400.130	TSF							
Passenger Cars:			11	6	17	6	12	18	265
Truck Trips:									
2-axle:			*2*	*1*	*3*	*1*	*2*	*4*	*53*
3-axle:			*7*	*4*	*10*	*4*	*7*	*11*	*160*
4+-axle:			*24*	*13*	*37*	*13*	*27*	*41*	*588*
- Net Truck Trips (PCE) [2]			*33*	*18*	*50*	*18*	*37*	*56*	*801*
First Inland Logistics Center II (PCE) [3]			**43**	**23**	**67**	**24**	**50**	**74**	**1,066**

[1] TSF = Thousand Square Feet.

[2] Based on the following Passenger Car Equivalent Factors: 2-axle = 1.5 PCE, 3-axle = 2.0 PCE, 4+-axle = 3.0 PCE. (See Table 1)

[3] TOTAL TRIPS (PCE) = Passenger Cars + Net Truck Trips (PCE).

The total volume on each roadway was divided by the total site traffic generation to indicate the percentage of Project traffic that would use each component of the regional roadway system in each relevant direction. The Project passenger car trip distribution pattern is graphically depicted on Exhibit 4-1. The Project truck trip distribution pattern is graphically depicted on Exhibit 4-2. Each of these distribution patterns was reviewed and approved by the City of Moreno Valley as part of the traffic study scoping process.

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 average daily traffic (ADT) volumes for the weekday are shown on Exhibit 4-3. Project AM and PM peak hour volumes are shown on Exhibits 4-4 and 4-5.

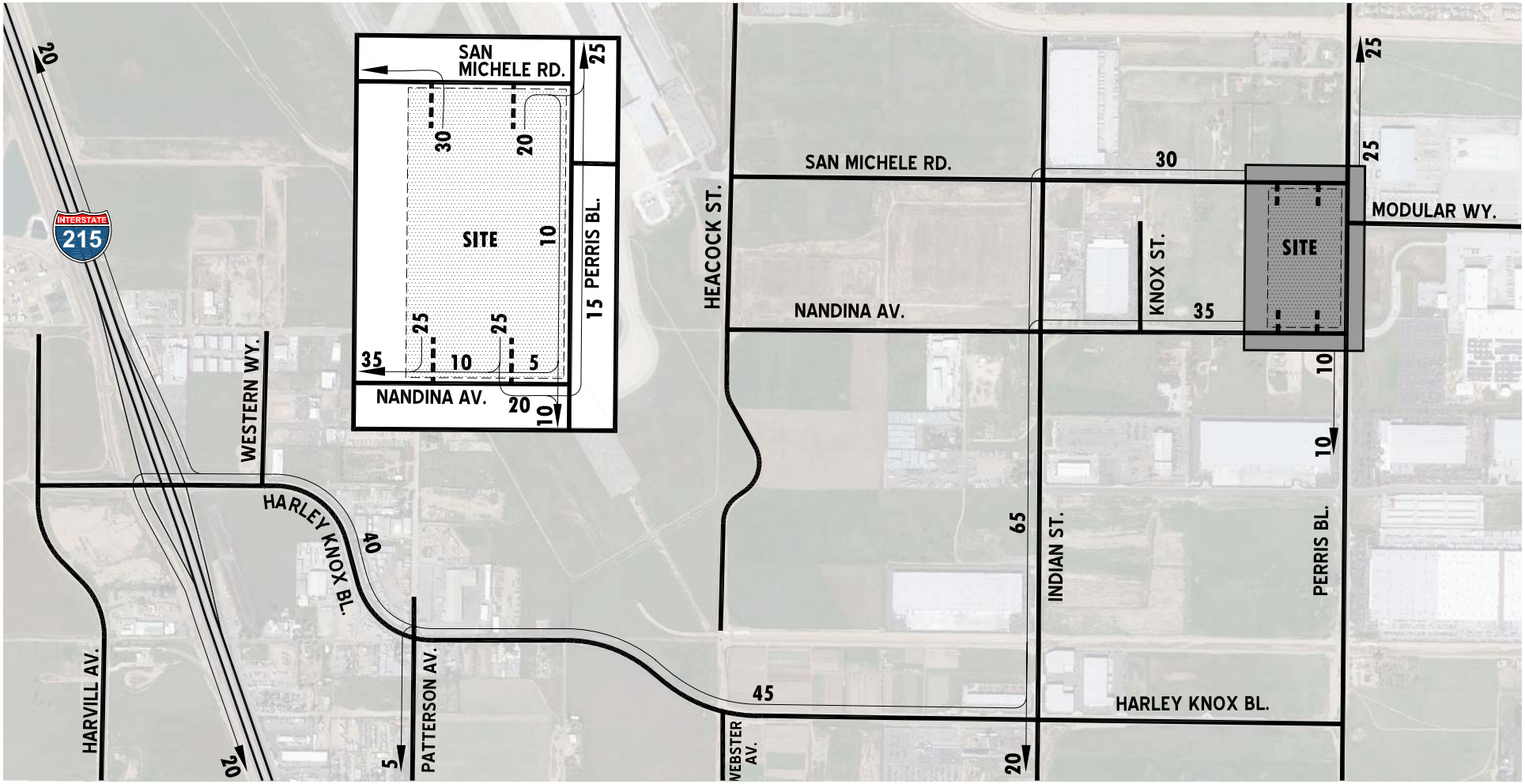
4.5 BACKGROUND TRAFFIC

Future year traffic forecasts have been based upon five (5) years of background (ambient) growth at 2% per year for 2017 traffic conditions. The ambient growth factor is intended to approximate regional traffic growth. The total ambient growth is 10.4% for 2017 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

EXHIBIT 4-1

PROJECT (PASSENGER CAR) TRIP DISTRIBUTION



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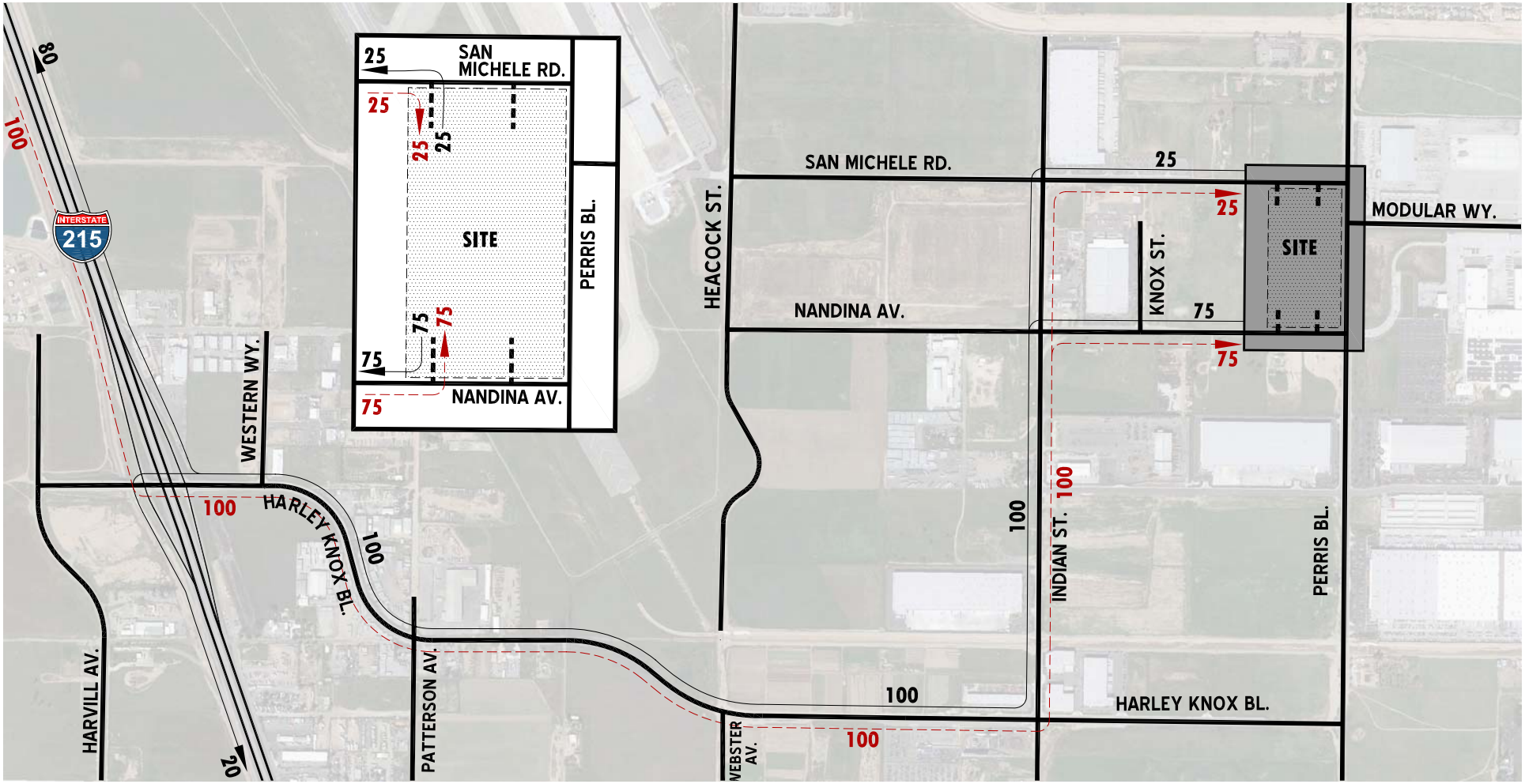
LEGEND:

10 = PERCENT TO/FROM PROJECT

N

EXHIBIT 4-2

PROJECT (TRUCK) TRIP DISTRIBUTION



LEGEND:

10 = PERCENT TO/FROM PROJECT
—— = OUTBOUND
- - - - = INBOUND

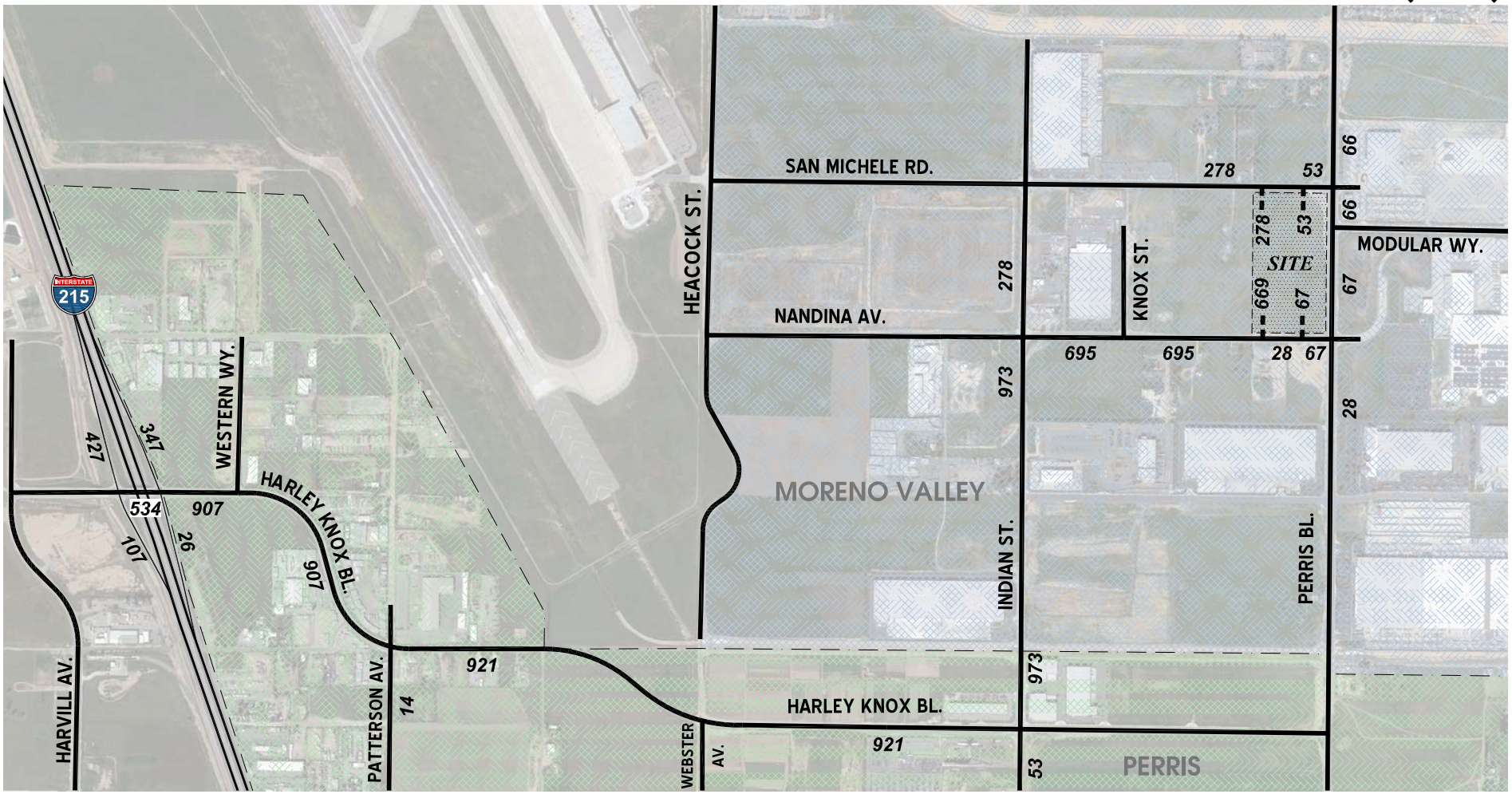
N

First Inland Logistics II
City of Moreno Valley, CA (JN - 08179:201.dwg)

URBAN CROSSROADS

EXHIBIT 4-3

PROJECT ONLY
AVERAGE DAILY TRAFFIC (ADT)



LEGEND:

10 = VEHICLES PER DAY

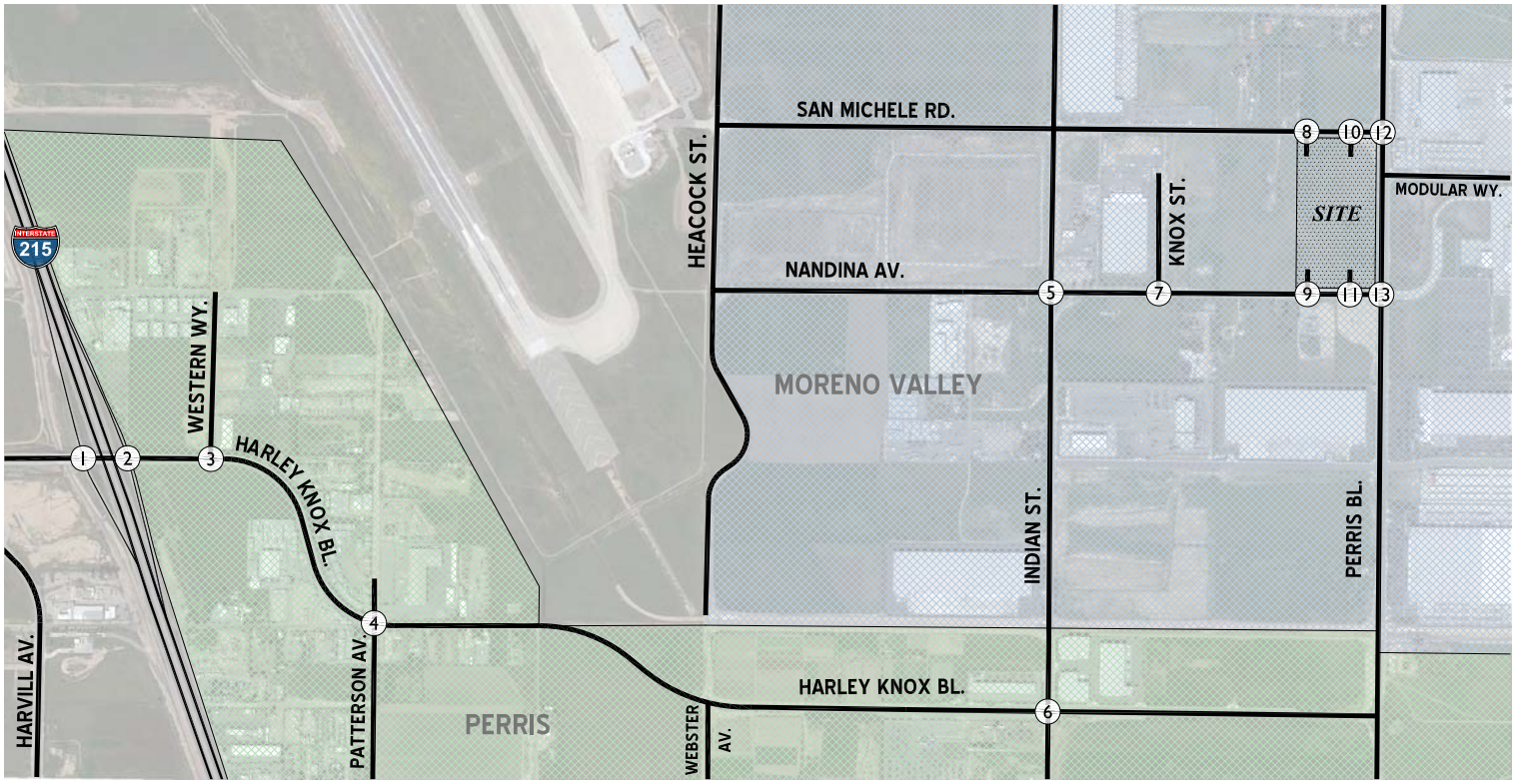
N

First Inland Logistics II
City of Moreno Valley, CA (JN - 08179:101.dwg)

URBAN CROSSROADS

EXHIBIT 4-4

PROJECT ONLY
AM PEAK HOUR INTERSECTION VOLUMES



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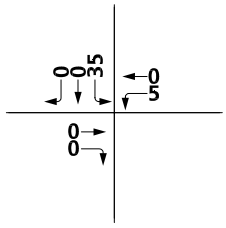

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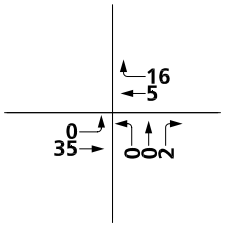

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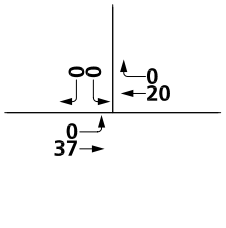
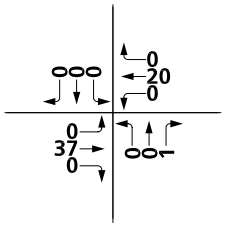
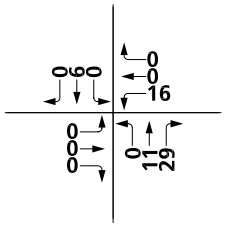


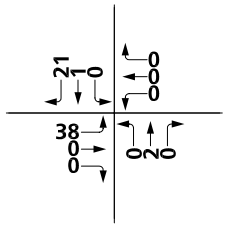
4 Patterson Av. & Harley Knox Bl.



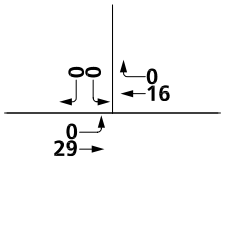
5 Indian St. & Nandina Av.



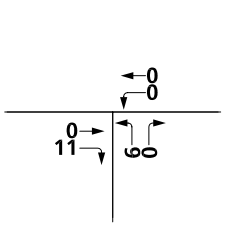
6 Indian St. & Harley Knox Bl.



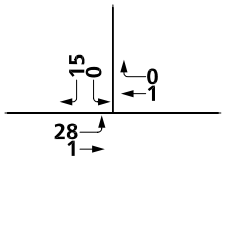
7 Knox St. & Nandina Av.



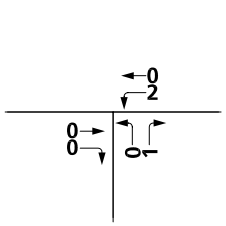
8 Driveway 1 & San Michele Rd.



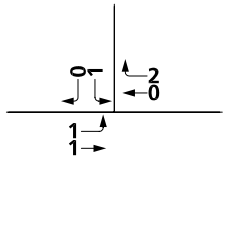
9 Driveway 2 & Nandina Av.



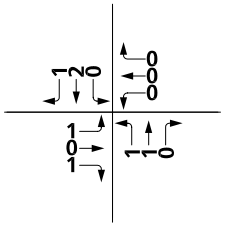
10 Driveway 3 & San Michele Rd.



11 Driveway 4 & Nandina Av.



12 Perris Bl. & San Michele Rd.



13 Perris Bl. & Nandina Av.

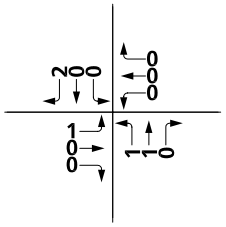
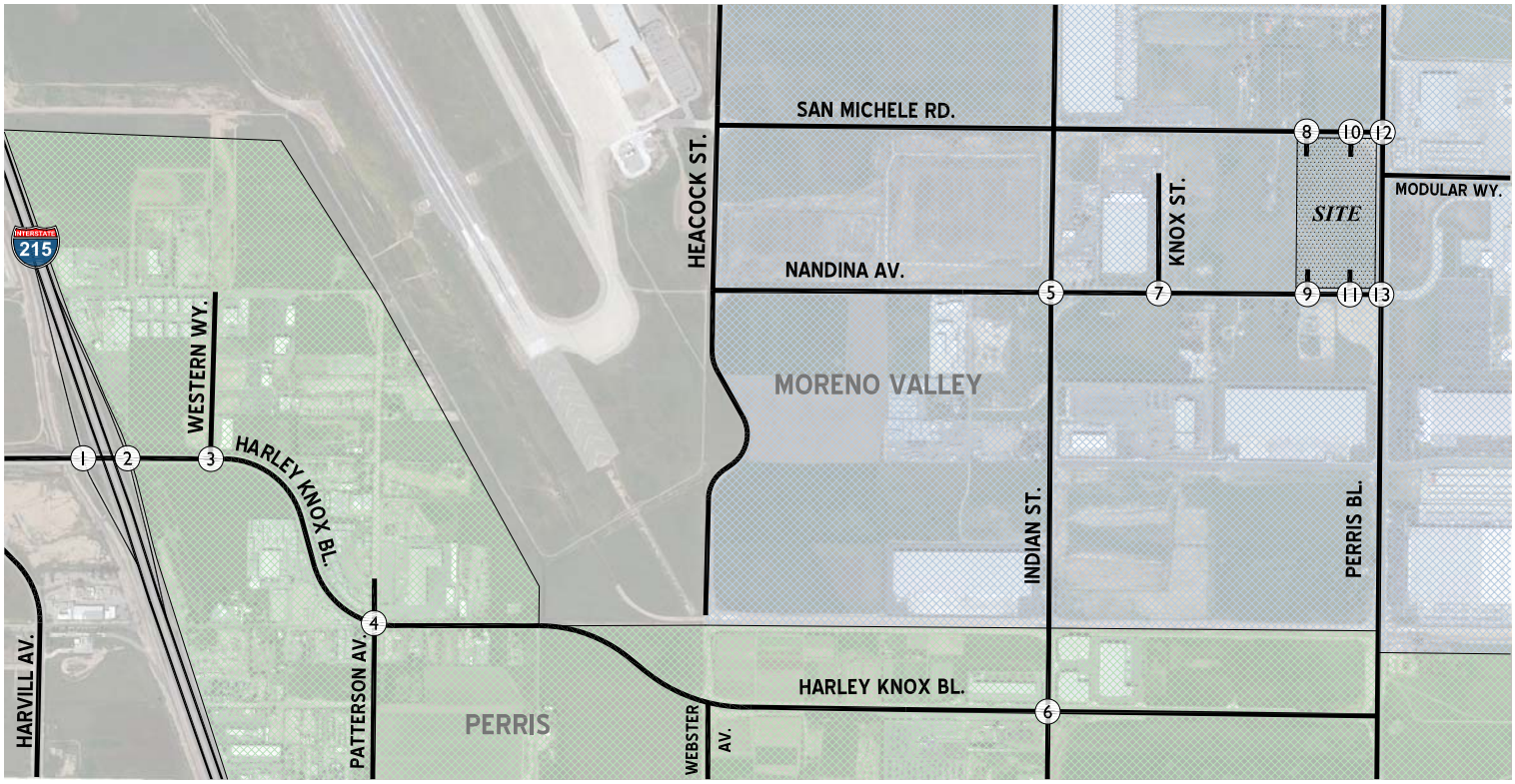
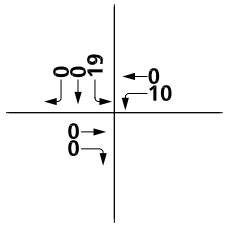


EXHIBIT 4-5

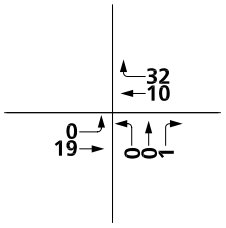
PROJECT ONLY
PM PEAK HOUR INTERSECTION VOLUMES



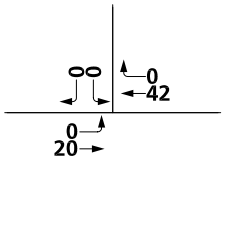
1 I-215 SB Ramps & Harley Knox Bl.



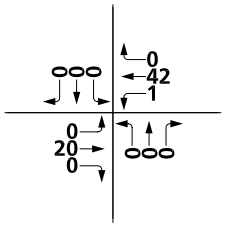
2 I-215 NB Ramps & Harley Knox Bl.



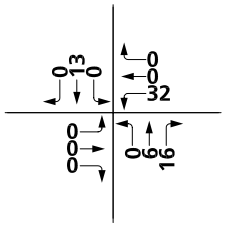
3 Western Wy. & Harley Knox Bl.



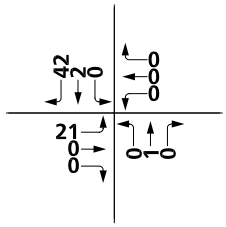
4 Patterson Av. & Harley Knox Bl.



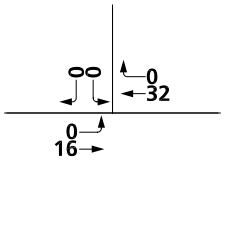
5 Indian St. & Nandina Av.



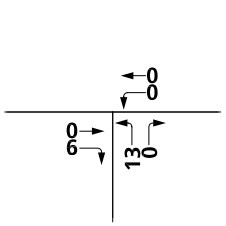
6 Indian St. & Harley Knox Bl.



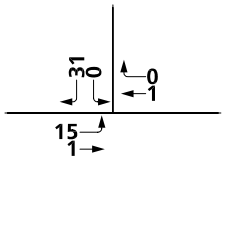
7 Knox St. & Nandina Av.



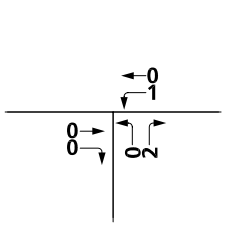
8 Driveway 1 & San Michele Rd.



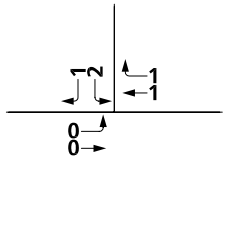
9 Driveway 2 & Nandina Av.



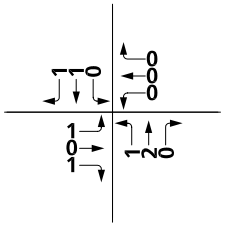
10 Driveway 3 & San Michele Rd.



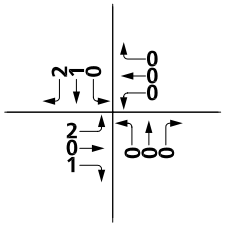
11 Driveway 4 & Nandina Av.



12 Perris Bl. & San Michele Rd.



13 Perris Bl. & Nandina Av.



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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.

4.6 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 4-6 illustrates the cumulative development location map.

4.6.1 CUMULATIVE DEVELOPMENT LAND USE SUMMARY

A summary of cumulative development land uses are shown on Table 4-3. It should be noted that consistent with the Project, PCE volumes have been estimated where applicable. The cumulative development projects assumed in this traffic analysis are estimated to generate 248,824 net PCE trip-ends per day during a typical weekday with approximately 21,484 net PCE vehicle trips during the AM peak hour and 25,545 net PCE vehicle trips during the PM peak hour. Pursuant to discussions with City staff, this region of Moreno Valley / Perris is not anticipated to fully construct and absorb 100% of the proposed residential, commercial retail and industrial developments by 2017 (the Project's opening year). As such, near-term cumulative conditions assume approximately 65% absorption of the cumulative developments.

4.6.2 CUMULATIVE DEVELOPMENT TRIP ASSIGNMENT

Based on the identified trip distribution patterns for the cumulative development projects on arterial highways throughout the study area for future conditions, cumulative development ADT volumes, AM peak hour and PM peak hour intersection turning movement volumes are shown on Exhibits 4-7, 4-8 and 4-9, respectively.

4.7 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 Project is not expected to be built out until 2013 and City of Moreno Valley TIA guidelines requires the EAP (Opening Year 2017 with Project) analysis scenario to identify project-related impacts.

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

EXHIBIT 4-6

CUMULATIVE DEVELOPMENT PROJECTS LOCATION MAP

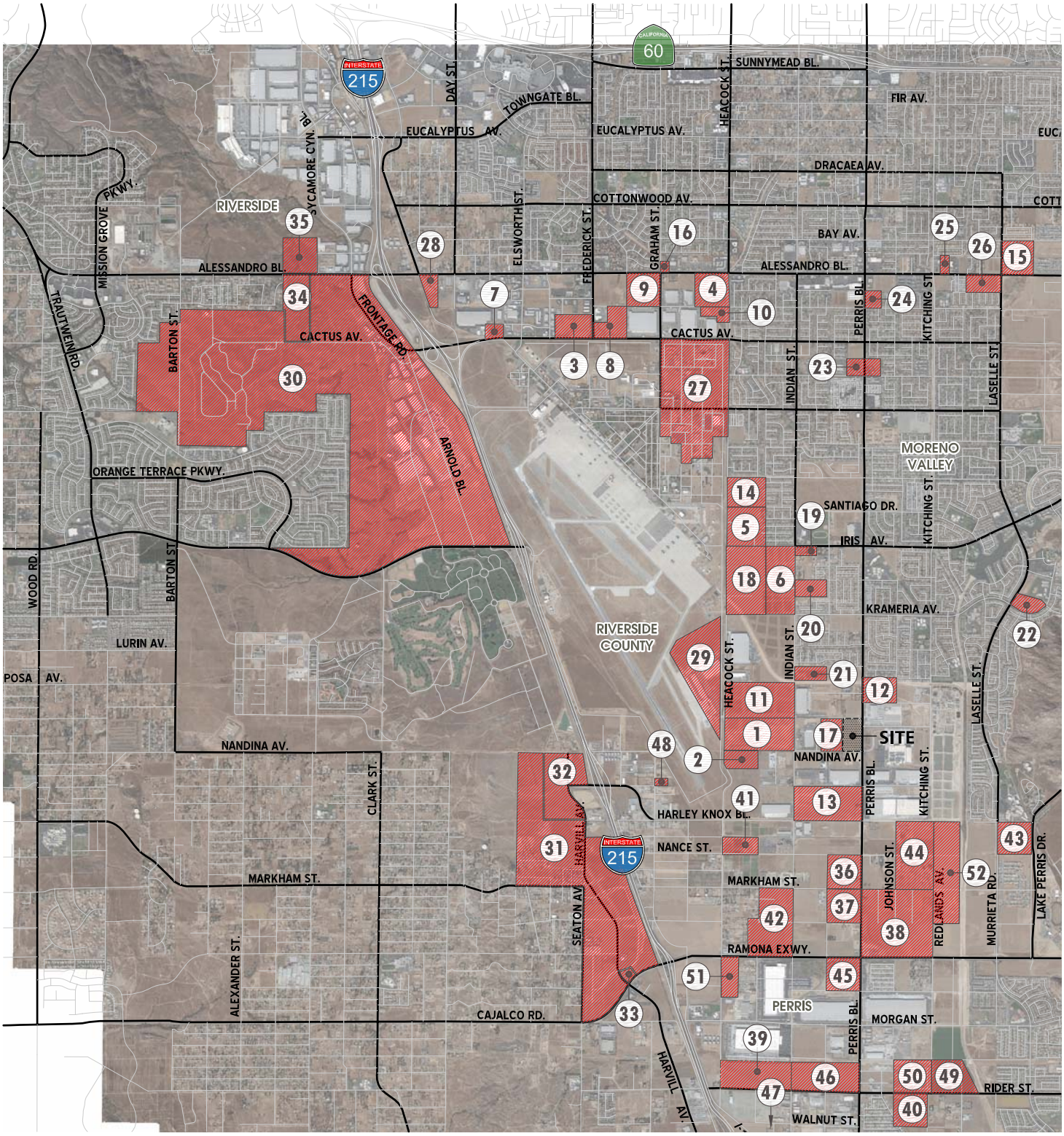
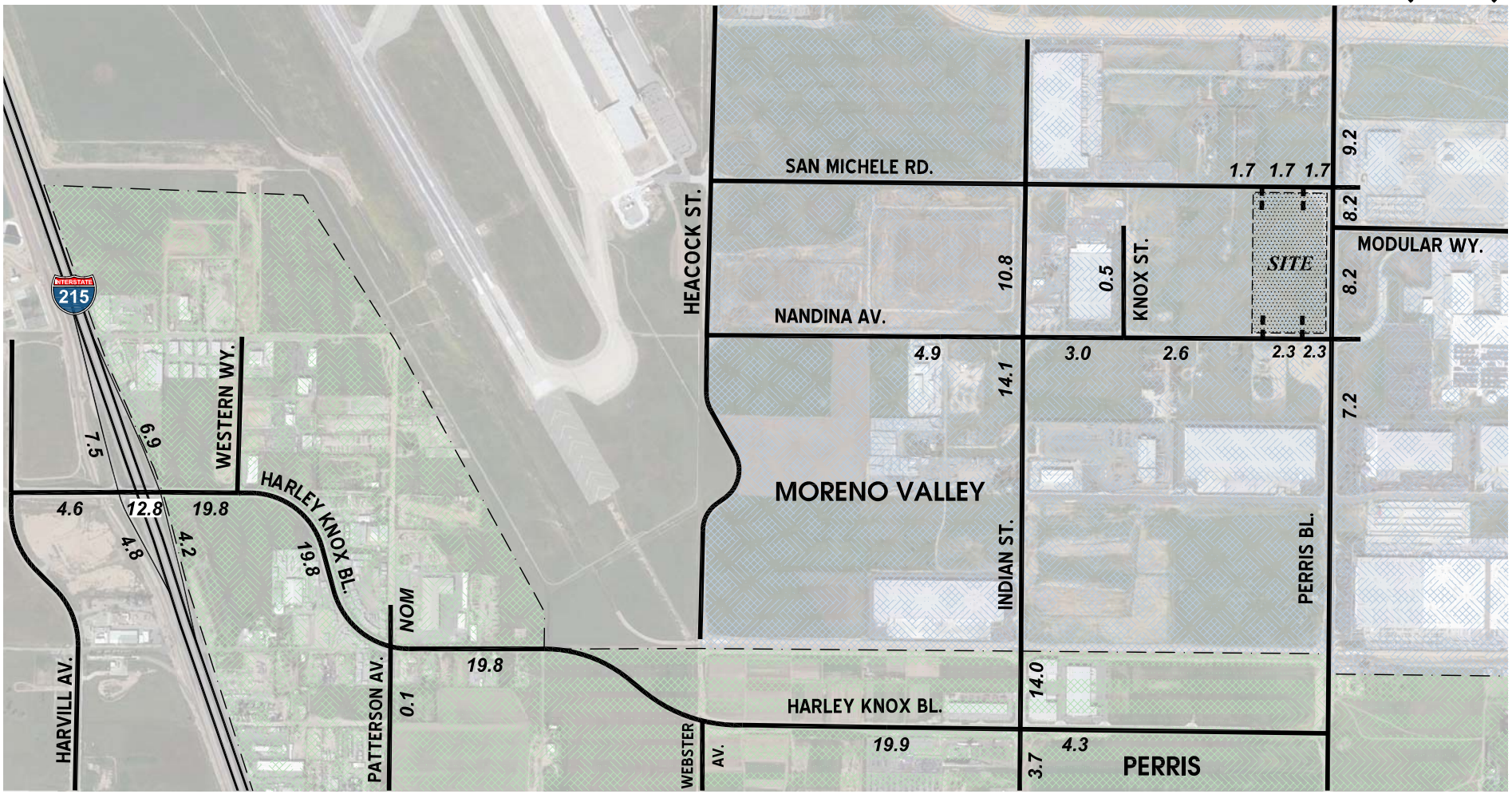


EXHIBIT 4-7

CUMULATIVE DEVELOPMENT AVERAGE DAILY TRAFFIC (ADT)



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

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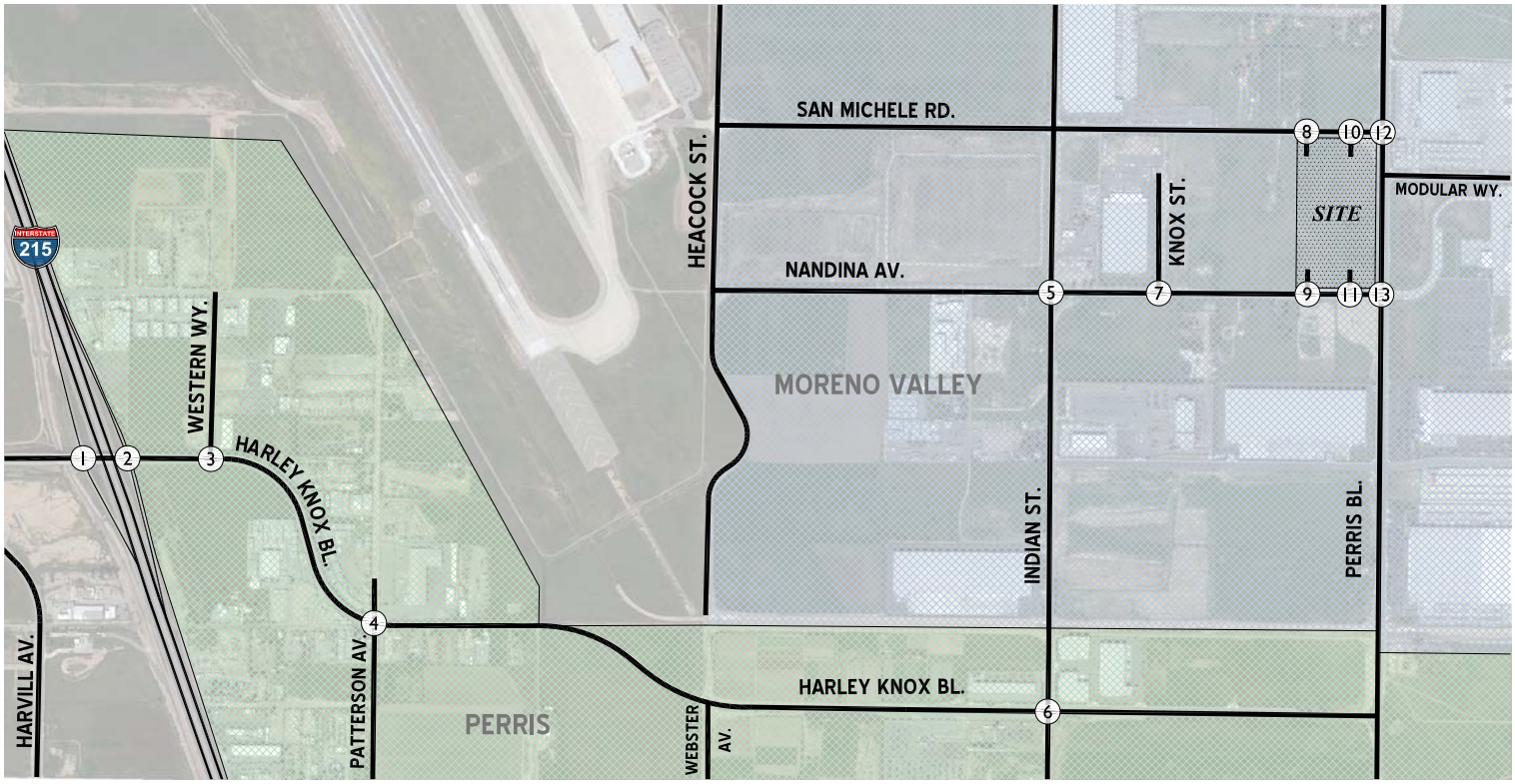
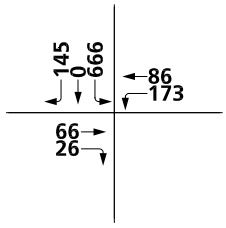
EXHIBIT 4-8

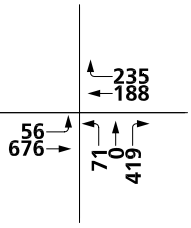
CUMULATIVE DEVELOPMENT
AM PEAK HOUR INTERSECTION VOLUMES



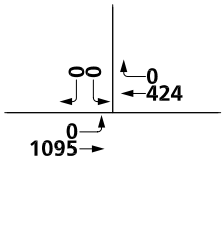
1 I-215 SB Ramps & Harley Knox Bl.



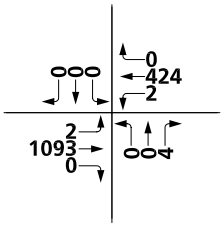
2 I-215 NB Ramps & Harley Knox Bl.



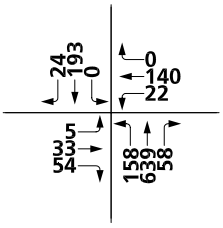
3 Western Wy. & Harley Knox Bl.



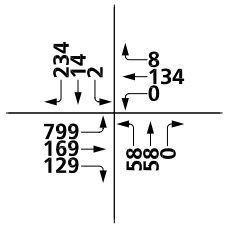
4 Patterson Av. & Harley Knox Bl.



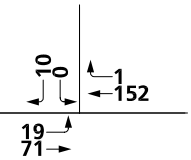
5 Indian St. & Nandina Av.



6 Indian St. & Harley Knox Bl.



7 Knox St. & Nandina Av.



8 Driveway 1 & San Michele Rd.

Future Intersection

9 Driveway 2 & Nandina Av.

Future Intersection

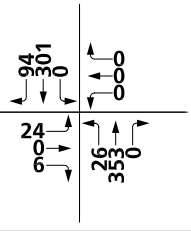
10 Driveway 3 & San Michele Rd.

Future Intersection

11 Driveway 4 & Nandina Av.

Future Intersection

12 Perris Bl. & San Michele Rd.



13 Perris Bl. & Nandina Av.

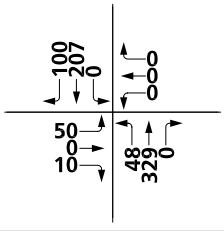


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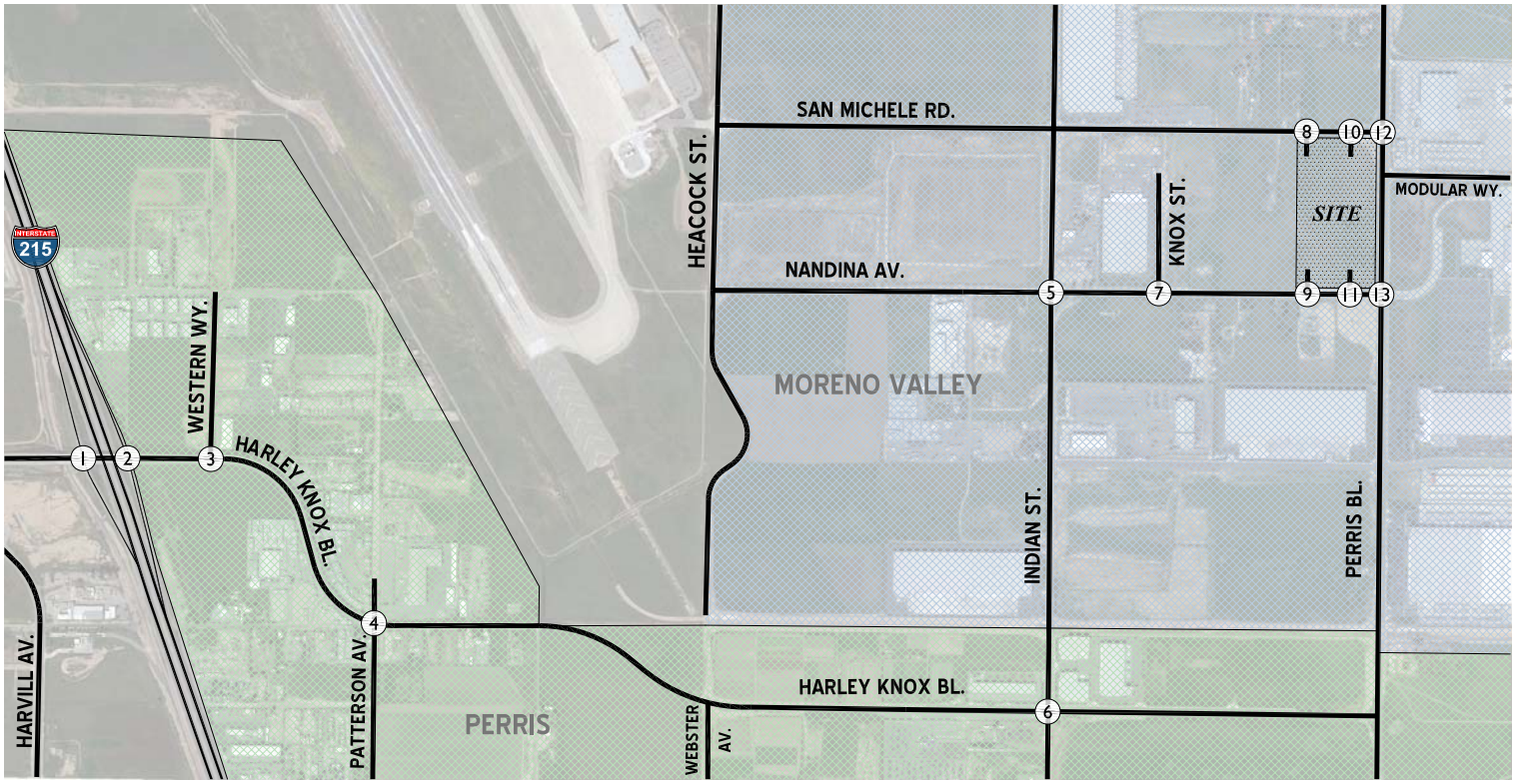
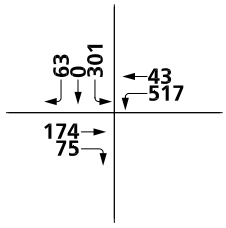
EXHIBIT 4-9

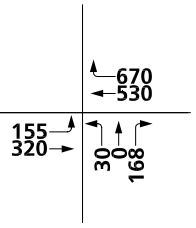
CUMULATIVE DEVELOPMENT
PM PEAK HOUR INTERSECTION VOLUMES



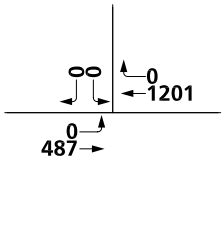
1 I-215 SB Ramps & Harley Knox Bl.



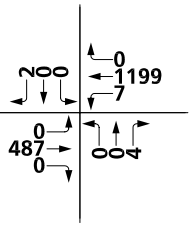
2 I-215 NB Ramps & Harley Knox Bl.



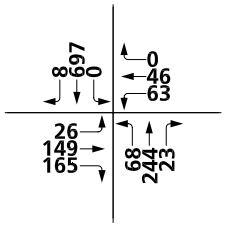
3 Western Wy. & Harley Knox Bl.



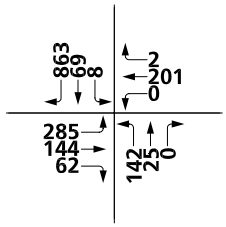
4 Patterson Av. & Harley Knox Bl.



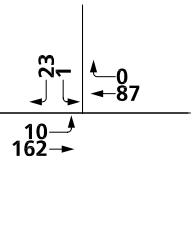
5 Indian St. & Nandina Av.



6 Indian St. & Harley Knox Bl.



7 Knox St. & Nandina Av.



8 Driveway 1 & San Michele Rd.

Future Intersection

9 Driveway 2 & Nandina Av.

Future Intersection

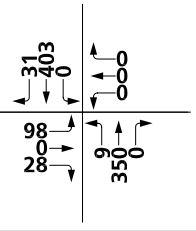
10 Driveway 3 & San Michele Rd.

Future Intersection

11 Driveway 4 & Nandina Av.

Future Intersection

12 Perris Bl. & San Michele Rd.



13 Perris Bl. & Nandina Av.

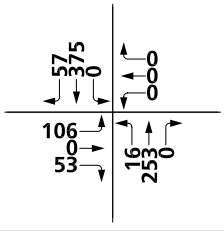


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Table 4-3 (Page 1 of 2)

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
CITY OF MORENO VALLEY				
1	PA 06-0152 & PA 06-0153 (First Park Nandina I & II)	High-Cube Warehouse	1,182.918	TSF
2	PA 06-0014 (Pierce Hardy Limited Partnership)[3]	Lumber Yard	67.000	TSF
3	PA 08-0072 (Overton Moore Properties)	High-Cube Warehouse	520.000	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)[4]	Hotel	110	RMS
		Fast Food w/Drive Thru	8.000	TSF
		Commercial	42.400	TSF
8	PA 07-0147; PA 07-0157 (MV Centerpointe Business Center)	High-Cube Warehouse	671.990	TSF
9	PA 08-0002; PA 08-0003 (Centerpointe Business Park I)	High-Cube Warehouse	607.920	TSF
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
12	PA 06-0017 (Ivan Devries)	Industrial Park	569.200	TSF
13	PA 09-0004 (Vogel)	High-Cube Warehouse	1,616.133	TSF
14	TM 34748	SFDR	135	DU
15	PA 08-0079-0081 (Winco Foods)	Discount Supermarket	95.440	TSF
		Specialty Retail	14.800	TSF
16	PA 09-0031	Gas Station	12	VFP
17	First Park Nandina III	High-Cube Warehouse	691.960	TSF
18	March Business Center	General Light Industrial	16.732	TSF
		Warehousing	87.429	TSF
		High-Cube Warehouse	1,380.246	TSF
19	TM 33810	SFDR	16	DU
20	TM 34151	SFDR	37	DU
21	TM 32716	SFDR	57	DU
22	TM 32917	Condo/Townhomes	227	DU
23	TM 33417 & TM 33607	Condo/Townhomes	112	DU
24	TM 34988	Condo/Townhomes	251	DU
25	TM 34216	Condo/Townhomes	40	DU
26	TM 34681	Condo/Townhomes	49	DU
MARCH JOINT POWERS AUTHORITY				
27	March Lifecare Campus Specific Plan[3]	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

Table 4-3 (Page 2 of 2)

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
COUNTY OF RIVERSIDE				
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
CITY OF RIVERSIDE				
35	P07-1028 (Alessandro Business Park)	General Light Industrial	652.018	TSF
CITY OF PERRIS				
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
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
52	Stratford Ranch Specific Plan	High-Cube Warehouse	1,725.411	TSF

[1] SFDR = Single Family Detached Residential

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

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

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

approximate the Opening Year conditions for the study year of 2017, 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 2017, 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.

4.8 NEAR-TERM (2017) CONDITIONS

The buildup approach combines existing traffic counts with a background ambient growth factor to forecast the near-term 2017 traffic conditions. An ambient growth factor of 10.4% accounts for background (area-wide) traffic increases that occur over time up to the year 2017 from the year 2012 (compounded two percent per year growth over a minimum five year period). Traffic volumes generated by the Project are then added to assess the 2017 With Project traffic conditions. The 2017 roadway network is similar to the Existing conditions roadway network, with the exception of future roadways proposed to be developed by the Project.

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

- Opening Year (2017) Without Project
    - Existing 2012 counts
    - Ambient growth traffic (10.4%)

- Opening Year (2017) With Project
    - Existing 2012 counts
    - Ambient growth traffic (10.4%)
    - Project traffic

- Opening Year Cumulative (2017) Without Project
    - Existing 2012 counts
    - Ambient growth traffic (10.4%)
    - Cumulative Development Project traffic

- Opening Year Cumulative (2017) With Project
    - Existing 2012 counts
    - Ambient growth traffic (10.4%)
    - Cumulative Development Project traffic
    - Project traffic

5.0 EXISTING PLUS PROJECT TRAFFIC ANALYSIS

Although not required by the lead jurisdiction's traffic impact analysis guidelines, for purposes of full disclosure, an analysis of existing traffic volumes plus traffic generated by the proposed Project (E+P) has been included in this analysis. The reason this particular analysis scenario is provided for informational purposes only, and why most traffic impact study guidelines published by local jurisdictions throughout California do not typically require analysis of the "E+P" scenario is that it rarely materializes as an actual scenario in the real world. In fact, the time period between the date a Notice of Preparation is issued and the date project buildout occurs can often be a period of several years or more. During this time period, other projects are being constructed, the transportation network is evolving and traffic patterns are changing. Therefore, the "E+P" scenario never materializes in real world conditions and thus does not accurately describe the environment that exists when a particular project is constructed and becomes operational.

In addition, unlike other areas of CEQA inquiry, such as the construction of a building where none currently exists, which in the context of a habitat corridor there is true utility to performing an "E+P" analysis. However, in the context of traffic impacts that are derivative of a development project, traffic is virtually always a cumulative issue. By their very nature, traffic impacts are very fluid and are influenced by other growth and projects that are occurring throughout the transportation network. In other words, because normal increases in traffic occur over time, background traffic levels that occur at the time the Project is actually constructed are a more accurate representation of the Existing baseline against which to measure the true impacts of a proposed Project. Nevertheless, Urban Crossroads has conducted level of service calculations for study intersections, roadway segments and I-215 Freeway mainline to evaluate their operations under hypothetical E+P traffic conditions for buildout of the proposed Project.

This section discusses the traffic forecasts for Existing plus Project (E+P) conditions and the resulting intersection, roadway segment and freeway mainline operations. As noted previously, this scenario is presented for informational purposes only.

5.1 EXISTING PLUS PROJECT TRAFFIC VOLUME FORECASTS

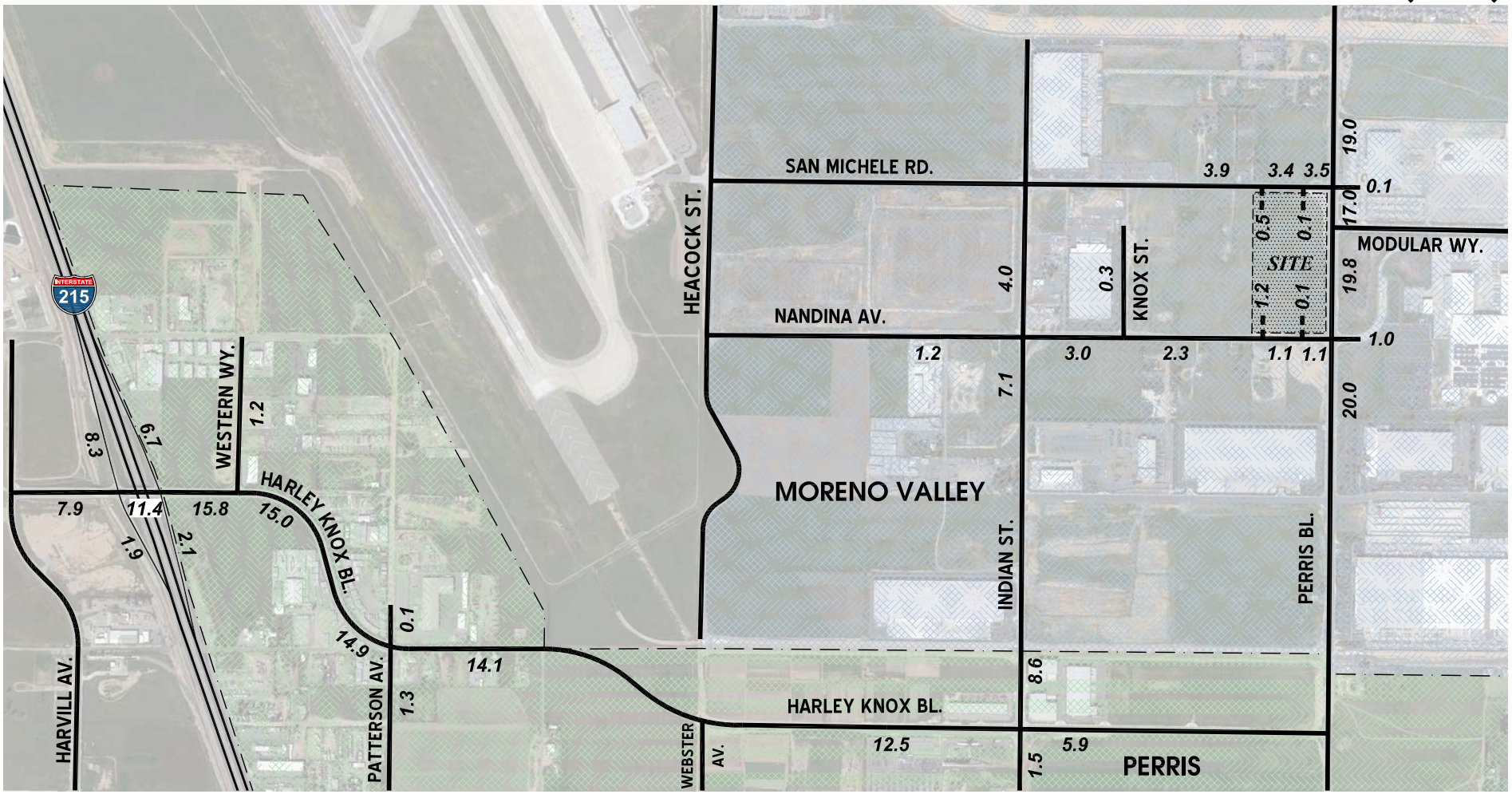
This scenario includes Existing (2012) traffic volumes plus project traffic. Exhibit 5-1 shows the ADT volumes which can be expected for E+P traffic conditions. E+P AM and PM peak hour intersection turning movement volumes are shown on Exhibits 5-2 and 5-3, respectively.

5.2 INTERSECTION OPERATIONS ANALYSIS

E+P peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TIA. The intersection analysis results are summarized in Table 5-1 which indicates that the study area intersections will experience

EXHIBIT 5-1

EXISTING PLUS PROJECT AVERAGE DAILY TRAFFIC (ADT)



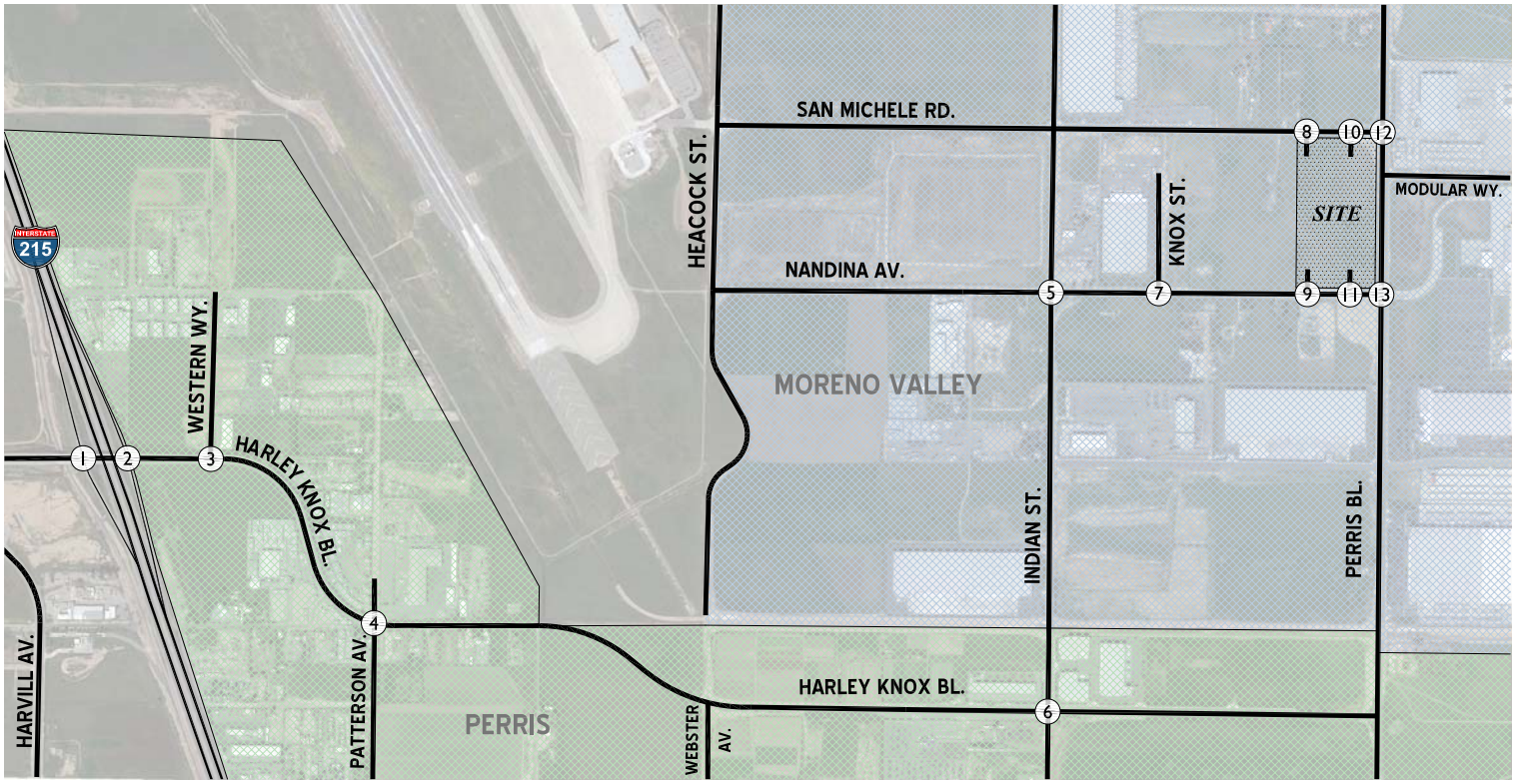
LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

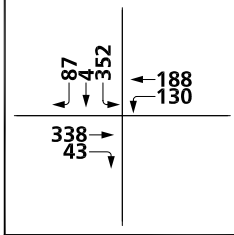
N

EXHIBIT 5-2

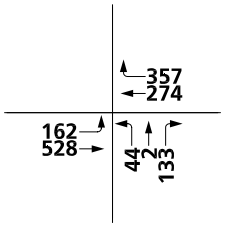
EXISTING PLUS PROJECT AM PEAK HOUR INTERSECTION VOLUMES



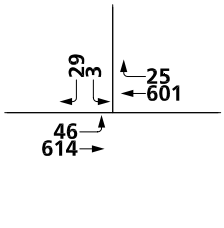
1 I-215 SB Ramps & Harley Knox Bl.



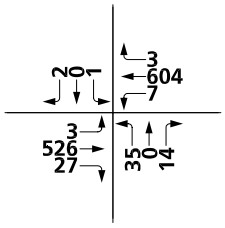
2 I-215 NB Ramps & Harley Knox Bl.



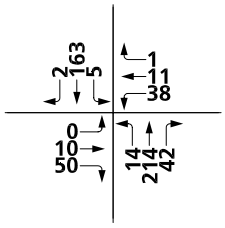
3 Western Wy. & Harley Knox Bl.



4 Patterson Av. & Harley Knox Bl.



5 Indian St. & Nandina Av.



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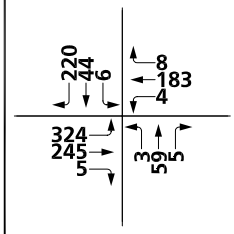
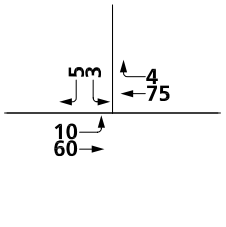
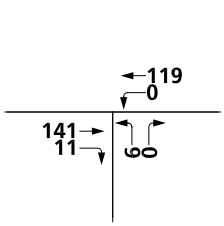


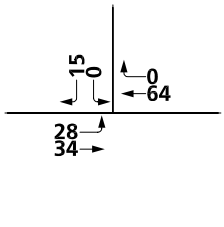
7 Knox St. & Nandina Av.



8 Driveway 1 & San Michele Rd.



9 Driveway 2 & Nandina Av.



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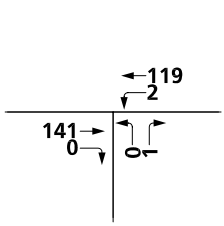

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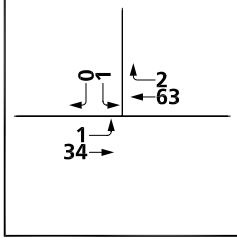

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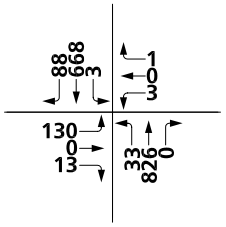

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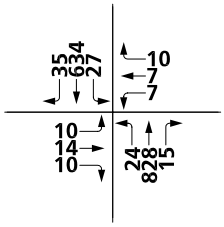
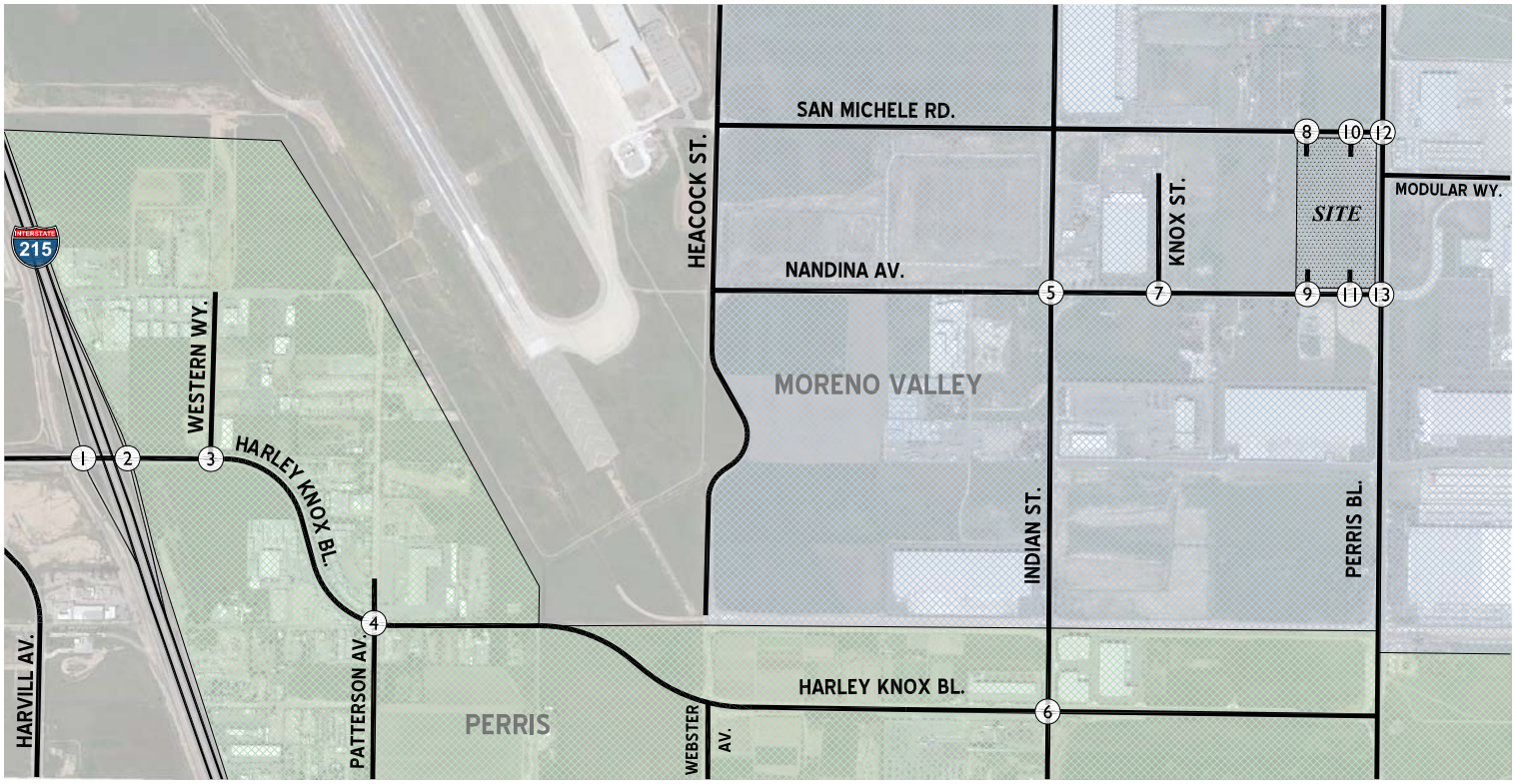


EXHIBIT 5-3

EXISTING PLUS PROJECT PM PEAK HOUR INTERSECTION VOLUMES



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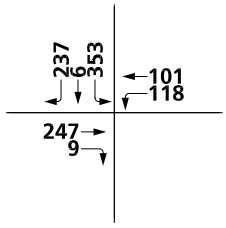
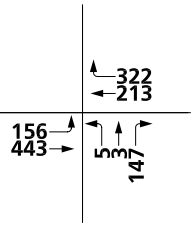
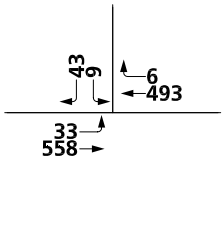


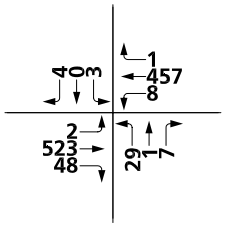
2 I-215 NB Ramps & Harley Knox Bl.



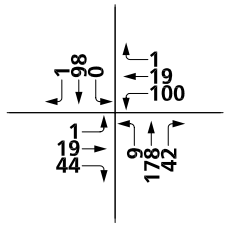
3 Western Wy. & Harley Knox Bl.



4 Patterson Av. & Harley Knox Bl.



5 Indian St. & Nandina Av.



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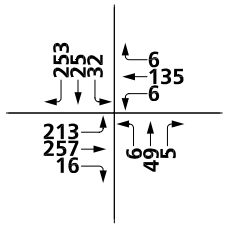
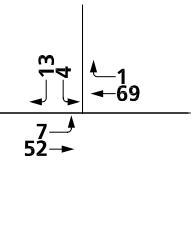
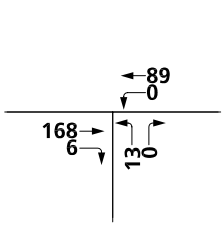


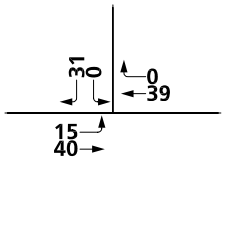
7 Knox St. & Nandina Av.



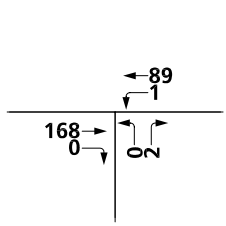
8 Driveway 1 & San Michele Rd.



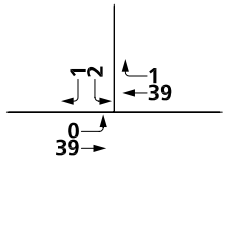
9 Driveway 2 & Nandina Av.



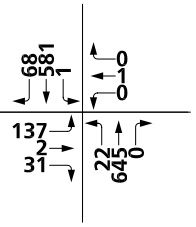
10 Driveway 3 & San Michele Rd.



11 Driveway 4 & Nandina Av.



12 Perris Bl. & San Michele Rd.



13 Perris Bl. & Nandina Av.

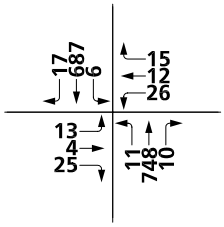


Table 5-1

Intersection Analysis for Existing Plus Project Conditions

#	Intersection	Jurisdiction	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	AM	PM
1	I-215 SB Ramps / Harley Knox Bl.	Caltrans	TS	0	0	0	0	1	1	0	2	d	1	2	0	25.7	28.5	C	C
2	I-215 NB Ramps / Harley Knox Bl.	Caltrans	TS	0	1	1	0	0	0	1	2	0	0	2	d	17.6	18.0	C	B
3	Western Wy. / Harley Knox Bl.	Perris	CSS	0	0	0	0	1	0	0	2	0	0	2	0	11.9	13.5	B	B
4	Patterson Av. / Harley Knox Bl.	Perris	TS	0	1	0	0	1	0	1	1	1	1	1	0	18.2	18.0	B	B
5	Indian St. / Nandina Av.	MV	TS	1	2	0	1	2	0	1	1	1	1	1	0	23.8	25.3	C	C
6	Indian St. / Harley Knox Bl.	Perris	TS	2	2	1	1	2	0>	1	1	1	2	2	0	31.8	29.4	C	C
7	Knox St. / Nandina Av.	MV	CSS	0	0	0	1	0	1	1	1	0	0	1	0	9.4	9.6	A	A
8	Driveway 1 / San Michele Rd.	MV	**CSS**	0	**1**	0	0	0	0	0	**2**	0	**1**	1	0	10.1	10.5	B	B
9	Driveway 2 / Nandina Av.	MV	**CSS**	0	0	0	0	**1**	0	**1**	1	0	0	1	0	8.7	8.8	A	A
10	Driveway 3 / San Michele Rd.	MV	**CSS**	0	**1**	0	0	0	0	0	**2**	0	**1**	1	0	8.6	8.8	A	A
11	Driveway 4 / Nandina Av.	MV	**CSS**	0	0	0	0	**1**	0	**1**	1	0	0	1	0	9.0	8.8	A	A
12	Perris Bl. / San Michele Rd.	MV	TS	1	2	1	1	1	1>	1	1	**1**	1	1	1	36.2	36.9	D	D
13	Perris Bl. / Nandina Av.	MV	TS	1	3	0	1	1	1>	1	2	0	1	1	1	37.1	46.7	D	D

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

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; 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.

[3] CSS = Cross-street Stop; AWS = All-Way Stop; TS = Traffic Signal

acceptable LOS (i.e., LOS "D" or better) during the peak hours. These findings are consistent with the results of the Existing (2012) conditions analysis.

The intersection operations analysis worksheets are included in Appendix "5.1" of this TIA.

5.3 ROADWAY SEGMENT CAPACITY ANALYSIS

As noted previously, the City of Moreno Valley stated roadway segment capacities are approximate figures only, and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet future traffic demand. Table 5-2 provides a summary of the E+P 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 2-2. As shown on Table 5-2, the study area roadway segments are anticipated to operate at acceptable LOS (i.e., LOS "D" or better) under E+P traffic conditions.

5.4 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 traffic signals that appear to be warranted in addition to those currently warranted under Existing (2012) conditions (see Appendix "5.2").

5.5 BASIC FREEWAY SEGMENT ANALYSIS

E+P mainline directional volumes for the AM and PM peak hours are provided on Exhibit 5-4. Mainline segment analysis results for the AM and PM peak hours are summarized on Table 5-3. As shown on Table 5-3, the segments along the I-215 Freeway are anticipated to operate at acceptable levels of service (LOS "C" or better) during the peak hour for E+P traffic conditions. E+P basic freeway segment analysis worksheets are provided in Appendix "5.3".

5.6 FREEWAY MERGE/DIVERGE ANALYSIS

Ramp merge and diverge operations were also evaluated for E+P conditions and are presented in Table 5-4. As shown in Table 5-4, the I-215 Freeway ramp merge and diverge areas operate at LOS "E" or better during the peak hours under existing plus project traffic conditions. E+P freeway ramp junction operations analysis worksheets are provided in Appendix "5.4".

Table 5-2

Existing Plus Project Conditions
Roadway Volume/Capacity Analysis[1]

#	Roadway	Segment Limits	Jurisdiction	Roadway Section	LOS Capacity[2,3]	Existing Plus Project	V/C	LOS	Acceptable LOS
1	Harley Knox Boulevard	West of I-215 Freeway	Co. of Riv.	4D	35,900	7,884	0.22	A	D
2		I-215 SB Ramps to I-215 NB Ramps	Perris	4D	35,900	11,358	0.32	A	D
3		I-215 NB Ramps to Western Way	Perris	4U	25,900	15,751	0.61	B	D
4		East of Western Way	Perris	4U	25,900	14,959	0.58	A	D
5		West of Patterson Avenue	Perris	4U	25,900	14,899	0.58	A	D
6		East of Patterson Avenue	Perris	2D	18,000	14,073	0.78	C	D
7		West of Indian Street	Perris	3D	25,000	12,512	0.50	A	D
8		East of Indian Street	Perris	3D	25,000	5,856	0.23	A	D
9	Western Way	North of Harley Knox Boulevard	Perris	2U	13,000	1,200	0.09	A	D
10	Patterson Avenue	North of Harley Knox Boulevard	Perris	2U	13,000	132	0.01	A	D
11		South of Harley Knox Boulevard	Perris	2U	13,000	1,250	0.10	A	D
12	Indian Street	North of Nandina Avenue	MV	4D	37,500	3,950	0.11	A	D
13		South of Nandina Avenue	MV	2D	12,500	7,141	0.57	A	D
14		North of Harley Knox Boulevard	MV	2D	12,500	8,545	0.68	B	D
15		South of Harley Knox Boulevard	Perris	4D	35,900	1,481	0.04	A	D
16	Knox Street	North of Nandina Avenue	MV	2D	12,500	324	0.03	A	D
17	Perris Boulevard	North of San Michele Road	MV	3D	25,000	19,026	0.76	C	D
18		South of San Michele Road	MV	4D	37,500	16,998	0.45	A	D
19		North of Nandina Avenue	MV	4D	37,500	19,759	0.53	A	D
20		South of Nandina Avenue	MV	4D	37,500	19,984	0.53	A	D
21	San Michele Road	West of Driveway 1	MV	2D	12,500	3,902	0.31	A	D
22		Driveway 1 to Driveway 3	MV	2D	12,500	3,396	0.27	A	D
23		Driveway 3 to Perris Boulevard	MV	2D	12,500	3,496	0.28	A	D
24	Nandina Avenue	West of Indian Street	MV	2U	12,500	1,236	0.10	A	D
25		Indian Street to Knox Street	MV	2D	12,500	3,035	0.24	A	D
26		Knox Street to Driveway 2	MV	2D	12,500	2,303	0.18	A	D
27		Driveway 2 to Driveway 4	MV	2U	12,500	1,072	0.09	A	D
28		Driveway 4 to Perris Boulevard	MV	2U	12,500	1,135	0.09	A	D

[1] Per Figure 9-2: City of Moreno Valley Level of Service (LOS) Standards, City of Moreno Valley General Plan Circulation Element.

From Table CE-2 of the City of Perris General Plan Circulation Element.

[2] These maximum roadway capacities have been extracted from the City of Moreno Valley's Transportation Division's Traffic Impact Analysis Transportation Division's Traffic Impact Analysis 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 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.

[3] The City of Perris roadway standard capacity is LOS "D", with the exception of SR-74 and Cajalco/Ramona Expressway which allows LOS "E" capacity. As such, the volumes shown in the table are based upon LOS "D" capacity with the exception of segments along SR-74 and Cajalco/Ramona Expressway which have been based upon LOS "E" capacity.

Table 5-3

Existing Plus Project Conditions Basic Freeway Segment Analysis

Scenario	Direction	Mainline Segment	Volume		Truck %	Truck %	Lanes[1]	Density[2]		LOS	
			AM	PM	AM	PM		AM	PM	AM	PM
Existing + Project	SB	North of Harley Knox Boulevard	2,613	3,856	5%	4%	3	14.5	21.2	B	C
		South of Harley Knox Boulevard	2,531	3,884	4%	4%	3	13.9	21.4	B	C
	NB	North of Harley Knox Boulevard	3,994	2,977	4%	5%	3	22.0	16.5	C	B
		South of Harley Knox Boulevard	3,768	2,634	4%	4%	3	20.8	14.5	C	B

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

Table 5-4

I-215 Freeway Ramp Junction Merge/Diverge Analysis
For Existing Plus Project Conditions

Freeway	Direction	Ramp or Segment	Lanes on Freeway	AM Peak Hour		PM Peak Hour	
				Density[1]	LOS	Density[1]	LOS
I-215 Freeway	SB	Off-Ramp at Harley Knox Boulevard	3	19.6	B	26.0	C
		On-Ramp at Harley Knox Boulevard	3	16.7	B	23.3	C
	NB	On-Ramp at Harley Knox Boulevard	3	24.3	C	19.6	B
		Off-Ramp at Harley Knox Boulevard	3	24.9	C	18.7	B

[1] Density is measured by passenger cars per mile per lane (pc/mi/ln).

EXHIBIT 5-4

EXISTING PLUS PROJECT
I-215 FREEWAY MAINLINE VOLUMES

LEGEND:

100 (250) = AM (PM) PEAK HOUR VOLUMES

N

6.0 OPENING YEAR (2017) TRAFFIC ANALYSIS

This section discusses the methods used to develop Opening Year (2017) traffic forecasts for without and with Project conditions, and the resulting intersection, roadway segment and freeway mainline operations.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year (2017) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- The analysis for the intersection of Perris Boulevard at San Michele Road assumes the following geometrics, which are anticipated to be in place by Year 2013: one northbound left turn lane, two northbound through lanes, one northbound shared through-right turn lane, one southbound left turn lane, two southbound though lanes, one southbound shared through-right turn lane, one eastbound left turn lane, one eastbound through lane, one eastbound right turn lane, one westbound left turn lane, one westbound through lane and one westbound right turn lane.
- The analysis for the intersection of Perris Boulevard at Nandina Avenue assumes the following geometrics, which are anticipated to be in place by Year 2013: one northbound left turn lane, two northbound through lanes, one northbound shared through-right turn lane, one southbound left turn lane, three southbound through lanes, one southbound right turn lane with overlap phasing, one eastbound left turn lane, one eastbound through lane, one eastbound shared through-right turn lane, one westbound left turn lane, one westbound through lane and one westbound right turn lane.
- 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 Opening Year (2017) with Project conditions only (e.g., half-section roadway widening along San Michele Road, Nandina Avenue and Perris Boulevard and intersection turn lane improvements at the Project driveways).

6.2 OPENING YEAR (2017) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

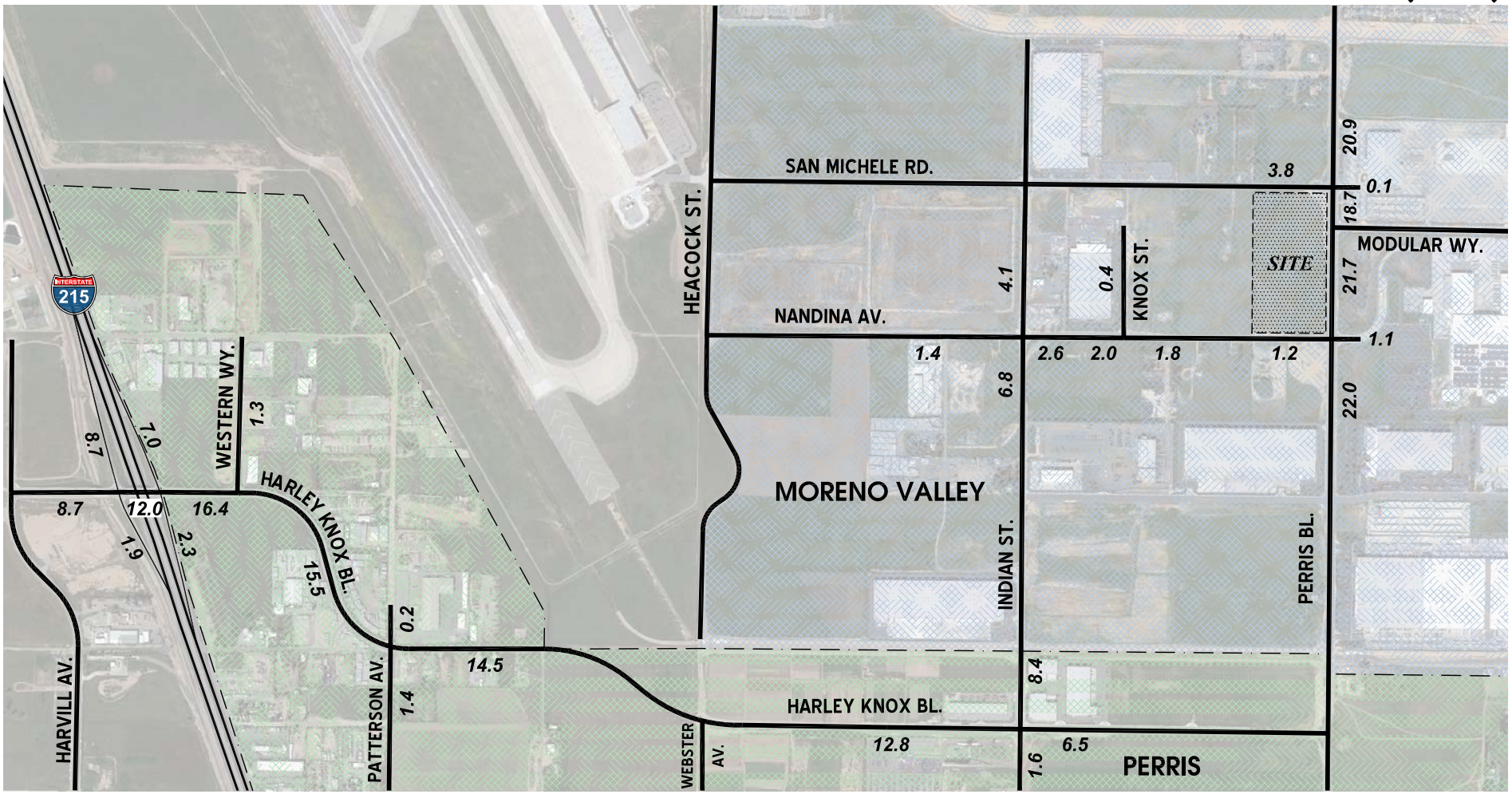
This scenario includes Existing (2012) traffic volumes plus an ambient growth factor of 10.4%. The weekday ADT volumes which can be expected for Opening Year (2017) without Project traffic conditions are shown on Exhibit 6-1. Exhibits 6-2 and 6-3 show the AM and PM peak hour intersection turning movement volumes for Opening Year (2017) without Project traffic conditions.

6.3 OPENING YEAR (2017) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2012) traffic volumes plus an ambient growth factor of 10.4% and the addition of project traffic. The weekday ADT volumes which can be expected for Opening Year (2017)

EXHIBIT 6-1

OPENING YEAR (2017) WITHOUT PROJECT AVERAGE DAILY TRAFFIC (ADT)



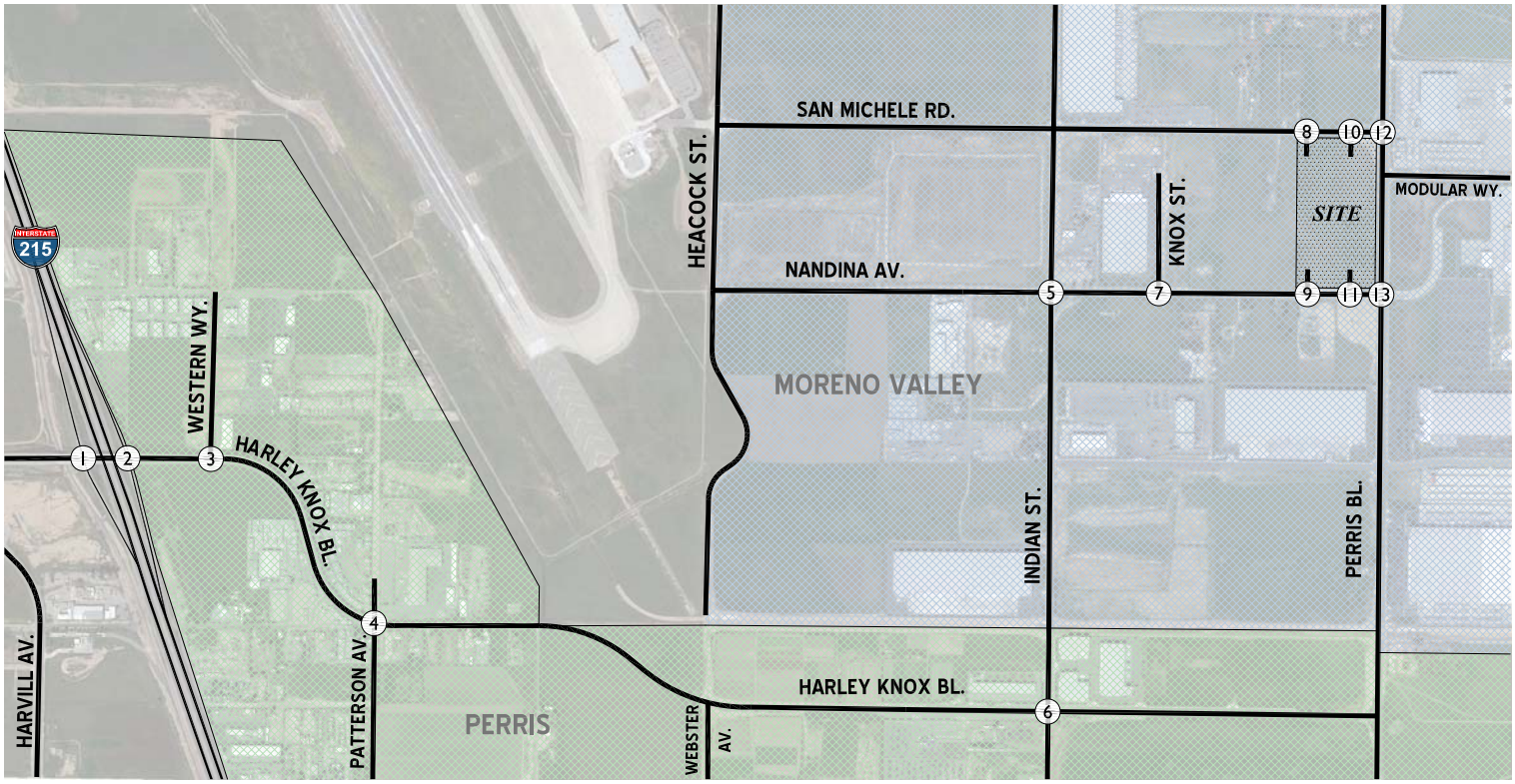
LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

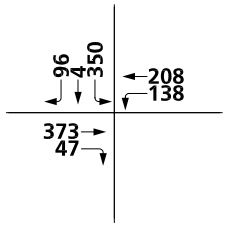
N

EXHIBIT 6-2

OPENING YEAR (2017) WITHOUT PROJECT AM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Harley Knox Bl.



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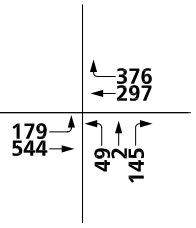

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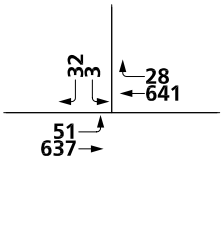
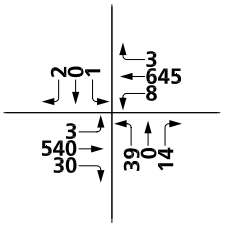
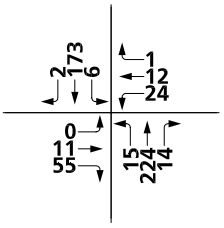


4 Patterson Av. & Harley Knox Bl.



5 Indian St. & Nandina Av.



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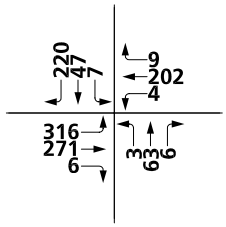

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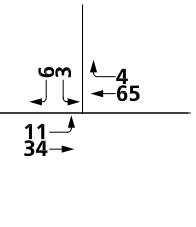


8 Driveway 1 & San Michele Rd.

Future Intersection

9 Driveway 2 & Nandina Av.

Future Intersection

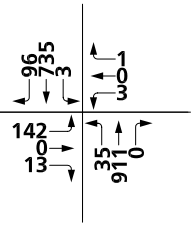
10 Driveway 3 & San Michele Rd.

Future Intersection

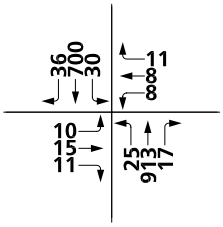
11 Driveway 4 & Nandina Av.

Future Intersection

12 Perris Bl. & San Michele Rd.



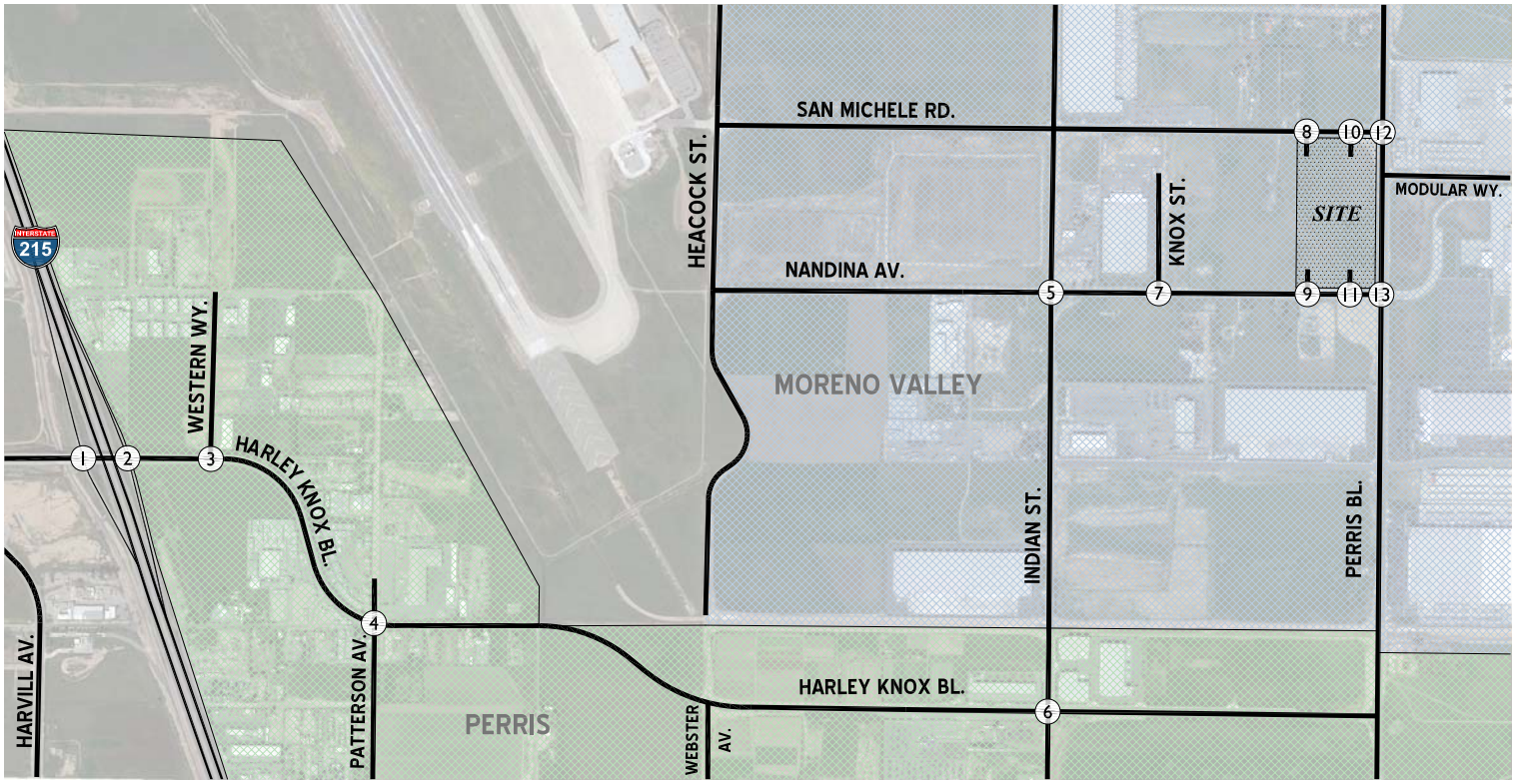
13 Perris Bl. & Nandina Av.



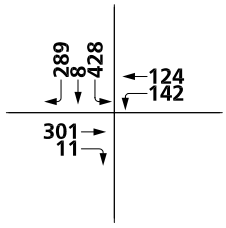
N

EXHIBIT 6-3

OPENING YEAR (2017) WITHOUT PROJECT PM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Harley Knox Bl.



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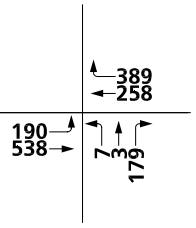
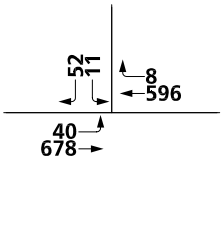
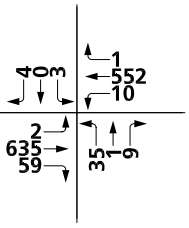


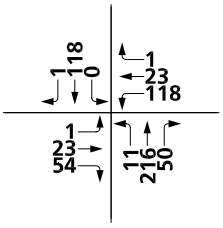
3 Western Wy. & Harley Knox Bl.



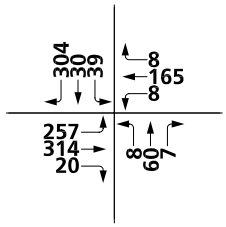
4 Patterson Av. & Harley Knox Bl.



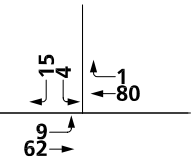
5 Indian St. & Nandina Av.



6 Indian St. & Harley Knox Bl.



7 Knox St. & Nandina Av.



8 Driveway 1 & San Michele Rd.

Future Intersection

9 Driveway 2 & Nandina Av.

Future Intersection

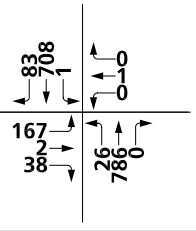
10 Driveway 3 & San Michele Rd.

Future Intersection

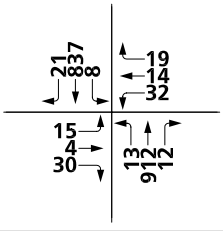
11 Driveway 4 & Nandina Av.

Future Intersection

12 Perris Bl. & San Michele Rd.



13 Perris Bl. & Nandina Av.



with Project traffic conditions are shown on Exhibit 6-4. Exhibits 6-5 and 6-6 show the AM and PM peak hour intersection turning movement volumes for Opening Year (2017) with Project traffic conditions.

6.4 INTERSECTION OPERATIONS ANALYSIS

Level of service calculations were conducted for the study intersections to evaluate their operations under Opening Year (2017) conditions with existing roadway and intersection geometrics consistent with Exhibit 3-1. The intersection analysis results are summarized in Table 6-1 which indicates that the study area intersections are anticipated to experience acceptable LOS (i.e., LOS "D" or better) during the peak hours for Opening Year (2017) without Project traffic conditions.

The intersection operations analysis worksheets for Opening Year (2017) without Project conditions are included in Appendix "6.1" of this TIA.

The study area intersections are anticipated to continue to operate at acceptable LOS (i.e., LOS "D" or better) during the peak hours with the addition of Project traffic. As such, the Project's contribution to the study area intersections is considered to be "less-than-significant". The intersection operations analysis worksheets for Opening Year (2017) with Project conditions are included in Appendix "6.2" of this TIA.

6.5 ROADWAY SEGMENT CAPACITY ANALYSIS

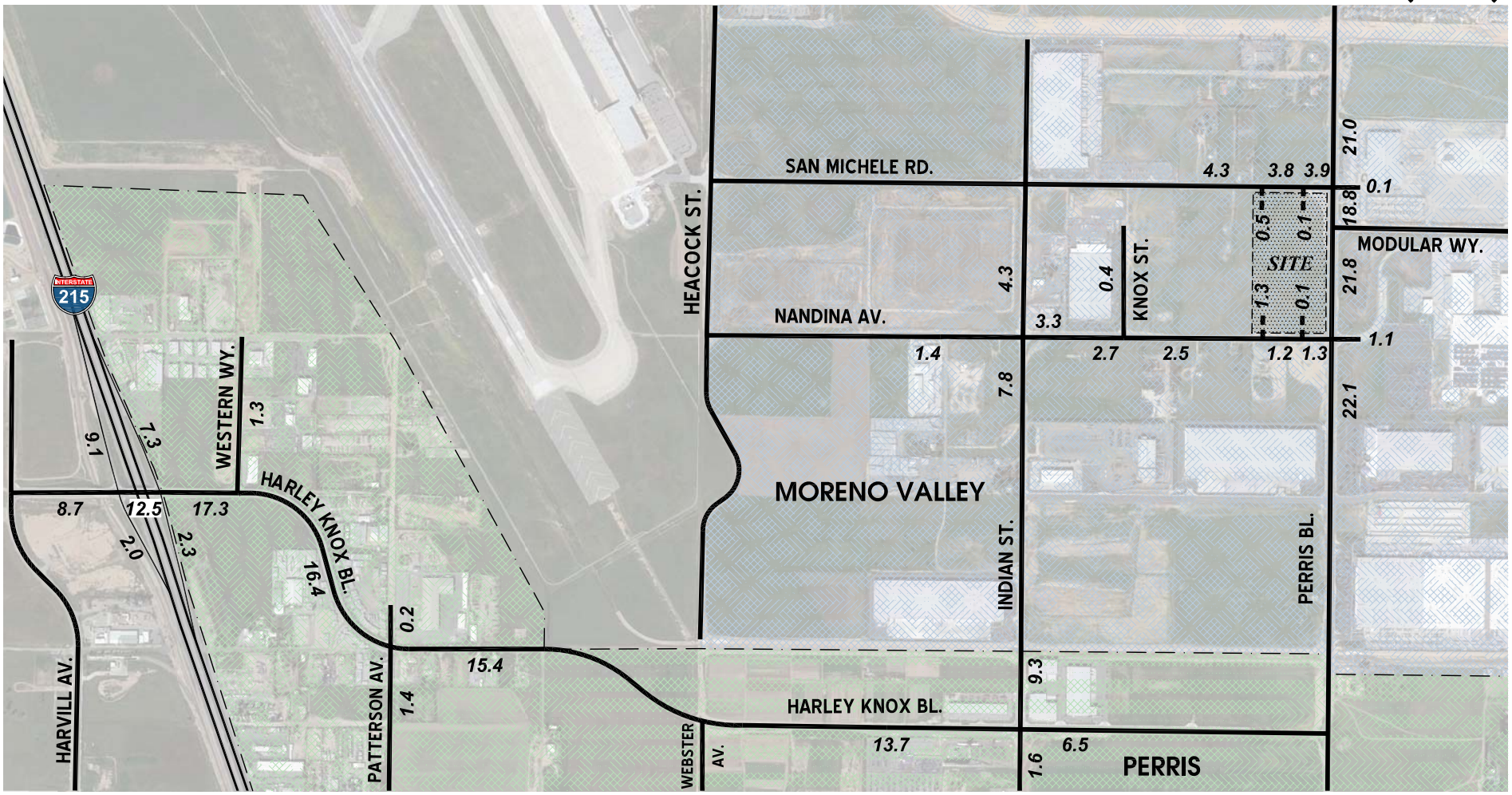
As noted previously, the roadway segment capacities are approximate figures only, and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet future traffic demands. Table 6-2 provides a summary of the Opening Year (2017) 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 2-2. As shown on Table 6-2, the study area roadway segments are anticipated to operate at acceptable LOS (i.e., LOS "D" or better) under Opening Year (2017) with Project traffic conditions.

6.6 TRAFFIC SIGNAL WARRANTS ANALYSIS

For Opening Year (2017) without and with Project conditions, no additional traffic signals appear to be warranted in addition to those currently warranted for Existing conditions (see Appendix "6.3" and Appendix "6.4").

EXHIBIT 6-4

OPENING YEAR (2017) WITH PROJECT AVERAGE DAILY TRAFFIC (ADT)



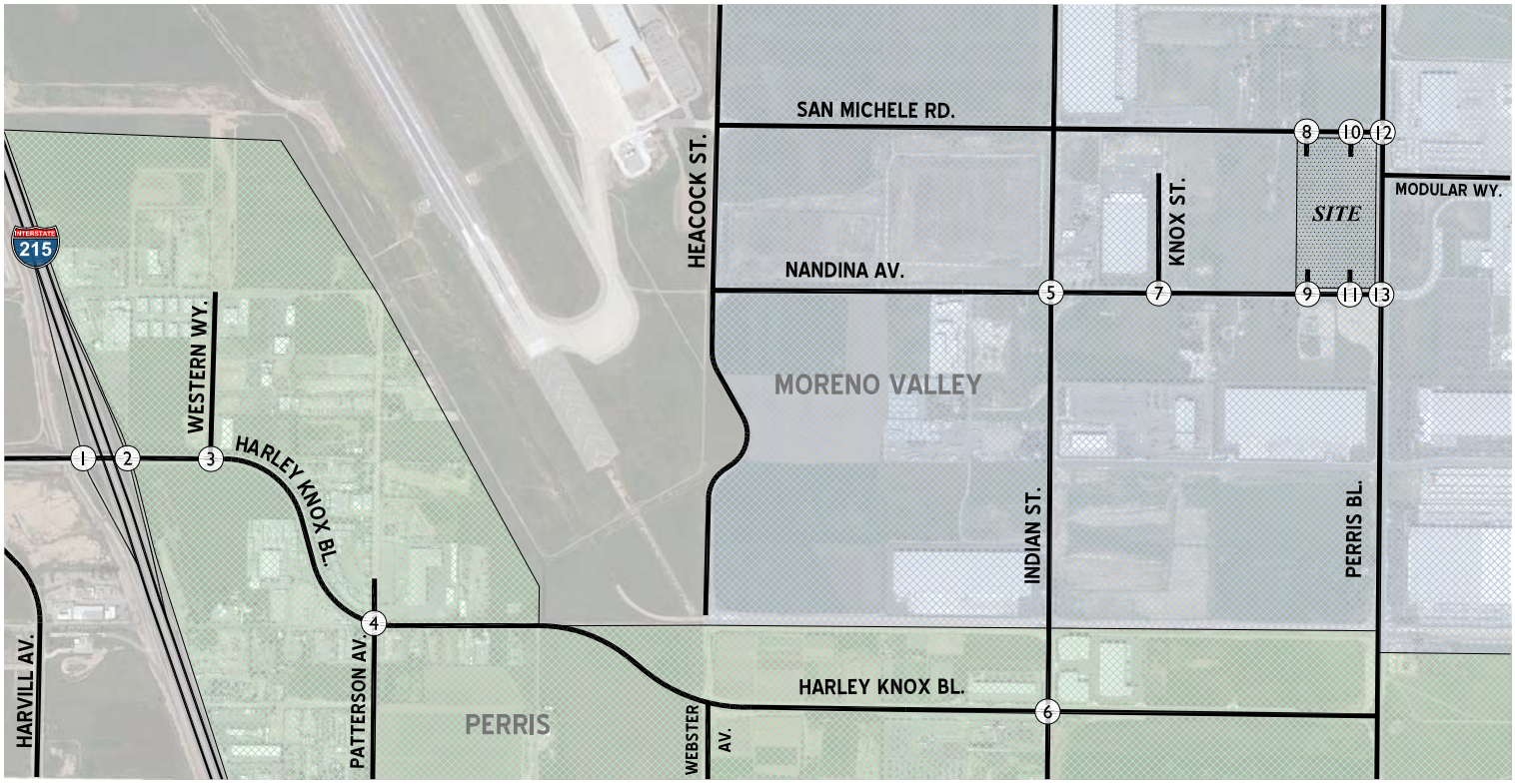
LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

N

EXHIBIT 6-5

OPENING YEAR (2017) WITH PROJECT AM PEAK HOUR INTERSECTION VOLUMES



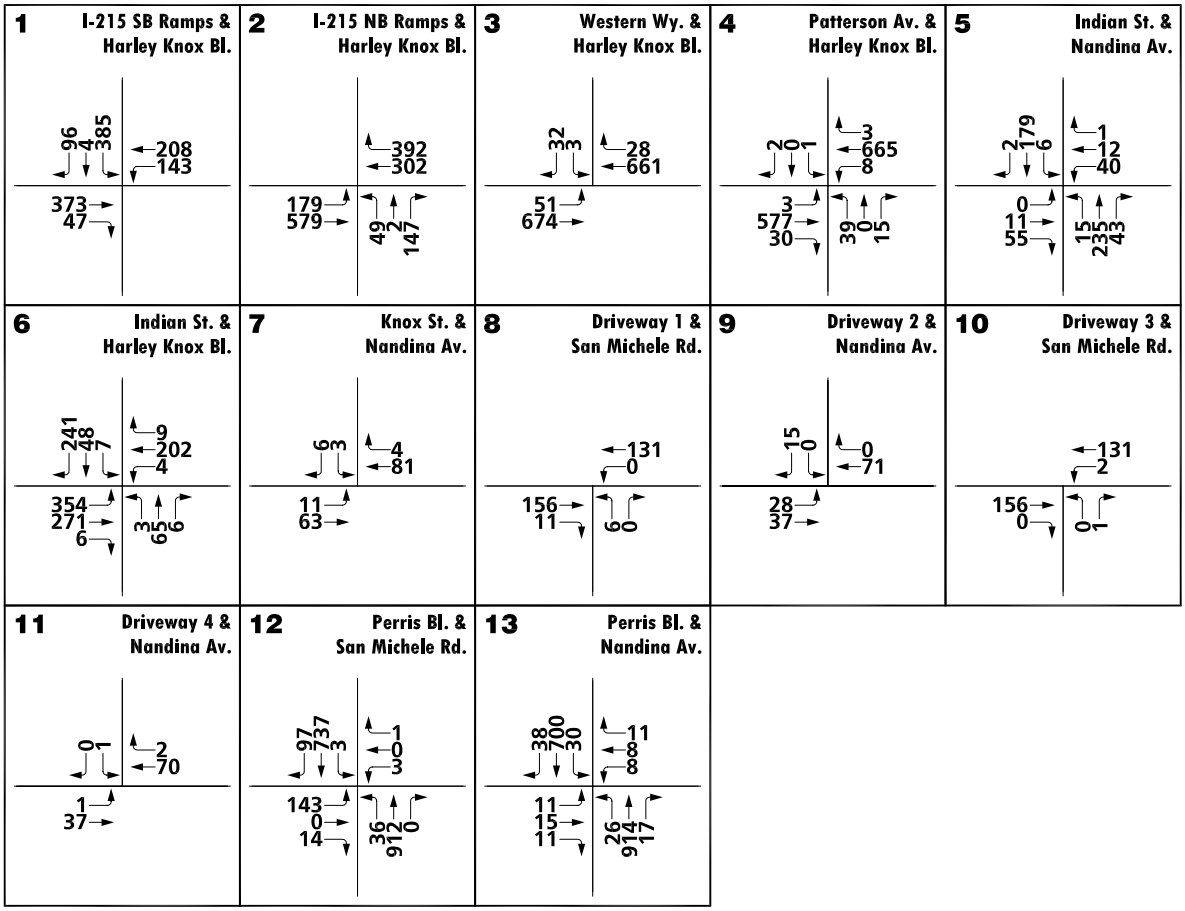
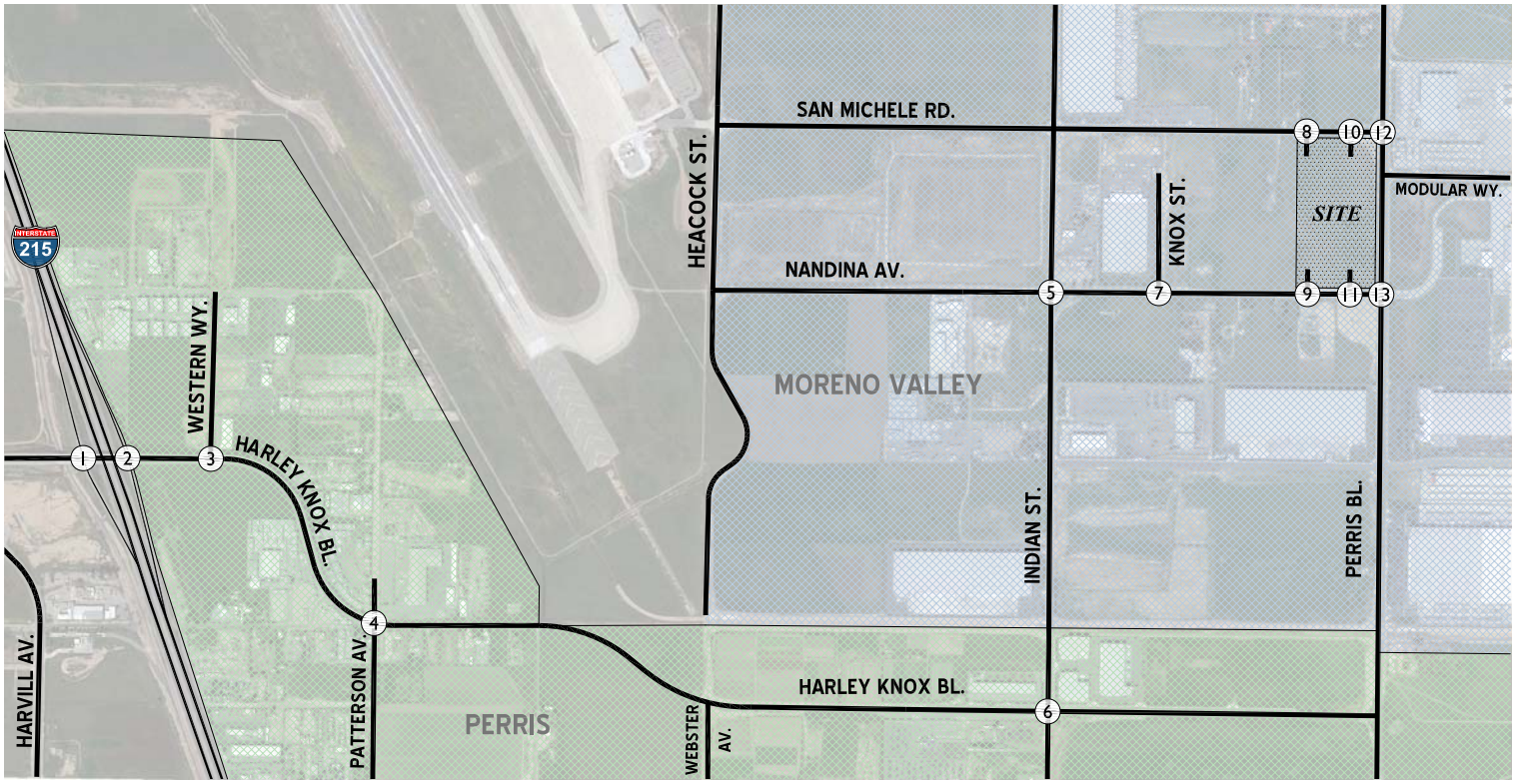


EXHIBIT 6-6

OPENING YEAR (2017) WITH PROJECT PM PEAK HOUR INTERSECTION VOLUMES



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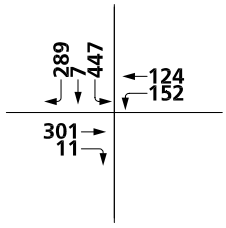
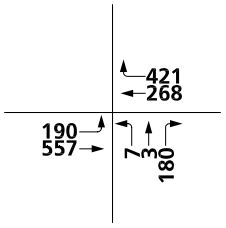
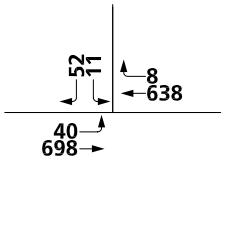


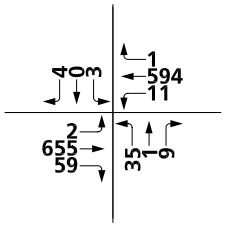
2 I-215 NB Ramps & Harley Knox Bl.



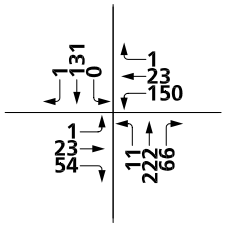
3 Western Wy. & Harley Knox Bl.



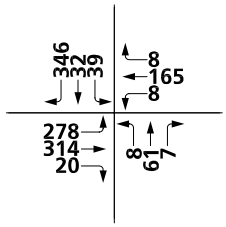
4 Patterson Av. & Harley Knox Bl.



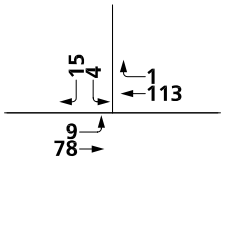
5 Indian St. & Nandina Av.



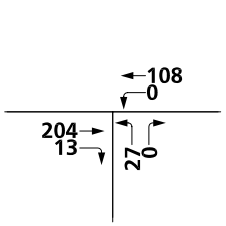
6 Indian St. & Harley Knox Bl.



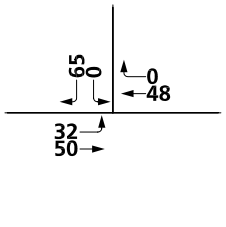
7 Knox St. & Nandina Av.



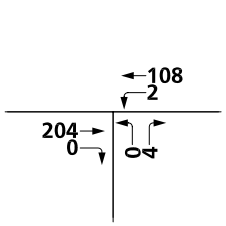
8 Driveway 1 & San Michele Rd.



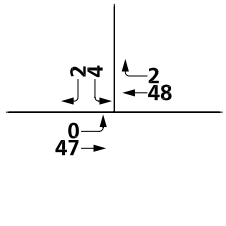
9 Driveway 2 & Nandina Av.



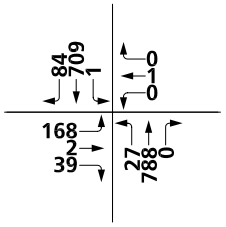
10 Driveway 3 & San Michele Rd.



11 Driveway 4 & Nandina Av.



12 Perris Bl. & San Michele Rd.



13 Perris Bl. & Nandina Av.

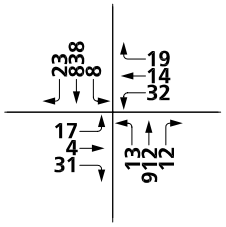


Table 6-1

Intersection Analysis for Opening Year (2017) Conditions

#	Intersection	Jurisdiction	Traffic Control[3]	Existing (2012)				EA (2017)				EAP (2017)			
				Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	I-215 SB Ramps / Harley Knox Bl.	Caltrans	TS	23.7	26.8	C	C	24.9	36.6	C	D	28.5	41.3	C	D
2	I-215 NB Ramps / Harley Knox Bl.	Caltrans	TS	17.7	18.1	B	B	18.2	19.0	B	B	18.0	19.0	B	B
3	Western Wy. / Harley Knox Bl.	Perris	CSS	11.7	13.0	B	B	12.4	14.1	B	B	12.6	14.7	B	B
4	Patterson Av. / Harley Knox Bl.	Perris	TS	17.9	17.6	B	B	18.7	18.4	B	B	19.1	18.9	B	B
5	Indian St. / Nandina Av.	MV	TS	23.3	23.4	C	C	23.5	23.9	C	C	23.9	25.7	C	C
6	Indian St. / Harley Knox Bl.	Perris	TS	30.8	29.3	C	C	31.6	29.9	C	C	33.0	30.1	C	C
7	Knox St. / Nandina Av.	MV	CSS	9.1	9.3	A	A	9.2	9.4	A	A	9.5	9.8	A	A
8	Driveway 1 / San Michele Rd.	MV	**CSS**	Future Intersection				Future Intersection				10.4	10.8	B	B
9	Driveway 2 / Nandina Av.	MV	**CSS**	Future Intersection				Future Intersection				8.7	8.8	A	A
10	Driveway 3 / San Michele Rd.	MV	**CSS**	Future Intersection				Future Intersection				8.7	8.8	A	A
11	Driveway 4 / Nandina Av.	MV	**CSS**	Future Intersection				Future Intersection				9.1	8.9	A	A
12	Perris Bl. / San Michele Rd.	MV	TS	36.0	36.8	D	D	31.6	31.6	C	C	31.7	31.7	C	C
13	Perris Bl. / Nandina Av.	MV	TS	37.1	46.6	D	D	28	28.3	C	C	28.0	28.3	C	C

[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.

[2] MV = City of Moreno Valley; MJPA = March Joint Powers Authority

[3] CSS = Cross-street Stop; AWS = All-Way Stop; TS = Traffic Signal

Table 6-2

Opening Year (2017) Conditions
Roadway Volume/Capacity Analysis[1]

#	Roadway	Segment Limits	Jurisdiction	Roadway Section	LOS Capacity[2,3]	EA (2017)	V/C	LOS	Acceptable LOS	EAP (2017)	V/C	LOS	Acceptable LOS
1	Harley Knox Boulevard	West of I-215 Freeway	Co. of Riv.	4D	35,900	8,705	0.24	A	D	8,705	0.24	A	D
2		I-215 SB Ramps to I-215 NB Ramps	Perris	4D	35,900	11,951	0.33	A	D	12,485	0.35	A	D
3		I-215 NB Ramps to Western Way	Perris	4U	25,900	16,389	0.63	B	D	17,296	0.67	B	D
4		East of Western Way	Perris	4U	25,900	15,515	0.60	A	D	16,422	0.63	B	D
5		West of Patterson Avenue	Perris	4U	25,900	15,448	0.60	A	D	16,355	0.63	B	D
6		East of Patterson Avenue	Perris	2D	18,000	14,521	0.81	D	D	15,442	0.86	D	D
7		West of Indian Street	Perris	3D	25,000	12,799	0.51	A	D	13,719	0.55	A	D
8		East of Indian Street	Perris	3D	25,000	6,466	0.26	A	D	6,466	0.26	A	D
9	Western Way	North of Harley Knox Boulevard	Perris	2U	13,000	1,325	0.10	A	D	1,325	0.10	A	D
10	Patterson Avenue	North of Harley Knox Boulevard	Perris	2U	13,000	146	0.01	A	D	146	0.01	A	D
11		South of Harley Knox Boulevard	Perris	2U	13,000	1,365	0.11	A	D	1,379	0.11	A	D
12	Indian Street	North of Nandina Avenue	MV	4D	37,500	4,054	0.11	A	D	4,332	0.12	A	D
13		South of Nandina Avenue	MV	2D	12,500	6,810	0.54	A	D	7,783	0.62	B	D
14		North of Harley Knox Boulevard	MV	2D	12,500	8,360	0.67	B	D	9,333	0.75	C	D
15		South of Harley Knox Boulevard	Perris	4D	35,900	1,577	0.04	A	D	1,630	0.05	A	D
16	Knox Street	North of Nandina Avenue	MV	2D	12,500	358	0.03	A	D	358	0.03	A	D
17	Perris Boulevard	North of San Michele Road	MV	**6D**	56,300	20,933	0.37	A	D	20,999	0.37	A	D
18		South of San Michele Road	MV	**6D**	56,300	18,694	0.33	A	D	18,760	0.33	A	D
19		North of Nandina Avenue	MV	**6D**	56,300	21,742	0.39	A	D	21,809	0.39	A	D
20		South of Nandina Avenue	MV	**6D**	56,300	22,033	0.39	A	D	22,061	0.39	A	D
21	San Michele Road	West of Driveway 1	MV	2D	12,500	4,001	0.32	A	D	4,279	0.34	A	D
22		Driveway 1 to Driveway 3	MV	2D	12,500	3,749	0.30	A	D	3,749	0.30	A	D
23		Driveway 3 to Perris Boulevard	MV	2D	12,500	3,802	0.30	A	D	3,854	0.31	A	D
24	Nandina Avenue	West of Indian Street	MV	2U	12,500	1,365	0.11	A	D	1,365	0.11	A	D
25		Indian Street to Knox Street	MV	2D	12,500	2,584	0.21	A	D	3,279	0.26	A	D
26		Knox Street to Driveway 2	MV	2D	12,500	1,775	0.14	A	D	2,470	0.20	A	D
27		Driveway 2 to Driveway 4	MV	2U	12,500	1,153	0.09	A	D	1,181	0.09	A	D
28		Driveway 4 to Perris Boulevard	MV	2U	12,500	1,179	0.09	A	D	1,246	0.10	A	D

[1] Per Figure 9-2: City of Moreno Valley Level of Service (LOS) Standards, City of Moreno Valley General Plan Circulation Element.

From Table CE-2 of the City of Perris General Plan Circulation Element.

[2] These maximum roadway capacities have been extracted from the City of Moreno Valley's Transportation Division's Traffic Impact Analysis

Transportation Division's Traffic Impact Analysis 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 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.

[3] The City of Perris roadway standard capacity is LOS "D", with the exception of SR-74 and Cajalco/Ramona Expressway which allows LOS "E" capacity. As such, the volumes shown in the table are based upon LOS "D" capacity with the exception of segments along SR-74 and Cajalco/Ramona Expressway which have been based upon LOS "E" capacity.

6.7 BASIC FREEWAY SEGMENT ANALYSIS

Opening Year (2017) without and with Project peak hour mainline directional volumes are provided on Exhibits 6-7 and 6-8, respectively. The Opening Year (2017) freeway analysis assumes the existing mixed-flow lanes only, and does not include any improvements that may be constructed by Caltrans at a later date. Segment analysis results for the AM and PM peak hours are summarized on Table 6-3. As shown on Table 6-3, the study area mainline segments are anticipated to operate at acceptable service levels for Opening Year (2017) without and with Project conditions (i.e., LOS "E" or better).

Opening Year (2017) without Project freeway mainline level of service analysis worksheets are provided in Appendix "6.5". Opening Year (2017) with Project freeway mainline level of service analysis worksheets are provided in Appendix "6.6".

6.8 FREEWAY MERGE/DIVERGE ANALYSIS

Ramp merge and diverge operations have been evaluated for Opening Year (2017) traffic conditions at the I-215/Harley Knox Boulevard interchange. As shown on Table 6-4, it is anticipated that the ramp junctions along the I-215 Freeway are projected to operate at acceptable service levels for both Opening Year (2017) without and with Project conditions (i.e., LOS "E" or better).

Opening Year (2017) without Project freeway ramp operations analysis worksheets are provided in Appendix "6.7" and Opening Year (2017) with Project freeway ramp operations analysis worksheets are provided in Appendix "6.8".

6.9 PROJECT IMPACTS AND RECOMMENDED IMPROVEMENTS

The comparison of Opening Year (2017) without Project to Opening Year (2017) with Project traffic conditions indicates that the addition of Project traffic is not anticipated to result in any deficient peak hour operations at the study area intersections, roadway segments or I-215 freeway mainline. Potential impacts at each of the study area intersections, roadway segments and freeway facilities resulting from the addition of project-related traffic were found to be "less-than-significant".

EXHIBIT 6-7

OPENING YEAR (2017) WITHOUT PROJECT I-215 FREEWAY MAINLINE VOLUMES

EXHIBIT 6-8

OPENING YEAR (2017) WITH PROJECT I-215 FREEWAY MAINLINE VOLUMES

LEGEND:

100 (250) = AM (PM) PEAK HOUR VOLUMES

N

Table 6-3

Opening Year (2017) Conditions Basic Freeway Segment Analysis

Scenario	Direction	Mainline Segment	Volume		Truck %	Truck %	Lanes[1]	Density[2]		LOS	
			AM	PM	AM	PM		AM	PM	AM	PM
EA (2017)	SB	North of Harley Knox Boulevard	2,846	4,236	3%	4%	3	15.6	23.3	B	C
		South of Harley Knox Boulevard	2,789	4,277	4%	4%	3	15.4	23.6	B	C
	NB	North of Harley Knox Boulevard	4,392	3,252	4%	4%	3	24.2	17.9	C	B
		South of Harley Knox Boulevard	4,158	2,907	4%	4%	3	22.9	16.0	C	B
EAP (2017)	SB	North of Harley Knox Boulevard	2,881	4,255	4%	4%	3	15.9	23.4	B	C
		South of Harley Knox Boulevard	2,794	4,287	4%	4%	3	15.4	23.6	B	C
	NB	North of Harley Knox Boulevard	4,408	3,284	4%	5%	3	24.3	18.2	C	C
		South of Harley Knox Boulevard	4,160	2,908	4%	4%	3	22.9	16.0	C	B

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

Table 6-4

I-215 Freeway Ramp Junction Merge/Diverge Analysis
For Opening Year (2017) Conditions

Freeway	Direction	Ramp or Segment	Lanes on Freeway	Opening Year (2017) Without Project				Opening Year (2017) With Project			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Density[1]	LOS	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
I-215 Freeway	SB	Off-Ramp at Harley Knox Boulevard	3	20.8	C	27.9	C	21.1	C	28.0	D
		On-Ramp at Harley Knox Boulevard	3	18.0	B	25.2	C	18.0	B	25.3	C
	NB	On-Ramp at Harley Knox Boulevard	3	26.3	C	20.9	C	26.5	C	21.2	C
		Off-Ramp at Harley Knox Boulevard	3	26.9	C	20.2	C	26.9	C	20.2	C

[1] Density is measured by passenger cars per mile per lane (pc/mi/ln).

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7.0 OPENING YEAR CUMULATIVE (2017) TRAFFIC ANALYSIS

This section discusses the methods used to develop Opening Year Cumulative (2017) traffic forecasts for without and with Project conditions and the resulting intersection, roadway segment and freeway mainline operations.

7.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year Cumulative (2017) conditions is consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- The analysis for the intersection of Perris Boulevard at San Michele Road assumes the following geometrics, which are anticipated to be in place by Year 2013: one northbound left turn lane, two northbound through lanes, one northbound shared through-right turn lane, one southbound left turn lane, two southbound though lanes, one southbound shared through-right turn lane, one eastbound left turn lane, one eastbound through lane, one eastbound right turn lane, one westbound left turn lane, one westbound through lane and one westbound right turn lane.
- The analysis for the intersection of Perris Boulevard at Nandina Avenue assumes the following geometrics, which are anticipated to be in place by Year 2013: one northbound left turn lane, two northbound through lanes, one northbound shared through-right turn lane, one southbound left turn lane, three southbound through lanes, one southbound right turn lane with overlap phasing, one eastbound left turn lane, one eastbound through lane, one eastbound shared through-right turn lane, one westbound left turn lane, one westbound through lane and one westbound right turn lane.
- 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 Opening Year (2017) with Project conditions only (e.g., half-section roadway widening along San Michele Road, Nandina Avenue and Perris Boulevard and intersection turn lane improvements at the Project driveways).

A schedule for the widening of the I-215 Freeway between Nuevo Road in the City of Perris and Box Springs Road in the City of Riverside has not been set, due to the state's ongoing budget challenges. As such, the future expansion of the I-215 Freeway has been assumed for "with mitigation measures" conditions only.

7.2 OPENING YEAR CUMULATIVE (2017) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2012) 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 (2017) without Project traffic conditions are shown on Exhibit 7-1. Exhibits 7-2 and 7-3 show the AM and PM peak hour intersection turning movement volumes for Opening Year Cumulative (2017) without Project traffic conditions.

7.3 OPENING YEAR CUMULATIVE (2017) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2012) 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 (2017) with Project traffic conditions are shown on Exhibit 7-4. Exhibits 7-5 and 7-6 show the AM and PM peak hour intersection turning movement volumes for Opening Year Cumulative (2017) with Project traffic conditions.

7.4 INTERSECTION OPERATIONS ANALYSIS

LOS calculations were conducted for the study intersections to evaluate their operations under Opening Year Cumulative (2017) conditions with existing roadway and intersection geometrics consistent with Exhibit 3-1. The intersection analysis results are summarized in Table 7-1 which indicates that the following intersection locations will experience unacceptable LOS (i.e., LOS "E" or LOS "F") during one or both of the peak hours for Opening Year (2017) without Project traffic conditions:

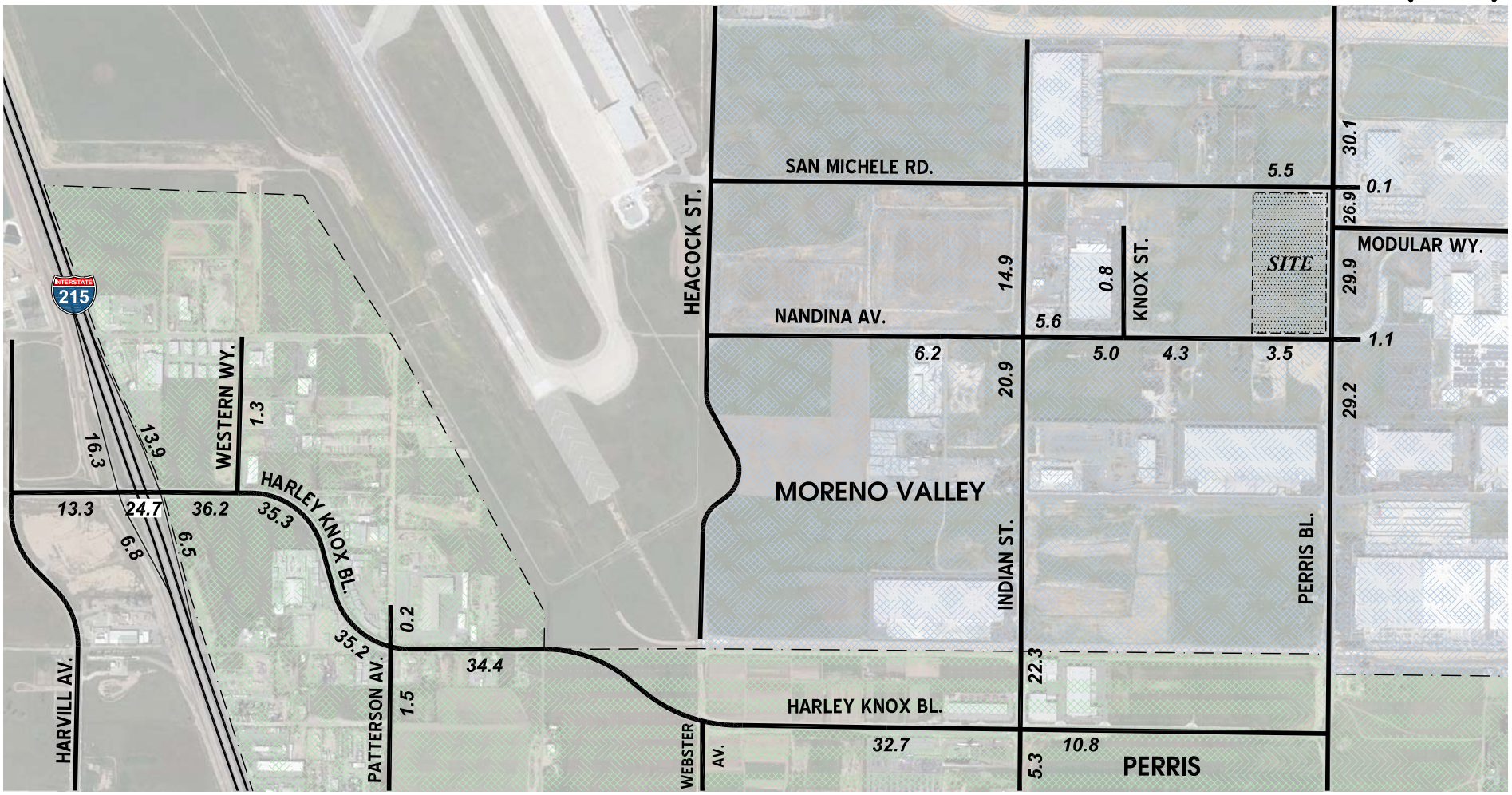
ID	Intersection Location
1	I-215 Southbound Ramps / Harley Knox Boulevard – LOS "F" AM and PM peak hours
2	I-215 Northbound Ramps / Harley Knox Boulevard – LOS "F" PM peak hour only
3	Western Way / Harley Knox Boulevard – LOS "F" PM peak hour only
4	Patterson Avenue / Harley Knox Boulevard – LOS "F" AM and PM peak hours
6	Indian Street / Harley Knox Boulevard – LOS "F" AM and PM peak hours

The addition of Project traffic is not anticipated to cause any additional study area intersection to operate at unacceptable peak hour operations in addition to those previously identified under Opening Year Cumulative (2017) without Project traffic conditions. The intersection operations analysis worksheets for Opening Year Cumulative (2017) without Project conditions are included in Appendix "7.1" of this TIA. The intersection operations analysis worksheets for Opening Year Cumulative (2017) with Project conditions are included in Appendix "7.2" of this TIA.

Measures to address cumulative impacts for Opening Year Cumulative (2017) traffic conditions are discussed in Section 7.9 *Cumulative Impacts and Recommended Improvements*.

EXHIBIT 7-1

OPENING YEAR CUMULATIVE (2017) WITHOUT PROJECT AVERAGE DAILY TRAFFIC (ADT)



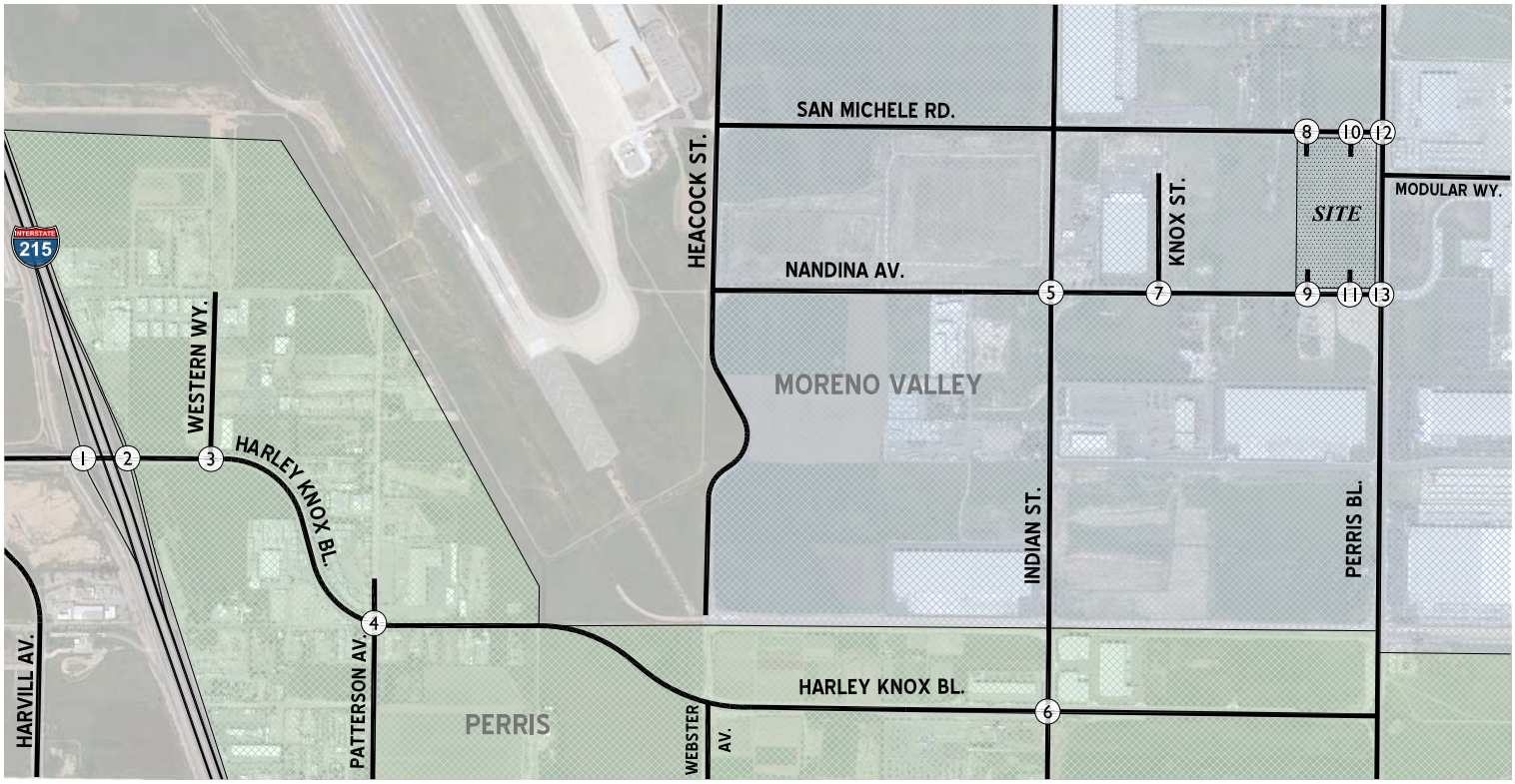
LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

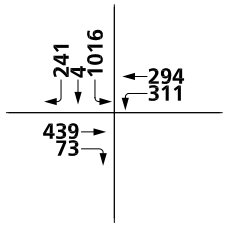
N

EXHIBIT 7-2

OPENING YEAR CUMULATIVE (2017) WITHOUT PROJECT AM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Harley Knox Bl.



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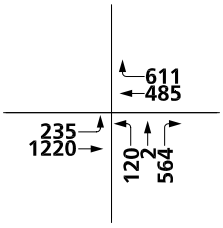
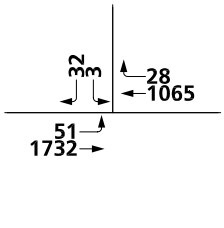


3 Western Wy. & Harley Knox Bl.



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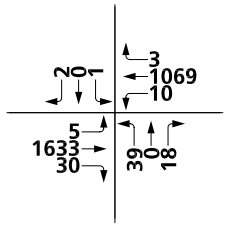

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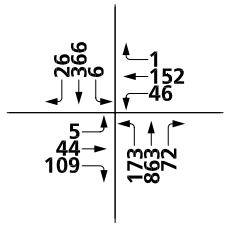

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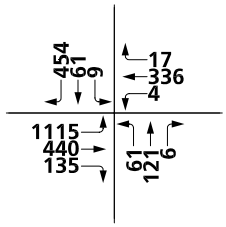
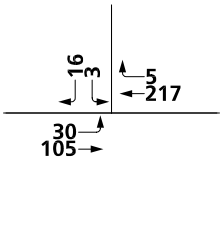


7 Knox St. & Nandina Av.



8 Driveway 1 & San Michele Rd.

Future Intersection

9 Driveway 2 & Nandina Av.

Future Intersection

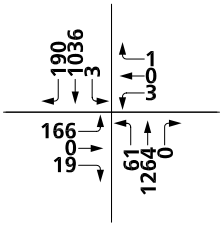
10 Driveway 3 & San Michele Rd.

Future Intersection

11 Driveway 4 & Nandina Av.

Future Intersection

12 Perris Bl. & San Michele Rd.



13 Perris Bl. & Nandina Av.

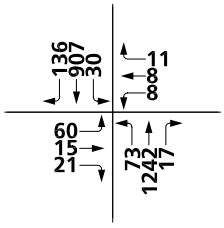


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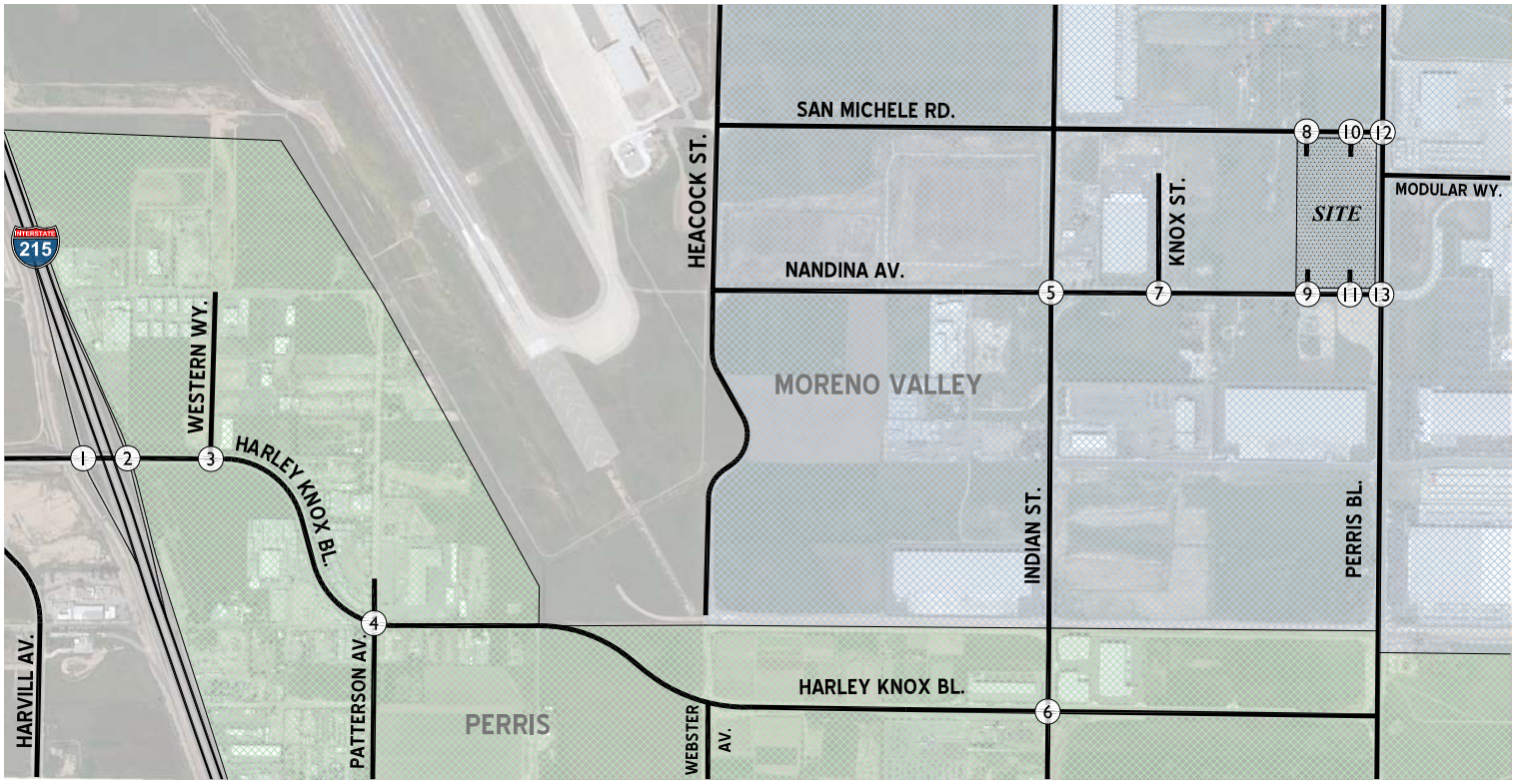
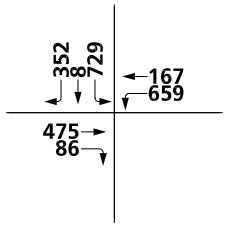
EXHIBIT 7-3

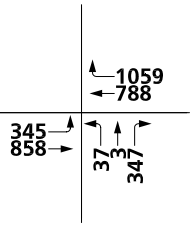
OPENING YEAR CUMULATIVE (2017) WITHOUT PROJECT PM PEAK HOUR INTERSECTION VOLUMES



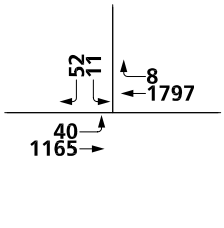
1 I-215 SB Ramps & Harley Knox Bl.



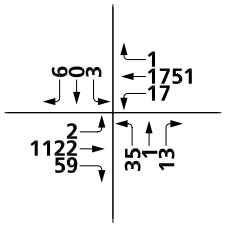
2 I-215 NB Ramps & Harley Knox Bl.



3 Western Wy. & Harley Knox Bl.



4 Patterson Av. & Harley Knox Bl.



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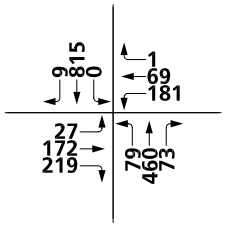
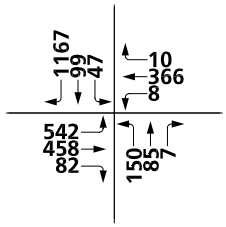
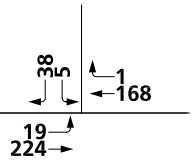


6 Indian St. & Harley Knox Bl.



7 Knox St. & Nandina Av.



8 Driveway 1 & San Michele Rd.

Future Intersection

9 Driveway 2 & Nandina Av.

Future Intersection

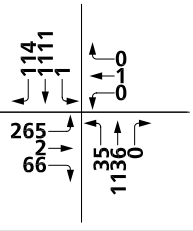
10 Driveway 3 & San Michele Rd.

Future Intersection

11 Driveway 4 & Nandina Av.

Future Intersection

12 Perris Bl. & San Michele Rd.



13 Perris Bl. & Nandina Av.

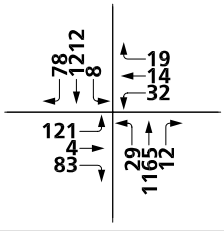


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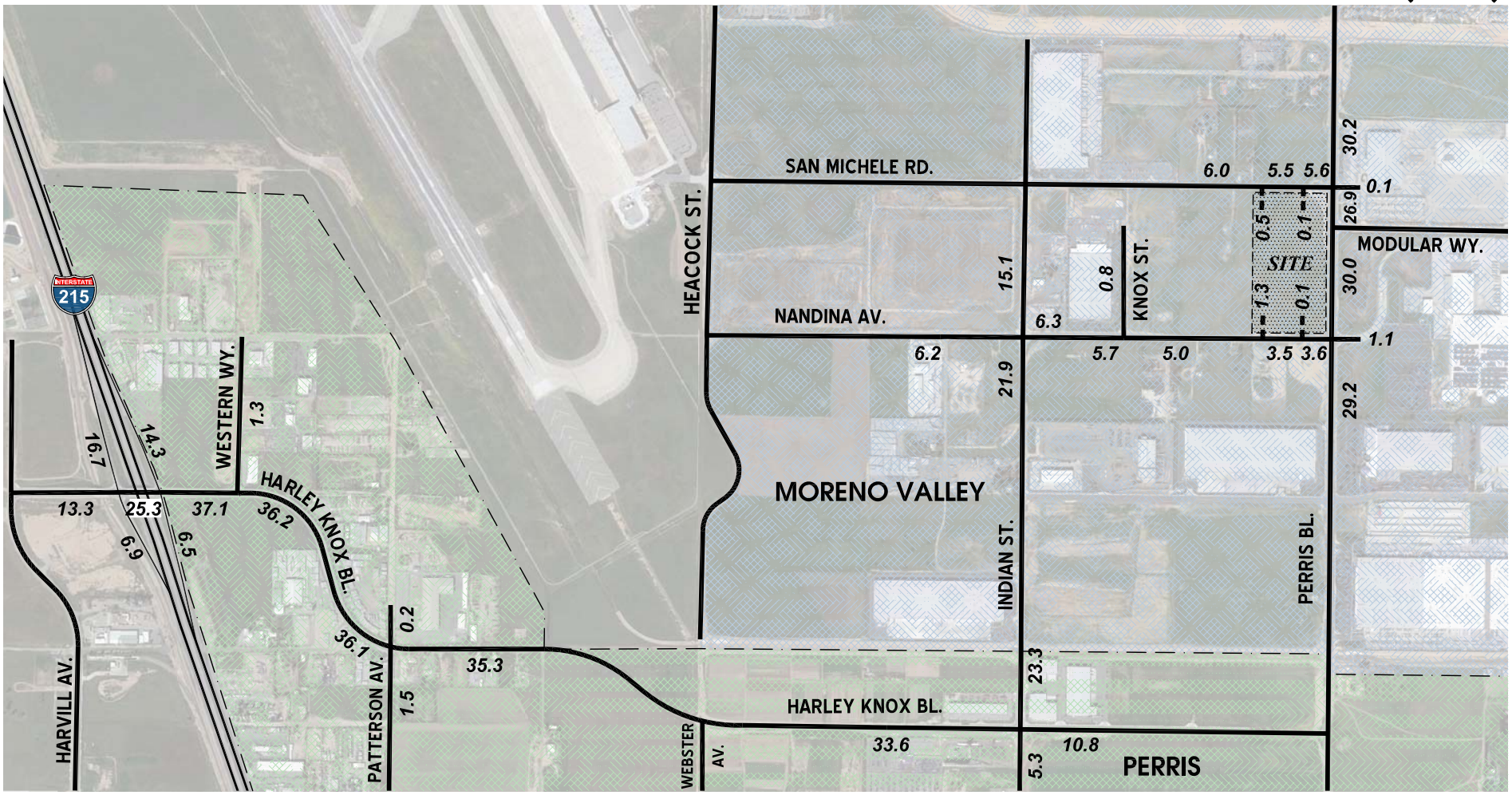
EXHIBIT 7-4

OPENING YEAR CUMULATIVE (2017) WITH PROJECT AVERAGE DAILY TRAFFIC (ADT)



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

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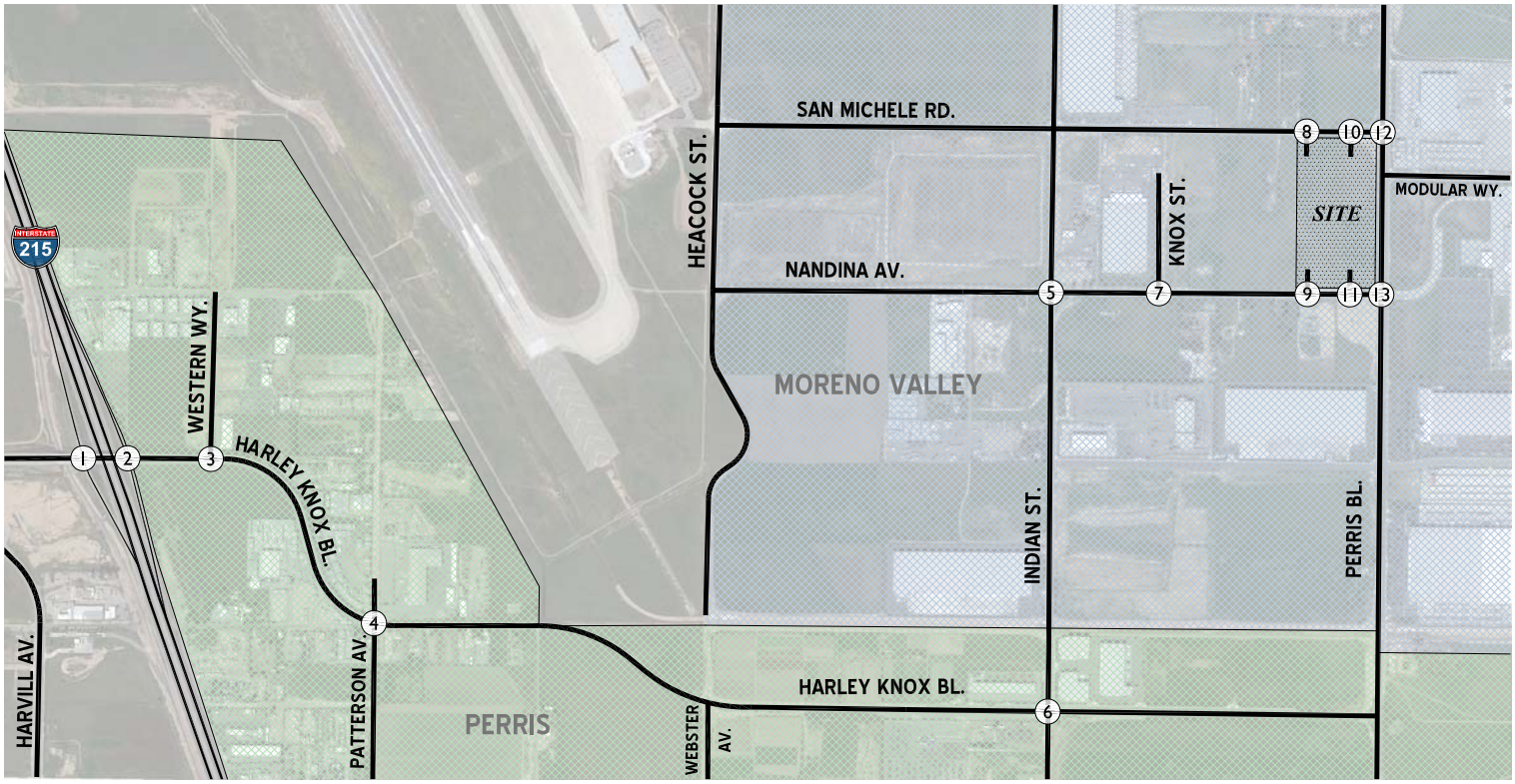
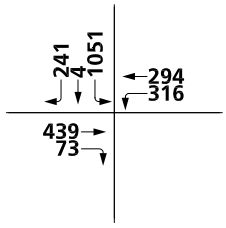
EXHIBIT 7-5

OPENING YEAR CUMULATIVE (2017) WITH PROJECT AM PEAK HOUR INTERSECTION VOLUMES



1 I-215 SB Ramps & Harley Knox Bl.



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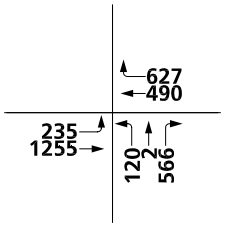
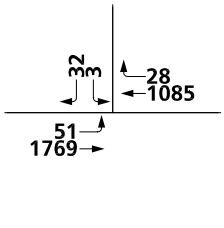
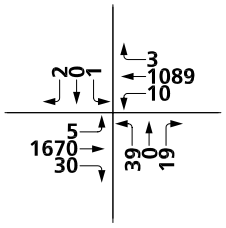


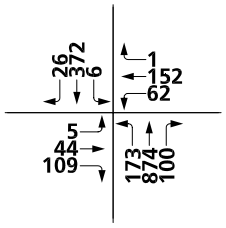
3 Western Wy. & Harley Knox Bl.



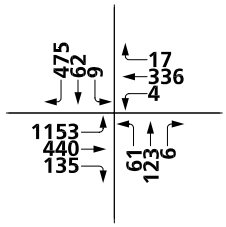
4 Patterson Av. & Harley Knox Bl.



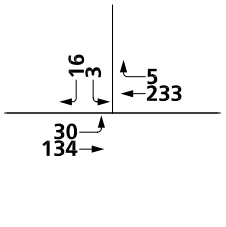
5 Indian St. & Nandina Av.



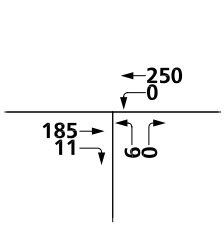
6 Indian St. & Harley Knox Bl.



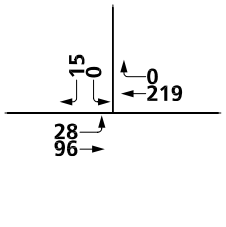
7 Knox St. & Nandina Av.



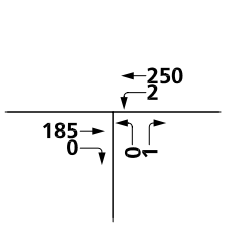
8 Driveway 1 & San Michele Rd.



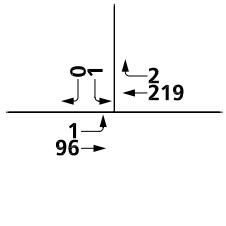
9 Driveway 2 & Nandina Av.



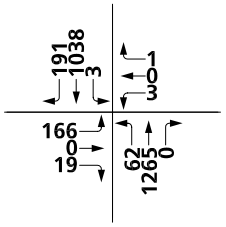
10 Driveway 3 & San Michele Rd.



11 Driveway 4 & Nandina Av.



12 Perris Bl. & San Michele Rd.



13 Perris Bl. & Nandina Av.

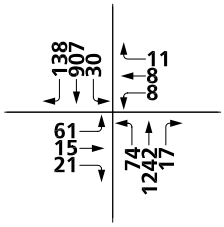
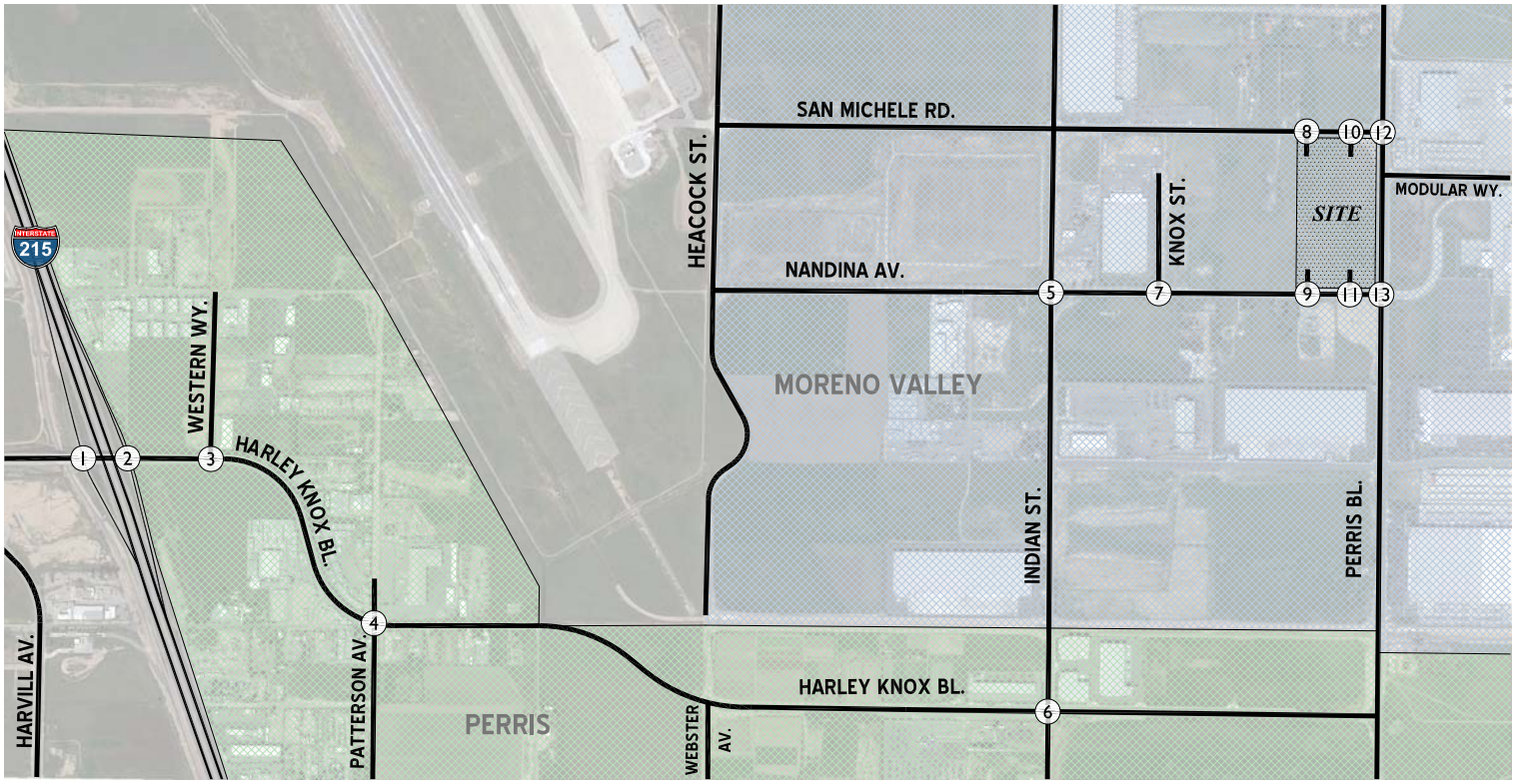
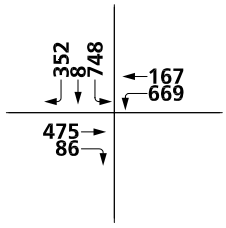


EXHIBIT 7-6

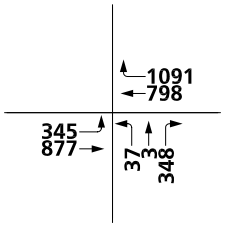
OPENING YEAR CUMULATIVE (2017) WITH PROJECT PM PEAK HOUR INTERSECTION VOLUMES



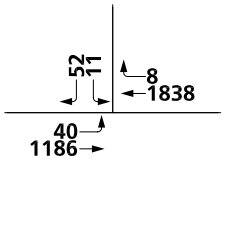
1 I-215 SB Ramps & Harley Knox Bl.



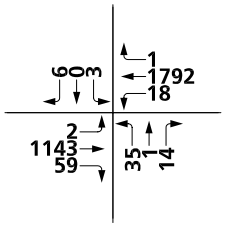
2 I-215 NB Ramps & Harley Knox Bl.



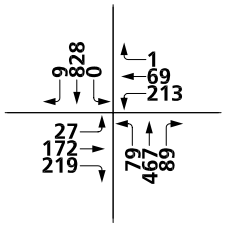
3 Western Wy. & Harley Knox Bl.



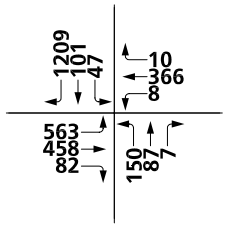
4 Patterson Av. & Harley Knox Bl.



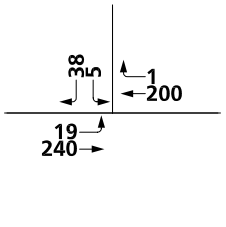
5 Indian St. & Nandina Av.



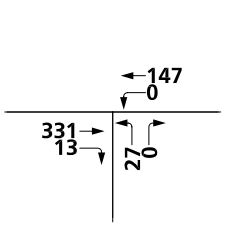
6 Indian St. & Harley Knox Bl.



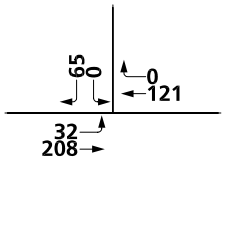
7 Knox St. & Nandina Av.



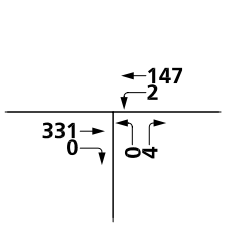
8 Driveway 1 & San Michele Rd.



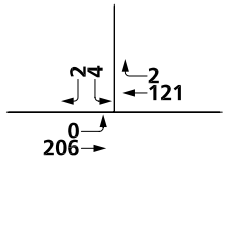
9 Driveway 2 & Nandina Av.



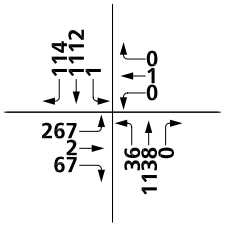
10 Driveway 3 & San Michele Rd.



11 Driveway 4 & Nandina Av.



12 Perris Bl. & San Michele Rd.



13 Perris Bl. & Nandina Av.

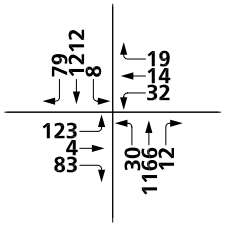


Table 7-1

Intersection Analysis for Opening Year Cumulative (2017) Conditions

#	Intersection	Jurisdiction	Traffic Control[3]	Existing (2012)				EAC (2017)				EAPC (2017)			
				Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	I-215 SB Ramps / Harley Knox Bl.	Caltrans	TS	23.7	26.8	C	C	***>80.0***	***>80.0***	***F***	***F***	***>80.0***	***>80.0***	***F***	***F***
2	I-215 NB Ramps / Harley Knox Bl.	Caltrans	TS	17.7	18.1	B	B	47.6	***>80.0***	D	***F***	48.4	***>80.0***	D	***F***
3	Western Wy. / Harley Knox Bl.	Perris	CSS	11.7	13.0	B	B	23.2	***>50.0***	C	***F***	24.2	***>50.0***	C	***F***
4	Patterson Av. / Harley Knox Bl.	Perris	TS	17.9	17.6	B	B	***>80.0***	***>80.0***	***F***	***F***	***>80.0***	***>80.0***	***F***	***F***
5	Indian St. / Nandina Av.	MV	TS	23.3	23.4	C	C	28.5	29.5	C	C	28.9	31.2	C	C
6	Indian St. / Harley Knox Bl.	Perris	TS	30.8	29.3	C	C	***>80.0***	***>80.0***	***F***	***F***	***>80.0***	***>80.0***	***F***	***F***
7	Knox St. / Nandina Av.	MV	CSS	9.1	9.3	A	A	11.1	11.5	B	B	11.5	11.9	B	B
8	Driveway 1 / San Michele Rd.	MV	**CSS**	Future Intersection				Future Intersection				11.5	12.2	B	B
9	Driveway 2 / Nandina Av.	MV	**CSS**	Future Intersection				Future Intersection				9.5	9.2	A	A
10	Driveway 3 / San Michele Rd.	MV	**CSS**	Future Intersection				Future Intersection				8.7	9.1	A	A
11	Driveway 4 / Nandina Av.	MV	**CSS**	Future Intersection				Future Intersection				10.4	10.0	B	B
12	Perris Bl. / San Michele Rd.	MV	TS	36.0	36.8	D	D	33.6	38.8	C	D	33.8	38.9	C	D
13	Perris Bl. / Nandina Av.	MV	TS	37.1	46.6	D	D	29.8	33.1	C	C	24.8	33.2	C	C

[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.

[2] MV = City of Moreno Valley; MJPA = March Joint Powers Authority

[3] CSS = Cross-street Stop; AWS = All-Way Stop; TS = Traffic Signal

7.5 ROADWAY SEGMENT CAPACITY ANALYSIS

As noted previously, the roadway segment capacities are approximate figures only, and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet future traffic demands. Table 7-2 provides a summary of the Opening Year Cumulative (2017) 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 2-2. As shown on Table 7-2, the following roadway segments are anticipated to operate at unacceptable LOS under Opening Year Cumulative (2017) traffic conditions:

ID	Roadway Segments
3	Harley Knox Boulevard, between I-215 NB Ramps and Western Way – LOS "E"
4	Harley Knox Boulevard, East of Western Way – LOS "E"
5	Harley Knox Boulevard, West of Patterson Avenue – LOS "E"
6	Harley Knox Boulevard, East of Patterson Avenue – LOS "F"
7	Harley Knox Boulevard, West of Indian Street – LOS "E"
13	Indian Street, South of Nandina Avenue – LOS "F"
14	Indian Street, North of Harley Knox Boulevard – LOS "F"

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 improvements discussed in Section 7.9 *Cumulative Impacts and Recommended Improvements*. It should be noted that in some cases, the recommended intersection improvements discussed in Section 7.9 *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 7.9 *Cumulative Impacts and Recommended Improvements*.

7.6 TRAFFIC SIGNAL WARRANTS ANALYSIS

For Opening Year Cumulative (2017) without and with Project conditions, there are no additional traffic signals that appear to be warranted in addition to those previously warranted under Opening Year (2017) traffic conditions (see Appendix "7.3" and Appendix "7.4").

As noted previously, 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 necessary correlate with level of service. An intersection may satisfy a signal warrant condition and operate at or above LOS "C" or operate below LOS "C" and not meet signal warrant.

Table 7-2

Opening Year Cumulative (2017) Conditions
Roadway Volume/Capacity Analysis[1]

#	Roadway	Segment Limits	Jurisdiction	Roadway Section	LOS Capacity[2,3]	EAC (2017)	V/C	LOS	Acceptable LOS	EAPC (2017)	V/C	LOS	Acceptable LOS
1	Harley Knox Boulevard	West of I-215 Freeway	Co. of Riv.	4D	35,900	13,255	0.37	A	D	13,255	0.37	A	D
2		I-215 SB Ramps to I-215 NB Ramps	Perris	4D	35,900	24,732	0.69	B	D	25,266	0.70	B	D
3		I-215 NB Ramps to Western Way	Perris	4U	25,900	***36,174***	***1.40***	***F***	***D***	***37,081***	***1.43***	***F***	***D***
4		East of Western Way	Perris	4U	25,900	***35,300***	***1.36***	***F***	***D***	***36,207***	***1.40***	***F***	***D***
5		West of Patterson Avenue	Perris	4U	25,900	***35,233***	***1.36***	***F***	***D***	***36,140***	***1.40***	***F***	***D***
6		East of Patterson Avenue	Perris	2D	18,000	***34,418***	***1.91***	***F***	***D***	***35,339***	***1.96***	***F***	***D***
7		West of Indian Street	Perris	3D	25,000	***32,697***	***1.31***	***F***	***D***	***33,617***	***1.34***	***F***	***D***
8		East of Indian Street	Perris	3D	25,000	10,811	0.43	A	D	10,811	0.43	A	D
9	Western Way	North of Harley Knox Boulevard	Perris	2U	13,000	1,325	0.10	A	D	1,325	0.10	A	D
10	Patterson Avenue	North of Harley Knox Boulevard	Perris	2U	13,000	154	0.01	A	D	154	0.01	A	D
11		South of Harley Knox Boulevard	Perris	2U	13,000	1,485	0.11	A	D	1,499	0.12	A	D
12	Indian Street	North of Nandina Avenue	MV	4D	37,500	14,862	0.40	A	D	15,140	0.40	A	D
13		South of Nandina Avenue	MV	2D	12,500	***20,893***	***1.67***	***F***	***D***	***21,867***	***1.75***	***F***	***D***
14		North of Harley Knox Boulevard	MV	2D	12,500	***22,312***	***1.78***	***F***	***D***	***23,286***	***1.86***	***F***	***D***
15		South of Harley Knox Boulevard	Perris	4D	35,900	5,278	0.15	A	D	5,332	0.15	A	D
16	Knox Street	North of Nandina Avenue	MV	2D	12,500	834	0.07	A	D	834	0.07	A	D
17	Perris Boulevard	North of San Michele Road	MV	**6D**	56,300	30,121	0.54	A	D	30,187	0.54	A	D
18		South of San Michele Road	MV	**6D**	56,300	26,870	0.48	A	D	26,938	0.48	A	D
19		North of Nandina Avenue	MV	**6D**	56,300	29,920	0.53	A	D	29,986	0.53	A	D
20		South of Nandina Avenue	MV	**6D**	56,300	29,209	0.52	A	D	29,233	0.52	A	D
21	San Michele Road	West of Driveway 1	MV	2D	12,500	5,729	0.46	A	D	6,007	0.48	A	D
22		Driveway 1 to Driveway 3	MV	2D	12,500	5,477	0.44	A	D	5,477	0.44	A	D
23		Driveway 3 to Perris Boulevard	MV	2D	12,500	5,530	0.44	A	D	5,584	0.45	A	D
24	Nandina Avenue	West of Indian Street	MV	2U	12,500	6,224	0.50	A	D	6,224	0.50	A	D
25		Indian Street to Knox Street	MV	2D	12,500	5,600	0.45	A	D	6,296	0.50	A	D
26		Knox Street to Driveway 2	MV	2D	12,500	4,343	0.35	A	D	5,038	0.40	A	D
27		Driveway 2 to Driveway 4	MV	2U	12,500	3,463	0.28	A	D	3,491	0.28	A	D
28		Driveway 4 to Perris Boulevard	MV	2U	12,500	3,489	0.28	A	D	3,555	0.28	A	D

[1] Per Figure 9-2: City of Moreno Valley Level of Service (LOS) Standards, City of Moreno Valley General Plan Circulation Element.

From Table CE-2 of the City of Perris General Plan Circulation Element.

[2] These maximum roadway capacities have been extracted from the City of Moreno Valley's Transportation Division's Traffic Impact Analysis Transportation Division's Traffic Impact Analysis 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 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.

[3] The City of Perris roadway standard capacity is LOS "D", with the exception of SR-74 and Cajalco/Ramona Expressway which allows LOS "E" capacity. As such, the volumes shown in the table are based upon LOS "D" capacity with the exception of segments along SR-74 and Cajalco/Ramona Expressway which have been based upon LOS "E" capacity.

Although not warranted, the intersection of Western Way at Harley Knox Boulevard is anticipated to operate at unacceptable LOS during the peak hours without the installation of a traffic signal. The addition of lanes is not anticipated to improve the deficient peak hour LOS at this intersection. As such, it is recommended that this location be monitored, and the City Traffic Engineer should implement engineering judgment and his/her discretion on the installation of a traffic signal.

7.7 BASIC FREEWAY SEGMENT ANALYSIS

Opening Year Cumulative (2017) without and with Project peak hour mainline directional volumes are provided on Exhibits 7-7 and 7-8, respectively. The Opening Year Cumulative (2017) freeway analysis assumes the existing mixed-flow lanes only, and does not include any improvements that may be constructed by Caltrans at a later date. Segment analysis results for the AM and PM peak hours are summarized on Table 7-3. As shown on Table 7-3, the study area mainline segments are anticipated to operate at acceptable service levels for Opening Year Cumulative (2017) without and with Project conditions (i.e., LOS "E" or better).

A schedule for the widening of I-215 Freeway between Nuevo Road in the City of Perris and Box Springs Road in the City of Riverside has not been set, due to the state's ongoing budget challenges. The widening project includes the addition of a carpool lane in each direction of travel over a 10.75-mile section of the I-215 Freeway. Although there are no basic freeway mainline segments along the I-215 Freeway that are anticipated to operate at unacceptable LOS under Opening Year Cumulative (2017) traffic conditions, this widening has been analyzed as a future improvement at the end in Section 7.10.2 *Recommended Improvements to Address Cumulative Impacts on Freeway Facilities* of this TIA.

Opening Year Cumulative (2017) without Project freeway mainline level of service analysis worksheets are provided in Appendix "7.5". Opening Year Cumulative (2017) with Project freeway mainline level of service analysis worksheets are provided in Appendix "7.6".

7.8 FREEWAY MERGE/DIVERGE ANALYSIS

Ramp merge and diverge operations have been evaluated for Opening Year Cumulative (2017) traffic conditions at the I-215/Harley Knox Boulevard interchanges. As shown on Table 7-4, it is anticipated that the ramp junctions along the I-215 Freeway are projected to operate at acceptable service levels for both Opening Year (2017) without and with Project conditions (i.e., LOS "E" or better).

Similar to the basic freeway segment analysis, the proposed addition of a carpool lane in each direction of travel has been analyzed as a future improvement at the end in Section 7.10 *Cumulative Impacts and Recommended Improvements* to although there are no deficient I-215 Freeway ramp junctions. Opening Year Cumulative (2017) without Project freeway ramp operations analysis worksheets are

EXHIBIT 7-7

OPENING YEAR CUMULATIVE (2017) WITHOUT PROJECT I-215 FREEWAY MAINLINE VOLUMES

EXHIBIT 7-8

OPENING YEAR CUMULATIVE (2017) WITH PROJECT I-215 FREEWAY MAINLINE VOLUMES

Table 7-3

Opening Year Cumulative (2017) Conditions Basic Freeway Segment Analysis

Scenario	Direction	Mainline Segment	Volume		Truck %	Truck %	Lanes[1]	Density[2]		LOS	
			AM	PM	AM	PM		AM	PM	AM	PM
EAC (2017)	SB	North of Harley Knox Boulevard	4,211	5,689	21%	10%	3	25.2	35.2	C	E
		South of Harley Knox Boulevard	3,542	5,958	14%	14%	3	20.5	40.0	C	E
	NB	North of Harley Knox Boulevard	5,735	4,654	9%	18%	3	35.4	27.8	E	D
		South of Harley Knox Boulevard	5,700	3,682	12%	13%	3	35.9	21.2	E	C
EAPC (2017)	SB	North of Harley Knox Boulevard	4,246	5,708	21%	11%	3	25.4	35.7	C	E
		South of Harley Knox Boulevard	3,547	5,968	14%	14%	3	20.5	40.1	C	E
	NB	North of Harley Knox Boulevard	5,751	4,686	9%	19%	3	35.6	28.2	E	D
		South of Harley Knox Boulevard	5,702	3,683	12%	13%	3	35.9	21.2	E	C

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

Table 7-4

I-215 Freeway Ramp Junction Merge/Diverge Analysis
For Opening Year Cumulative (2017) Conditions

Freeway	Direction	Ramp or Segment	Lanes on Freeway	OY Cumulative (2017) Without Project				OY Cumulative (2017) With Project			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Density[1]	LOS	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
I-215 Freeway	SB	Off-Ramp at Harley Knox Boulevard	3	31.6	D	35.8	E	31.9	D	36.0	E
		On-Ramp at Harley Knox Boulevard	3	23.3	C	36.6	E	23.3	C	36.7	E
	NB	On-Ramp at Harley Knox Boulevard	3	34.6	D	32.6	D	34.7	D	33.0	D
		Off-Ramp at Harley Knox Boulevard	3	35.7	E	25.6	C	35.7	E	25.7	C

[1] Density is measured by passenger cars per mile per lane (pc/mi/ln).

provided in Appendix "7.7" and Opening Year Cumulative (2017) with Project freeway mainline level of service analysis worksheets are provided in Appendix "7.8".

7.9 CUMULATIVE IMPACTS AND RECOMMENDED IMPROVEMENTS

Improvement strategies 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 improvement strategies discussed below to address Opening Year Cumulative (2017) cumulative traffic impacts are presented in Table 7-5.

7.9.1 RECOMMENDED IMPROVEMENTS TO ADDRESS CUMULATIVE IMPACTS AT INTERSECTIONS

The following recommended improvements are recommended to reduce Opening Year Cumulative (2017) cumulative impacts to "less-than-significant":

Recommended Improvement – I-215 Southbound Ramps / Harley Knox Boulevard (#1) – This intersection is anticipated to operate at an unacceptable LOS (LOS "F") during the AM and PM peak hours under Opening Year Cumulative (2017) without Project condition and is anticipated to continue to operate at LOS "F" during the peak hours with the addition of Project traffic. As such, this impact is considered **cumulatively significant**. The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- Construct a 2nd southbound left turn lane.
- Re-stripe the existing southbound shared left-through lane as an exclusive left turn lane.
- Re-stripe the existing southbound right turn lane as a shared through-right turn lane.
- Construct a 2nd westbound left turn lane.

Recommended Improvement – I-215 Northbound Ramps / Harley Knox Boulevard (#2) – This intersection is anticipated to operate at an unacceptable LOS (LOS "F") during the AM and PM peak hours under Opening Year Cumulative (2017) without Project condition and is anticipated to continue to operate at LOS "F" during the peak hours with the addition of Project traffic. As such, this impact is considered **cumulatively significant**. The following improvement is necessary to reduce the cumulative impact to ***"less-than-significant"***:

- Construct a westbound free-right turn lane.

Table 7-5

Recommended Improvements for Opening Year Cumulative (2017) 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	AM	PM
1	I-215 SB Ramps / Harley Knox Bl.																	
	- Without Improvements	TS	0	0	0	0	1	1	0	2	d	1	2	0	>80.0	>80.0	F	F
	- With Improvements	TS	0	0	0	**2**	1	**0**	0	2	d	**2**	2	0	21.5	20.5	C	C
2	I-215 NB Ramps / Harley Knox Bl.																	
	- Without Improvements	TS	0	1	1	0	0	0	1	2	0	0	2	d	48.4	>80.0	D	F
	- With Improvements	TS	0	1	1	0	0	0	1	2	0	0	2	**1>>**	13.0	14.1	B	B
3	Western Wy. / Harley Knox Bl.																	
	- Without Improvements	CSS	0	0	0	0	1	0	0	2	0	0	2	0	24.2	>50.0	C	F
	- With Improvements	**TS**	0	0	0	**1**	**0**	**1**	**1**	2	0	0	2	0	26.2	15.7	C	B
4	Patterson Av. / Harley Knox Bl.																	
	- Without Improvements	TS	0	1	0	0	1	0	1	1	1	1	1	0	>80.0	>80.0	F	F
	- With Improvements	TS	0	1	0	0	1	0	1	**2**	1	1	**2**	0	19.9	21.6	B	C
6	Indian St. / Harley Knox Bl.																	
	- Without Improvements	TS	2	2	1	1	2	0>	1	1	1	2	2	0	>80.0	>80.0	F	F
	- With Improvements	TS	2	2	1	1	2	**2>**	**2**	**2**	1	2	2	0	34.2	27.7	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

Recommended Improvement – Western Way / Harley Knox Boulevard (#3) – This intersection is anticipated to operate at an unacceptable LOS (LOS "F") during the AM and PM peak hours under Opening Year Cumulative (2017) without Project condition and is anticipated to continue to operate at LOS "F" during the peak hours with the addition of Project traffic. As such, this impact is considered **cumulatively significant**. The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- Install a traffic signal.
- Construct a southbound left turn lane.
- Re-stripe the existing shared left-right turn lane as dedicated right turn lane.
- Construct an eastbound left turn lane.

Recommended Improvement – Patterson Avenue / Harley Knox Boulevard (#4) – This intersection is anticipated to operate at an unacceptable LOS (LOS "F") during the AM and PM peak hours under Opening Year Cumulative (2017) without Project condition and is anticipated to continue to operate at LOS "F" during the peak hours with the addition of Project traffic. As such, this impact is considered **cumulatively significant**. The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- Construct a 2nd eastbound through lane.
- Construct a 2nd westbound through lane.

Recommended Improvement – Indian Street / Harley Knox Boulevard (#6) – This intersection is anticipated to operate at an unacceptable LOS (LOS "F") during the AM and PM peak hours under Opening Year Cumulative (2017) without Project condition and is anticipated to continue to operate at LOS "F" during the peak hours with the addition of Project traffic. As such, this impact is considered **cumulatively significant**. The following improvements are necessary to reduce the cumulative impact to ***"less-than-significant"***:

- Removal on the crosswalk on the north leg (maintain crosswalks on remaining legs of the intersection).
- Construct two (2) southbound right turn lanes.
- Construct a 2nd eastbound left turn lane.
- Construct a 2nd eastbound through lane.

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.

Worksheets for Opening Year Cumulative (2017) with Project conditions, with improvements, HCM calculations are provided in Appendix "7.9".

7.9.2 RECOMMENDED IMPROVEMENTS TO ADDRESS 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 General Plan roadway cross-sections. The effectiveness of the recommended roadway segment improvement strategies discussed below to address Opening Year Cumulative (2017) cumulative traffic impacts are presented in Table 7-6.

It is important to note that the intersections adjacent to the deficient roadway segments are anticipated to operate at an acceptable LOS with the proposed General Plan roadway cross-sections.

7.9.3 RECOMMENDED IMPROVEMENTS TO ADDRESS CUMULATIVE IMPACTS ON FREEWAY FACILITIES

The Project Study Report/Project Development Support in Riverside County on I-215 and SR-60 between Nuevo Road (I-215) & I-215/SR-60 Junction and Box Springs Road (I-215) & Day Street (SR-60) (prepared by Caltrans in April 2008), also known as the I-215 North Project, includes the construction of an high-occupancy vehicle lane in each direction of the I-215 Freeway between Nuevo Road and Box Springs Road within the existing median.

Caltrans typically assumes a reduction of fourteen (14) percent to the I-215 Freeway mainline through volumes in this region to account for vehicles utilizing the carpool (high-occupancy vehicle) lanes. Although the reduction to I-215 Freeway mainline volumes has been applied to account for the proposed carpool lanes, the analysis is performed assuming the same number of mixed-flow lanes and on and off-ramp configurations as existing baseline conditions.

As shown on Table 7-7, all of the freeway mainline segments are anticipated to operate at an acceptable LOS with the construction of a carpool lane in the southbound direction. Similarly, Table 7-8 shows that the freeway ramp junctions are anticipated to operate at an acceptable LOS with the construction of a carpool lane in the southbound direction. Worksheets for Opening Year Cumulative (2017) with Project conditions freeway mainline level of service analysis, with improvements, is provided in Appendix "7.10". Opening Year Cumulative (2017) with Project freeway ramp junction level of service analysis worksheets, with improvements are provided in Appendix "7.11".

Table 7-6

Opening Year Cumulative (2017) Conditions
Roadway Volume/Capacity Analysis, With Improvements[1]

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[2]	EAC (2017)	V/C	LOS	Acceptable LOS	EAPC (2017)	V/C	LOS	Acceptable LOS
3	Harley Knox Boulevard	I-215 NB Ramps to Western Way	4U	25,000	***36,174***	***1.45***	***F***	***D***	***37,081***	***1.48***	***F***	***D***
		I-215 NB Ramps to Western Way (GP Cross-Section)	**6D**	53,900	36,174	0.67	B	D	37,081	0.69	B	D
4		East of Western Way	4U	25,900	***35,300***	***1.36***	***F***	***D***	***36,207***	***1.40***	***F***	***D***
		East of Western Way (GP Cross-Section)	**6D**	53,900	35,300	0.65	B	D	36,207	0.67	B	D
5		West of Patterson Avenue	4U	25,900	***35,233***	***1.36***	***F***	***D***	***36,140***	***1.40***	***F***	***D***
		West of Patterson Avenue (GP Cross-Section)	**6D**	53,900	35,233	0.65	B	D	36,140	0.67	B	D
6		East of Patterson Avenue	2D	18,000	***34,418***	***1.91***	***F***	***D***	***35,339***	***1.96***	***F***	***D***
		East of Patterson Avenue (GP Cross-Section)	**6D**	53,900	34,418	0.64	B	D	35,339	0.66	B	D
7		West of Indian Street	3D	25,000	***32,697***	***1.31***	***E***	***D***	***33,617***	***1.34***	***E***	***D***
		West of Indian Street (GP Cross-Section)	**6D**	53,900	32,697	0.61	B	D	33,617	0.62	B	D
13	Indian Street	South of Nandina Avenue	2D	12,500	***19,118***	***1.53***	***F***	***D***	***20,091***	***1.61***	***F***	***D***
		South of Nandina Avenue (GP Cross-Section)	**4D**	37,500	19,118	0.51	A	D	20,091	0.54	A	D
14		North of Harley Knox Boulevard	2D	12,500	***20,576***	***1.65***	***F***	***D***	***21,549***	***1.72***	***F***	***D***
		North of Harley Knox Boulevard (GP Cross-Section)	**4D**	37,500	20,576	0.55	A	D	21,549	0.57	A	D

[1] Per Figure 9-2: City of Moreno Valley Level of Service (LOS) Standards, City of Moreno Valley General Plan Circulation Element.

[2] These maximum roadway capacities have been extracted from the City of Moreno Valley's Transportation Division's Traffic Impact Analysis Transportation Division's Traffic Impact Analysis 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 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.

Table 7-7

Opening Year Cumulative (2017) With Project Conditions Basic Freeway Segment Analysis With Planned I-215 Improvements

Scenario	Direction	Mainline Segment	Volume		Truck %	Truck %	Lanes[1]	Density[2]		LOS	
			AM	PM	AM	PM		AM	PM	AM	PM
EAPC (2017)	SB	North of Harley Knox Boulevard	4,246	5,708	21%	11%	3	22.2	28.7	C	D
		South of Harley Knox Boulevard	3,547	5,968	14%	14%	3	17.3	31.5	B	D
	NB	North of Harley Knox Boulevard	5,751	4,686	9%	19%	3	28.8	24.2	D	C
		South of Harley Knox Boulevard	5,702	3,683	12%	13%	3	28.9	17.6	D	B

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

Table 7-8

I-215 Freeway Ramp Junction Merge/Diverge Analysis
For Opening Year Cumulative (2017) With Project Conditions, With Planned I-215 Improvements

Freeway	Diriection	Ramp or Segment	Lanes on Freeway	AM Peak Hour		PM Peak Hour	
				Density[1]	LOS	Density[1]	LOS
I-215 Freeway	SB	Off-Ramp at Harley Knox Boulevard	3	29.3	D	32.7	D
		On-Ramp at Harley Knox Boulevard	3	20.5	C	33.1	D
	NB	On-Ramp at Harley Knox Boulevard	3	31.0	D	29.8	D
		Off-Ramp at Harley Knox Boulevard	3	32.4	D	22.3	C

[1] Density is measured by passenger cars per mile per lane (pc/mi/ln).

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8.0 LOCAL CIRCULATION AND SITE ACCESS

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

The Project is proposed to have access on San Michele Road and Nandina Avenue. All Project access points are proposed to be full-access. Regional access to the Project site will be provided by the I-215 Freeway (located to the west) via Harley Knox 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.

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 six-lane divided arterial highway (110-foot right-of-way) between San Michele Road and Nandina Avenue. The proposed Project would improve Perris Boulevard as required by final conditions of approval for the proposed Project and applicable City of Moreno Valley standards.

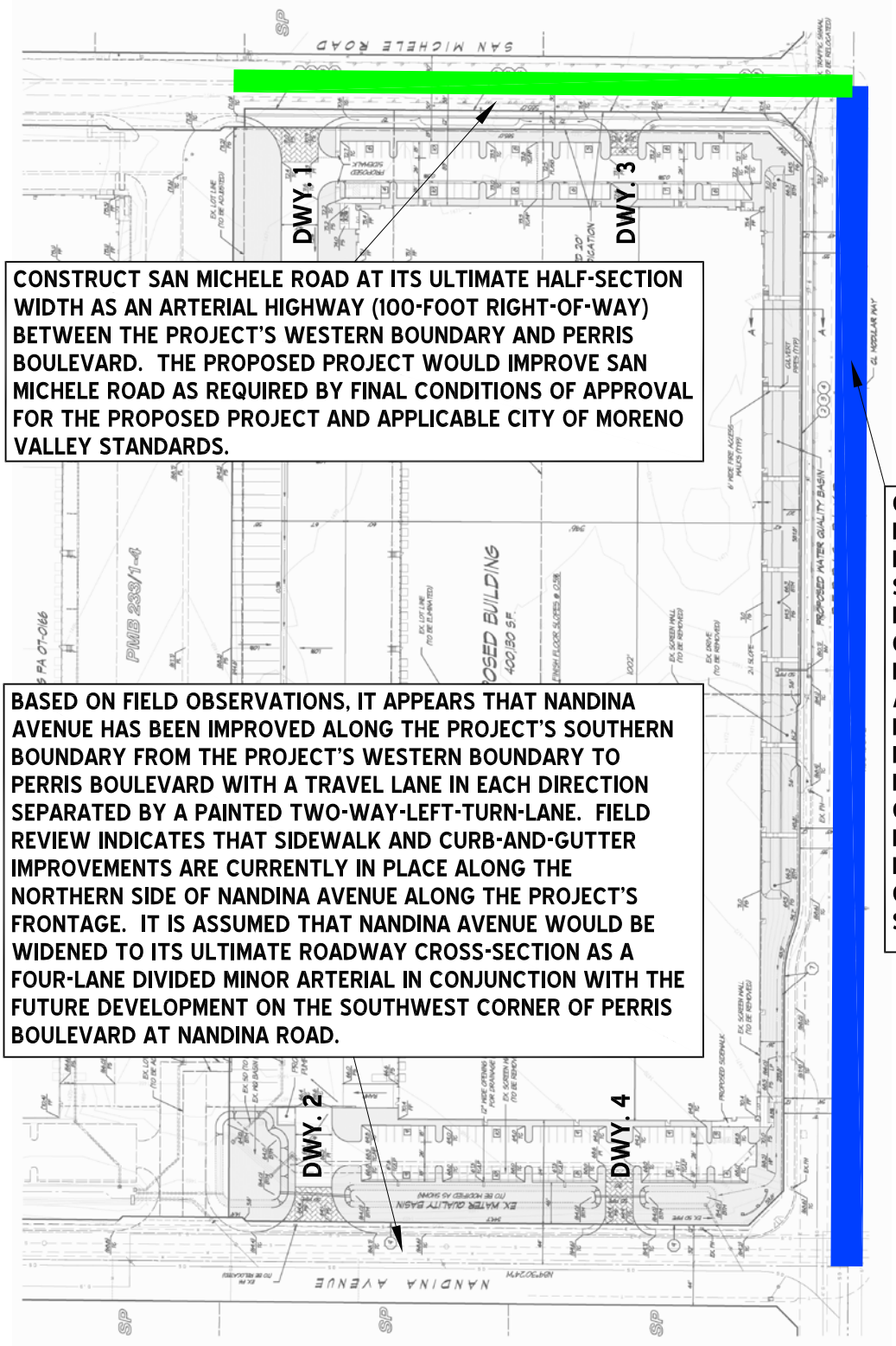
San Michele Road – San Michele Road is an east-west oriented roadway located along the Project's northern boundary. Construct San Michele Road at its ultimate half-section width as an arterial highway (100-foot right-of-way) between the Project's western boundary and Perris Boulevard. The proposed Project would improve San Michele Road as required by final conditions of approval for the proposed Project and applicable City of Moreno Valley standards.

Nandina Avenue – Nandina Avenue is an east-west oriented roadway located along the Project's southern boundary. Based on field observations, it appears that Nandina Avenue has been improved along the Project's southern boundary from the Project's western boundary to Perris Boulevard with a travel lane in each direction separated by a painted two-way-left-turn-lane. Field review indicates that sidewalk and curb-and-gutter improvements are currently in place along the northern side of Nandina Avenue along the Project's frontage. It is assumed that Nandina Avenue would be widened to its ultimate roadway cross-section as a four-lane divided roadway in conjunction with the future development on the southwest corner of Perris Boulevard at Nandina Road.

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



CONSTRUCT SAN MICHELE ROAD AT ITS ULTIMATE HALF-SECTION WIDTH AS AN ARTERIAL HIGHWAY (100-FOOT RIGHT-OF-WAY) BETWEEN THE PROJECT'S WESTERN BOUNDARY AND PERRIS BOULEVARD. THE PROPOSED PROJECT WOULD IMPROVE SAN MICHELE ROAD AS REQUIRED BY FINAL CONDITIONS OF APPROVAL FOR THE PROPOSED PROJECT AND APPLICABLE CITY OF MORENO VALLEY STANDARDS.

BASED ON FIELD OBSERVATIONS, IT APPEARS THAT NANDINA AVENUE HAS BEEN IMPROVED ALONG THE PROJECT'S SOUTHERN BOUNDARY FROM THE PROJECT'S WESTERN BOUNDARY TO PERRIS BOULEVARD WITH A TRAVEL LANE IN EACH DIRECTION SEPARATED BY A PAINTED TWO-WAY-LEFT-TURN-LANE. FIELD REVIEW INDICATES THAT SIDEWALK AND CURB-AND-GUTTER IMPROVEMENTS ARE CURRENTLY IN PLACE ALONG THE NORTHERN SIDE OF NANDINA AVENUE ALONG THE PROJECT'S FRONTAGE. IT IS ASSUMED THAT NANDINA AVENUE WOULD BE WIDENED TO ITS ULTIMATE ROADWAY CROSS-SECTION AS A FOUR-LANE DIVIDED MINOR ARTERIAL IN CONJUNCTION WITH THE FUTURE DEVELOPMENT ON THE SOUTHWEST CORNER OF PERRIS BOULEVARD AT NANDINA ROAD.

CONSTRUCT PERRIS BOULEVARD AT ITS ULTIMATE HALF-SECTION WIDTH AS A SIX-LANE DIVIDED ARTERIAL HIGHWAY (110-FOOT RIGHT-OF-WAY) BETWEEN SAN MICHELE ROAD AND NANDINA AVENUE. THE PROPOSED PROJECT WOULD IMPROVE PERRIS BOULEVARD AS REQUIRED BY FINAL CONDITIONS OF APPROVAL FOR THE PROPOSED PROJECT AND APPLICABLE CITY OF MORENO VALLEY STANDARDS.

LEGEND:

= DIVIDED ARTERIAL (6-LANE) (110-FOOT ROW)

= ARTERIAL (100-FOOT ROW)

N

The Project is anticipated to construct curb-and-gutter improvements and sidewalks along the Project frontages on San Michele Road, Perris Boulevard and Nandina Avenue.

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.

Driveway 1 / San Michele Road – 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 through lane and one shared through-right turn lane.
Westbound Approach: One left turn lane and one through lane.

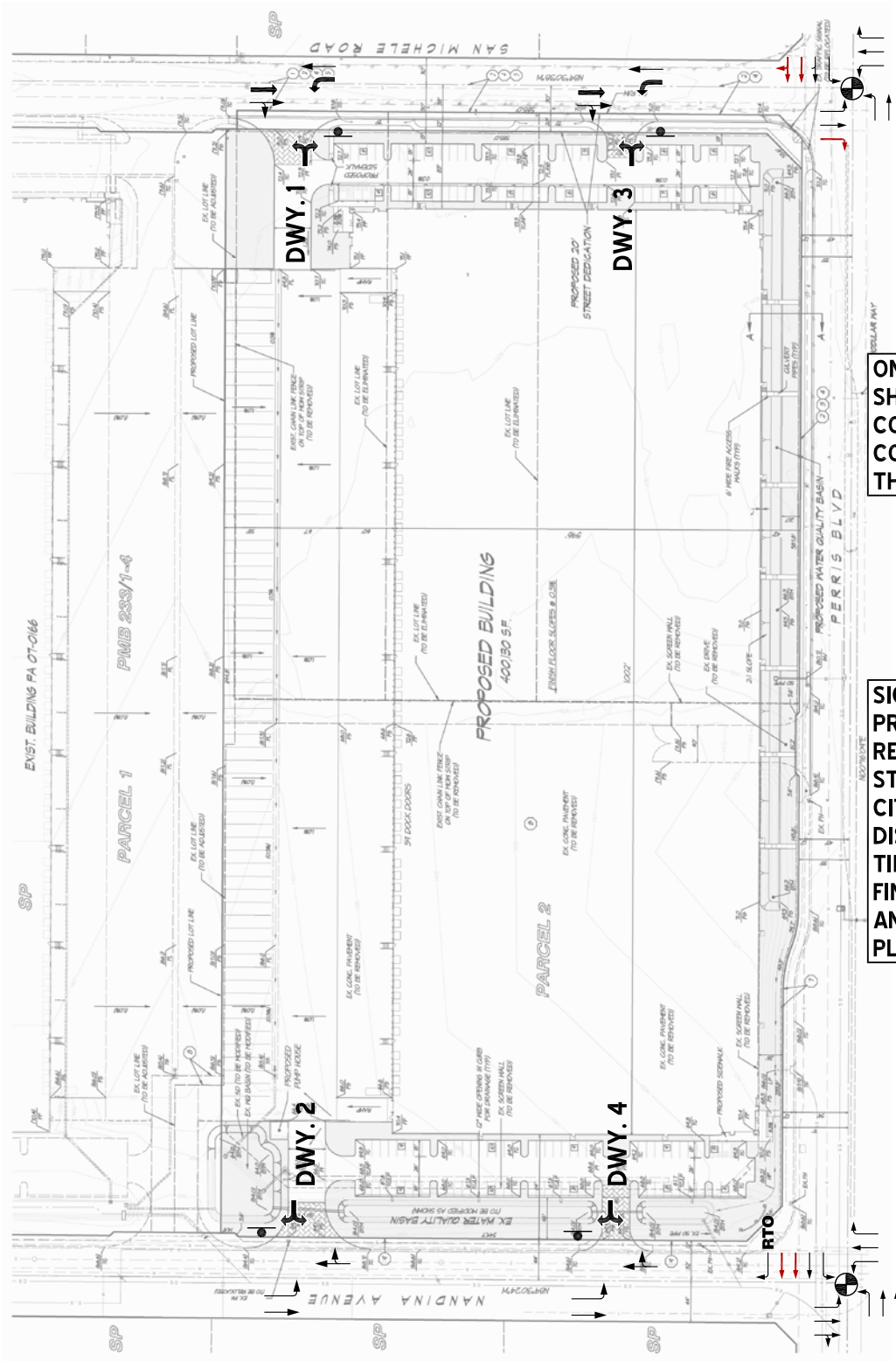
Driveway 2 / Nandina Avenue – Install a stop control on the southbound approach and construct the intersection with the following geometrics:
Northbound Approach: N/A
Southbound Approach: One shared left-right turn lane.
Eastbound Approach: One left turn lane and one through lane.
Westbound Approach: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

Driveway 3 / San Michele Road – 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 through lane and one shared through-right turn lane.
Westbound Approach: One left turn lane and one through lane.

Driveway 4 / Nandina Avenue – 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 left turn lane and one through lane.
Westbound Approach: One shared through-right turn lane.

EXHIBIT 8-2

ON-SITE CIRCULATION RECOMMENDATIONS



ON-SITE SIGNING AND STRIPING SHOULD BE IMPLEMENTED IN CONJUNCTION WITH DETAILED CONSTRUCTION PLANS FOR THE PROJECT SITE.

SIGHT DISTANCE AT EACH PROJECT POINT SHOULD BE REVIEWED WITH RESPECT TO STANDARD CALTRANS AND CITY MORENO VALLEY SIGHT DISTANCE STANDARDS AT THE TIME OF PREPARATION OF FINAL GRADING, LANDSCAPE AND STREET IMPROVEMENTS PLANS.

LEGEND:

- = TRAFFIC SIGNAL
- = STOP SIGN
- = EXISTING LANE
- = PROJECT IMPROVEMENT
- = IMPROVEMENTS TO BE IN PLACE BY YEAR 2013

RTO = RIGHT TURN OVERLAP

N

Perris Boulevard / San Michele Road – Based on discussions with City staff, the intersection will be constructed with the following geometrics by Year 2013:
Northbound Approach: One left turn lane, two through 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, one through lane and one right turn lane.
Westbound Approach: One left turn lane, one through lane and one right turn lane.

Perris Boulevard / Nandina Avenue – Based on discussions with City staff, the intersection will be constructed with the following geometrics by Year 2013:
Northbound Approach: One left turn lane, two through lanes and one shared through-right turn lane.
Southbound Approach: One left turn lane, three through lanes and one right turn lane with overlap phasing.
Eastbound Approach: One left turn lane, one through lane and one shared through-right turn lane.
Westbound Approach: One left turn lane, one through lane and one right lane.

A queuing analysis has been preformed for the site adjacent roadways of San Michele Road, Perris Boulevard and Nandina Avenue in an effort to determine if there are any queuing issues between the easterly full access driveways on San Michele Road and Nandina Avenue and Perris Boulevard (see Appendix "8.1"). Specifically, the queuing analysis indicates that the eastbound left-turn queues at Perris Boulevard on both San Michele Road and Nandina Avenue are not anticipated to stack beyond Driveway 3 and Driveway 4. As such, it is anticipated that Driveway 3 on San Michele Road and Driveway 4 on Nandina Avenue could provide full access. The painted median (two-way-left-turn lane) would be utilized as left-turn lanes for access into the Project site. It is also important to note that both Driveway 3 and Driveway 4 would only be utilized by passenger car vehicles (employees only, no heavy vehicles) and both intersections meet the City's minimum intersection spacing requirement for full access.

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.

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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 for Opening Year Cumulative (2017) conditions to mitigate the cumulative and project-related 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 between 3.3% and 3.5% of new vehicle trips to the impacted 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 is a truly regional mitigation fee program, and is imposed and implemented in every jurisdiction in Western Riverside County, except the City of Beaumont.

Table 9-1

Summary of Transportation Impact Fee Program Improvements for Opening Year Cumulative (2017) Conditions

#	Intersection Location	EAPC (2017) Recommended Improvements	Program Improvements[1]	Non-Program Improvements	Fair Share[2]
1	I-215 SB Ramps / Harley Knox Bl.	1.SBL; 1.WBL; Re-stripe for 1.SBL and 1.SBT/R	1.SBL; 1.WBL; Re-stripe for 1.SBL and 1.SBT/R	None	--
2	I-215 NB Ramps / Harley Knox Bl.	1.WB Free Right; Re-stripe for 1.NBL/T/R	1.WB Free Right; Re-stripe for 1.NBL/T/R	None	--
3	Western Wy. / Harley Knox Bl.	Install Traffic Signal; 1.SBL; 1.EBL	None	Install Traffic Signal; 1.SBL; 1.EBL	3.3%
4	Patterson Av. / Harley Knox Bl.	1.EBT; 1.WBT	1.EBT, 1.WBT	None	--
6	Indian St. / Harley Knox Bl.	2.SBR w/ overlap phasing; 1.EBL; 1.EBT; Remove cross-walk on north leg (WB approach)	1.EBT	2.SBR w/ overlap phasing; 1.EBL; Remove cross-walk on north leg (WB approach)	3.5%

[1] Improvements included in TUMF Nexus (2006) or City of Moreno Valley DIF (2007) programs.

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

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.

Current TUMF rates are shown in Table 9-2. The fee for industrial use is $1.73 per square foot with an adjustment to the baseline square footage for high-cube buildings. In addition, an annual inflation adjustment is considered each year in January. In this way, TUMF fees 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.

The facilities planned through the TUMF program are constructed prior to the time at which the identified facility is expected to deteriorate to an inadequate level of service. 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 impacts to 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.

Table 9-2

Estimated Fee Obligation

FEE REFERENCE	SINGLE FAMILY RESIDENTIAL ($ PER DU)	MULTI-FAMILY ($ PER DU)	COMMERCIAL ($ PER SQ FT)	SERVICE ($ PER SQ FT)	HIGH CUBE/ INDUSTRIAL ($ PER SQ FT)
City of Moreno Valley DIF	$8,903	$5,884	$4.240 - $7.755	$3.184	$0.996
Transportation Uniform Mitigation Fee (TUMF)[2]	$8,873	$6,231	$10.49	$4.19	$1.73

[1] DIF rates shown are effective starting January 11, 2013.

[2] TUMF as of January 1, 2011.

[*] Non-residential fees based on square footage of building area

Fee Calculation

Program	Category	Unit Cost	Units/Sq.Ft.	DIF	TUMF
DIF	Industrial	$0.996	400,130	$398,333	
TUMF	Industrial	$1.730	248,031		$429,093.98
			Total Transportation Impact Fees		**$827,427**

* TUMF calculations for Parcels 1 & 2 assume High-Cube designation

**High cube buildings in excess of 200k sq. ft. use the following formula;

Total building square footage - 200,000 = A

A x .24 = B

B + 200,000 = Fee Basis

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. The DIF rates shown on Table 9-2 are based on rates recently approved by the City Council and are anticipated to take effect on January 11, 2013.

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 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 9-3.

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 9-3

Project Fair Share Calculations

#	Intersection		Existing	Project	EAPC (2017)	Total New Traffic	Project % of New
3	Western Wy. / Harley Knox Bl.						
		AM:	1,261	57	2,968	1,707	**3.3%**
		PM:	1,080	62	3,135	2,055	3.0%
6	Indian St. / Harley Knox Bl.						
		AM:	1,044	62	2,820	1,776	**3.5%**
		PM:	937	66	3,085	2,148	3.1%