Beaumont Pointe Specific Plan
(Formerly "Jack Rabbit Trail Specific Plan")

TRAFFIC ANALYSIS

CITY OF BEAUMONT

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LIST OF EXHIBITS

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LIST OF TABLES

LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
CA MUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CMP	Congestion Management Program
DIF	Development Impact Fee
E+P	Existing Plus Project
EIR	Environmental Impact Report
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
ITE	Institute of Transportation Engineers
LOS	Level of Service
NCHRP	National Cooperative Highway Research Program
PCE	Passenger Car Equivalent
PHF	Peak Hour Factor
Project	Jack Rabbit Trail Specific Plan
RCTC	Riverside County Transportation Commission
RivTAM	Riverside Transportation Analysis Model
RTA	Riverside Transit Agency
RTP	Regional Transportation Plan
SCAG	Southern California Association of Governments
SCS	Sustainable Communities Strategies
SHS	State Highway System
TA	Traffic Analysis
TUMF	Transportation Uniform Mitigation Fee
WRCOG	Western Riverside Council of Governments
V/C	Volume to Capacity

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1 INTRODUCTION

This report presents the results of the traffic analysis (TA) for the proposed Beaumont Pointe Specific Plan ("Project") (formerly known as "Jack Rabbit Trail Specific Plan"), which is located south of the SR-60 Freeway and west of Jack Rabbit Trail, in the City of Beaumont, as shown on Exhibit 1-1.

The purpose of this TA is to evaluate the potential deficiencies related to traffic, identify circulation system deficiencies that may result from the development of the proposed Project, and to recommend improvements to resolve identified deficiencies in order to achieve acceptable operational conditions at study area intersections. This TA has been prepared in accordance with the County of Riverside's Traffic Impact Analysis Preparation Guide (August 2008), the California Department of Transportation (Caltrans) Guide for the Preparation of Traffic Impact Studies, and through consultation with City of Beaumont staff during the scoping process. (1) (2) The Project traffic study scoping agreement is provided in Appendix 1.1 of this TA, which has been approved by the City of Beaumont.

1.1 SUMMARY OF FINDINGS

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

Phase 1

- Project to construct 4th Street at its ultimate full-width as a Modified Secondary (78-foot right-of-way) from the western Project boundary to Jack Rabbit Trail consistent with the City's standards. Project to construct 4th Street with a minimum of one lane of travel in each direction from Jack Rabbit Trail to Potrero Boulevard to facilitate site access consistent with the City's standards.
- Project to install a traffic signal at the intersection of Jack Rabbit Trail & 4th Street.

Phase 2

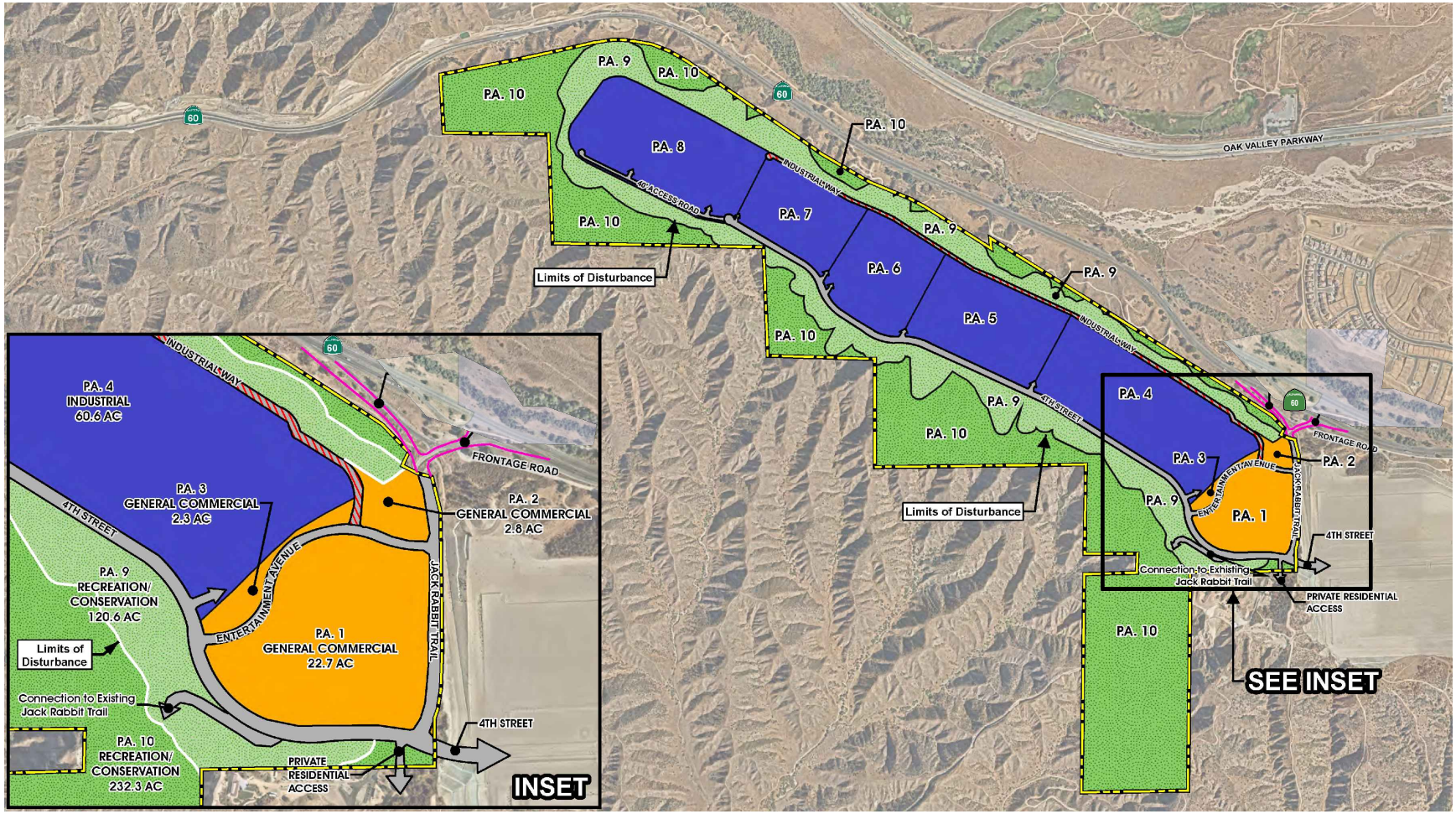
There are no additional site adjacent and site access improvements recommended for Phase 2.

Project Buildout

- Project to construct Jack Rabbit Trail at its ultimate full-width as a Modified Industrial Collector (78-foot right-of-way) from 4th Street to the SR-60 Freeway ramp consistent with the City's standards. It should be noted, the Project is proposing to construct Jack Rabbit Trail to provide access to Parcels 1 and 2 and to meet County of Riverside Fire Authority road requirements, not to provide primary Project access to the SR-60 Freeway.
- Project to construct Entertainment Avenue at its ultimate full-width as a Private Road (50-foot right-of-way) from 4th Street to Jack Rabbit Trail consistent with the City's standards.

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

EXHIBIT 1-1: PRELIMINARY SITE PLAN



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URBAN CROSSROADS

The proposed Project is not anticipated to require the construction of any off-site improvements, however, there are improvement needs identified at off-site intersections for future cumulative traffic analysis scenarios. As such, the Project Applicant's responsibility for the Project's contributions towards deficient off-site intersections is fulfilled through payment of fair share and/or payment into pre-existing fee programs (if applicable) that would be assigned to the future construction of the identified recommended improvements. The Project Applicant would be required to pay requisite fees and/or fair share contributions consistent with the City's requirements (see Section 10 *Local and Regional Funding Mechanisms*).

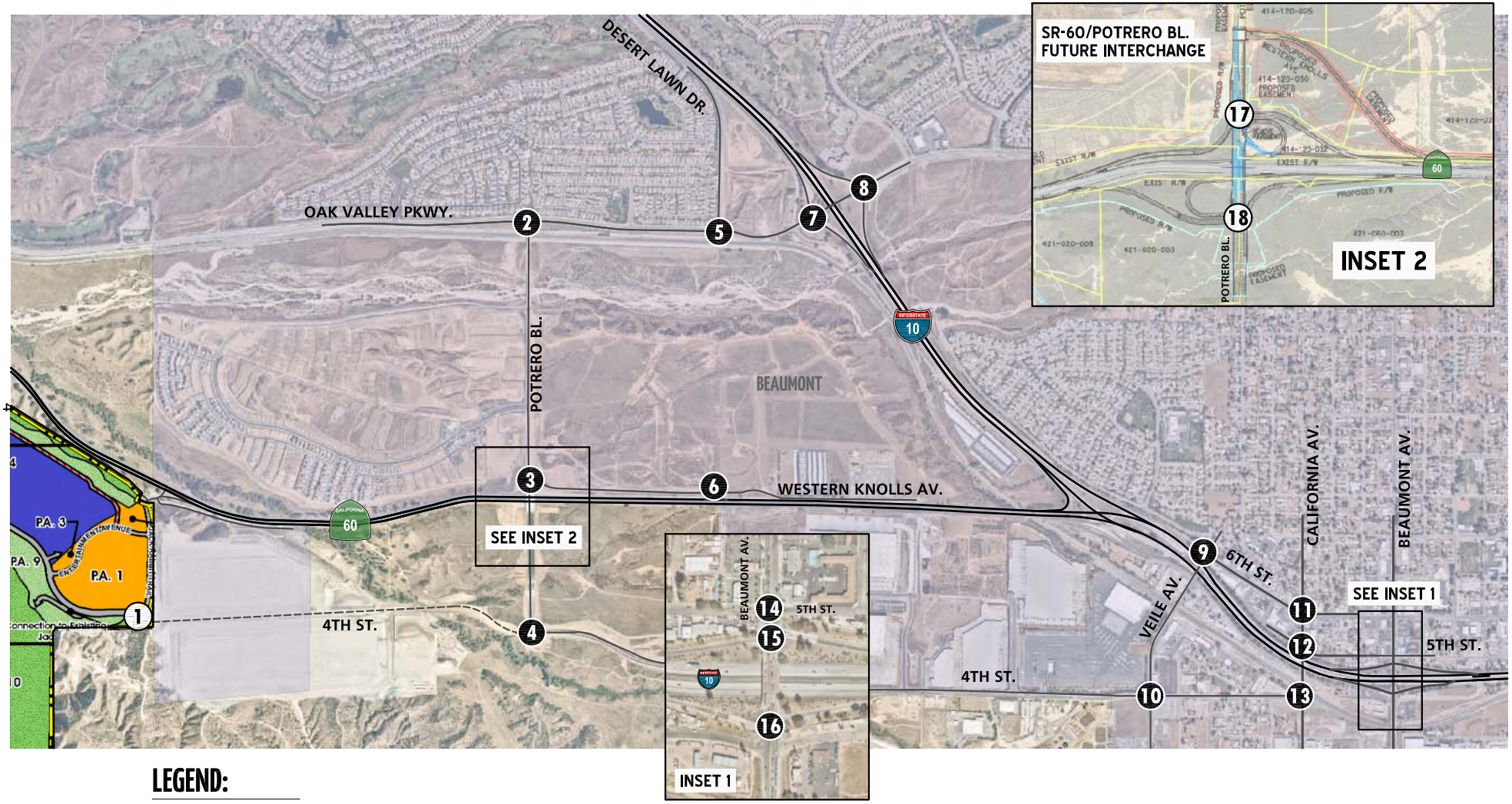
1.2 PROJECT OVERVIEW

The Project is proposed to consist of 4,500,000 square feet of high-cube fulfillment center use and 500,000 square feet of general light industrial use. In addition, there is commercial component that includes a 125-room hotel, 77,000 square foot indoor go-kart facility, 26,000 square foot rock climbing facility, 24,000 square foot trampoline park, 40,000 square foot bowling alley, 36-hole miniature golf, 15,000 square feet of quality restaurant use, and 15,000 square feet of high turnover (sit-down) restaurant use. The Project is proposed to be developed in three phases as follows:

- Phase 1 = 1,379,191 square feet of high-cube fulfillment center warehouse use (Opening Year 2023)
- Phase 1 + Phase 2 = 4,500,000 square feet of high-cube fulfillment center warehouse use and 500,000 square feet of general light industrial use (Opening Year 2025)
- Project Buildout = 4,500,000 square feet of high-cube fulfillment center warehouse use, 500,000 square feet of general light industrial use, and all uses within the general commercial area (Opening Year 2027)

The preliminary land use plan for the proposed Project is shown on Exhibit 1-1. As indicated on Exhibit 1-1, access to the Project site will be provided via the future extension of 4th Street to Potrero Boulevard. No access to the SR-60 Freeway/Jack Rabbit Trail interchange is proposed (to be utilized as secondary emergency access only and access will be restricted via the installation of a gate at Jack Rabbit Trail). The Project has coordinated with Caltrans and has received approval for the closure of Jack Rabbit Trail approximately 125-feet south of the SR-60 Freeway (see Appendix 1.3). Exhibit 1-2 depicts the location of the proposed Project in relation to the existing roadway network and the study area intersections. Interim regional access to the Project site is available from the SR-60 Freeway via the Western Knolls and I-10 Freeway via the Oak Valley Parkway and Beaumont Avenue interchanges. Once the Potrero Boulevard interchange is constructed, regional access to the Project site would be available from the SR-60 Freeway/Potrero Boulevard and I-10 Freeway/Oak Valley Parkway interchanges. The City has recently received the remaining funding for the construction of the SR-60 Freeway and Potrero Boulevard interchange, which is anticipated to be completed by 2026/2027.

EXHIBIT 1-2: LOCATION MAP



LEGEND:

- (0) = EXISTING INTERSECTION ANALYSIS LOCATION
- (0) = FUTURE INTERSECTION ANALYSIS LOCATION

N

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) Trip Generation Manual, 10th Edition, 2017 and the High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019). (3) (4) The proposed Project is anticipated to generate a total of 16,266 trip-ends per day, 1,060 AM peak hour trips and 1,466 PM peak hour trips. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

1.3 ANALYSIS SCENARIOS

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

- Existing (2020) Conditions
- Existing plus Project (E+P) Conditions – Phase 1
- Existing plus Project (E+P) Conditions – Phase 1 + Phase 2
- Existing plus Project (E+P) Conditions – Project Buildout
- Opening Year (2023) Without Project Conditions
- Opening Year (2023) With Project (Phase1) Conditions
- Opening Year (2025) Without Project Conditions
- Opening Year (2025) With Project (Phase 1 + Phase 2) Conditions
- Opening Year (2027) Without Project Conditions
- Opening Year (2027) With Project (Project Buildout) Conditions
- Horizon Year (2045) Without Project Conditions
- Horizon Year (2045) With Project (Project Buildout) Conditions

1.3.1 EXISTING (2020) CONDITIONS

Information for Existing (2020) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared.

1.3.2 EXISTING PLUS PROJECT CONDITIONS

The Existing plus Project (E+P) analysis determines traffic deficiencies that would occur on the existing roadway system with the addition of Project traffic.

1.3.3 OPENING YEAR (2023, 2025, AND 2027) CONDITIONS

The Opening Year (2023, 2025, and 2027) conditions analysis determines the potential near-term circulation system deficiencies. To account for background traffic growth, traffic associated with other known development projects in conjunction with an ambient growth from Existing (2020) conditions of 6.12% is included for Opening Year (2023) traffic conditions, 10.41% is included for Opening Year (2025) traffic conditions, and 14.87% is included for Opening Year (2027) traffic conditions. This comprehensive list was compiled from information provided by the City of Beaumont and is consistent with other recent studies in the study area.

1.4 STUDY AREA

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

1.4.1 INTERSECTIONS

The 18 study area intersections shown on Exhibit 1-2 and listed in Table 1-1 were selected for evaluation in this TA based on consultation with City of Beaumont staff. The study area includes intersections where the Project is anticipated to contribute 50 or more peak hour trips per the County of Riverside's traffic study guidelines. (1) The "50 peak hour trip" criteria represent a minimum number of trips at which a typical intersection would have the potential to be substantively affected by a given development proposal. The 50 peak hour trip criterion is a traffic engineering rule of thumb that is accepted and widely used within Riverside County for estimating a potential area of influence (i.e., study area).

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

ID	Intersection Location	Jurisdiction	CMP?
1	Jack Rabbit Tr. & 4th St. – Future Intersection	County of Riverside	No
2	Potrero Bl. & Oak Valley Pkwy.	City of Beaumont	No
3	Potrero Bl. & Western Knolls Av.	City of Beaumont	No
4	Potrero Bl. & 4th St.	County of Riverside	No
5	Desert Lawn Dr. & Oak Valley Pkwy.	City of Beaumont	No
6	SR-60 WB & Western Knolls Pkwy.	City of Beaumont, Caltrans	No
7	I-10 EB Ramps & Oak Valley Pkwy.	City of Beaumont, Caltrans	No
8	I-10 WB Ramps & Oak Valley Pkwy.	City of Beaumont, Caltrans	No
9	Veile Av. & I-10 WB On-ramp/6th St.	City of Beaumont	No
10	Veile Av. & 4th St.	City of Beaumont	No
11	California Av. & 6th St.	City of Beaumont	No
12	California Av. & 5th St.	City of Beaumont	No
13	California Av. & 4th St.	City of Beaumont	No
14	Beaumont Av. & 5th St.	City of Beaumont	No
15	Beaumont Av. & I-10 WB Ramps	City of Beaumont, Caltrans	No
16	Beaumont Av. & I-10 EB Ramps	City of Beaumont, Caltrans	No
17	Potrero Bl. & I-10 WB Ramps – Future Intersection	City of Beaumont, Caltrans	No
18	Potrero Bl. & I-10 EB Ramps – Future Intersection	City of Beaumont, Caltrans	No

The intent of a Congestion Management Program (CMP) is to more directly link land use, transportation, and air quality, thereby prompting reasonable growth management programs that will effectively utilize new transportation funds, alleviate traffic congestion and related deficiencies, and improve air quality. The County of Riverside CMP became effective with the passage of Proposition 111 in 1990 and updated most recently updated in 2011. The Riverside County Transportation Commission (RCTC) adopted the 2011 CMP for the County of Riverside in December 2011. (5) There are no study area intersections identified as a Riverside County CMP facility.

1.4.2 FREEWAY MAINLINE AND RAMP JUNCTION ANALYSIS

Study area freeway mainline analysis locations were selected based on Caltrans traffic study guidelines, which may require the analysis of State highway facilities. (2) Consistent with recent Caltrans guidance, and because deficiencies to freeway segments tend to dissipate with distance from the point of State Highway System (SHS) entry, quantitative study of freeway segments beyond those immediately adjacent to the point of entry typically is not required. This TA evaluates the following freeway facilities for interim conditions adjacent to the point of entry to the SHS at the I-10 Freeway at Oak Valley Parkway and Beaumont Avenue interchanges and the SR-60 Freeway at Western Knolls Avenue interchange (see Table 1-2):

TABLE 1-2: FREEWAY FACILITY ANALYSIS LOCATIONS FOR INTERIMCONDITIONS

ID	Freeway Facilities
1	I-10 Freeway Eastbound, West of Oak Valley Pkwy.
2	I-10 Freeway Eastbound, Off-Ramp at Oak Valley Pkwy.
3	I-10 Freeway Eastbound, On-Ramp at Beaumont Av.
4	I-10 Freeway Eastbound, East of Beaumont Av.
5	I-10 Freeway Westbound, West of Oak Valley Pkwy.
6	I-10 Freeway Westbound, On-Ramp at Oak Valley Pkwy.
7	I-10 Freeway Westbound, On-Ramp at Beaumont Av.
8	I-10 Freeway Westbound, West of Beaumont Av.
9	SR-60 Freeway Eastbound, West of I-10 Freeway
10	SR-60 Freeway Eastbound, Off-Ramp at 6th St.
11	SR-60 Freeway Westbound, East of Western Knolls Av.
12	SR-60 Freeway Westbound, Off-Ramp at Western Knolls Av.
13	SR-60 Freeway Westbound, On-Ramp at Western Knolls Av.
14	SR-60 Freeway Westbound, West of Western Knolls Av.

This study evaluates the following freeway facilities for ultimate conditions adjacent to the point of entry to the SHS at the I-10 Freeway at Oak Valley Parkway and Beaumont Avenue interchanges and the SR-60 Freeway at Potrero Boulevard interchange (see Table 1-2):

TABLE 1-3: FREEWAY FACILITY ANALYSIS LOCATIONS FOR ULTIMATE CONDITIONS

ID	Freeway Facilities
1	I-10 Freeway Eastbound, West of Oak Valley Pkwy.
2	I-10 Freeway Eastbound, Off-Ramp at Oak Valley Pkwy.
3	I-10 Freeway Westbound, West of Oak Valley Pkwy.
4	I-10 Freeway Westbound, On-Ramp at Oak Valley Pkwy.
5	SR-60 Freeway Eastbound, West of Potrero Bl.
6	SR-60 Freeway Eastbound, Off-Ramp at Potrero Bl. – Future Ramp
7	SR-60 Freeway Eastbound, On-Ramp at Potrero Bl. – Future Ramp
8	SR-60 Freeway Eastbound, East of Potrero Bl.
9	SR-60 Freeway Westbound, West of Potrero Bl.
10	SR-60 Freeway Westbound, Loop On-Ramp at Potrero Bl. – Future Ramp
11	SR-60 Freeway Westbound, Off-Ramp at Potrero Bl. – Future Ramp
12	SR-60 Freeway Westbound, East of Potrero Bl.

1.5 DEFICIENCIES

This section provides a summary of deficiencies by analysis scenario. Section 2 *Methodologies* provides information on the methodologies used in the analysis and Section 5 *E+P Traffic Conditions*, Section 6 *Opening Year (2023) Traffic Conditions,* Section 7 *Opening Year (2025) Traffic Conditions,* Section 8 *Opening Year (2027) Traffic Conditions*, and Section 9 *Horizon Year (2045) Traffic Conditions* includes the detailed analysis. A summary of LOS results for all analysis scenarios is presented on Exhibit 1-3.

1.5.1 E+P (PHASE 1) CONDITIONS

Intersections

The following study area intersections are anticipated to operate at an unacceptable LOS (i.e., LOS E or worse) during the peak hours with the addition of Phase 1 Project traffic, consistent with Existing (2020) traffic conditions:

- Desert Lawn Drive & Oak Valley Parkway (#5) – LOS F AM peak hour only
- California Avenue & 5th Street (#12) – LOS F AM peak hour only
- California Avenue & 4th Street (#13) – LOS E AM peak hour; LOS F PM peak hour
- Beaumont Avenue & I-10 Westbound Ramps (#15) – LOS F AM peak hour; LOS E PM peak hour
- Beaumont Avenue & I-10 Eastbound Ramps (#16) – LOS F AM peak hour; LOS E PM peak hour

Off-Ramp Queues

Consistent with Existing (2020) traffic conditions, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows.

EXHIBIT 1-3: SUMMARY OF DEFICIENT INTERSECTIONS BY ANALYSIS SCENARIO

#	Intersection	Existing (2020)		E+P (Phase 1)		E+P (Phase 2)		E+P (Project Buildout)		2023 Without Project		2023 With Project (Phase 1)		2025 Without Project		2025 With Project (Phase 2)		2027 Without Project		2027 With Project (Project Buildout)		2045 Without Project		2045 With Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Jack Rabbit Tr. & 4th St.	N/A	N/A							N/A	N/A			N/A	N/A			N/A	N/A			N/A	N/A		
2	Potrero Bl. & Oak Valley Pkwy.																								
3	Potrero Bl. & Western Knolls Av.																								
4	Potrero Bl. & 4th St.																								
5	Desert Lawn Dr. & Oak Valley Pkwy.																								
6	SR-60 WB & Western Knolls Av.									N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	I-10 EB Ramps & Oak Valley Pkwy.																								
8	I-10 WB Ramps & Oak Valley Pkwy.																								
9	Veile Av. & I-10 WB On-ramp/6th St.																								
10	Veile Av. & 4th St.																								
11	California Av. & 6th St.																								
12	California Av. & 5th St.																								
13	California Av. & 4th St.																								
14	Beaumont Av. & 5th St.																								
15	Beaumont Av. & I-10 WB Ramps3									N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16	Beaumont Av. & I-10 EB Ramps3									N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17	Potrero Bl. & I-10 WB Ramps	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A																
18	Potrero Bl. & I-10 EB Ramps	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A																

● = A - D ● = E ● = F

Freeway Facilities

Consistent with Existing (2020) traffic conditions, the study area freeway segments and merge/diverge ramp junctions analyzed for this study are anticipated to continue to operate at an acceptable LOS (i.e., LOS D or better) during the peak hours.

1.5.2 E+P (PHASE 2) CONDITIONS

Intersections

The following additional study area intersections are anticipated to operate at an unacceptable LOS (i.e., LOS E or worse) during the peak hours with the addition of Phase 2 Project traffic:

- Potrero Boulevard & 4th Street (#4) – LOS F AM and PM peak hours
- I-10 Eastbound Ramps & Oak Valley Parkway (#7) – LOS E AM and PM peak hours

Off-Ramp Queues

Consistent with Existing (2020) traffic conditions, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows.

Freeway Facilities

Consistent with Existing (2020) traffic conditions, the study area freeway segments and merge/diverge ramp junctions analyzed for this study are anticipated to continue to operate at an acceptable LOS (i.e., LOS D or better) during the peak hours.

1.5.3 E+P (PROJECT BUILDOUT) CONDITIONS

Intersections

The following additional study area intersection is anticipated to operate at an unacceptable LOS (i.e., LOS E or worse) during the peak hours with the addition of Project Buildout traffic, consistent with Existing (2020) traffic conditions:

- Potrero Boulevard & Western Knolls Avenue (#3) – LOS E AM peak hour; LOS F PM peak hour

Off-Ramp Queues

Consistent with Existing (2020) traffic conditions, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows.

Freeway Facilities

Consistent with Existing (2020) traffic conditions, the study area freeway segments and merge/diverge ramp junctions analyzed for this study are anticipated to continue to operate at an acceptable LOS (i.e., LOS D or better) during the peak hours.

1.5.4 OPENING YEAR (2023, 2025, AND 2027) AND HORIZON YEAR (2045) CONDITIONS

A summary of the deficiencies for each subsequent scenario is provided in Section 6 *Opening Year (2023) Traffic Conditions,* Section 7 *Opening Year (2025) Traffic Conditions,* Section 8 *Opening Year (2027) Traffic Conditions*, and Section 9 *Horizon Year (2045) Traffic Conditions*.

1.6 RECOMMENDATIONS

1.6.1 SITE ADJACENT AND SITE ACCESS RECOMMENDATIONS

The following recommendations are based on the minimum improvements needed to accommodate site access and maintain acceptable peak hour operations. The site adjacent recommendations for Phase 1 and Project Buildout are shown on Exhibits 1-4 and 1-5, respectively.

Phase 1

Recommendation 1 – Jack Rabbit Trail & 4th Street (#1) – The following improvements are necessary to accommodate site access:

- Project to install a traffic signal.
- Project to construct a southbound left turn lane with a minimum of 200-feet of storage and a right turn lane.
- Project to construct an eastbound left turn lane with a minimum of 100-feet of storage and a through lane.
- Project to construct a westbound through lane and a right turn lane with a minimum of 100-feet of storage.

Recommendation 2 – Potrero Boulevard & 4th Street (#1) – The following improvements are necessary to accommodate site access:

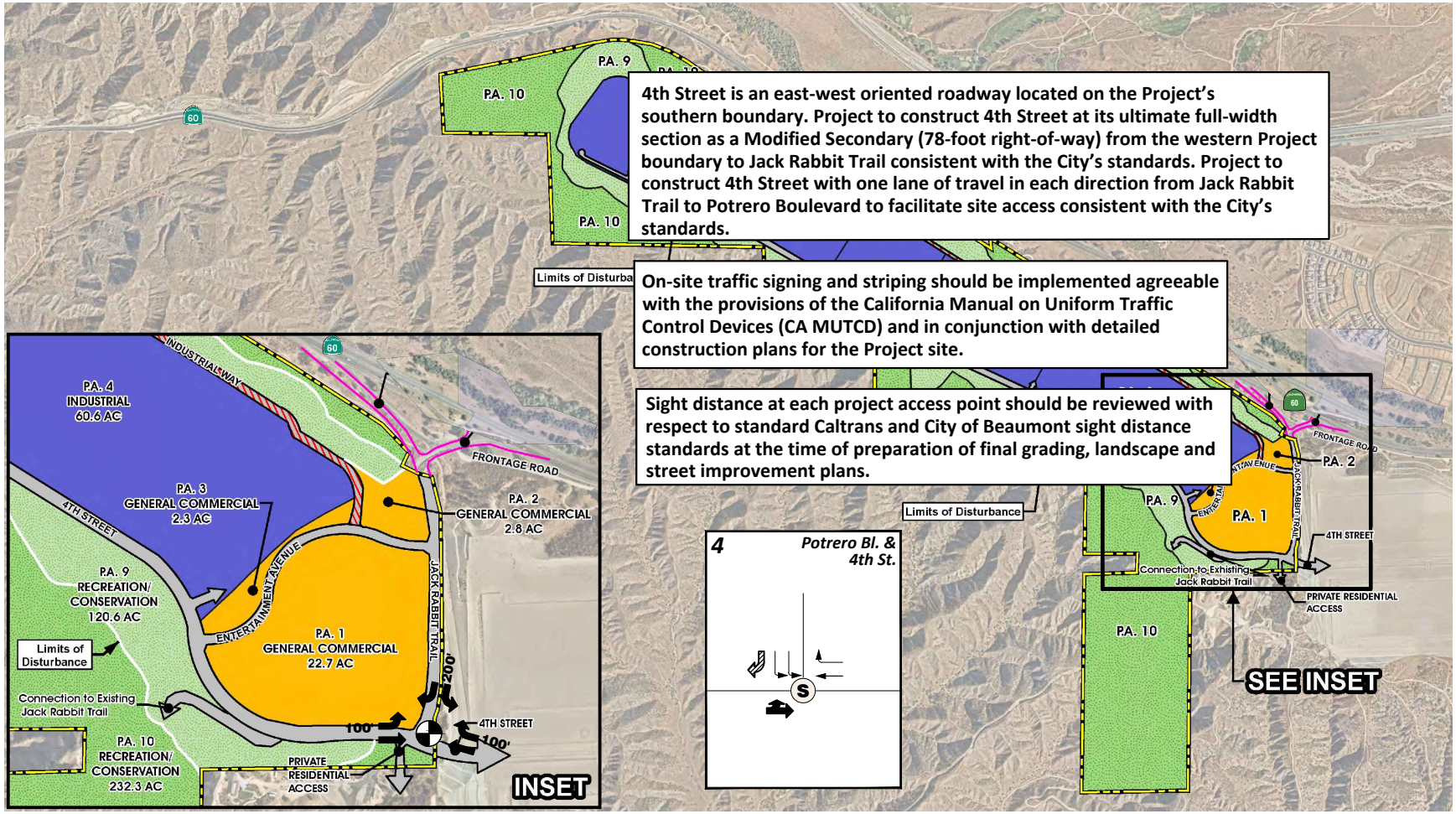
- Project to construct an eastbound shared left-through lane.
- Project to stripe the southbound right turn lane.

Recommendation 3 – 4th Street is an east-west oriented roadway located on the Project's southern boundary. Project to construct 4th Street at its ultimate full-width as a Modified Secondary (78-foot right-of-way) from the western Project boundary to Jack Rabbit Trail consistent with the City's standards. Project to construct 4th Street with a minimum of one lane of travel in each direction from Jack Rabbit Trail to Potrero Boulevard to facilitate site access consistent with the City's standards.

Phase 2

There are no site adjacent and site access improvements recommended for Phase 2.

EXHIBIT 1-4: SITE ADJACENT ROADWAY AND SITE ACCESS RECOMMENDATIONS FOR PHASE 1



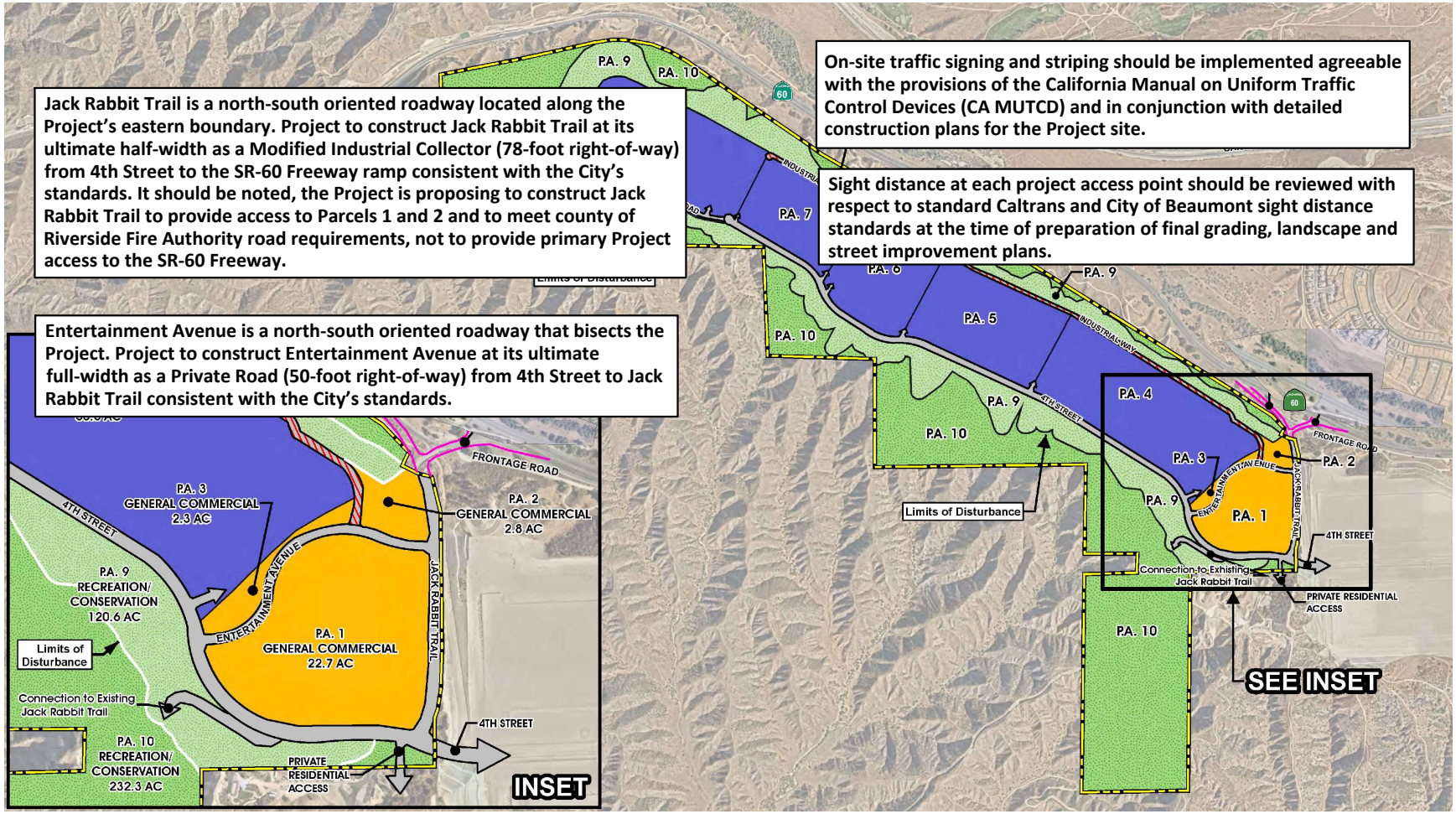
LEGEND:

- = NEW TRAFFIC SIGNAL
- = EXISTING LANE
- = LANE IMPROVEMENT
- = RESTRIPE ONLY
- 150' = MINIMUM TURN POCKET LENGTH

N

12396 - recs.dwg

EXHIBIT 1-5: SITE ADJACENT ROADWAY AND SITE ACCESS RECOMMENDATIONS FOR PROJECT BUILDOUT



Project Buildout

Recommendation 4 – Jack Rabbit Trail is a north-south oriented roadway located along the Project's eastern boundary. Project to construct Jack Rabbit Trail at its ultimate full-width as a Modified Industrial Collector (78-foot right-of-way) from 4th Street to the SR-60 Freeway ramp consistent with the City's standards. It should be noted, the Project is proposing to construct Jack Rabbit Trail to provide access to Parcels 1 and 2 and to meet County of Riverside Fire Authority road requirements, not to provide primary Project access to the SR-60 Freeway.

Recommendation 5 – Entertainment Avenue is a north-south oriented roadway that bisects the Project. Project to construct Entertainment Avenue at its ultimate full-width as a Private Road (50-foot right-of-way) from 4th Street to Jack Rabbit Trail consistent with the City's standards.

Recommendation 6 – Oak Valley Truck Restriction. The Project Applicant would work with the City on developing a truck route plan for future industrial development. The truck route plan would be implemented through future tenant lease agreements identifying the acceptable truck routes to and from the site and providing driver education on the appropriate truck routes.

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

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

1.6.2 OFF-SITE RECOMMENDATIONS

The recommended improvements needed to address the cumulative deficiencies identified under Existing (2020), E+P (Phase 1, Phase 2, and Buildout), Opening Year (2023), Opening Year (2025), Opening Year (2027), and Horizon Year (2045) traffic conditions are shown in Table 1-4. The improvements necessary to achieve the applicable minimum LOS standards have been identified for each applicable location. For those improvements listed in Table 1-4 and not constructed as part of the Project, the Project Applicant's responsibility for the Project's contributions towards deficient intersections is fulfilled through physical construction and payment of fair share and/or Transportation Uniform Mitigation Fee (TUMF)/Development Impact Fee (DIF) program fees (if applicable) that would be assigned to construction of the identified recommended improvements. Preliminary cost estimates and fee assessments for these improvements are summarized in Table 1-4. The Project Applicant would be required to pay TUMF/DIF and/or fair share fees consistent with the City's requirements (see Section 10 *Local and Regional Funding Mechanisms*).

Table 1-4

Summary of Improvements by Analysis Scenario

#	Intersection Location	Jurisdiction	Existing (2020)	E+P (Phase 1)	E+P (Phase 2)	E+P (Buildout)	2023 Without Project	2023 With Project	2025 Without Project	2025 With Project	2027 Without Project	2027 With Project	Horizon Year (2045) Without Project	Horizon Year (2045) With Project	Improvements in County TUMF/DIF[1]	Project Responsibility[2]	Cost of Improvement	Phase 1 Fair Share %[2]	Phase 1 Fair Share Cost	Phase 2 Fair Share %[3]	Phase 2 Fair Share Cost	Buildout Fair Share %[3]	Buildout Fair Share Cost	Horizon Year Fair Share %[2]	Horizon Year Fair Share Cost
2	Potrero Bl. & Oak Valley Pkwy.	Beaumont	None	None	None	None	None	None	None	None	Install a Traffic Signal	Same	Same	Same	Yes(DIF)	Fees	--	--	--	--	--	--	--	--	--
													Add 2nd NB left turn lane	Same	Yes (DIF)	Fees	--		--		--		--		--
													Add 2nd WB left turn lane	Same	Yes (DIF)	Fees	--		--		--		--		--
													Add 3rd WB through lane	Same	Yes (DIF)	Fees	--		--		--		--		--
																Total:	**$0**		**$0**		**$0**		**$0**		**$0**
3	Potrero Bl. & Western Knolls Av.	Beaumont	None	None	None	Remove the stop control on the NB and SB approaches, converting the intersection to a cross-street stop control Add SB left turn lane	None	None	None	None	Same as E+P (Buildout)	Same as E+P (Buildout)	Same as E+P (Buildout)	Same as E+P (Buildout)	Yes (DIF/TUMF)	Fees	--	--	--	--	--	--	--	--	--
											Same as E+P (Buildout)	Same as E+P (Buildout)	Same as E+P (Buildout)	Same as E+P (Buildout)	Yes (DIF/TUMF)	Fees	--		--		--		--		--
													Add 3rd NB through lane	Same	Yes (DIF/TUMF)	Fees	--		--		--		--		--
													Add 3rd SB through lane	Same	Yes (DIF/TUMF)	Fees	--		--		--		--		--
																Total:	**$0**		**$0**		**$0**		**$0**		**$0**
4	Potrero Bl. & 4th St.	County of Riverside	None	None	Add 2nd EB left turn lane Modify the traffic signal to implement overlap phasing for the SB right turn lane	Same Same	None	None	Same as E+P (Phase 2) Same as E+P (Phase 2)	Same as E+P (Phase 2) Same as E+P (Phase 2)	Same as E+P (Phase 2) Same as E+P (Phase 2)	Same as E+P (Phase 2) Same as E+P (Phase 2)	Same as E+P (Phase 2) Same as E+P (Phase 2)	Same as E+P (Phase 2) Same as E+P (Phase 2)	Yes (DIF/TUMF) Yes (DIF/TUMF)	Construct & Fee Credit Construct & Fee Credit	$100,000 $50,000	--	-- --	52.5%	$52,465 $26,233	--	-- --	--	--
																Total:	**$150,000**		**$0**		**$78,698**		**$0**		**$0**
5	Desert Lawn Dr. & Oak Valley Pkwy.	Beaumont	Install a Traffic Signal	Same	Same	Same	Same	Same	Same	Same	Same Add 2nd EB through lane	Same Same	Same Same	Same Same	Yes (DIF) Yes (DIF/TUMF)	Construct & Fee Credit Fees	$500,000 --	9.6%	$47,893 --	--	-- --	--	-- --	--	--
													Add 2nd SB left turn lane	Same	Yes (DIF/TUMF)	Fees	--		--		--		--		--
													Add 3rd EB through lane	Same	Yes (DIF/TUMF)	Fees	--		--		--		--		--
													Add WB right turn lane	Same	Yes (DIF/TUMF)	Fees	--		--		--		--		--
													Modify the traffic signal to implement overlap phasing for the SB right turn lane	Same	Yes (DIF/TUMF)	Fees	--		--		--		--		--
																Total:	**$500,000**		**$47,893**		**$0**		**$0**		**$0**
7	I-10 EB Ramps & Oak Valley Pkwy.	Beaumont, Caltrans	None	None	Add SB left turn lane Add EB right turn lane	Same Same	Same Same	Same Same	Same Same Add 2nd EB through lane	Same Same Same	Same Same Same Add 2nd SB left turn lane Add 2nd WB through lane	Same Same Same Same Same	Same Same Same Same Same	Same Same Same Same Same	Yes (TUMF) Yes (TUMF) Yes (TUMF) Yes (TUMF) Yes (TUMF)	Fees Fees Fees Fees Fees	-- -- -- -- --	--	-- -- -- -- --	--	-- -- -- -- --	--	-- -- -- -- --	--	-- -- -- -- --
													Add 3rd EB through lane	Same	Yes (TUMF)	Fees	--		--		--		--		--
													Add 3rd WB through lane	Same	Yes (TUMF)	Fees	--		--		--		--		--
													Add SB right turn lane	Same	Yes (TUMF)	Fees	--		--		--		--		--
																Total:	**$0**		**$0**		**$0**		**$0**		**$0**
8	I-10 WB Ramps & Oak Valley Pkwy.	Beaumont, Caltrans	None	None	None	None	None	None	Add NB left turn lane	Same	Same Add 2nd EB through lane Add 2nd WB through lane	Same Same Same	Same Same Same	Same Same Same	Yes (TUMF) Yes (TUMF) Yes (TUMF)	Fees Fees Fees	-- -- --	--	-- -- --	--	-- -- --	--	-- -- --	--	-- -- --
													Add 2nd EB left turn lane	Same	Yes (TUMF)	Fees	--		--		--		--		--
													Add 3rd EB through lane	Same	Yes (TUMF)	Fees	--		--		--		--		--
													Add 3rd WB through lane	Same	Yes (TUMF)	Fees	--		--		--		--		--
													Add WB right turn lane	Same	Yes (TUMF)	Fees	--		--		--		--		--
																Total:	**$0**		**$0**		**$0**		**$0**		**$0**
11	California Av. & 6th St.	Beaumont	None	None	None	None	None	None	None	None	Restripe the EB approach to provide one left turn lane, one through lane, and one shared through-right turn lane	Same	Same	Same	Yes (DIF)	Fees	--	--	--	--	--	--	--	--	--
											Restripe the WB approach to provide one left turn lane, one through lane, and one shared through-right turn lane	Same	Same	Same	Yes (DIF)	Fees	--		--		--		--		--
																Total:	**$0**		**$0**		**$0**		**$0**		**$0**
12	California Av. & 5th St.	Beaumont	Install a Traffic Signal	Same	Same	Same	Same	Same	Same	Same	Same	Same	Same	Same	No	Fair Share	$650,000	7.5%	$49,057	--	--	--	--	--	--
																Total:	**$650,000**		**$49,057**		**$0**		**$0**		**$0**
13	California Av. & 4th St.	Beaumont	Install a Traffic Signal	Same	Same	Same	Same	Same	Same Add SB right turn lane	Same Same	Same Same Add 2nd NB through lane Add 2nd SB through lane	Same Same Same Same	Same Same Same Same	Same Same Same Same	Yes (DIF) Yes (DIF) Yes (DIF) Yes (DIF)	Fees Fees Fees Fees	-- -- -- --	--	-- -- -- --	--	-- -- -- --	--	-- -- -- --	--	-- -- -- --
											Modify the traffic signal to implement overlap phasing for the SB right turn lane	Same	Same	Same	Yes (DIF)	Fees	--		--		--		--		--
																Total:	**$0**		**$0**		**$0**		**$0**		**$0**
15	Beaumont Av. & I-10 WB Ramps	Beaumont, Caltrans	Modify the traffic signal to implement a 120-second cycle length	Same	Same	Same	Not Evaluated[6]	Not Evaluated[6]	Not Evaluated[6]	Not Evaluated[6]	Not Evaluated[6]	Not Evaluated[6]	Not Evaluated[6]	Not Evaluated[6]	Yes (TUMF)	Fees	--	--	--	--	--	--	--	--	--
																Total:	**$0**		**$0**		**$0**		**$0**		**$0**
16	Beaumont Av. & I-10 EB Ramps	Beaumont, Caltrans	Modify the traffic signal to implement a 120-second cycle length	Same	Same	Same	Not Evaluated[6]	Not Evaluated[6]	Not Evaluated[6]	Not Evaluated[6]	Not Evaluated[6]	Not Evaluated[6]	Not Evaluated[6]	Not Evaluated[6]	Yes (TUMF)	Fees	--	--	--	--	--	--	--	--	--
																Total:	**$0**		**$0**		**$0**		**$0**		**$0**

Table 1-4
Page 2 of 2

Summary of Improvements by Analysis Scenario

#	Intersection Location	Jurisdiction	Existing (2020)	E+P (Phase 1)	E+P (Phase 2)	E+P (Buildout)	2023 Without Project	2023 With Project	2025 Without Project	2025 With Project	2027 Without Project	2027 With Project	Horizon Year (2045) Without Project	Horizon Year (2045) With Project	Improvements in County TUMF/DIF[1]	Project Responsibility[2]	Cost of Improvement	Phase 1 Fair Share %[3]	Phase 1 Fair Share Cost	Phase 2 Fair Share %[3]	Phase 2 Fair Share Cost	Buildout Fair Share %[3]	Buildout Fair Share Cost	Horizon Year Fair Share %[3]	Horizon Year Fair Share Cost
17	Potrero Bl. & I-10 WB Ramps	Beaumont, Caltrans	Does Not Exist	Does Not Exist	Does Not Exist	Does Not Exist	Install a Traffic Signal[6]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--	--	--	--	--	--	--	--	--
							Add NB through lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add 2nd NB through lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add 3rd NB through lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add NB free right turn lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add SB through lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add 2nd SB through lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add 3rd SB through lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add dual free SB right turn lanes[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add dual WB left turn lanes[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add dual WB right turn lanes[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
																Total:	$0		$0		$0		$0		$0
18	Potrero Bl. & I-10 EB Ramps	County of Riverside, Caltrans	Does Not Exist	Does Not Exist	Does Not Exist	Does Not Exist	Install a Traffic Signal[6]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--	--	--	--	--	--	--	--	--
							Add NB through lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add 2nd NB through lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add 3rd NB through lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add dual right turn lanes[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add SB through lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add 2nd SB through lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add 3rd SB through lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add free SB right turn lane[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add dual EB left turn lanes[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
							Add dual EB right turn lanes[5]	Same	Same	Same	Same	Same	Same	Same	Yes (TUMF)	Fees	--		--		--		--		--
																Total:	$0		$0		$0		$0		$0
																Total Cost	$1,300,000		$96,949		$78,698		$0		$0

[1] Improvements included in TUMF Nexus, or City of Beaumont DIF fee programs.
[2] Identifies the Project's responsibility to construct an improvement or contribute fair share towards the implementation of the improvements shown.
[3] Program improvements constructed by project may be eligible for fee credit, at discretion of City. See Table 10-1 for fair share calculations.
[4] Traffic signal heads are currently installed at this location, but not operational as of January 28, 2020.
[5] Improvement is consistent with the SR-60 Freeway/Potrero Boulevard interchange improvement project.
[6] The proposed Project is not anticipated to contribute any trips to this intersection during the peak hours for this scenario. As such, intersection operations were not evaluated.
[7] Since the Project is not anticipated to contribute any trips to this intersection once the future SR-60 Freeway/Potrero interchange is in place, fair share has been calculated for near-term conditions based on Existing and E+P (Buildout) volumes. See Table 10-1 for fair share calculations.

2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. Since the City of Beaumont does not have their own traffic study guidelines, the methodologies described are generally consistent with the County of Riverside and Caltrans traffic study guidelines. (1) (2)

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) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (6) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

The City of Beaumont and County of Riverside require signalized intersection operations analysis based on the methodology described in the HCM (6th Edition). Intersection LOS operations are based on an intersection's average control delay. Control delays include 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. Study area intersections have been evaluated using the Synchro (Version 10) analysis software package.

The traffic modeling and signal timing optimization software package Synchro (Version 10) is utilized to analyze signalized intersections within the City of Beaumont. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

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

Source: HCM, 6th Edition

A saturation flow rate of 1900 has been utilized for all study area intersections located within the City of Beaumont and County of Riverside. The peak hour traffic volumes are adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Common practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g. PHF = [Hourly Volume] / [4 x Peak 15-minute Flow Rate]). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. (6)

California Department of Transportation (Caltrans)

Per the Caltrans Guide for the Preparation of Traffic Impact Studies, the traffic modeling and signal timing optimization software package Synchro (Version 10) has also been utilized to analyze signalized intersections under Caltrans' jurisdiction, which include interchange to arterial ramps (i.e., I-10 Freeway ramps at Oak Valley Parkway and Beaumont Avenue and SR-60 Freeway ramps at Western Knolls Avenue and Potrero Boulevard). (2) Signal timing for the freeway arterial-to-ramp intersections have been obtained from Caltrans District 8 and were utilized for the purposes of this analysis.

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Beaumont and County of Riverside require the operations of unsignalized intersections be evaluated using the methodology described by the HCM. (6) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2).

TABLE 2-2: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

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

Source: HCM, 6th Edition

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. Per the HCM, the highest delay and associated LOS on the minor approach is reported for two-way stop-controlled intersections. For all-way stop controlled intersections, LOS is computed for the intersection as a whole and the average delay is reported (similar to signalized intersections).

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

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

The signal warrant criteria for Existing conditions are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The Caltrans CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (7) Specifically, this TA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing study area intersections for all analysis scenarios. Warrant 3 is appropriate to use for this TA because it provides specialized warrant criteria for intersections with rural characteristics (e.g., located in communities with populations of less than 10,000 persons or with adjacent major streets operating above 40 miles per hour). For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection.

Traffic signal warrant analyses were performed for the following unsignalized study area intersection shown in Table 2-3:

TABLE 2-3: TRAFFIC SIGNAL WARRANT ANALYSIS LOCATIONS

ID	Intersection Location	Jurisdiction
1	Jack Rabbit Tr. & 4th St. – Future Intersection	County of Riverside
2	Potrero Bl. & Oak Valley Pkwy.	Beaumont
3	Potrero Bl. & Western Knolls Av.	Beaumont
4	Potrero Bl. & 4th St.	County of Riverside
5	Desert Lawn Dr. & Oak Valley Pkwy.	Beaumont
10	Veile Av. & 4th St.	Beaumont
12	California Av. & 5th St.	Beaumont
13	California Av. & 4th St.	Beaumont

The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 3 *Area Conditions* of this report. The traffic signal warrant analyses for future conditions are presented in Section 5 *E+P Traffic Conditions,* Section 6 *Opening Year (2023) Traffic Conditions,* Section 7 *Opening Year (2025) Traffic Conditions,* Section 8 *Opening Year (2027) Traffic Conditions,* and Section 9 *Horizon Year (2045) Traffic Conditions* of this report.

It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

2.4 FREEWAY OFF-RAMP QUEUING ANALYSIS

Consistent with Caltrans requirements, the 95th percentile queuing of vehicles has been assessed at the off-ramps to determine potential queuing deficiencies at the freeway ramp intersections at the I-10 Freeway at Oak Valley Parkway and Beaumont Avenue interchanges and at the SR-60 Freeway at Potrero Boulevard (future traffic conditions only). Specifically, the queuing analysis is utilized to identify any potential queuing and "spill back" onto the I-10 or SR-60 Freeway mainline from the off-ramps.

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

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

2.5 FREEWAY MAINLINE SEGMENT ANALYSIS METHODOLOGY

Consistent with recent Caltrans guidance, the TA has evaluated freeway segments where the Project is anticipated to contribute 50 or more peak hour one-way trips, in an effort to conduct a conservative analysis and overstate as opposed to understand potential deficiencies.

The freeway system in the study area has been broken into segments defined by the freeway-to-arterial interchange locations. The freeway segments have been evaluated in this TA based upon peak hour directional volumes. The freeway segment analysis is based on the methodology described in the HCM and performed using Highway Capacity Software (HCS) 7. The performance measure preferred by Caltrans to calculate LOS is density. Density is expressed in terms of passenger cars per mile per lane. Table 2-4 illustrates the freeway segment LOS descriptions for each density range utilized for this analysis.

TABLE 2-4: DESCRIPTION OF FREEWAY MAINLINE LOS

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, 6th Edition

The number of lanes for existing baseline conditions has been obtained from field observations conducted by Urban Crossroads in January 2020. These existing freeway geometrics have been utilized for Existing, E+P (Phases 1, 2, and Buildout), Opening Year (2023), Opening Year (2025), Opening Year (2027), and Horizon Year (2045) conditions.

The I-10 and SR-60 Freeway mainline volume data was obtained from the Caltrans Performance Measurement System (PeMS) website for the segments of the I-10 Freeway interchanges at Oak

Valley Parkway and Beaumont Avenue, and the SR-60 Freeway at Western Knolls Avenue. The data was obtained from November 2019. In an effort to conduct a conservative analysis, the maximum value observed within the 3-day period was utilized for the weekday morning (AM) and weekday evening (PM) peak hours. In addition, truck traffic, represented as a percentage of total traffic and actual vehicles (as opposed to Passenger Car Equivalent (PCE) volumes) have been utilized for the purposes of the basic freeway segment analysis. (8)

2.6 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 where the Project is anticipated to contribute 50 or more peak hour trips (see Table 1-2) at the I-10 Freeway at Oak Valley Parkway and Beaumont Avenue interchanges and the SR-60 Freeway at Western Knolls Avenue (Existing and E+P conditions only) and Potrero Boulevard (future traffic conditions only) interchanges. Although the HCM indicates the influence area for a merge/diverge junction is 1,500 feet, the analysis presented in this TA 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 in the region.

The merge/diverge analysis is based on the HCM Ramps and Ramp Junctions analysis method and performed using HCS7 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 2-5 presents the merge/diverge area level of service descriptions for each density range utilized for this analysis.

TABLE 2-5: DESCRIPTION OF FREEWAY MERGE AND DIVERGE LOS

Level of Service	Density Range (pc/mi/ln)[1]
A	≤10.0
B	10.0 – 20.0
C	20.0 – 28.0
D	28.0 – 35.0
E	>35.0
F	Demand Exceeds Capacity

[1] pc/mi/ln = passenger cars per mile per lane. Source: HCM, 6th Edition

Similar to the basic freeway segment analysis, the I-10 Freeway mainline volume data were obtained from the Caltrans maintained PeMS website for the segments of the I-10 Freeway interchanges at Oak Valley Parkway and Beaumont Avenue, and the SR-60 Freeway at Western Knolls Avenue. The ramp data (per the count data presented in Appendix 3.1) were then utilized to flow conserve the mainline volumes to determine the remaining I-10 Freeway and SR-60 Freeway mainline segment volumes. Flow conservation checks ensure that traffic flows from north to south (and vice versa) of the interchange area with no unexplained loss of vehicles. The

data was obtained from November 2019. In an effort to conduct a conservative analysis, the maximum value observed within the 3-day period was utilized for the weekday morning (AM) and weekday evening (PM) peak hours. In addition, truck traffic, represented as a percentage of total traffic and actual vehicles (as opposed to PCE volumes) have been utilized for the purposes of the freeway ramp junction (merge/diverge) analysis. (8)

2.7 MINIMUM LEVEL OF SERVICE (LOS)

The definition of an intersection deficiency has been obtained from each of the applicable surrounding jurisdictions.

2.7.1 CITY OF BEAUMONT

The City of Beaumont has established LOS D as the minimum level of service for all roadways/intersections within the City (Policy 10 of the General Plan Circulation Element). Therefore, any intersection operating at LOS E or F will be considered deficient for the purposes of this analysis.

2.7.2 COUNTY OF RIVERSIDE

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

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

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

The applicable minimum LOS utilized for the purposes of this analysis is LOS D per the County-wide target LOS for projects located within the Pass area plan.

2.7.3 CALTRANS

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on SHS facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. Consistent with the City of Beaumont minimum LOS of LOS D, LOS D will be used as the target LOS for both arterial-to-freeway ramps and freeway mainline segments and ramp junctions.

2.8 DEFICIENCY CRITERIA

This section outlines the methodology used in this analysis related to identifying circulation system deficiencies.

2.8.1 INTERSECTIONS

To determine whether the addition of project traffic at a study intersection results in a direct project-related deficiency, the following thresholds will be utilized:

- A project-related traffic deficiency occurs at a study intersection if the addition of project-generated trips reduces the peak hour level of service of the study intersection to change from acceptable level of service (LOS A, B, C or D) to an unacceptable level of service (LOS E or F);
- A cumulative traffic deficiency occurs at a study intersection if the Project contributes peak hour trips to an intersection that is anticipated to operate at a deficient LOS without the Project (LOS E or F).

2.8.2 CALTRANS

To determine whether the addition of project traffic to the SHS freeway segments would result in a deficiency, the following will be utilized:

- The TA finds that the LOS of a segment will degrade from D or better to E or F.

The TA finds that a project will exacerbate an already deficient condition if it contributes 50 or more one-way peak hour trips. A segment that is operating at or near capacity is deemed to be deficient.

2.9 PROJECT FAIR SHARE CALCULATION METHODOLOGY

Improvements found to be included in the TUMF and/or DIF will be identified as such. For improvements that do not appear to be in either of the pre-existing fee programs, a fair share contribution based on the Project's proportional share may be imposed in order to address the Project's share of deficiencies in lieu of construction. It should be noted that fair share calculations are for informational purposes only and the City Traffic Engineer will determine the appropriate improvements to be implemented by a project (to be identified in the conditions of approval).

The Project's fair share contribution is determined based on the following equations, which are the ratio of Project traffic to net new traffic for each applicable phase (where net new traffic is the future traffic less existing traffic):

For Opening Year (2023, 2025, 2027) traffic conditions:

Project Fair Share % = Project Phase 1, Phase 2, or Phase 3 Traffic / (2023, 2025, and 2027 Total Traffic – Existing Traffic)

or;

For Horizon Year (2045) traffic conditions:

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

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3 AREA CONDITIONS

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

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the scoping agreement with City of Beaumont staff (Appendix 1.1), the study area includes a total of 18 existing and future intersections as shown previously on Exhibit 1-2, where the Project is anticipated to contribute 50 or more peak hour trips. 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 ELEMENTS

As noted previously, the Project site is located within the City of Beaumont. The roadway classifications and planned (ultimate) roadway cross-sections of the major roadways within the study area, as identified on City of Beaumont General Plan Circulation Element, are described subsequently. Exhibit 3-2 shows the City of Beaumont General Plan Circulation Element and Exhibit 3-3 illustrates the City of Beaumont General Plan roadway cross-sections.

Expressways are six-lane divided roadways (typically divided by a raised median) with a 194 to 220-foot and a 94-foot curb-to-curb measurement. These roadways serve regional through-traffic and inter-city traffic. The following study area roadway within the City of Beaumont is classified as an Expressway:

- Beaumont Avenue, south of I-10 Freeway

Urban Arterials are six-lane divided roadways (typically divided by a raised median or painted two-way turn-lane) with a 120-foot to 134-foot right-of-way and a 102-foot curb-to-curb measurement. These roadways serve both regional through-traffic and inter-city traffic and typically direct traffic onto and off-of the freeways. The following study area roadways within the City of Beaumont are classified as an Urban Arterial:

- Oak Valley Parkway, between Potrero Boulevard and Oak View Drive
- Potrero Boulevard, north of 4th Street

EXHIBIT 3-1 (1OF2): EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS

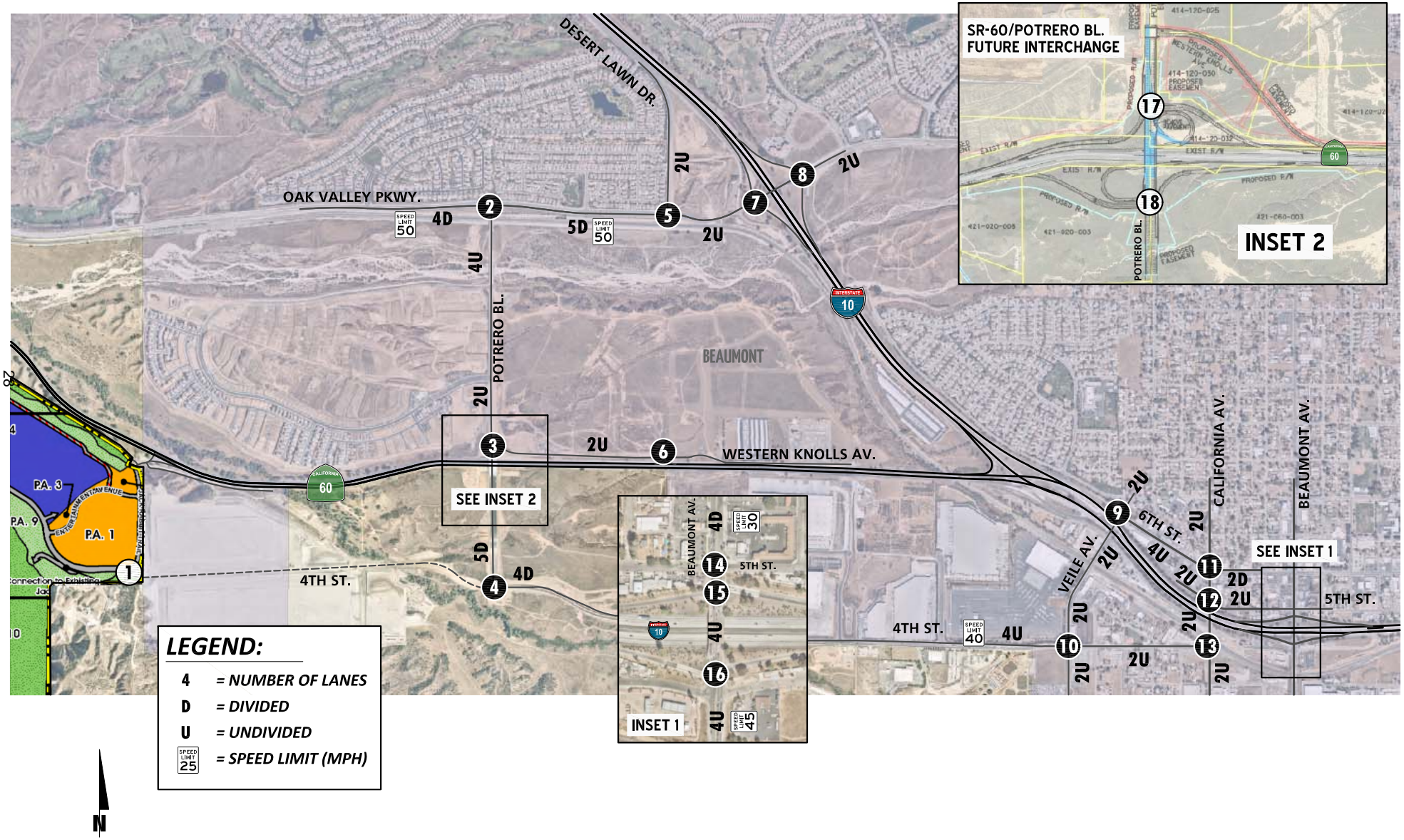
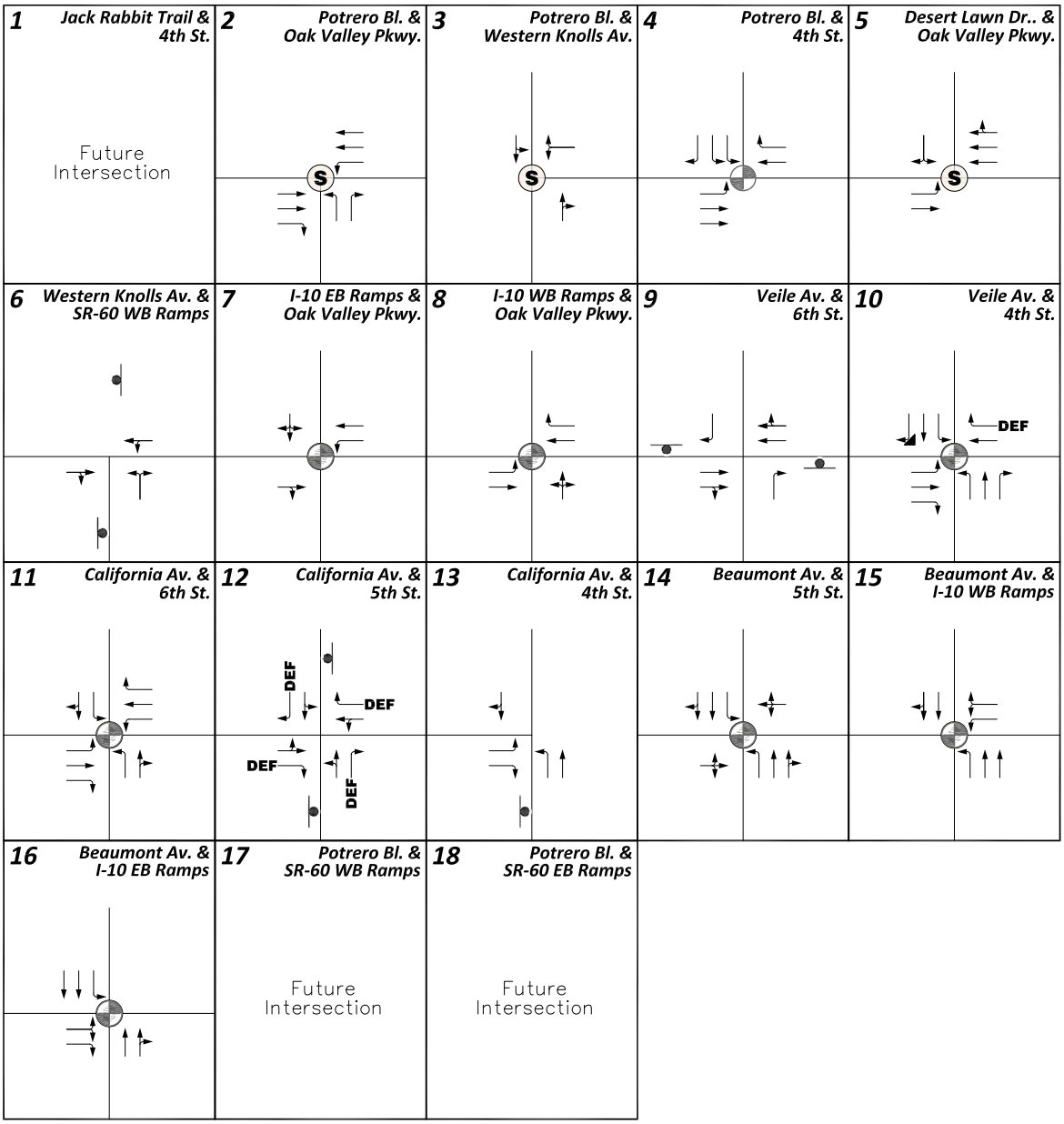


EXHIBIT 3-1 (2OF2): EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS



LEGEND:

- = TRAFFIC SIGNAL
- S = ALL WAY STOP
- = STOP SIGN
- = FREE RIGHT TURN
- DEF = DEFACTO RIGHT TURN

N

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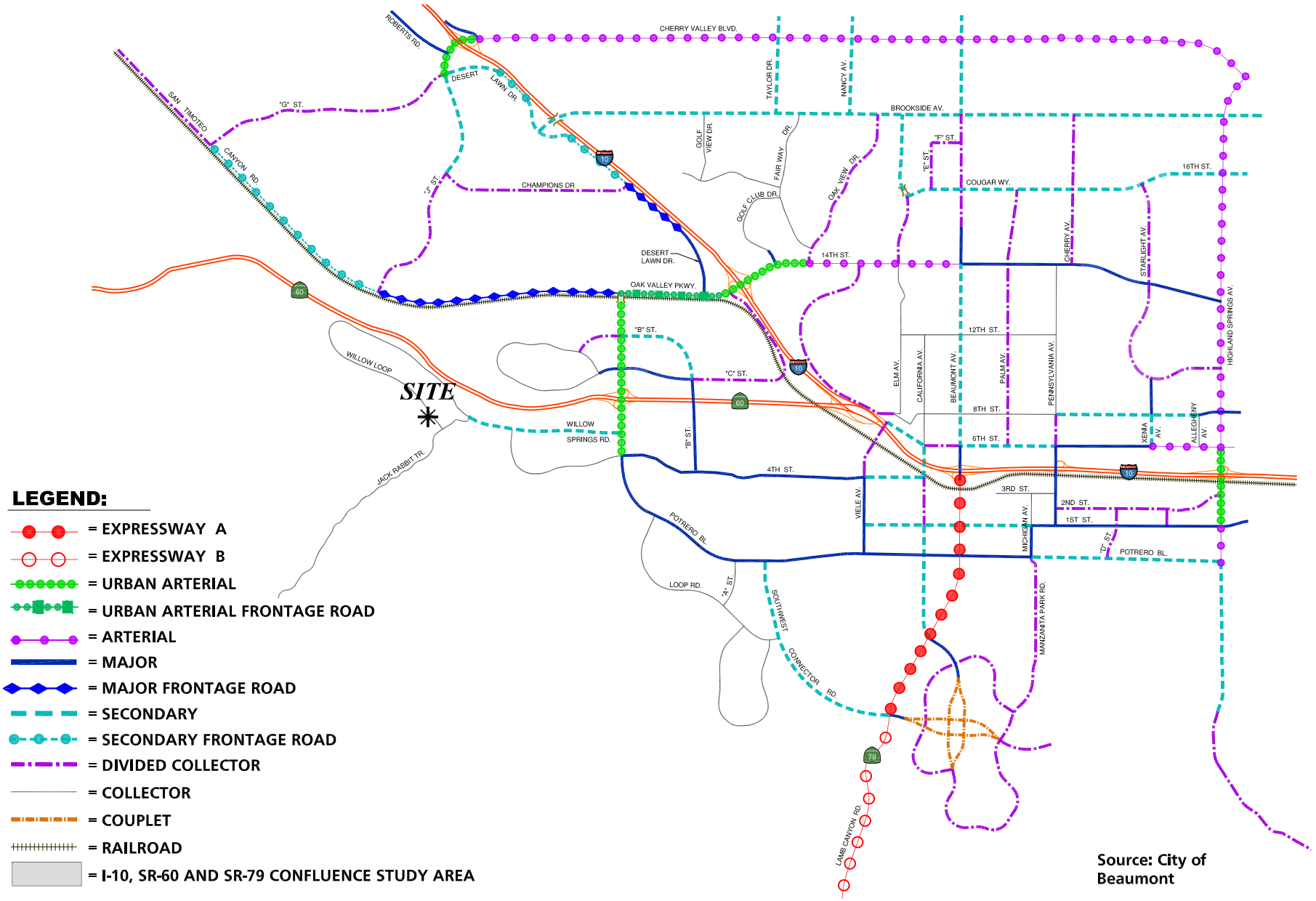
EXHIBIT 3-2: CITY OF BEAUMONT GENERAL PLAN CIRCULATION ELEMENT



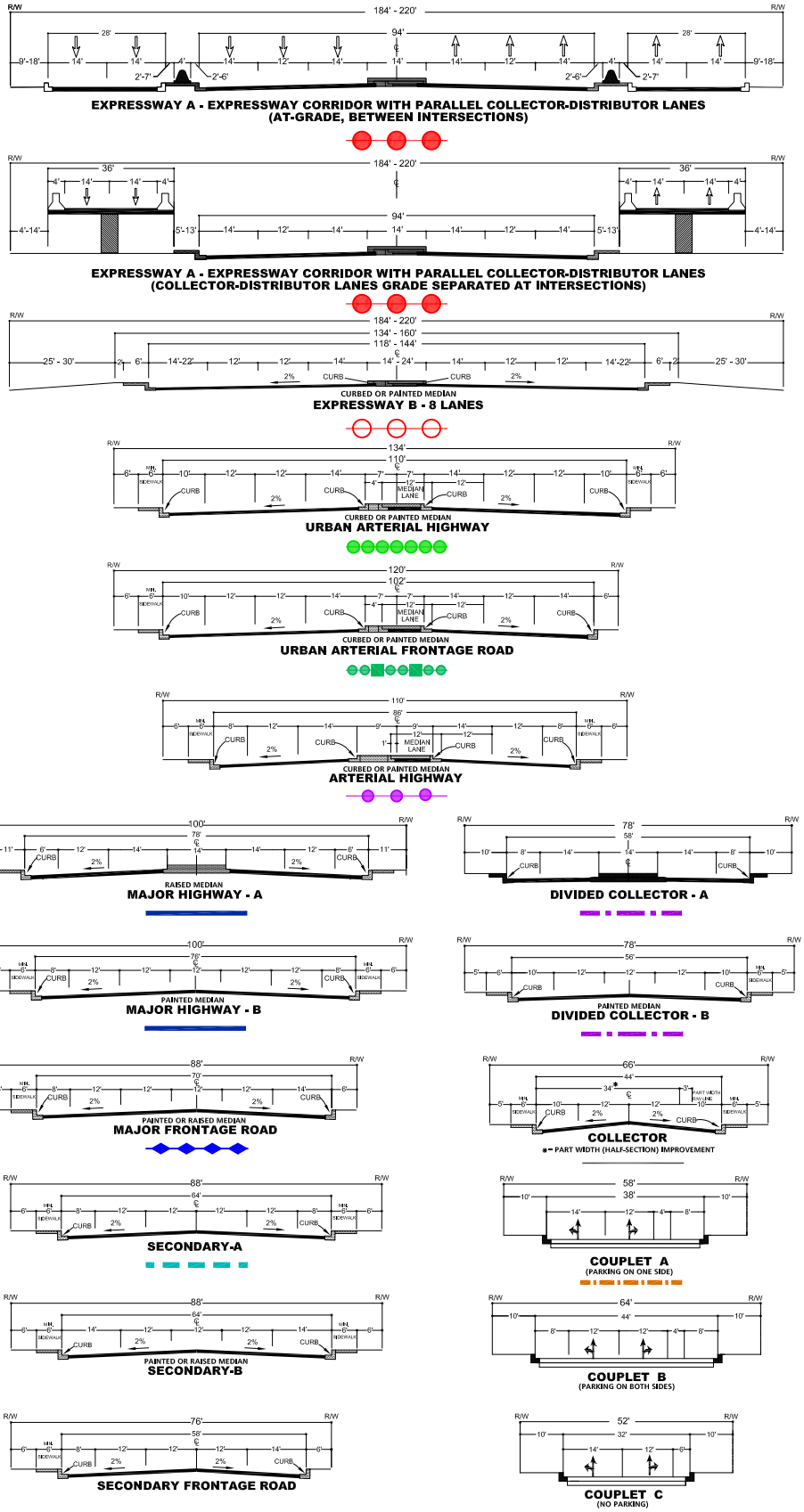
LEGEND:

- = EXPRESSWAY A
- = EXPRESSWAY B
- = URBAN ARTERIAL
- = URBAN ARTERIAL FRONTAGE ROAD
- = ARTERIAL
- = MAJOR
- = MAJOR FRONTAGE ROAD
- = SECONDARY
- = SECONDARY FRONTAGE ROAD
- = DIVIDED COLLECTOR
- = COLLECTOR
- = COUPLET
- = RAILROAD
- = I-10, SR-60 AND SR-79 CONFLUENCE STUDY AREA

N

Source: City of Beaumont

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



Source: City of Beaumont

Major Roadways are four lane divided roadways and may provide on-street parking. These roadways typically have an 88-foot to 100-foot right-of-way and a 70-foot to 76-foot curb-to-curb measurement. These roadways typically direct traffic through major development areas and serve to move large volumes of inter-city traffic. The following study area roadway within the City of Beaumont is classified as a Major Roadway:

- 4th Street, between Potrero Boulevard and Veile Avenue
- Veile Avenue, between 4th Street and 6th Street
- Beaumont Avenue, north of I-10 Freeway
- Desert Lawn Drive

Secondary Streets are four-lane roadways and may include a painted median. These roadways typically have a 76-foot to 86-foot right-of-way and a 56-foot to 64-foot curb-to-curb measurement. These roadways typically direct traffic through major development areas and a lesser capacity than Major Roadways. The following study area roadways within the City of Beaumont are classified as a Secondary Street:

- 4th Street, east of Veile Avenue
- California Avenue, south of 6th Street
- 6th Street, between Veile Avenue and California Avenue and east of Beaumont Avenue

Collector Streets are two-lane roadways and provide on-street parking on both sides. These roadways typically have a 66-foot to 78-foot right-of-way and a 44-foot curb-to-curb measurement. These roadways provide connections to secondary streets, arterials, and freeways, with most traffic being through-traffic or intra-city traffic. The following study area roadways within the City of Beaumont are classified as a Collector Street:

- 4th Street, west of Potrero Boulevard
- California Avenue, north of 6th Street

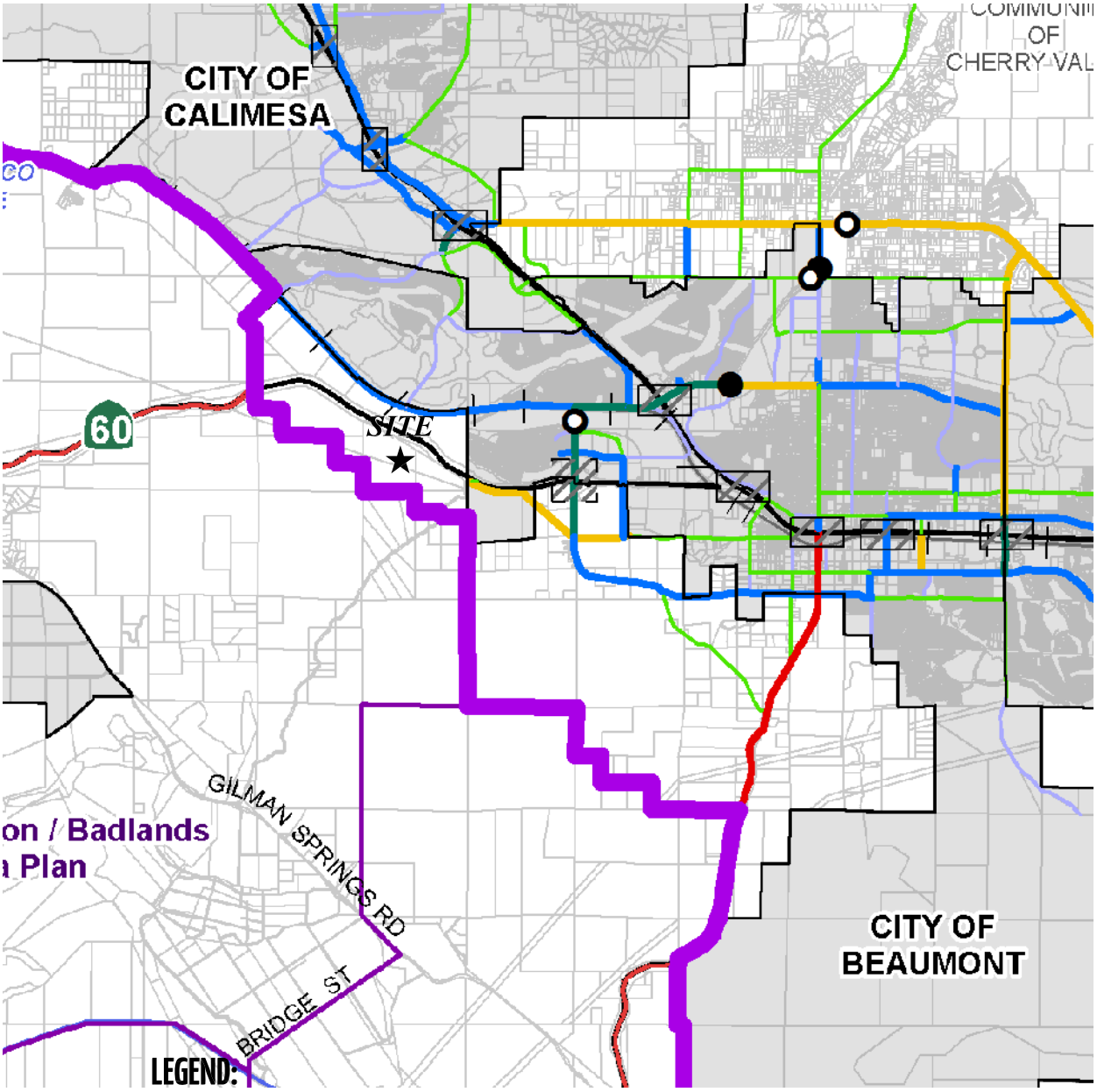
3.3 COUNTY OF RIVERSIDE GENERAL PLAN CIRCULATION ELEMENT

The study area is also partially located within the County of Riverside. Exhibit 3-4 shows the County of Riverside General Plan Circulation Element and Exhibit 3-5 illustrates the County of Riverside General Plan roadway cross-sections.

3.4 BICYCLE & PEDESTRIAN FACILITIES

The City of Beaumont General Plan does not include a bike facility exhibit. The County of Riverside trails and bikeway system is shown on Exhibit 3-6. As shown on Exhibit 3-6, there is a proposed regional trail adjacent to the Project site. Exhibit 3-7 illustrates the existing pedestrian facilities, including sidewalks and crosswalks. As shown on Exhibit 3-7, there are limited pedestrian facilities in the vicinity of the Project site. Field observations conducted in January 2020 indicate nominal pedestrian and bicycle activity within the study area.

EXHIBIT 3-4: COUNTY OF RIVERSIDE GENERAL PLAN CIRCULATION ELEMENT



SOURCE: RIVERSIDE COUNTY 12/8/2015

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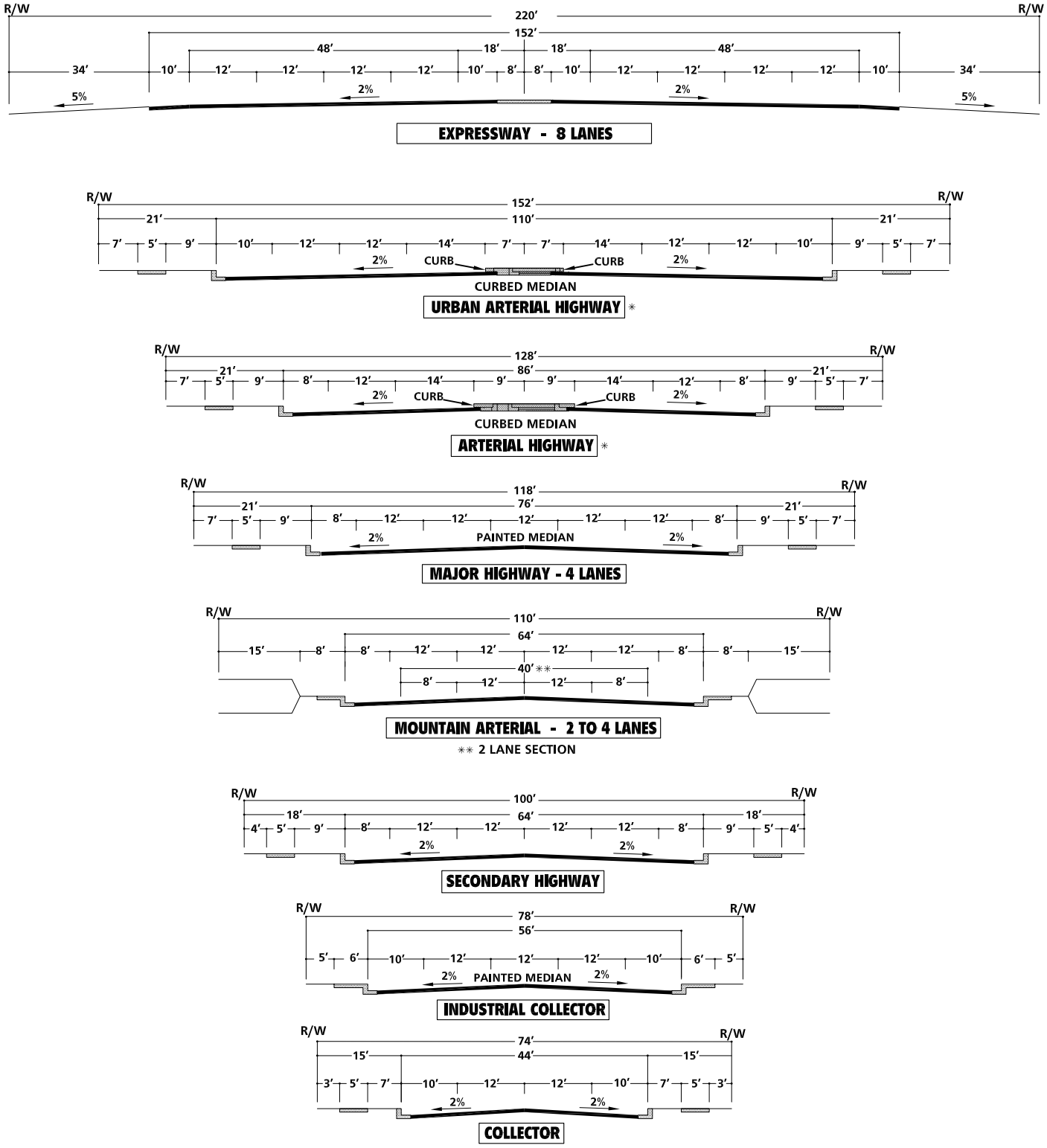
URBAN CROSSROADS

EXHIBIT 3-5: COUNTY OF RIVERSIDE GENERAL PLAN ROADWAY CROSS-SECTIONS



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

NOT TO SCALE

SOURCE: COUNTY OF RIVERSIDE

EXHIBIT 3-6: COUNTY OF RIVERSIDE TRAILS AND BIKEWAY SYSTEM

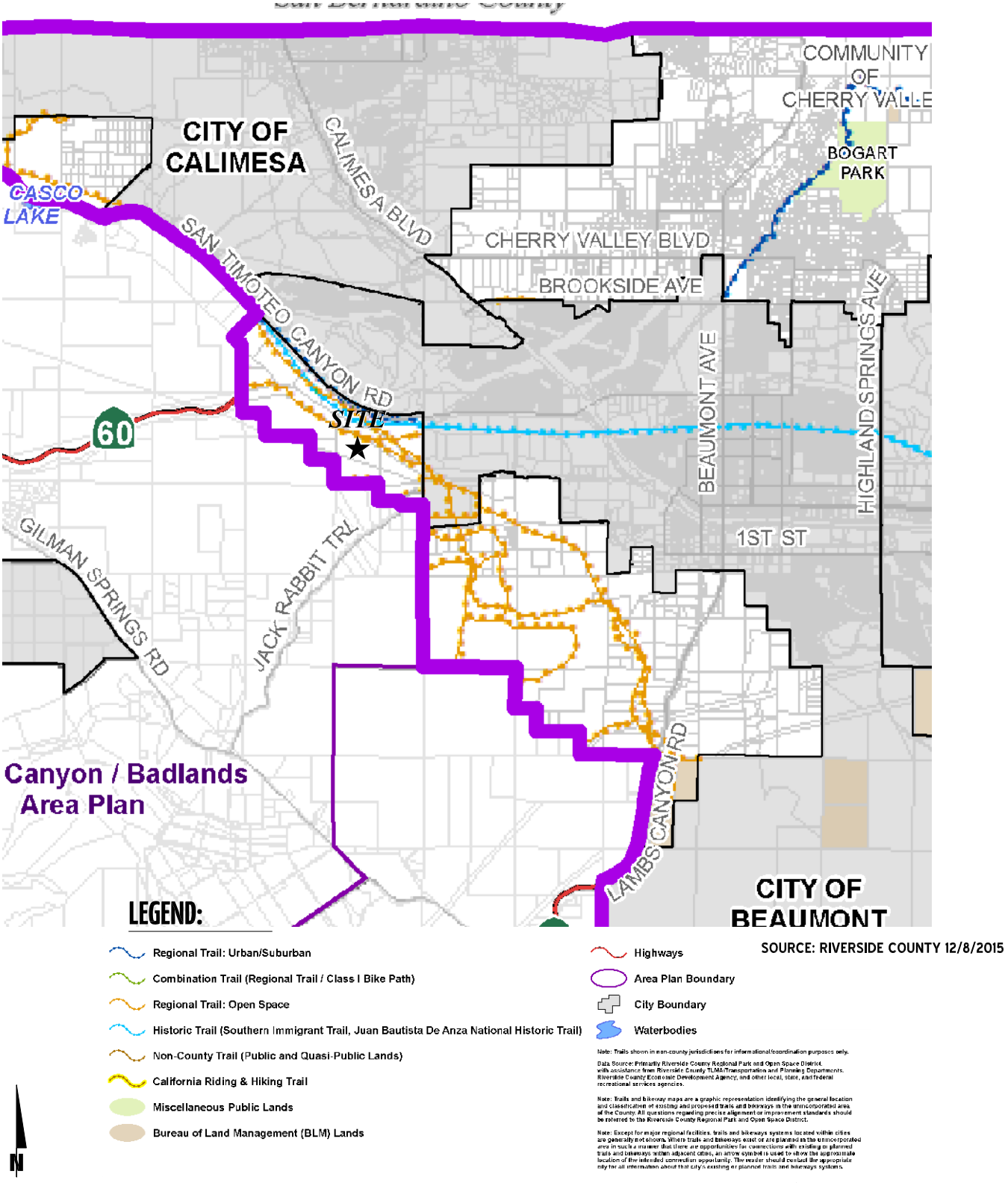


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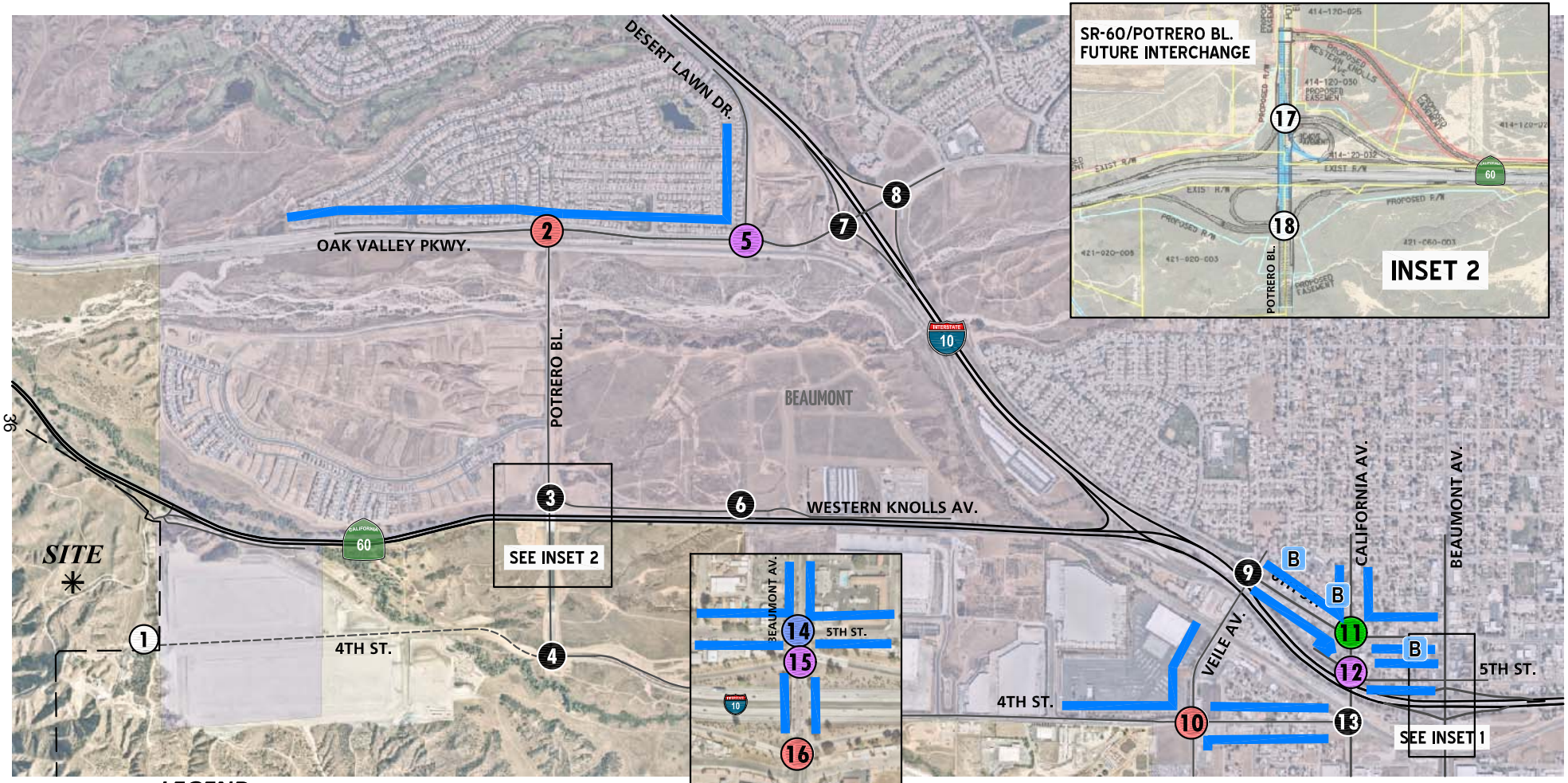
EXHIBIT 3-7: EXISTING PEDESTRIAN FACILITIES



3.5 TRANSIT SERVICE

The study area is currently served by the Pass Transit with bus services along 6th Street, California Avenue, Beaumont Avenue via routes 3/4. Riverside Transit Agency (RTA) Routes 34 and 210 runs along the SR-60 Freeway, but do not provide bus service/stops within the study area. The transit services are illustrated on Exhibit 3-8. There do not appear to be existing transit routes that could potentially serve the Project. Transit service is reviewed and updated by the Pass Transit and RTA periodically to address ridership, budget, and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate.

3.6 EXISTING TRAFFIC COUNTS

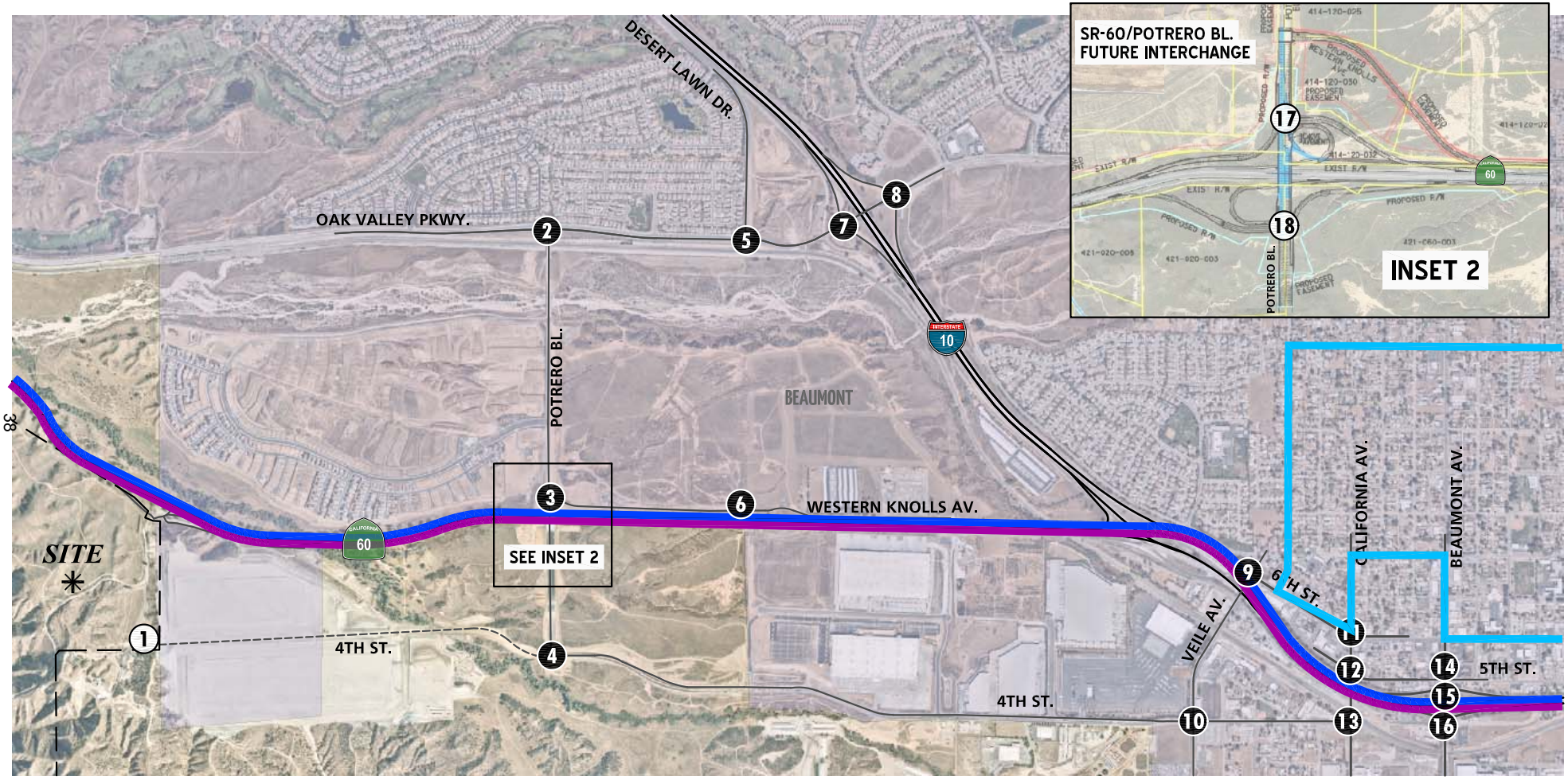
The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in November 2019 and January 2020, while schools were in session. The following peak hours were selected for analysis:

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

The weekday AM and weekday PM peak hour count data are representative of typical weekday peak hour traffic conditions in the study area. The traffic counts were taken before schools and businesses were closed due to the currently ongoing COVID-19 pandemic. There were no observations made in the field at the time the traffic counts were collected that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes, and near-by schools were in session and operating on normal schedules. Future traffic forecasts developed as part of this TA using the pre-COVID volumes will not understate potential future intersection deficiencies and improvement needs (see end of Appendix 3.1 for volume comparisons). The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1. These raw turning volumes have been flow conserved between intersections with limited access, no access, and where there are currently no uses generating traffic.

The traffic counts collected in November 2019 and January 2020 include the following vehicle classifications: Passenger Cars, 2-Axle Trucks, 3-Axle Trucks, and 4 or More Axle Trucks. To represent the effects large trucks, buses and recreational vehicles have on traffic flow; all trucks were converted into PCE. By their size alone, these vehicles occupy the same space as two or more passenger cars. In addition, the time it takes for them to accelerate and slow-down is much longer than for passenger cars and varies depending on the type of vehicle and number of axles. For the purpose of this analysis, a PCE factor of 1.5 has been applied to 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for 4+-axle trucks to estimate each turning movement. These factors are consistent with the values recommended for use in the San Bernardino County CMP and are in excess of the factor recommended for use in the County of Riverside traffic study guidelines. (9) Although the County of Riverside has a recommended PCE factor of 2.0, the San Bernardino County CMP PCE factors have been utilized in an effort to conduct a more conservative analysis.

EXHIBIT 3-8: EXISTING TRANSIT ROUTES



Existing weekday Average Daily Traffic (ADT) volumes on arterial highways throughout the study area are shown on Exhibit 3-9. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

Weekday PM Peak Hour (Approach Volume + Exit Volume) x 12.00 = Leg Volume

A comparison of the PM peak hour and daily traffic volumes of various roadway segments within the study area indicated that the peak-to-daily relationship is approximately 8.33 percent. As such, the above equation utilizing a factor of 12.00 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 8.33 percent (i.e., 1/0.0833 = 12.00) and was assumed to sufficiently estimate ADT volumes for planning-level analyses. Existing weekday AM and weekday PM peak hour intersection volumes are shown on Exhibit 3-10.

3.7 EXISTING (2020) INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized in Table 3-1 which indicates that the following study area intersections are currently operating at an unacceptable LOS (i.e., LOS E or worse) during the peak hours:

- Desert Lawn Drive & Oak Valley Parkway (#5) – LOS F AM peak hour only
- California Avenue & 5th Street (#12) – LOS F AM peak hour only
- California Avenue & 4th Street (#13) – LOS E AM peak hour; LOS F PM peak hour
- Beaumont Avenue & I-10 Westbound Ramps (#15) – LOS F AM peak hour; LOS E PM peak hour
- Beaumont Avenue & I-10 Eastbound Ramps (#16) – LOS F AM peak hour; LOS E PM peak hour

It should be noted, based on field observations, the intersections of I-10 Westbound Ramps & Beaumont Avenue (#15) and I-10 Eastbound Ramps & Beaumont Avenue (#16) experienced queuing issues along Beaumont Avenue during the AM peak hour. As such, the intersection operations analysis results shown in Table 3-1 reflect the field conditions at the time this TA was prepared. Consistent with Table 3-1, a summary of the peak hour intersection LOS for Existing conditions is shown on Exhibit 3-11. The intersection operations analysis worksheets are included in Appendix 3.2 of this TA.

3.8 EXISTING (2020) TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. The following unsignalized study area intersections currently warrant a traffic signal for Existing (2020) traffic conditions (see Appendix 3.3):

- Desert Lawn Drive & Oak Valley Parkway (#5)
- California Avenue & 4th Street (#13)

EXHIBIT 3-9: EXISTING (2020) AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

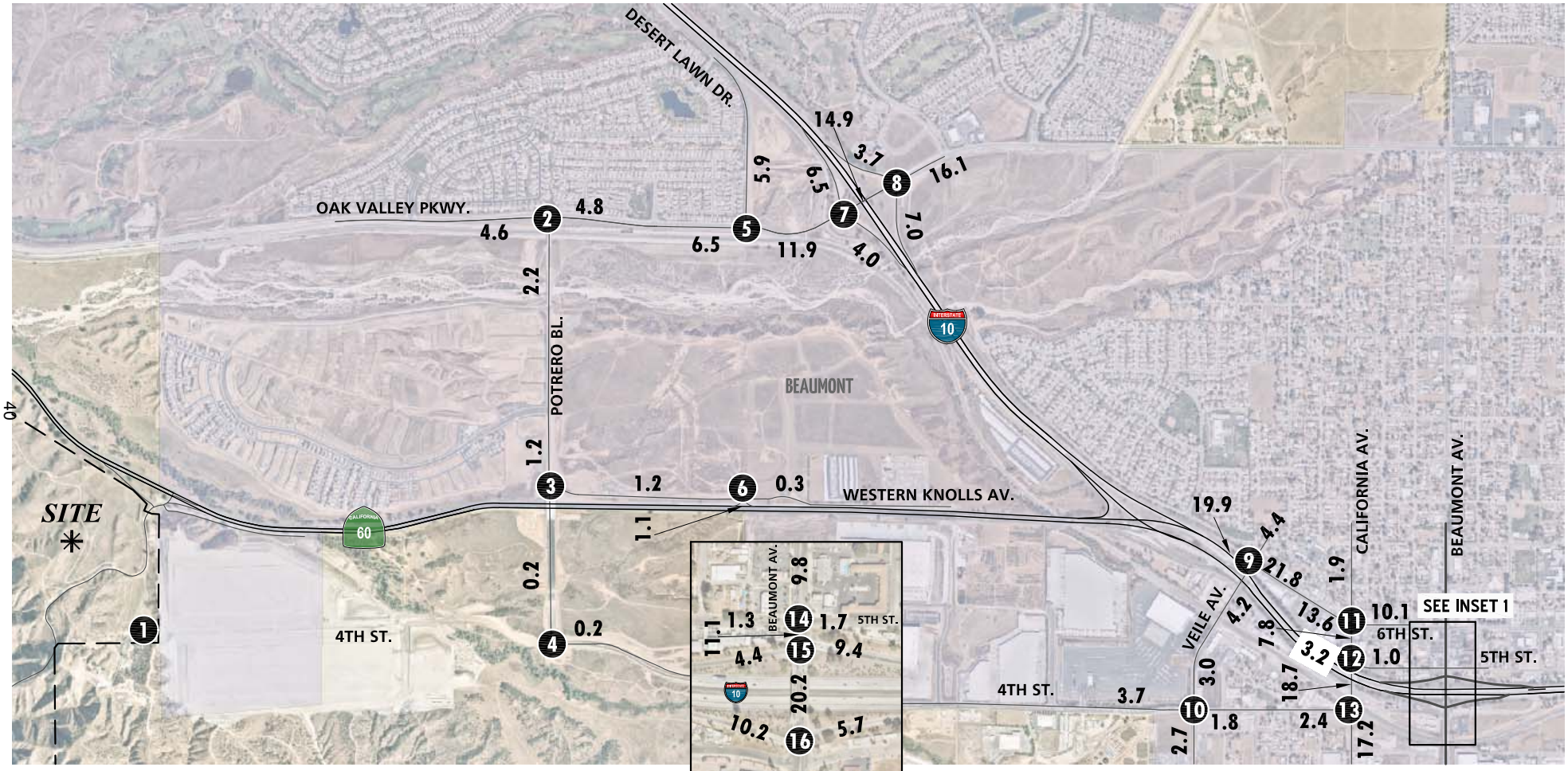
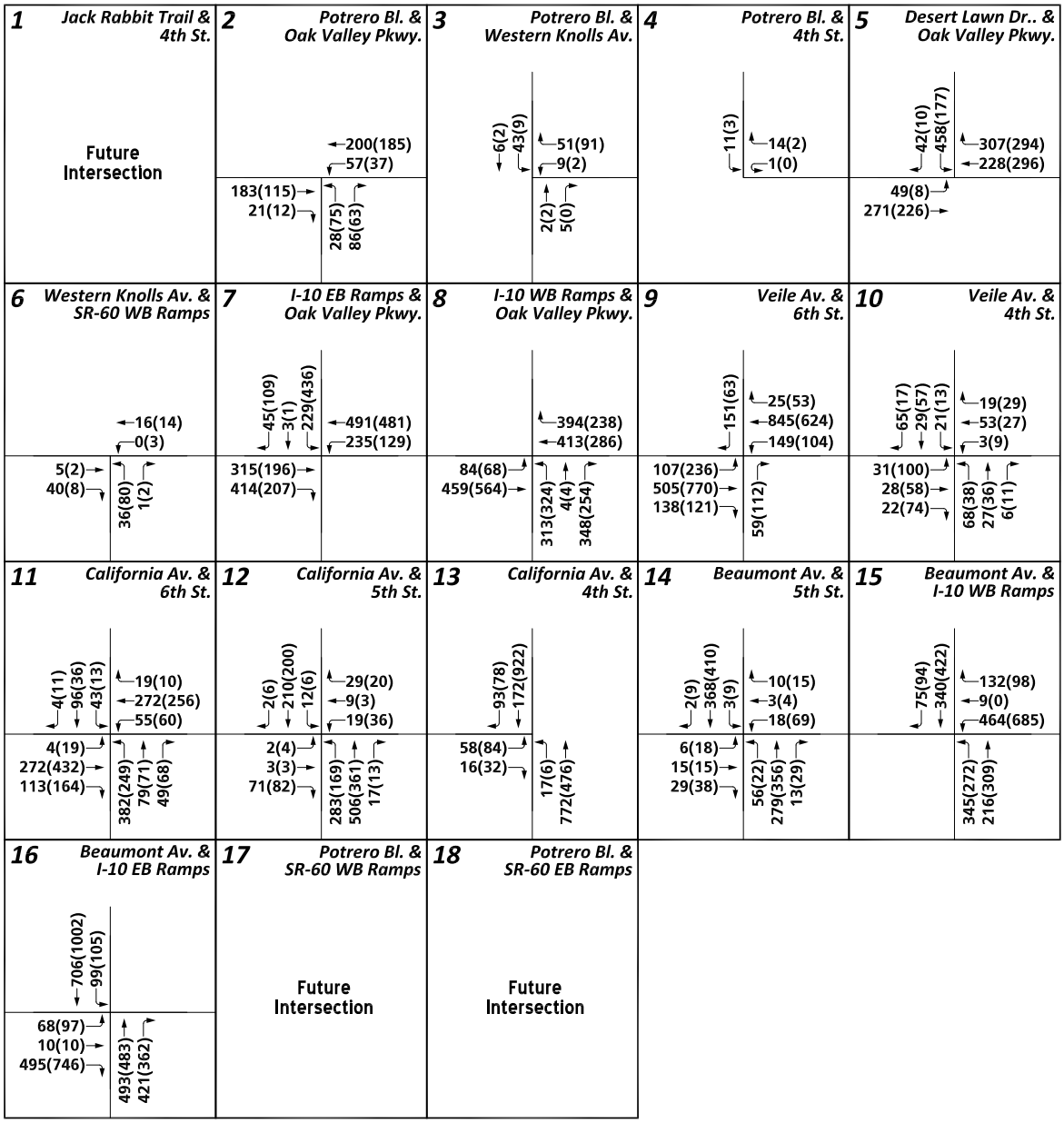


EXHIBIT 3-10: EXISTING (2020) TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

EXHIBIT 3-11: EXISTING (2020) SUMMARY OF LOS

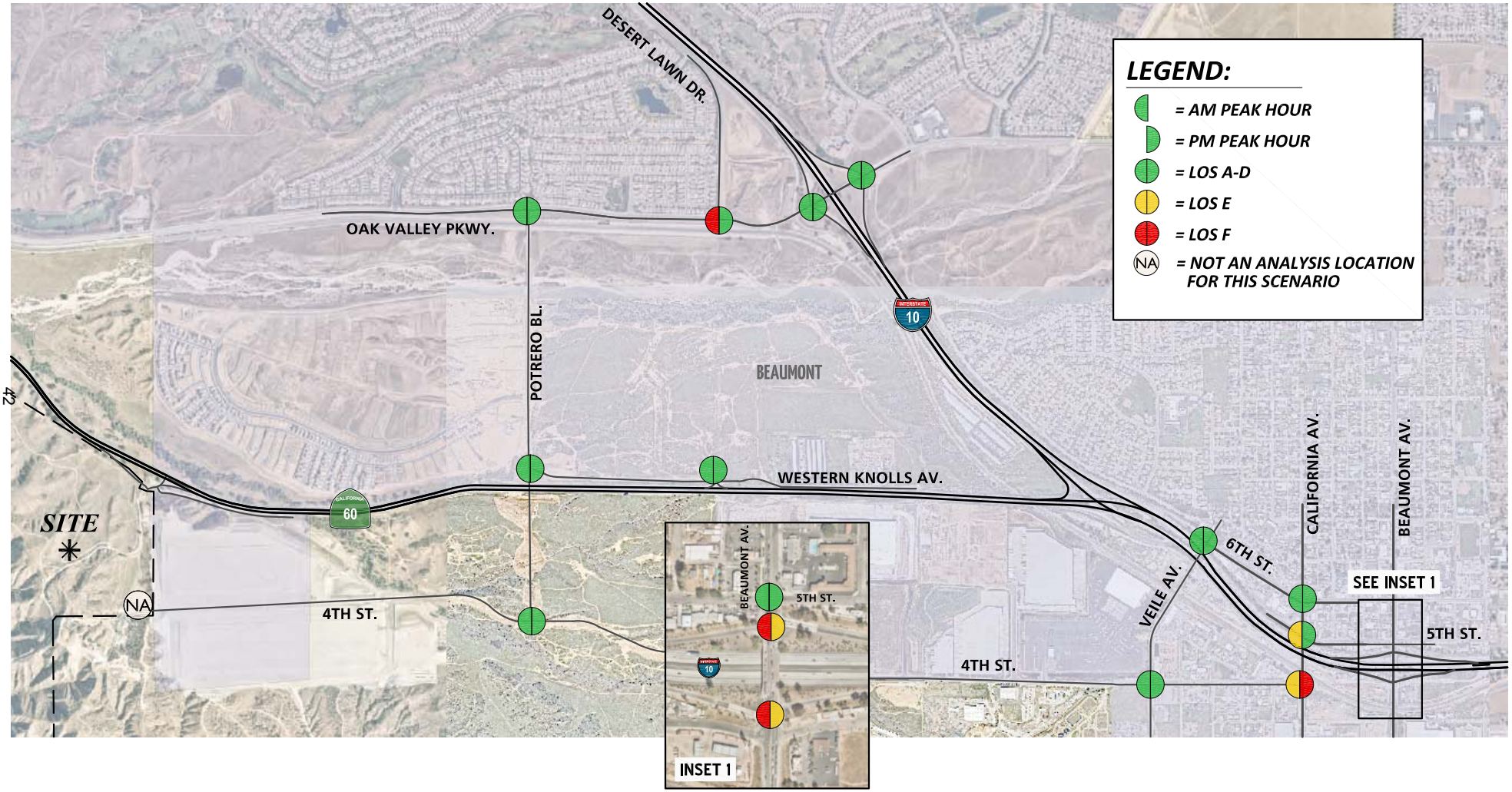


Table 3-1

Intersection Analysis for Existing (2020) 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	Jack Rabbit Tr. & 4th St.		Future Intersection															
2	Potrero Bl. & Oak Valley Pkwy.	AWS	1	0	1	0	0	0	0	2	1	1	2	0	8.6	8.3	A	A
3	Potrero Bl. & Western Knolls Av.	AWS	0	1	0	0	1	0	0	0	0	0	1	0	7.3	6.9	A	A
4	Potrero Bl. & 4th St.	TS	0	0	0	2	0	1	1	2	0	0	1	1	8.6	9.5	A	A
5	Desert Lawn Dr. & Oak Valley Pkwy.	AWS	0	0	0	0	1	0	1	1	0	0	3	0	**58.5**	10.2	**F**	B
6	SR-60 WB & Western Knolls Av.	CSS	0	1	0	0	0	0	0	1	0	0	1	1	9.9	10.7	A	B
7	I-10 EB Ramps & Oak Valley Pkwy.	TS	0	0	0	0	1	0	0	1	0	1	1	0	30.2	43.1	C	D
8	I-10 WB Ramps & Oak Valley Pkwy.	TS	0	1	0	0	0	0	1	1	0	0	1	d	33.9	31.0	C	C
9	Veile Av. & I-10 WB On-ramp/6th St.	CSS	0	0	1	0	0	1	0	2	0	1	2	0	14.6	13.6	B	B
10	Veile Av. & 4th St.	TS	1	1	1	1	1	1>>	1	1	1	1	1	d	17.6	17.8	B	B
11	California Av. & 6th St.	TS	1	1	0	1	1	0	1	1	1	1	1	1	33.5	30.4	C	C
12	California Av. & 5th St.	CSS	1	1	d	0	1	d	0	1	d	0	1	d	**55.9**	20.9	**F**	C
13	California Av. & 4th St.	CSS	1	1	0	0	1	0	1	0	1	0	0	0	**35.4**	**73.6**	**E**	**F**
14	Beaumont Av. & 5th St.	TS	1	2	0	1	2	0	0	1	0	0	1	0	7.6	7.5	A	A
15	Beaumont Av. & I-10 WB Ramps[4]	TS	1	2	0	0	2	0	0	0	0	1	1	0	**106.7**	**66.9**	**F**	**E**
16	Beaumont Av. & I-10 EB Ramps[4]	TS	0	2	0	1	2	0	0	1	1	0	0	0	**87.5**	**66.8**	**F**	**E**
17	Potrero Bl. & I-10 WB Ramps		Future Intersection															
18	Potrero Bl. & I-10 EB Ramps		Future Intersection															

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

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

L = Left; T = Through; R = Right; d = Defacto Right Turn Lane; >> = Free-Right Turn Lane

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

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

[4] Heavy northbound vehicle queues observed during the morning peak hours; heavy off-ramp queues during the evening peak hours.

3.9 EXISTING (2020) OFF-RAMP QUEUING ANALYSIS

A queuing analysis was performed for the off-ramps at the I-10 Freeway at Oak Valley Parkway and Beaumont Avenue interchanges to assess vehicle queues for the off ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-10 Freeway mainline. Queuing analysis findings are presented in Table 3-2. It is important to note that off-ramp lengths are consistent with the measured distance between the intersection and the freeway mainline. As shown in Table 3-2, there are no movements that are currently experiencing queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. This finding is consistent with field observations at the time traffic counts were conducted. Worksheets for Existing (2020) traffic conditions off-ramp queuing analysis are provided in Appendix 3.4.

3.10 FREEWAY FACILITY ANALYSIS

Existing (2020) mainline directional volumes for the AM and PM peak hours are provided on Exhibit 3-12. As shown in Table 3-3, the study area freeway segments and merge/diverge ramp junctions analyzed for this study are currently operating at an acceptable LOS (i.e., LOS D or better) during the peak hours for Existing (2020) traffic conditions. Existing (2020) freeway facility analysis worksheets are provided in Appendix 3.5.

3.11 EXISTING DEFICIENCIES AND IMPROVEMENTS

Improvements needed to achieve acceptable LOS have been identified at intersections that are currently operating at a deficient LOS under Existing (2020) traffic conditions.

3.11.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

Table 3-4 indicates the physical improvements needed to address LOS deficiencies at each of the study area intersections under Existing (2020) traffic conditions. The following improvements are necessary to improve the Existing (2020) deficiencies back to acceptable levels.

Desert Lawn Drive & Oak Valley Parkway (#5) – The following improvement is necessary to improve the existing deficiency to acceptable levels:

- Install a traffic signal.

California Avenue & 5th Street (#12) – The following improvement is necessary to improve the existing deficiency to acceptable levels:

- Install a traffic signal.

California Avenue & 4th Street (#13) – The following improvement is necessary to improve the existing deficiency to acceptable levels:

- Install a traffic signal.

Table 3-2

Peak Hour Freeway Off-Ramp Queuing Summary for Existing (2020) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet)		Acceptable? [1]	
			AM Peak Hour	PM Peak Hour	AM	PM
I-10 EB Ramps & Oak Valley Pwky.	SBL/T/R	1,150	327 [2]	463 [2]	Yes	Yes
I-10 WB Ramps & Oak Valley Pkwy.	NBL/T/R	1,220	468 [2]	376	Yes	Yes
Beaumont Av. & I-10 WB Ramps	WBL	485	221 [2]	266 [2]	Yes	Yes
	WBL/R	1,110	158	176	Yes	Yes
Beaumont Av. & I-10 EB Ramps	EBL/R	885	92	272 [2]	Yes	Yes
	EBR	235	87	236 [2,3]	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

[2] 95th percentile volume exceeds capacity, queue may be longer.

[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the I-10 Freeway mainline.

Table 3-3

Freeway Facility Analysis for Existing (2020) Conditions

Freeway	Direction[1]	Mainline Segment	Lanes[2]	Density[3]		LOS[4]	
				AM	PM	AM	PM
I-10 Freeway	EB	West of Oak Valley Pkwy.	3	9.9	13.5	A	B
		Off-Ramp at Oak Valley Pkwy.	3	13.2	17.8	B	B
		On-Ramp at Beaumont Av.	4	17.3	15.7	B	B
		East of Beaumont Av.	4	17.9	17.0	B	B
	WB	West of Oak Valley Pkwy.	3	11.3	13.2	B	B
		On-Ramp at Oak Valley Pkwy.	3	11.9	13.3	B	B
		On-Ramp at Beaumont Av.	4	16.2	18.3	B	B
		West of Beaumont Av.	4	13.4	15.4	B	B
SR-60 Freeway	EB	West of I-10 Freeway	2	9.3	10.9	A	A
		Off-Ramp at 6th St.	2	11.3	13.2	B	B
	WB	East of Western Knolls Av.	2	9.0	10.8	A	A
		Off-Ramp at Western Knolls Av.	2	7.7	9.8	A	A
		On-Ramp at Western Knolls Av.	2	6.9	8.2	A	A
		West of Western Knolls Av.	2	9.1	10.2	A	A

[1] NB = Northbound; SB = Southbound

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

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

[4] LOS = Level of Service

Table 3-4

Intersection Analysis for Existing (2020) Conditions With 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
5	Desert Lawn Dr. & Oak Valley Pkwy.																	
	- Without Improvements	AWS	0	0	0	0	1	0	1	1	0	0	3	0	**58.5**	10.2	**F**	B
	- With Improvements	**TS**	0	0	0	0	1	0	1	1	0	0	3	0	18.5	11.0	B	B
12	California Av. & 5th St.																	
	- Without Improvements	CSS	1	1	d	0	1	d	0	1	d	0	1	d	**55.9**	20.9	**F**	C
	- With Improvements	**TS**	1	1	d	0	1	d	0	1	d	0	1	d	15.4	12.0	B	B
13	California Av. & 4th St.																	
	- Without Improvements	CSS	1	1	0	0	1	0	1	0	1	0	0	0	**35.4**	**73.6**	**E**	**F**
	- With Improvements	**TS**	1	1	0	0	1	0	1	0	1	0	0	0	10.6	15.2	B	B
15	Beaumont Av. & I-10 WB Ramps																	
	- Without Improvements	TS	1	2	0	0	2	0	0	0	0	1	1	0	**106.7**	**66.9**	**F**	**E**
	- With Improvements[4]	TS	1	2	0	0	2	0	0	0	0	1	1	0	45.5	45.1	D	D
16	Beaumont Av. & I-10 EB Ramps																	
	- Without Improvements	TS	0	2	0	1	2	0	0	1	1	0	0	0	**87.5**	**66.8**	**F**	**E**
	- With Improvements[4]	TS	0	2	0	1	2	0	0	1	1	0	0	0	29.4	51.6	C	D

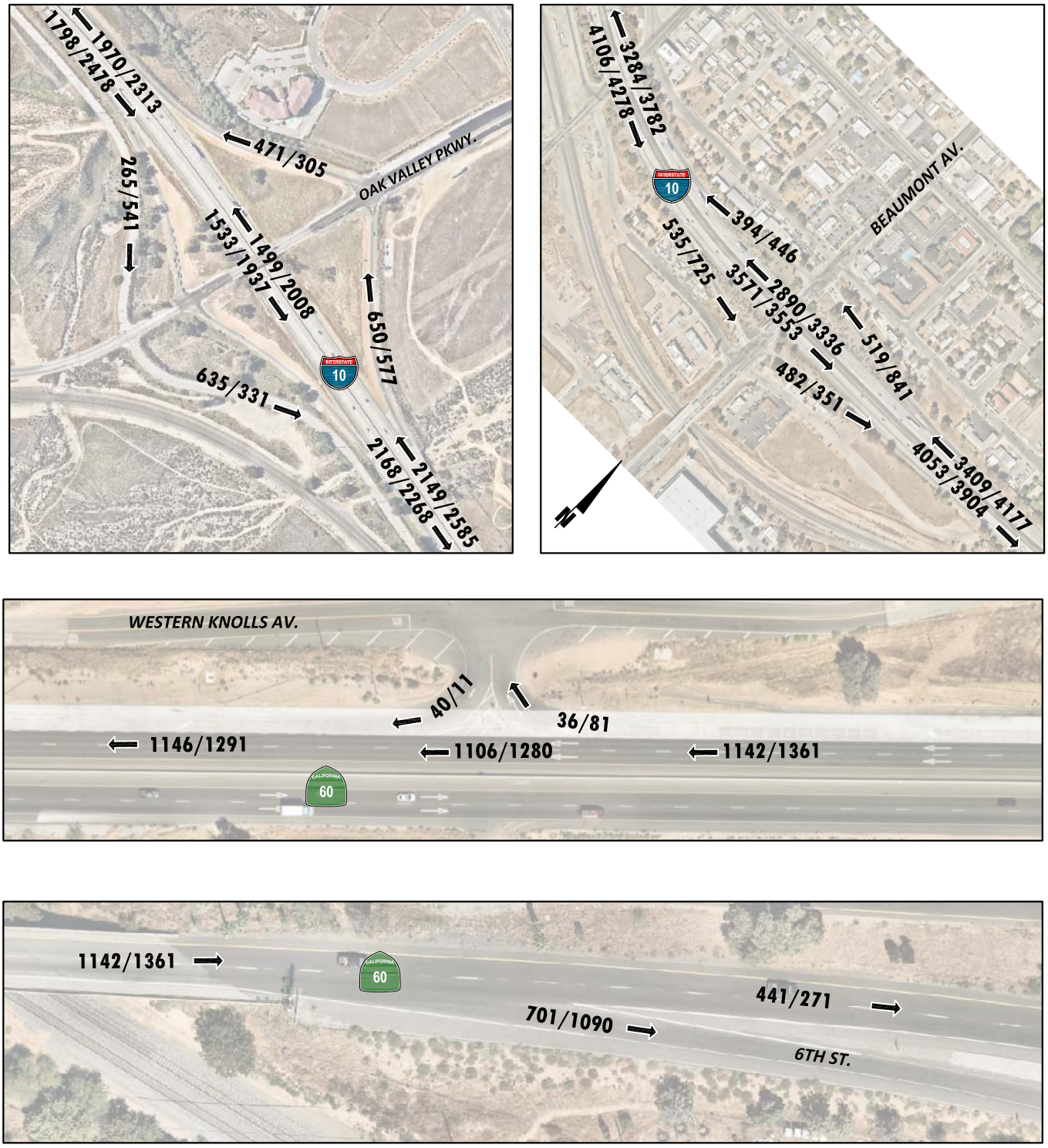
[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; **1** = Improvement

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

[3] AWS = All-way Stop; CSS = Cross-street Stop; TS = Traffic Signal; **TS** = Improvement

EXHIBIT 3-12: EXISTING (2020) FREEWAY MAINLINE VOLUMES



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Beaumont Avenue & I-10 Westbound Ramps (#15) – The following improvement is necessary to improve the existing deficiency to acceptable levels:

- Modify the traffic signal to accommodate a 120-second cycle length.

Beaumont Avenue & I-10 Eastbound Ramps (#16) – The following improvement is necessary to improve the existing deficiency to acceptable levels:

- Modify the traffic signal to accommodate a 120-second cycle length.

3.11.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown in Table 3-2, there are currently no peak hour queuing issues at the I-10 Freeway study area interchange. As such, no improvements are necessary.

3.11.3 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON FREEWAY FACILITIES

As shown in Table 3-3, the study area freeway segments and merge/diverge ramp junctions are currently operating at an acceptable LOS. As such no improvements are necessary.

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4 PROJECTED FUTURE TRAFFIC

The Project is to consist of 4,500,000 square feet of high-cube fulfillment center use and 500,000 square feet of general light industrial use. In addition, there is commercial component that includes a 125-room hotel, 77,000 square foot indoor go-kart facility, 26,000 square foot rock climbing facility, 24,000 square foot trampoline park, 40,000 square foot bowling alley, 36-hole miniature golf, 15,000 square feet of quality restaurant use, and 15,000 square feet of high turnover (sit-down) restaurant use. The Project is proposed to be developed in three phases as follows:

- Phase 1 = 1,379,191 square feet of high-cube fulfillment center warehouse use (Opening Year 2023)
- Phase 1 + Phase 2 = 4,500,000 square feet of high-cube fulfillment center warehouse use and 500,000 square feet of general light industrial use (Opening Year 2025)
- Project Buildout = 4,500,000 square feet of high-cube fulfillment center warehouse use, 500,000 square feet of general light industrial use, and all uses within the general commercial area (Opening Year 2027)

Interim regional access to the Project site is available from the SR-60 Freeway via the Western Knolls and I-10 Freeway via the Oak Valley Parkway and Beaumont Avenue interchanges. Once the Potrero Boulevard interchange is constructed, regional access to the Project site is available from the SR-60 Potrero Boulevard interchange and the I-10 Oak Valley Parkway interchange.

4.1 PROJECT TRIP GENERATION

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

In order to develop the traffic characteristics of the proposed Project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition, 2017) and the TUMF High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019) have been used. For purposes of this analysis, the following ITE land use codes and vehicle mixes have been utilized:

- High-Cube Fulfillment Center Warehouse has been used to derive site specific trip generation estimates for up to 4,500,000 square feet of the proposed Project. The ITE Trip Generation Manual (2017) has trip generation rates for high-cube fulfillment center use (ITE land use code 155), however, these rates are unreliable because they are based on limited data (i.e., one to two surveyed sites) and the ITE Trip Generation Manual recommends the use of local data sources where available. The recent (February 2020) ITE Trip Generation Manual Supplement includes trip generation rates for high-cube fulfillment center warehouse (non-sort) and (sort) facilities, however, it is unclear at this time the type of operation for the proposed speculative buildings. As such, the trip-generation statistics published in the TUMF High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019) which was commissioned by the Western Riverside

Council of Governments (WRCOG) in support of the Transportation Uniform Mitigation Fee (TUMF) update, has been utilized for the high-cube fulfillment center use. The WSP trip generation rates were published in January 2019 and are based on data collected at 11 local high-cube fulfillment center sites. However, the WSP study does not include a split for inbound and outbound vehicles, as such, the inbound and outbound splits per the ITE High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016) have been utilized.

- ITE land use code 110 (General Light Industrial) has been used to derive site specific trip generation estimates for up to 500,000 square feet of the proposed Project. The ITE Trip Generation Manual includes very limited data regarding the types of vehicles that are generated for general light industrial uses (passenger cars and various sizes of trucks). As such, data regarding the vehicle mix has been obtained from a separate report; the City of Fontana's Truck Trip Generation Study (August 2003) for the general light industrial uses proposed as part of the Project. The "Light Industrial" vehicle mix data has been utilized: 8.0% 2-axle trucks, 3.9% 3-axle trucks, and 9.5% 4+-axle trucks (total of 21.4% trucks).
- Other land uses assumed within the General Commercial area (Planning Areas 1-3):
    - Hotel – ITE Land Use Code 310
    - Shopping Center – ITE Land Use Code 820
    - Rock Climbing – ITE Land Use Code 434
    - Trampoline Park – ITE Land Use Code 436
    - Bowling Alley – ITE Land Use Code 437
    - Athletic Club – ITE Land Use Code 493
    - Miniature Golf Course – ITE Land Use Code 432
    - Quality Restaurant – ITE Land Use Code 931
    - High Turnover Sit-Down Restaurant – ITE Land Use Code 932
    - Indoor Car Racing (Alternative Source, See Table 1-1)

Internal capture is a percentage reduction that can be applied to the trip generation estimates for individual land uses to account for trips internal to the site. In other words, trips may be made between individual retail uses on-site or between the retail and industrial uses (employees) and can be made either by walking or using internal roadways without using external streets (e.g., restaurant to retail). Internal capture reductions between the proposed land uses have been considered based on the ITE Trip Generation Handbook, 3rd Edition (2017). (3)

Diverted trips are vehicle trips made as an intermediate stop while traveling from an origin to a primary destination with a route diversion from a primary route to another roadway to gain access to the site. As an example, using an alternative route to get to the commercial uses proposed by the Project by existing residents in the area on their way to school or work. As such, the diverted trips have been added back to affected intersections along Jack Rabbit Trail, 4th Street, and Potrero Boulevard.

Table 4-1 presents the trip generation rates for each of the land uses above. A summary of the Project's trip generation, by phase, is shown in Table 4-2 in actual vehicles and in Table 4-3 in PCE. PCE trip generation has been utilized for the purposes of the peak hour operations analyses. As shown in Table 4-2, the proposed development is anticipated to generate a net total of approximately 16,266 trip-ends per day on a typical weekday with 1,060 trips during the weekday AM peak hour and 1,466 trips during the weekday PM peak hour.

As part of each application for a land use within a Planning Area that would (based on application of ITE trip generation tables or any other then acceptable trip generation source (e.g., WRCOG High-Cube Warehouse Trip Generation Study (WSP) dated, January 29, 2019)) result in a greater number of average daily trips than those analyzed in this TA and Environmental Impact Report (EIR) for that Planning Area, the City shall have the right to require preparation of a supplement traffic analysis to determine whether the proposed change in use would change the findings and improvement requirements identified in the TA. If, after taking into account the unused trips from previously developed Planning Area and additional uses proposed for the undeveloped areas of the Project, the supplemental traffic assessment identifies intersection impacts that were not disclosed in the EIR, the City shall have the right to either accelerate the existing mitigation measures or impose new traffic mitigation measures that require fair share contributions by the Project Applicant as a condition of the requested entitlement.

4.2 PROJECT TRIP DISTRIBUTION

All Project traffic will access Potrero Boulevard via an extension of 4th Street to the west. No Project traffic is assumed to utilize the SR-60 Freeway/Jack Rabbit Trail interchange. E+P traffic conditions assume the existing roadway infrastructure only, which includes the interim Potrero Boulevard bridge and connection to SR-60 Freeway Westbound at Western Knolls Road. Opening Year and Horizon Year traffic conditions assumes the completion of the SR-60 Freeway/Potrero Boulevard interchange. No trucks are assumed to use Oak Valley Parkway (trucks to use Beaumont Avenue in the interim condition and Potrero Boulevard interchange once completed). Project truck traffic will be restricted from accessing Oak Valley Parkway and the I-10 Freeway ramps via Potrero Boulevard. The Project Applicant would work with the City on developing a truck route plan for future industrial development. The truck route plan would be implemented through future tenant lease agreements identifying the acceptable truck routes to and from the site and providing driver education on the appropriate truck routes.

Project trip distribution patterns for passenger cars and trucks are shown on Exhibits 4-1 and 4-2 for Existing/E+P conditions (without Potrero Boulevard interchange) and on Exhibits 4-3 and 4-4 for future conditions (with Potrero Boulevard interchange). Near-term Project trip distribution patterns without the future Potrero Boulevard interchange are supported by current Streetlight data. Similarly, long-range distribution patterns with the future Potrero Boulevard interchange are based on select zone runs for the Project traffic analysis zone from the Riverside County long-range traffic modeling tool.

Table 4-1

Trip Generation Rates

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Actual Vehicle Rates									
General Light Industrial[3]	TSF	110	0.616	0.084	0.700	0.082	0.548	0.630	4.960
Passenger Cars (78.6%)			0.484	0.066	0.550	0.064	0.431	0.495	3.899
2-Axle Trucks (8.0%)			0.049	0.007	0.056	0.007	0.044	0.050	0.397
3-Axle Trucks (3.9%)			0.024	0.003	0.027	0.003	0.021	0.025	0.193
4-Axle+ Trucks (9.5%)			0.059	0.008	0.067	0.008	0.052	0.060	0.471
High-Cube Fulfillment Center	TSF	--[4]	0.094	0.028	0.122	0.046	0.119	0.165	2.129
Passenger Cars			0.079	0.024	0.103	0.040	0.104	0.144	1.750
2-4 Axle Trucks			0.006	0.002	0.008	0.003	0.008	0.011	0.162
5+-Axle Trucks			0.008	0.003	0.011	0.003	0.007	0.010	0.217
Hotel	RM	310	0.28	0.19	0.47	0.31	0.29	0.60	8.36
Shopping Center[5]	TSF	820	0.73	0.45	1.18	2.11	2.29	4.40	46.38
K-1 Kart Racing[7]	TSF	--	N/A	N/A	N/A	0.36	0.27	0.63	6.76
Rock Climing[6]	TSF	434	0.46	0.94	1.40	0.93	0.71	1.64	16.40
Trampoline Park[6]	TSF	436	N/A	N/A	N/A	0.72	0.78	1.50	15.00
Bowling Alley[6]	TSF	437	0.77	0.04	0.81	0.75	0.41	1.16	11.60
Athletic Club[6]	TSF	493	1.93	1.23	3.16	3.90	2.39	6.29	62.90
Miniature Golf Course[6]	Holes	432	N/A	N/A	N/A	0.11	0.22	0.33	3.30
Quality Restaurant	TSF	931	0.37	0.36	0.73	5.23	2.57	7.80	83.84
High Turnover Sit-Down Restaurant	TSF	932	5.47	4.47	9.94	6.06	3.71	9.77	112.18
Passenger Car Equivalent (PCE) Rates									
General Light Industrial[3]	TSF	110	0.616	0.084	0.700	0.082	0.548	0.630	4.960
Passenger Cars			0.484	0.066	0.550	0.064	0.431	0.495	3.899
2-Axle Trucks (PCE = 1.5)			0.074	0.010	0.084	0.010	0.066	0.076	0.595
3-Axle Trucks (PCE = 2.0)			0.048	0.007	0.055	0.006	0.043	0.049	0.387
4-Axle+ Trucks (PCE = 3.0)			0.176	0.024	0.200	0.023	0.156	0.180	1.414
High-Cube Fulfillment Center	TSF	--[4]	0.094	0.028	0.122	0.046	0.119	0.165	2.129
Passenger Cars			0.079	0.024	0.103	0.040	0.104	0.144	1.750
2-4 Axle Trucks (PCE = 2.0)			0.012	0.004	0.016	0.006	0.016	0.022	0.324
5+-Axle Trucks (PCE = 3.0)			0.025	0.008	0.033	0.008	0.022	0.030	0.651

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017).

[2] RM = Room; TSF = Thousand Square Feet

[3] Vehicle Mix Source: Truck mix (by axle type) source from City of Fontana Truck Trip Generation Study (August 2003). PCE rates are per SBCTA.

[4] Vehicle Mix Source: TUMF High Cube Warehouse Trip Generation Study, WSP, November January 29, 2019.
Inbound and outbound split source: High Cube Warehouse Vehicle Trip Generation Analysis, October 2016, ITE. PCE rates are per SBCTA.

[5] Trip generation rates based on regression equation.

[6] No weekday daily value provided in ITE. Estimated based on 10 times the PM peak hour.

[7] Source: Trip Generation and Parking Rate Analysis for the proposed K-1 Speed Indoor Kart Track, Linscott Law & Greenspan Engineers, June 20, 2005.

Table 4-2

Project Trip Generation Summary (Actual Vehicles)

Land Use	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Phase 1									
High-Cube Fulfillment Center (Building 1)	1,379.191	TSF							
Passenger Cars:			109	33	142	56	143	199	2,414
Truck Trips:									
2-4-axle:			8	3	11	4	11	15	224
5+-axle:			12	3	15	4	10	14	300
- Truck Trips (Actual Vehicles)			20	6	26	8	21	29	524
Phase 1 Total:			**129**	**39**	**168**	**64**	**164**	**228**	**2,938**
Phase 2									
High-Cube Fulfillment Center	4,500.000	TSF							
Passenger Cars:			357	107	464	181	467	648	7,876
Truck Trips:									
2-4-axle:			28	8	36	14	36	50	730
5+-axle:			38	11	49	13	32	45	978
- Truck Trips (Actual Vehicles)			66	19	85	27	68	95	1,708
Subtotal			423	126	549	208	535	743	9,584
General Light Industrial	500.000	TSF							
Passenger Cars:			242	33	275	32	215	247	1,950
Truck Trips:									
2-axle:			25	3	28	3	22	25	198
3-axle:			12	2	14	2	11	13	98
4+-axle:			29	4	33	4	26	30	236
- Truck Trips (Actual Vehicles)			66	9	75	9	59	68	532
Subtotal			308	42	350	41	274	315	2,482
Phase 2 Passenger Cars:			*599*	*140*	*739*	*213*	*682*	*895*	*9,826*
Phase 2 Trucks:			*132*	*28*	*160*	*36*	*127*	*163*	*2,240*
Phase 2 Total:			**731**	**168**	**899**	**249**	**809**	**1,058**	**12,066**
Project Buildout									
High-Cube Fulfillment Center	4,500.000	TSF							
Passenger Cars:			357	107	464	181	467	648	7,876
Truck Trips:									
2-4-axle:			28	8	36	14	36	50	730
5+-axle:			38	11	49	13	32	45	978
- Truck Trips (Actual Vehicles)			66	19	85	27	68	95	1,708
Internal Trip Reduction (Office - Employees only)			-10	-5	-15	-1	-1	-2	-20
Subtotal			413	121	534	207	534	742	9,564

Table 4-2

Project Trip Generation Summary (Actual Vehicles)

Land Use	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
General Light Industrial	500.000	TSF							
Passenger Cars:			242	33	275	32	215	247	1,950
Truck Trips:									
2-axle:			25	3	28	3	22	25	198
3-axle:			12	2	14	2	11	13	98
4+-axle:			29	4	33	4	26	30	236
- Truck Trips (Actual Vehicles)			66	9	75	9	59	68	532
Internal Trip Reduction (Office - Employees only)			-30	-15	-45	-2	-2	-5	-36
Subtotal			278	27	305	39	272	311	2,446
Hotel	125	RM	35	24	59	38	37	75	1,046
Internal Trip Reduction (Hotel)			-1	-20	-21	-7	-8	-15	-210
Go Kart	77.000	TSF	0	0	0	28	21	49	522
Rock Climbing	26.000	TSF	12	24	36	24	18	42	426
Trampoline Park	24.000	TSF	0	0	0	17	19	36	360
Bowling Alley	40.000	TSF	31	2	33	30	16	46	464
Miniature Golf	36	Holes	0	0	0	4	8	12	120
Quality Restaurant	15.000	TSF	5	5	10	78	39	117	1,258
Internal Trip Reduction (Restaurant)			-9	-9	-18	-4	-4	-8	-92
Diverted Trips			0	0	0	-15	-15	-31	-514
High Turnover Sit-Down Restaurant	15.000	TSF	82	67	149	91	56	147	1,684
Internal Trip Reduction (Restaurant)			-13	-14	-27	-7	-6	-13	-146
Diverted Trips			0	0	0	-22	-22	-43	-662
Total Industrial Passenger Cars:			*559*	*120*	*679*	*210*	*679*	*889*	*9,770*
Total Trucks:			*132*	*28*	*160*	*36*	*127*	*163*	*2,240*
Total Commercial Passenger Cars:			*142*	*79*	*221*	*255*	*159*	*414*	*4,256*
TOTAL TRIPS (Actual Vehicles)[2]			**833**	**227**	**1,060**	**501**	**965**	**1,466**	**16,266**

[1] RM = Room; TSF = Thousand Square Feet

[2] TOTAL TRIPS = Passenger Cars + Truck Trips.

Table 4-3

Project Trip Generation Summary (PCE)

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Phase 1									
High-Cube Fulfillment Center	1,379.191	TSF							
Passenger Cars:			109	33	142	56	143	199	2,414
Truck Trips:									
2-4-axle:			17	5	22	8	22	30	448
5+-axle:			35	10	45	12	30	42	898
- Truck Trips (PCE)[2]			52	15	67	20	52	72	1,346
Phase 1 Total (PCE):			**161**	**48**	**209**	**76**	**195**	**271**	**3,760**
Phase 2									
High-Cube Fulfillment Center	4,500.000	TSF							
Passenger Cars:			357	107	464	181	467	648	7,876
Truck Trips:									
2-4-axle:			55	17	72	28	71	99	1,458
5+-axle:			114	34	148	38	97	135	2,930
- Truck Trips (PCE)[2]			169	51	220	66	168	234	4,388
Subtotal			526	158	684	247	635	882	12,264
General Light Industrial	500.000	TSF							
Passenger Cars:			242	33	275	32	215	247	1,950
Truck Trips:									
2-axle:			37	5	42	5	33	38	298
3-axle:			24	3	27	3	21	24	194
4+-axle:			88	12	100	12	78	90	708
- Truck Trips (PCE)[2]			149	20	169	20	132	152	1,200
Subtotal			391	53	444	52	347	399	3,150
Phase 2 Passenger Cars:			*599*	*140*	*739*	*213*	*682*	*895*	*9,826*
Phase 2 Trucks (PCE):			*318*	*71*	*389*	*86*	*300*	*386*	*5,588*
Phase 2 Total (PCE):			**917**	**211**	**1,128**	**299**	**982**	**1,281**	**15,414**
Project Buildout									
High-Cube Fulfillment Center	4,500.000	TSF							
Passenger Cars:			357	107	464	181	467	648	7,876
Truck Trips:									
2-4-axle:			55	17	72	28	71	99	1,458
5+-axle:			114	34	148	38	97	135	2,930
- Truck Trips (PCE)[2]			169	51	220	66	168	234	4,388
Internal Trip Reduction (Office - Employees only)			-10	-5	-15	-1	-1	-2	-20
Subtotal			516	153	669	246	634	881	12,244

Table 4-3

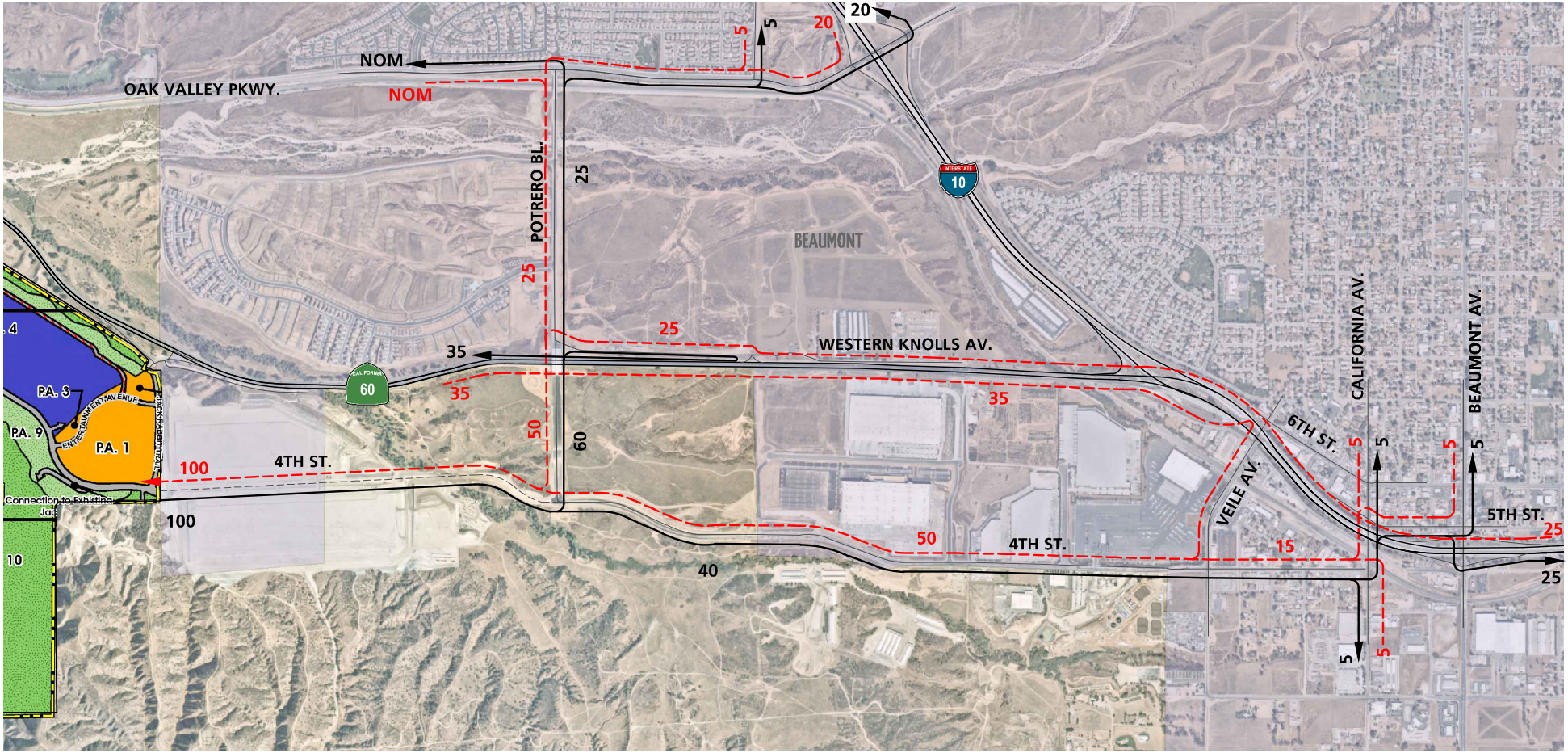
Project Trip Generation Summary (PCE)

Land Use	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
General Light Industrial	500.000	TSF							
Passenger Cars:			242	33	275	32	215	247	1,950
Truck Trips:									
2-axle:			37	5	42	5	33	38	298
3-axle:			24	3	27	3	21	24	194
4+-axle:			88	12	100	12	78	90	708
- Truck Trips (PCE)[2]			149	20	169	20	132	152	1,200
Internal Trip Reduction (Office - Employees only)			-30	-15	-45	-2	-2	-5	-36
Subtotal			361	38	399	50	345	395	3,114
Hotel	125	RM	35	24	59	38	37	75	1,046
Internal Trip Reduction (Hotel)			-1	-20	-21	-7	-8	-15	-210
Go Kart	77.000	TSF	0	0	0	28	21	49	522
Rock Climbing	26.000	TSF	12	24	36	24	18	42	426
Trampoline Park	24.000	TSF	0	0	0	17	19	36	360
Bowling Alley	40.000	TSF	31	2	33	30	16	46	464
Miniature Golf	36	Holes	0	0	0	4	8	12	120
Quality Restaurant	15.000	TSF	5	5	10	78	39	117	1,258
Internal Trip Reduction (Restaurant)			-9	-9	-18	-4	-4	-8	-92
Diverted Trips			0	0	0	-15	-15	-31	-514
High Turnover Sit-Down Restaurant	15.000	TSF	82	67	149	91	56	147	1,684
Internal Trip Reduction (Restaurant)			-13	-14	-27	-7	-6	-13	-146
Diverted Trips			0	0	0	-22	-22	-43	-662
Total Industrial Passenger Cars:			*559*	*120*	*679*	*210*	*679*	*889*	*9,770*
Total Trucks (PCE):			*318*	*71*	*389*	*86*	*300*	*386*	*5,588*
Total Commercial Passenger Cars:			*142*	*79*	*221*	*255*	*159*	*414*	*4,256*
TOTAL TRIPS (PCE)[3]			**1,019**	**270**	**1,289**	**551**	**1,138**	**1,689**	**19,614**

[1] RM = Room; TSF = Thousand Square Feet

[2] TOTAL TRIPS = Passenger Cars + Truck Trips.

EXHIBIT 4-1: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION WITHOUT POTRERO BOULEVARD INTERCHANGE



LEGEND:

10 = PERCENT TO/FROM PROJECT

◄—— = OUTBOUND

◄- - - = INBOUND

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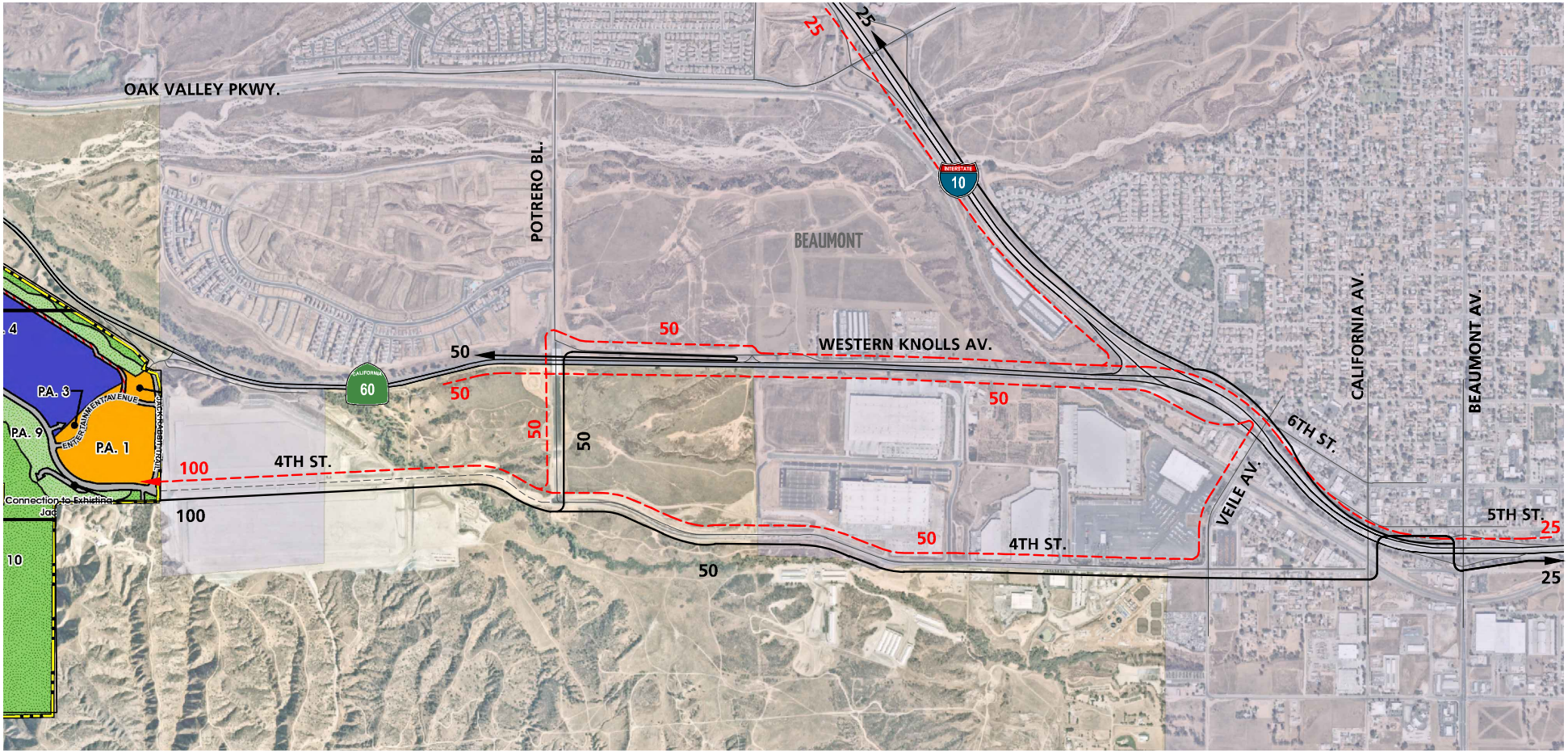
EXHIBIT 4-2: PROJECT (TRUCK) TRIP DISTRIBUTION WITHOUT POTRERO BOULEVARD INTERCHANGE



LEGEND:

10 = PERCENT TO/FROM PROJECT

◄—— = OUTBOUND

◄- - - = INBOUND

N

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EXHIBIT 4-3: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION WITH POTRERO BOULEVARD INTERCHANGE

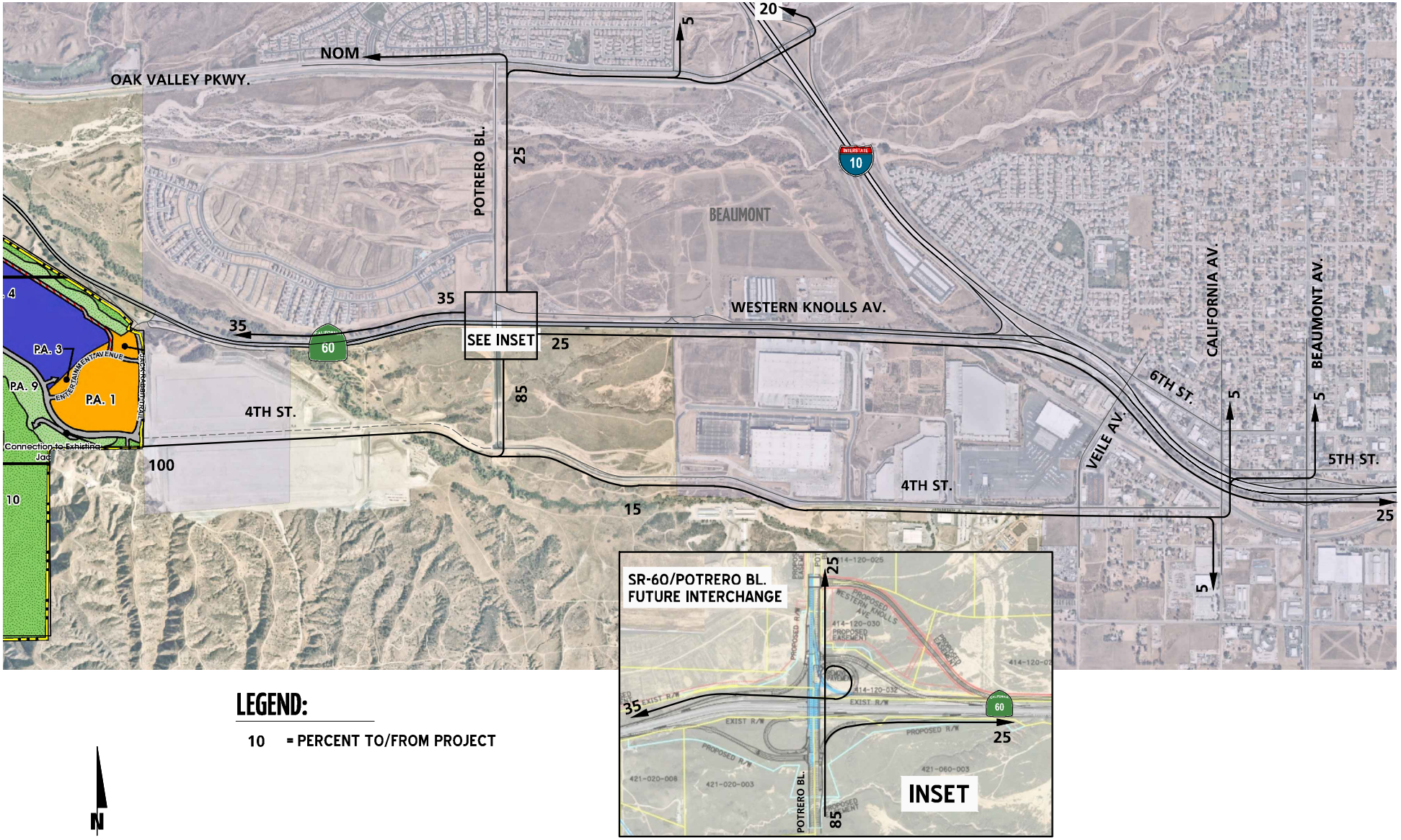
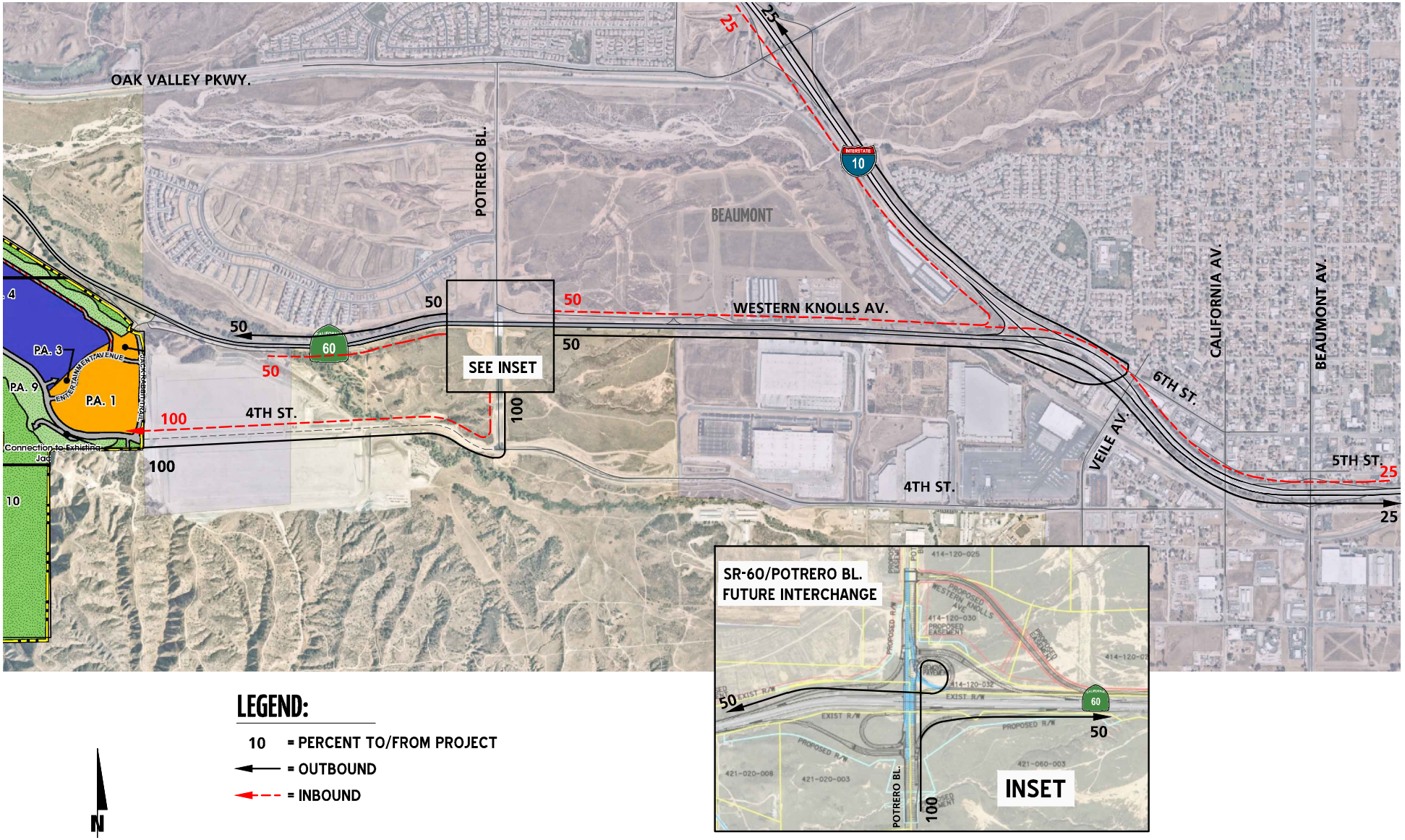


EXHIBIT 4-4: PROJECT (TRUCK) TRIP DISTRIBUTION WITH POTRERO BOULEVARD INTERCHANGE



4.3 MODAL SPLIT

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

4.4 PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, the Project only ADT and peak hour intersection turning movement volumes for without Potrero Boulevard interchange conditions are shown on the following exhibits:

- Exhibits 4-5 and 4-6 for Project (Phase 1)
- Exhibits 4-7 and 4-8 for Project (Phase 2)
- Exhibits 4-9 and 4-10 for Project (Buildout)

The Project only ADT and peak hour intersection turning movement volumes for with Potrero Boulevard interchange are shown on the following exhibits:

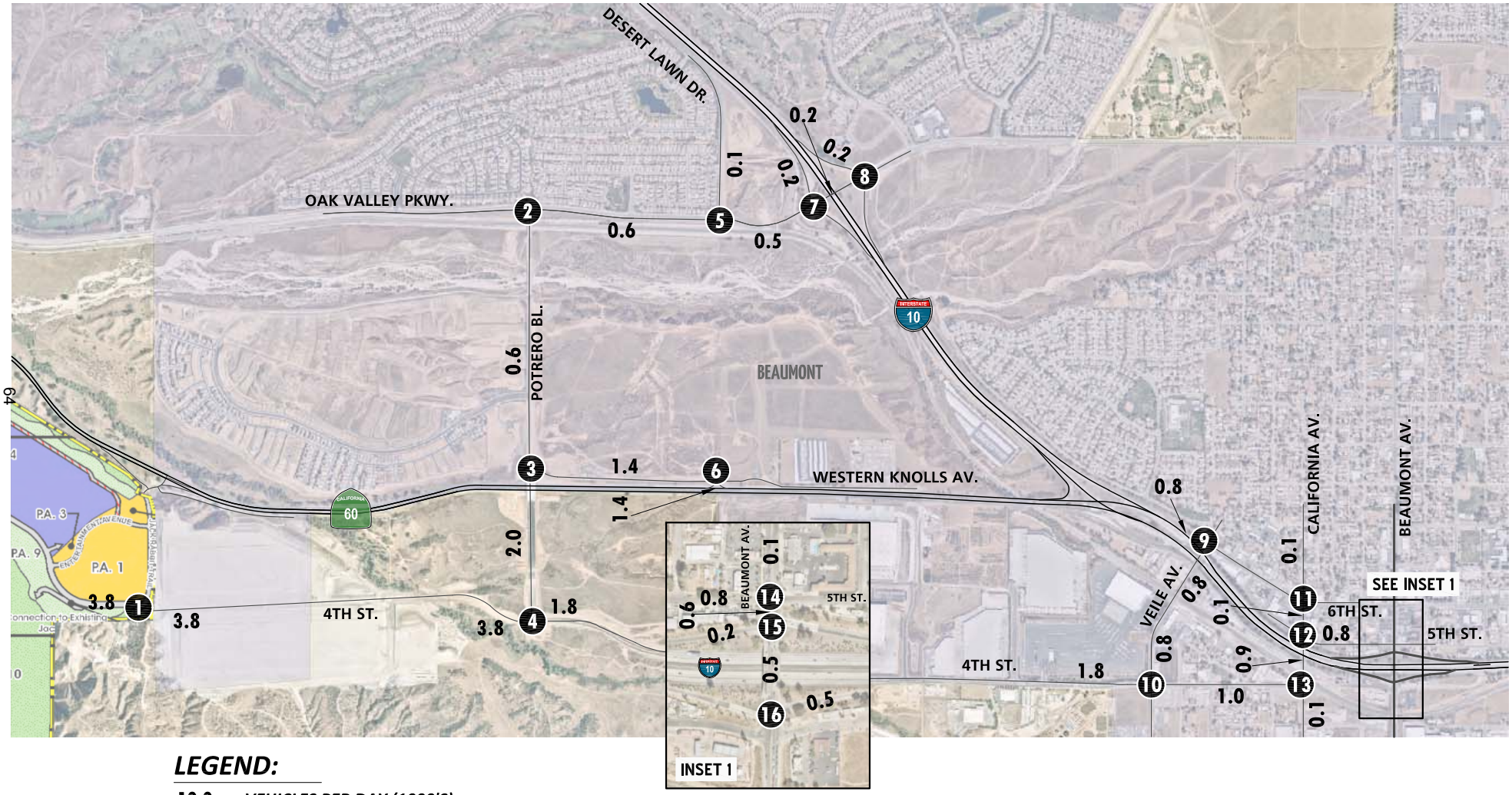
- Exhibits 4-11 and 4-12 for Project (Phase 1)
- Exhibits 4-13 and 4-14 for Project (Phase 2)
- Exhibits 4-15 and 4-16 for Project (Buildout)

4.5 BACKGROUND TRAFFIC

4.5.1 OPENING YEAR CONDITIONS

Future year traffic forecasts have been based upon background (ambient) growth at 2% per year for 2023, 2025, and 2027 traffic conditions. The total ambient growth is 6.12% for 2023 traffic conditions (compounded growth of 2 percent per year over 3 years or $1.02^{3\ years}$), 10.41% for 2025 traffic conditions (compounded growth of 2 percent per year over 5 years or $1.02^{5\ years}$), and 14.87% for 2027 traffic conditions (compounded growth of 2 percent per year over 7 years or $1.02^{7\ years}$). The ambient growth factor is intended to approximate regional traffic growth. The ambient growth factor 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, in order to account for area-wide growth not reflected in those projects. The list of other development projects identified on Exhibit 4-17 and on Table 4-4 are based on known projects at the time of the Notice of Preparation for this Project. Opening Year (2023), Opening Year (2025), and Opening Year (2027) traffic volumes are provided in Section 6, Section 7, and Section 8 of this TA. The traffic generated by the proposed Project was then manually added to the base volume to determine Opening Year “With Project” forecasts for each applicable phase.

EXHIBIT 4-5: PROJECT (PHASE 1) WITHOUT POTRERO BOULEVARD INTERCHANGE AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

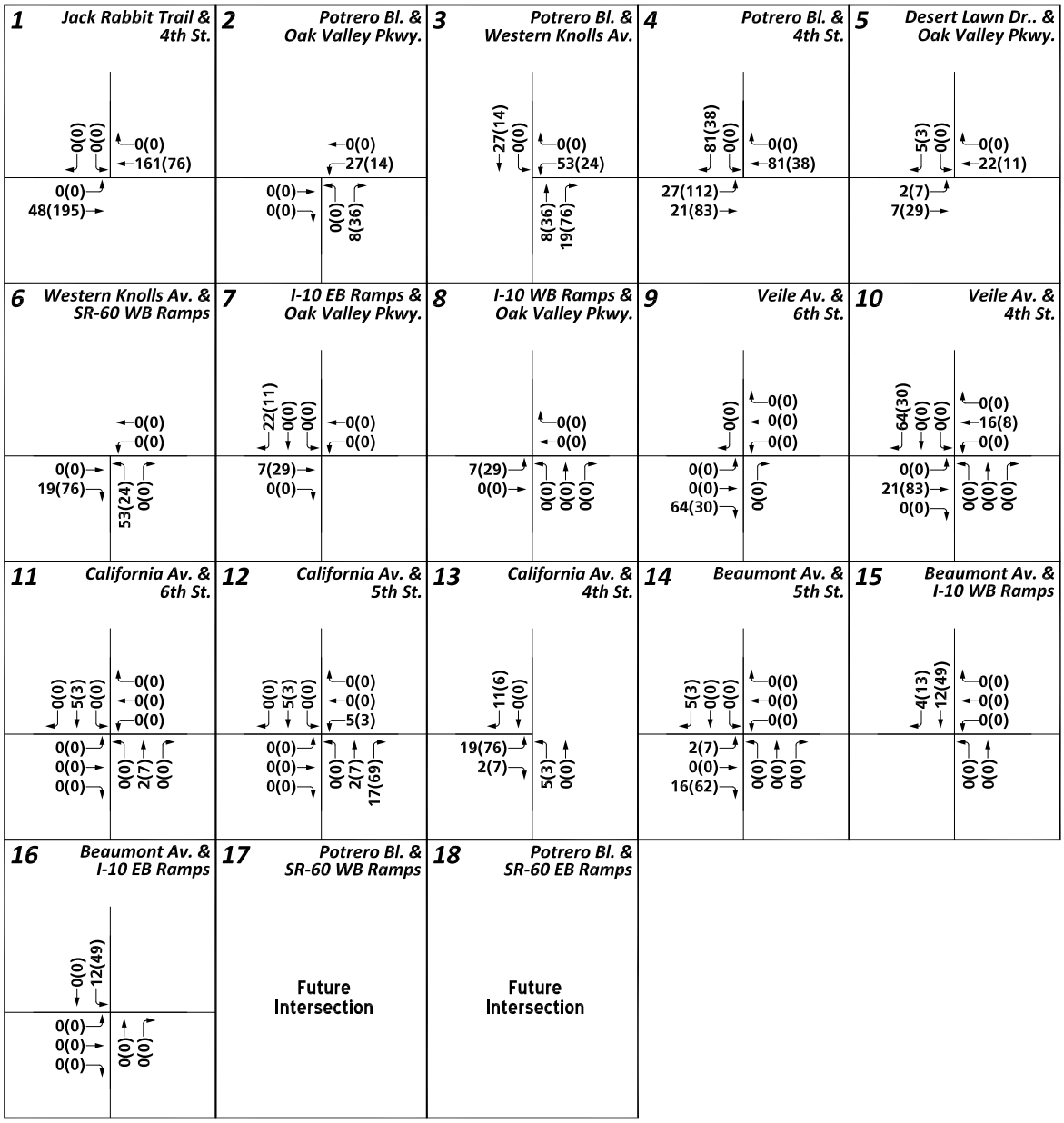


LEGEND:

10.0 *= VEHICLES PER DAY (1000'S)*

N

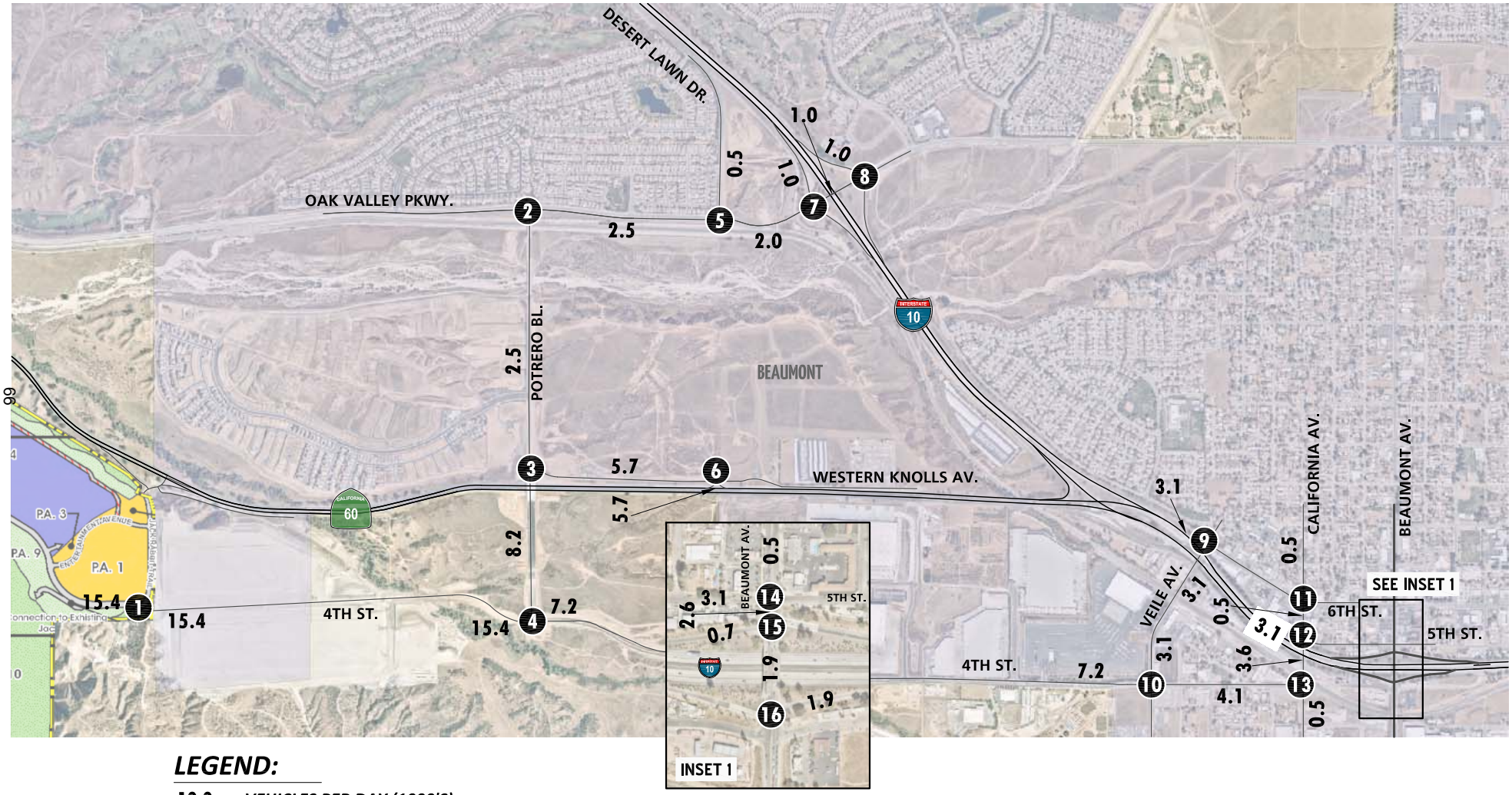
EXHIBIT 4-6: PROJECT (PHASE 1) WITHOUT POTRERO BOULEVARD INTERCHANGE TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

EXHIBIT 4-7: PROJECT (PHASE 2) WITHOUT POTRERO BOULEVARD INTERCHANGE AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

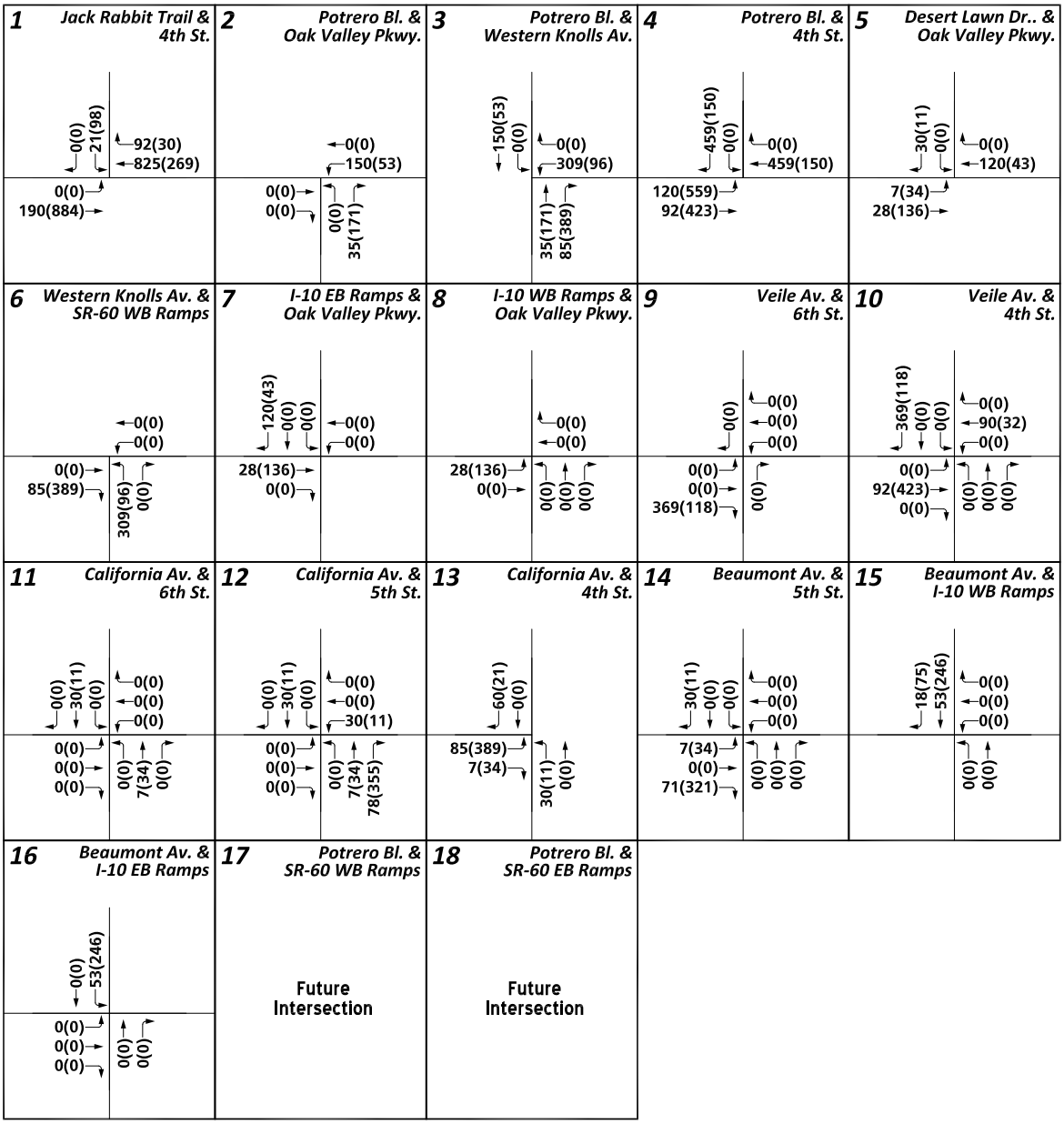


LEGEND:

10.0 *= VEHICLES PER DAY (1000'S)*

N

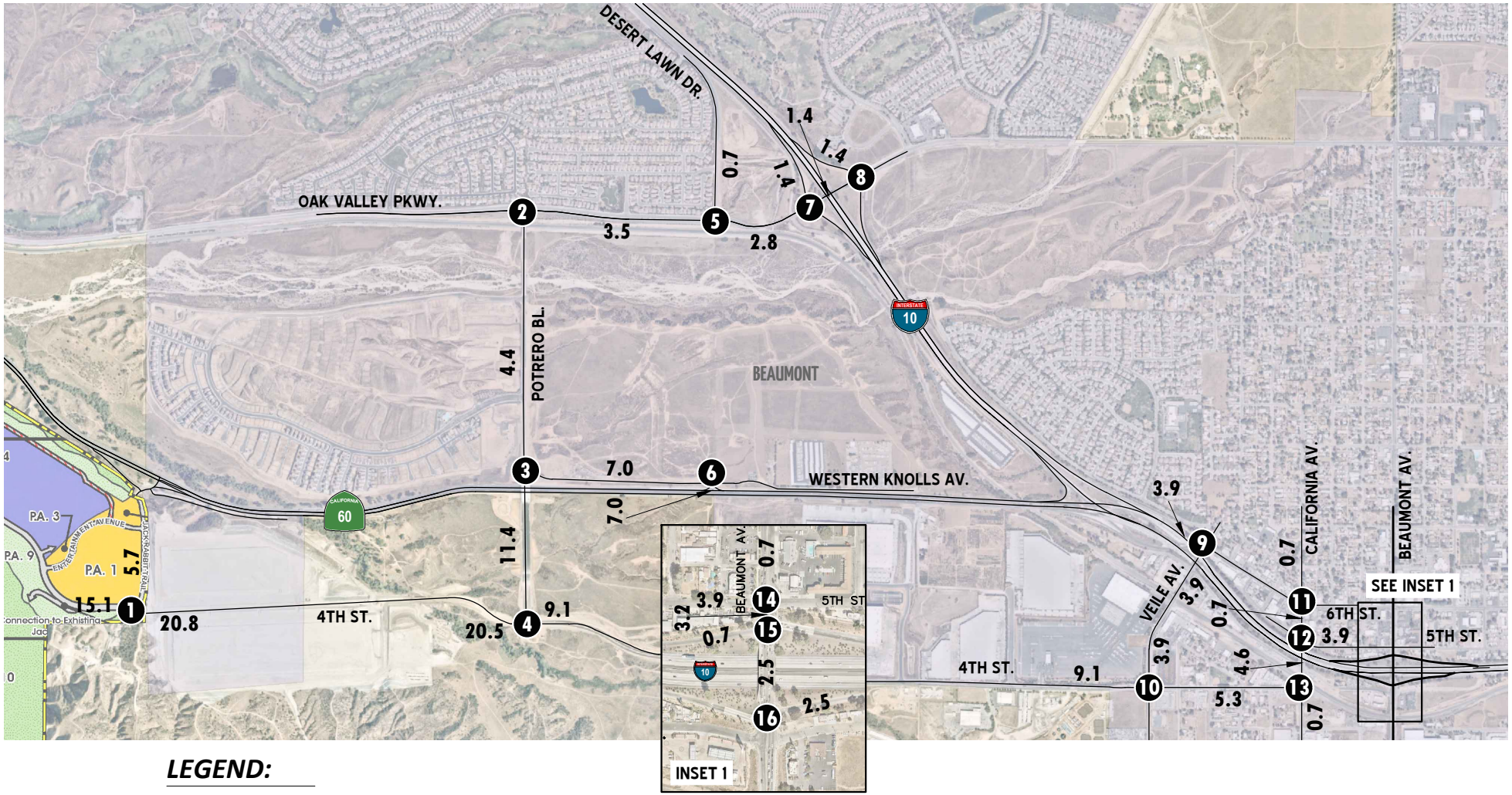
EXHIBIT 4-8: PROJECT (PHASE 2) WITHOUT POTRERO BOULEVARD INTERCHANGE TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

EXHIBIT 4-9: PROJECT (PROJECT BUILDOUT) WITHOUT POTRERO BOULEVARD INTERCHANGE AVERAGE DAILY TRAFFIC (ADT) (IN PCE)



LEGEND:

10.0 ***= VEHICLES PER DAY (1000'S)***

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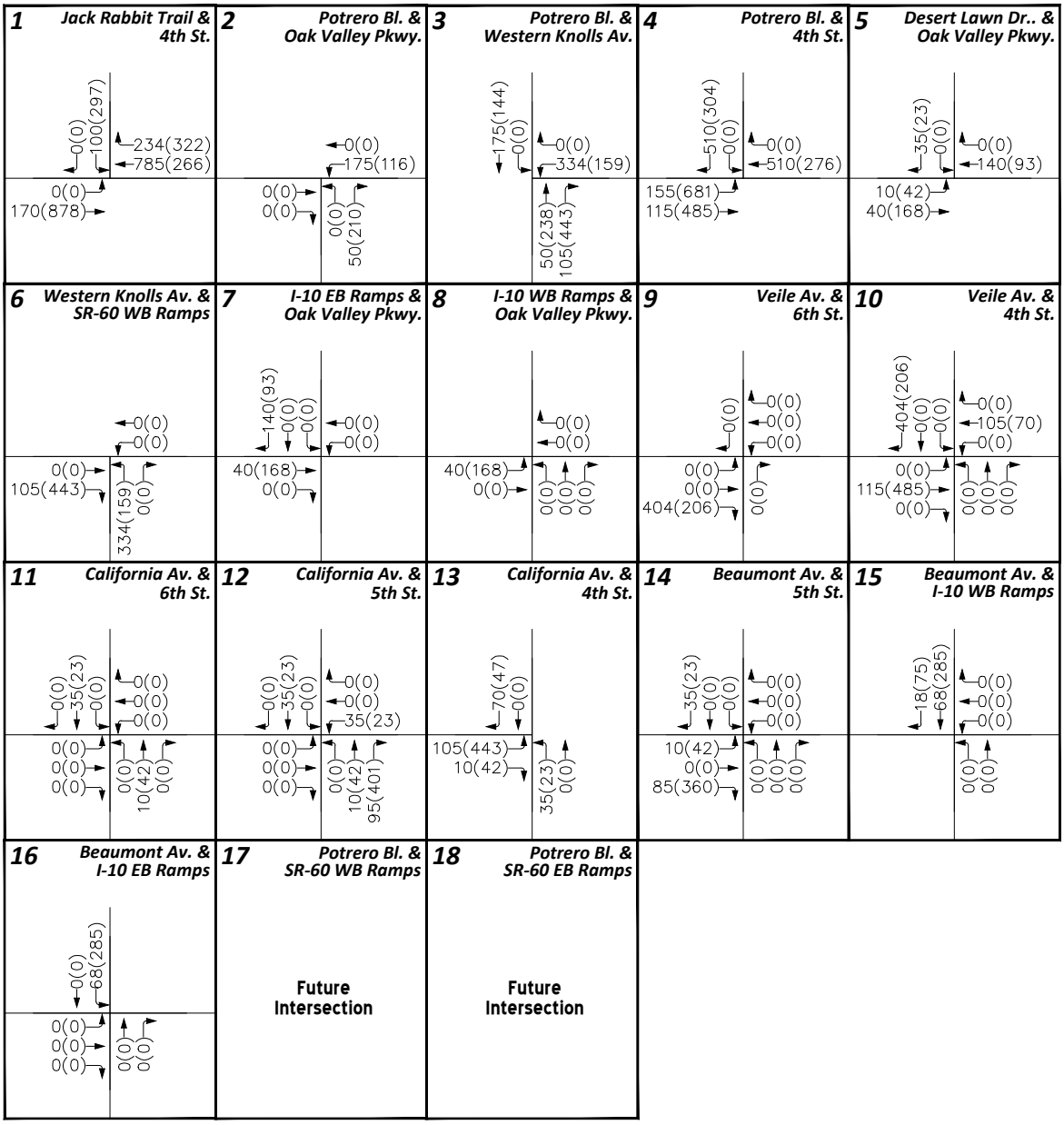
EXHIBIT 4-10: PROJECT (PROJECT BUILDOUT) WITHOUT POTRERO BOULEVARD INTERCHANGE TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

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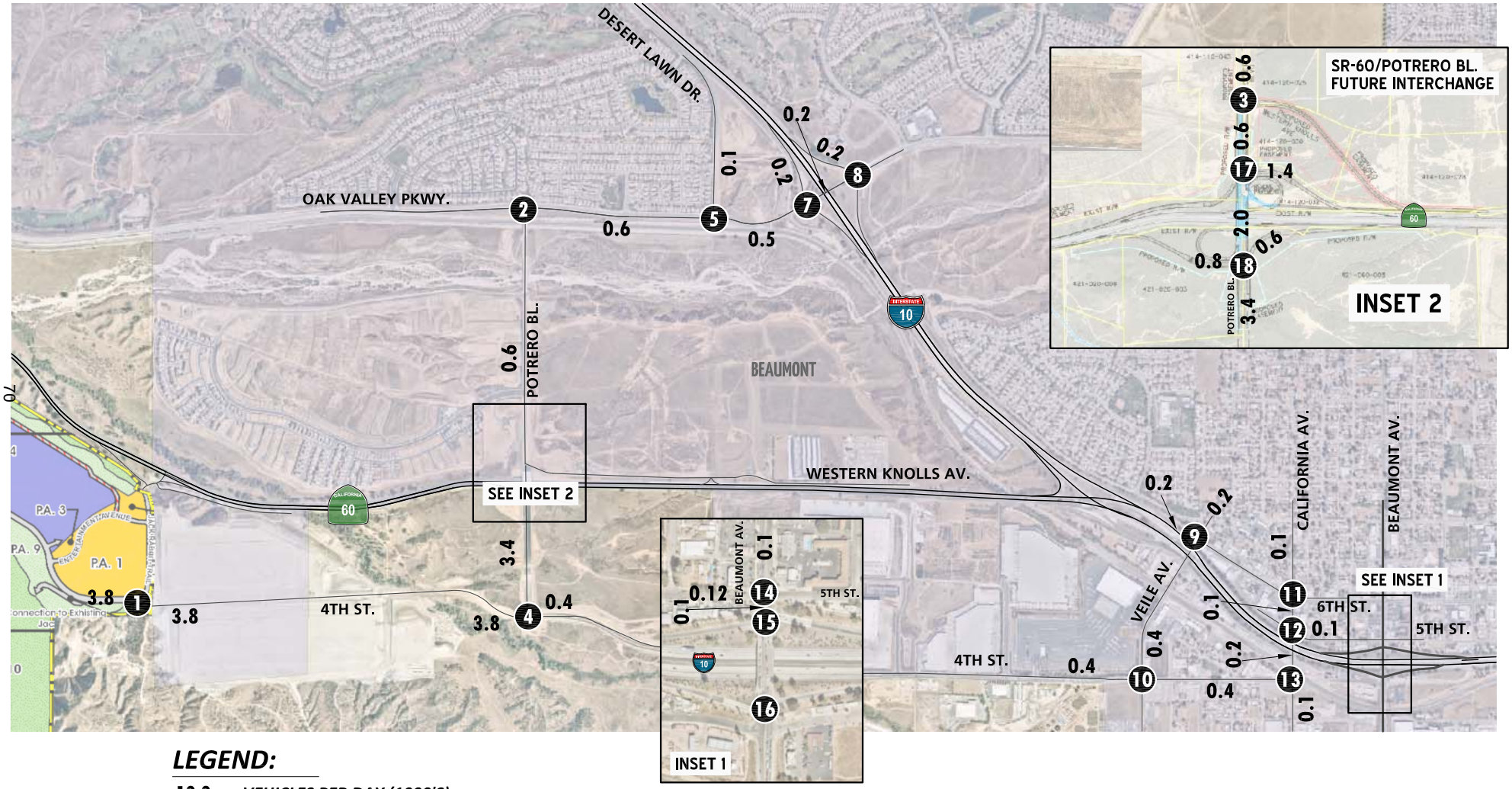
EXHIBIT 4-11: PROJECT (PHASE 1) WITH POTRERO BOULEVARD INTERCHANGE AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

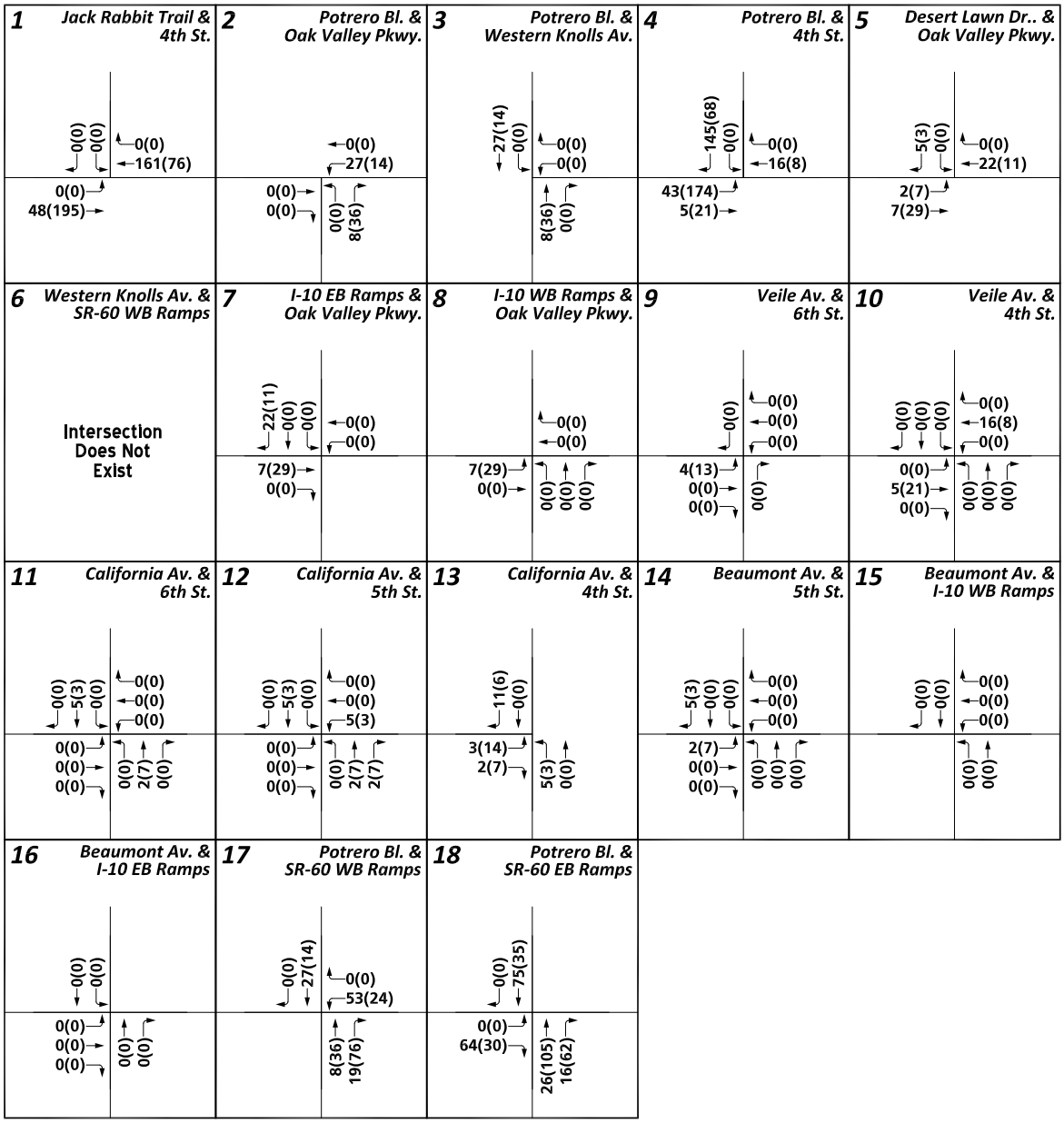


LEGEND:

10.0 *= VEHICLES PER DAY (1000'S)*

N

EXHIBIT 4-12: PROJECT (PHASE 1) WITH POTRERO BOULEVARD INTERCHANGE TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

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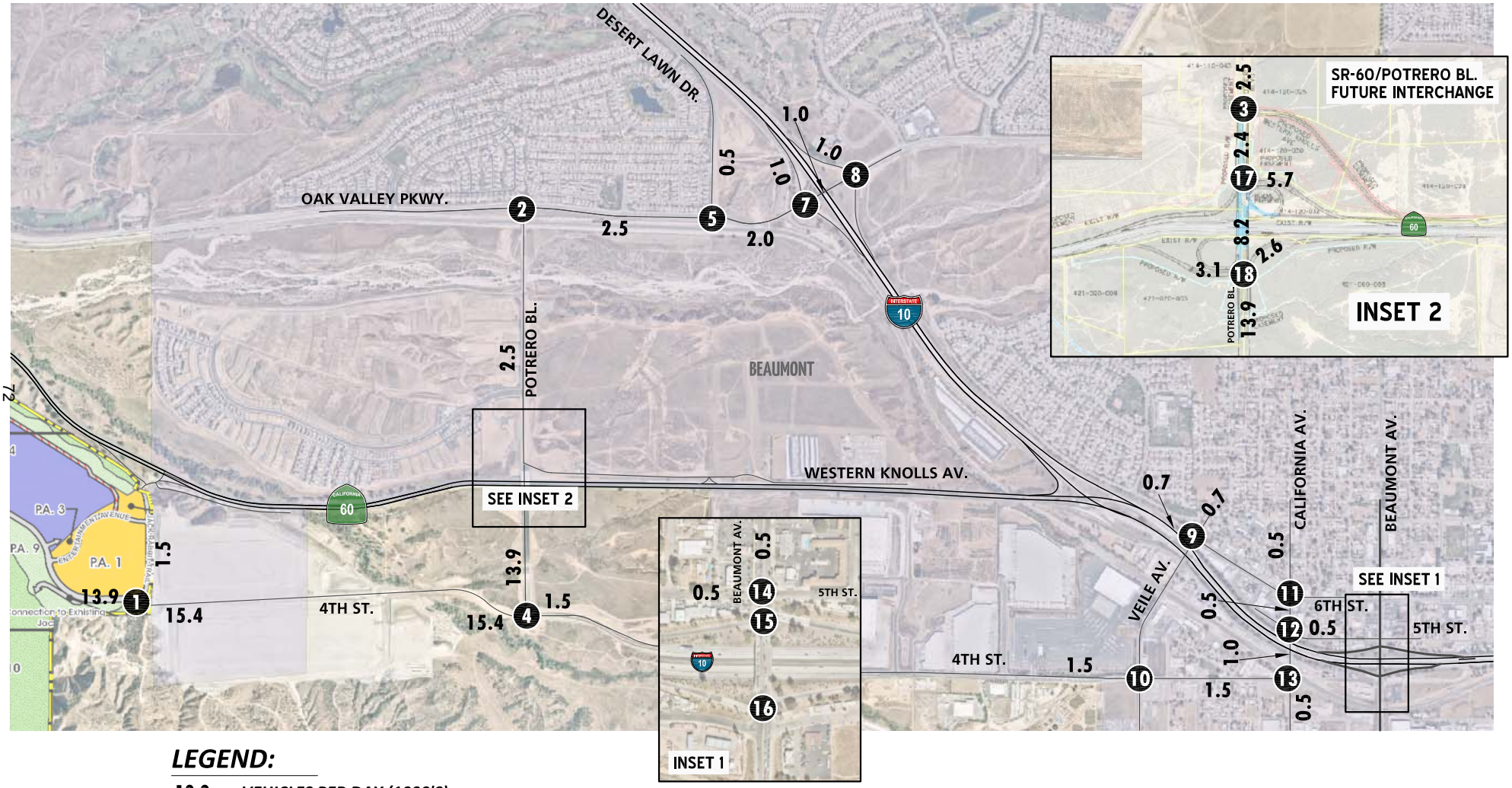
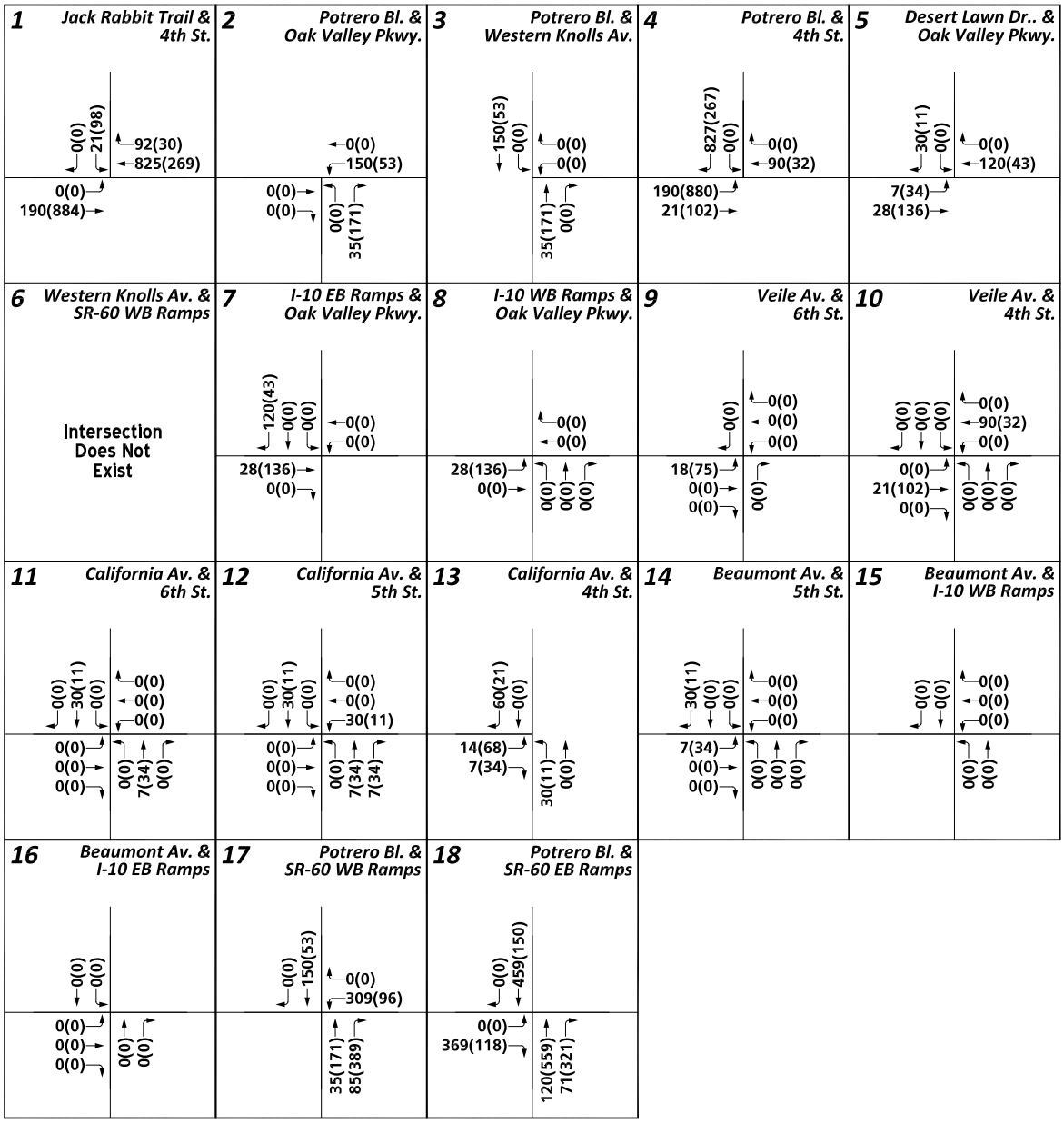
EXHIBIT 4-13: PROJECT (PHASE 2) WITH POTRERO BOULEVARD INTERCHANGE AVERAGE DAILY TRAFFIC (ADT) (IN PCE)



URBAN CROSSROADS

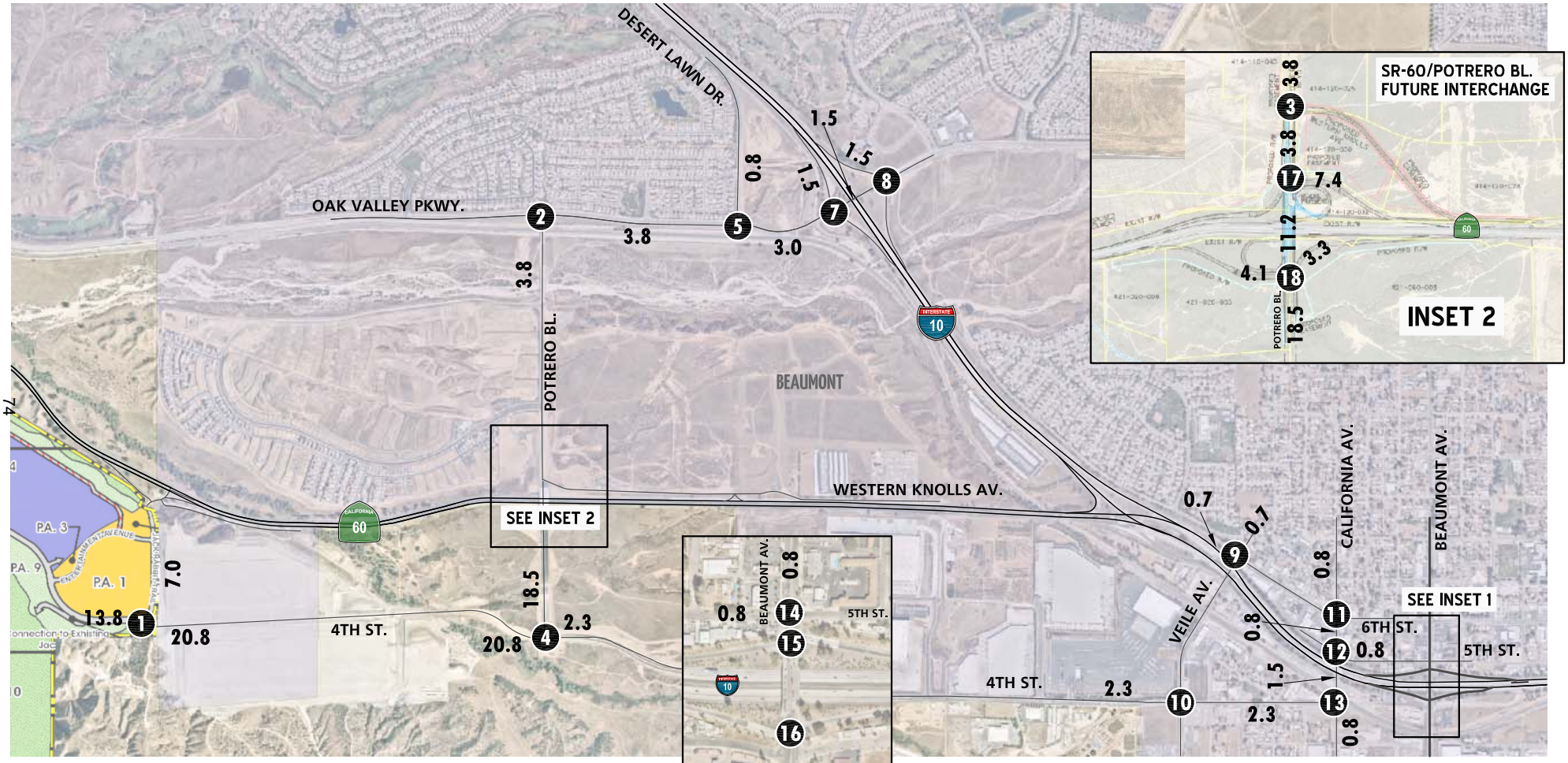
EXHIBIT 4-14: PROJECT (PHASE 2) WITH POTRERO BOULEVARD INTERCHANGE TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

EXHIBIT 4-15: PROJECT (PROJECT BUILDOUT) WITH POTRERO BOULEVARD INTERCHANGE AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

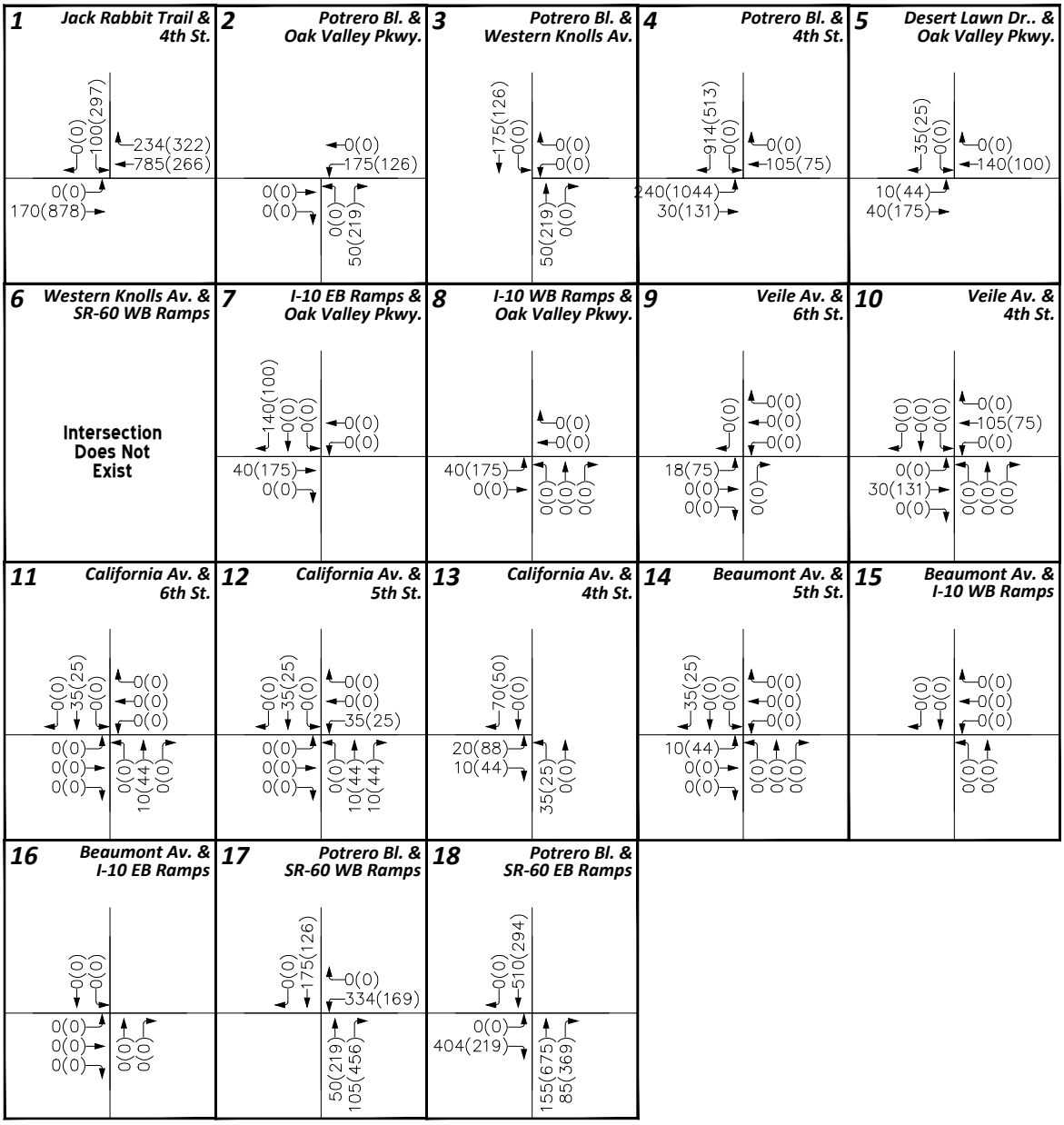


LEGEND:

10.0 *= VEHICLES PER DAY (1000'S)*

N

EXHIBIT 4-16: PROJECT (PROJECT BUILDOUT) WITH POTRERO BOULEVARD INTERCHANGE TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

N

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4.5.2 HORIZON YEAR (2045) CONDITIONS

The adopted Southern California Association of Governments (SCAG) 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (May 2020) growth forecasts for the City of Beaumont identifies projected growth in population of 80,200 in 2016 to 45,500 in 2045, or a 14.61% increase over the 29-year period. (10) The change in population equates to roughly a 1.97% growth rate, compounded annually. Similarly, growth over the same 29-year period in households is projected to increase by 76.26%, or a 1.98% annual growth rate. Finally, growth in employment over the same 29-year period is projected to increase by 70.97%, or a 1.87% annual growth rate.

Based on a comparison of Existing (2020) traffic volumes to the Horizon Year (2045) forecasts, the average growth rate is estimated at approximately 1.94%, compounded annually between Existing (2020) and 2045 traffic conditions. The annual growth rate at each individual intersection is not lower than 1.10% compounded annually to as high as 26.75% compounded annually over the same time period. Therefore, the annual growth rate utilized for the purposes of this analysis would appear to conservatively approximate the anticipated regional growth in traffic volumes in the City of Beaumont for Opening Year and Horizon Year (2045) traffic conditions, especially when considered along with the addition of project-related traffic, which would tend to overstate as opposed to understate the potential effects to traffic and circulation.

4.6 CUMULATIVE DEVELOPMENT TRAFFIC

A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the City of Beaumont. The cumulative project list includes known and foreseeable projects that are anticipated to contribute traffic to the study area intersections.

Where applicable, cumulative projects anticipated to contribute measurable traffic (i.e., 50 or more peak hour trips) to study area intersections have been manually added to the study area network to generate Opening Year (2023, 2025, and 2027) forecasts. In other words, this list of cumulative development projects has been reviewed to determine which projects would likely contribute measurable traffic through the study area intersections (e.g., those cumulative projects in close proximity to the proposed Project). For the purposes of this analysis, the cumulative projects that were determined to affect one or more of the study area intersections are shown on Exhibit 4-17, listed in Table 4-4, and have been considered for inclusion. The list of other development projects identified on Exhibit 4-17 and on Table 4-4 are based on known projects at the time of the Notice of Preparation for this Project.

EXHIBIT 4-17: CUMULATIVE DEVELOPMENT PROJECTS LOCATION MAP

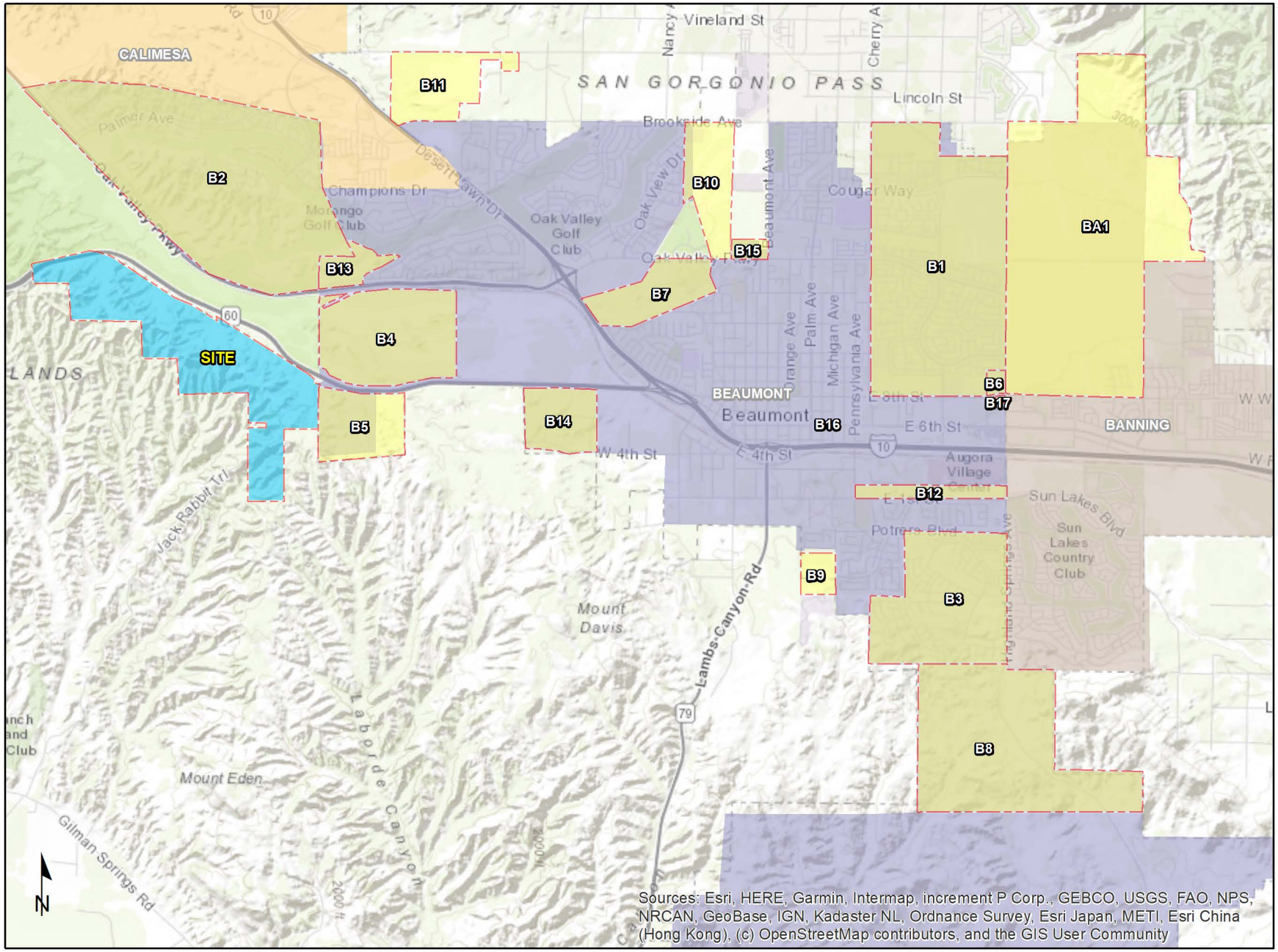


Table 4-4

Cumulative Development Land Use Summary

TAZ	Project	Land Use	Quantity[1]
City of Beaumont			
B1	Sundance	Residential	4,450 DU
B2	Fairway Canyon SCPGA	Residential	3,300 DU
B3	Four Seasons Tract No. 32260 & 33096	Residential	1,890 DU
B4	Heartland (Olivewood)	Residential	981 DU
B5	Hidden Canyon Industrial	Industrial	2,890.000 TSF
B6	Sundance Corporate Center	Commercial/Industrial	13.60 AC
B7	Kirkwood Ranch	Residential	403 DU
B8	Potrero Creek Estates	Residential	700 DU
B9	Tract No. 32850	Residential	95 DU
B10	Noble Creek Vistas	Residential	648 DU
B11	Sunny-Cal Specific Plan	Residential	571 DU
B12	San Gorgonio Village Phase 2	Commercial	22.50 AC
B13	Tournament Hills 3, TM 36307	Residential	279 DU
B14	Rolling Hills Ranch Industrial Phase 2	Industrial	2,850.000 TSF
B15	Beaumont Village	Commercial	50.810 TSF
B16	Beyond Beaumont	Commercial	6.589 TSF
B17	Highland & 8th Retail	Fast-Food w/ Drive-Thru	3.500 TSF
		Super Con. Mkt. w/ Gas Station	12 VFP
B18	Potrero & 4th Warehouse	Indusrtrial	577.920 TSF
City of Banning			
BA1	Butterfield Specific Plan	Residential	5,387 DU
		Commercial	549.000 TSF
		Golf Course	253.9 AC
		School	23.0 AC
BA2	7-11 NWC Ramsey St. & Sunset Ave.	Gasoline/Service Station w/Conven. Mkt.	10.0 VFP
BA3	Nourish	Commercial	1.07 AC
BA4	The Alley Barber & Hair Styling	Commercial	0.16 AC

[1] AC = Acres; DU = Dwelling Units; RM = Rooms; TSF = Thousand Square Feet; VFP = Vehicle Fueling Positions

Although it is unlikely that all of these cumulative projects would be fully built and occupied by Years 2023, 2025, and 2027, they have been included in an effort to conduct a conservative analysis and overstate as opposed to understate potential traffic deficiencies. Any other cumulative projects located beyond the study area that are not expected to contribute measurable traffic to study area intersections have not been included since the traffic would dissipate due to the distance from the Project site and study area intersections. Any additional traffic generated by other projects not on the cumulative projects list is likely accounted for through background ambient growth factors that have been applied to the peak hour volumes at study area intersections as discussed in Section 4.5 *Background Traffic*. Cumulative Only ADT and peak hour intersection turning movement volumes are shown on Exhibits 4-18 and 4-19, respectively.

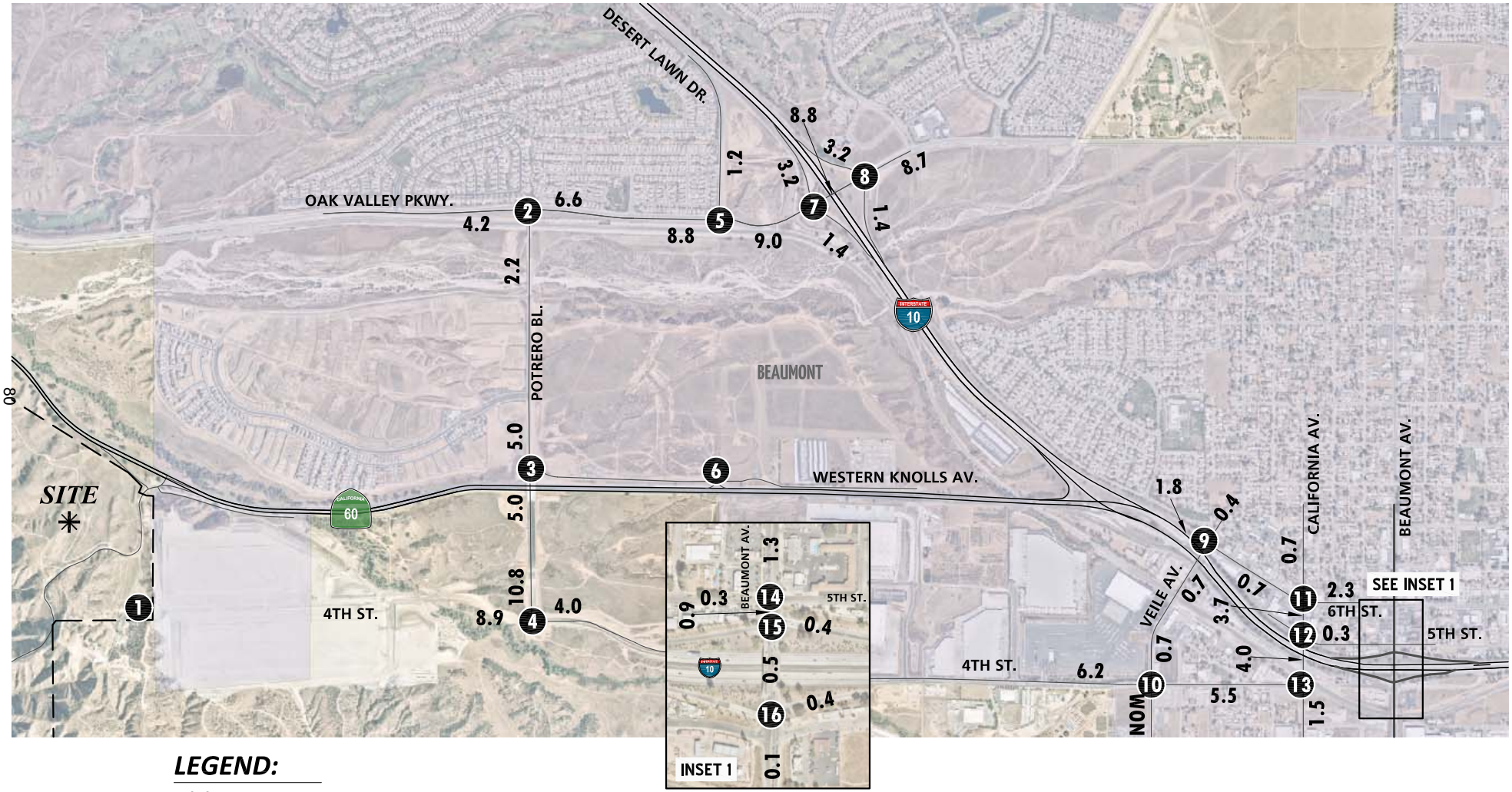
For the purposes of this study, absorption percentages have been applied to the cumulative development traffic. 35% of the cumulative development traffic is added for Opening Year Cumulative (2023) traffic volumes, 50% of the cumulative development traffic is added for Opening Year Cumulative (2025) traffic volumes, and 100% of cumulative development traffic is added for Opening Year Cumulative (2027) traffic volumes.

4.7 NEAR-TERM TRAFFIC CONDITIONS

The "buildup" approach combines existing traffic counts with a background ambient growth factor to forecast the near-term 2023, 2025, and 2027 traffic conditions. An ambient growth factor of 2.0% per year, compounded annually, accounts for background (area-wide) traffic increases that occur over time up to the years 2023, 2025, and 2027 from the year 2020. Traffic volumes generated by other development projects are then added to assess the Opening Year (2023, 2025, and 2027) traffic conditions. Lastly, Project traffic is added to assess "With Project" traffic conditions. The 2023, 2025, and 2027 roadway network is similar to the existing conditions roadway network with the exception of intersections proposed to be developed by the Project. The near-term traffic analysis includes the following traffic conditions, with the various traffic components:

- Opening Year (2023) Without Project
    - Existing 2020 counts
    - Ambient growth traffic (6.12%)
    - Cumulative Development Project traffic (35%) – (see Exhibit 4-17 and Table 4-4)
- Opening Year (2023) With Project
    - Existing 2020 counts
    - Ambient growth traffic (6.12%)
    - Cumulative Development Project traffic (35%) – (see Exhibit 4-17 and Table 4-4)
    - Project Phase 1 traffic
- Opening Year (2025) Without Project
    - Existing 2020 counts
    - Ambient growth traffic (10.41%)
    - Cumulative Development Project traffic (50%) – (see Exhibit 4-17 and Table 4-4)

EXHIBIT 4-18: CUMULATIVE ONLY AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

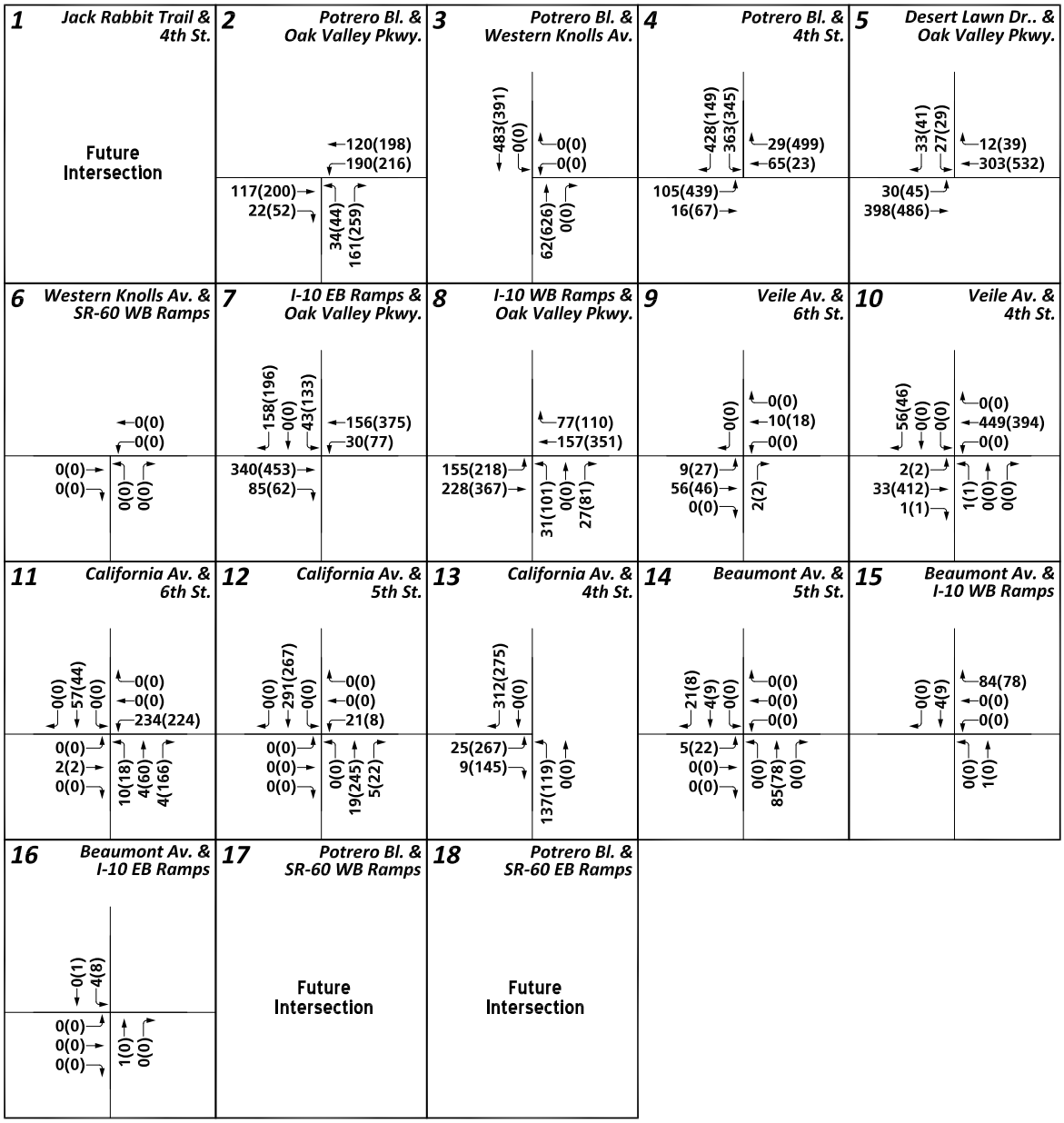


LEGEND:

10.0 = *VEHICLES PER DAY (1000'S)*
NOM = *NOMINAL, LESS THAN 50 VEHICLES PER DAY*

N

EXHIBIT 4-19: CUMULATIVE ONLY TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

- Opening Year (2025) With Project
    - Existing 2020 counts
    - Ambient growth traffic (10.41%)
    - Cumulative Development Project traffic (50%) – (see Exhibit 4-17 and Table 4-4)
    - Project Phase 1 + Phase 2 traffic
- Opening Year (2027) Without Project
    - Existing 2020 counts
    - Ambient growth traffic (14.87%)
    - Cumulative Development Project traffic (100%) – (see Exhibit 4-17 and Table 4-4)
- Opening Year (2027) With Project
    - Existing 2020 counts
    - Ambient growth traffic (14.87%)
    - Cumulative Development Project traffic (100%) – (see Exhibit 4-17 and Table 4-4)
    - Project Buildout traffic

4.8 HORIZON YEAR TRAFFIC FORECASTS

Traffic projections for Horizon Year conditions were derived from the Riverside County Transportation Analysis Model (RivTAM) regional model using accepted procedures for model forecast refinement and smoothing. The traffic forecasts reflect the area-wide growth anticipated between Existing and Horizon Year traffic conditions. The base model year for the RivTAM regional model is Year 2012 and the future year model is Year 2040.

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

The refined future peak hour approach and departure volumes obtained from these calculations are then entered into a spreadsheet program consistent with the National Cooperative Highway Research Program (NCHRP Report 255), along with initial estimates of turning movement proportions. A linear programming algorithm is used to calculate individual turning movements which match the known directional roadway segment forecast volumes computed in the previous step. This program computes a likely set of intersection turning movements from intersection approach counts and the initial turning proportions from each approach leg.

Typically, the model growth is prorated and is subsequently added to the existing (base validation) traffic volumes to represent Horizon Year traffic conditions. However, review of the resulting model growth indicates negative growth for some of the study area intersections. In an effort to conduct a conservative analysis, reductions to traffic forecasts from either Existing or Opening Year traffic conditions were not assumed as part of this analysis. As such, in conjunction with the addition of cumulative projects that are not consistent with the General Plan, additional growth has also been applied on a movement-by-movement basis, where applicable, to estimate reasonable Horizon Year

forecasts. Horizon Year turning volumes were compared to Opening Year volumes in order to ensure a minimum growth as a part of the refinement process. The minimum growth includes any additional growth between Opening Year and Horizon Year traffic conditions that is not accounted for by the traffic generated by cumulative development projects and ambient growth rates assumed between Existing (2020) and Horizon Year traffic conditions. Future estimated peak hour traffic data was used for new intersections and intersections with an anticipated change in travel patterns to further refine the Horizon Year peak hour forecasts.

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

In an effort to conduct a conservative analysis and overstate as opposed to understate potential traffic deficiencies, the Horizon Year traffic forecasts include background traffic, traffic generated by other cumulative development projects within the study area, and the traffic generated by the proposed Project. Post-processing worksheets for Horizon Year Without Project traffic conditions are provided in Appendix 4.1.

Pursuant to discussions with the City of Beaumont during the scoping process, the year 2045 has been utilized evaluating long-range conditions. The new Riverside County Transportation Analysis Model (known as RIVCOM) was under development and not yet available during the preparation of the TA and the RivTAM reflects a future year of 2040. As such, the regional growth rate from the newly adopted 2020 SCAG RTP/SCS report has been utilized (1.94% per year, compounded annually). This growth rate has been compounded annually to forecast 2045 forecasts using the post-processed 2040 RivTAM model data.

The scoping agreement was initially approved in April 2020 and a first draft of the traffic study was completed in July 2020 (which was reviewed by the City in December 2021). The RIVCOM traffic model was initially released in July 2021 after the traffic study had been completed. Comparisons of the ADT volumes from RIVCOM and RIVTAM indicate that the RIVTAM volumes are more conservative within the study area. As such, the long-range forecasts and analyses presented in this TA are conservative and will not understate potential deficiencies or improvements needed to address the deficiencies in order to maintain the City's acceptable LOS standards (per the City's General Plan). Images of the raw long-range ADT volumes for both RIVTAM and RIVCOM are provided at the end of Appendix 4.1.

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5 E+P TRAFFIC CONDITIONS

This section discusses the traffic forecasts for Existing Plus Project (E+P) conditions and the resulting intersection operations, traffic signal warrant, off-ramp queuing, and freeway facility analyses.

5.1 ROADWAY IMPROVEMENTS

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

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for E+P conditions only (e.g., intersection and roadway improvements at the Project's frontage and driveways).
- The future SR-60 Freeway/Potrero Boulevard interchange is not assumed to be in place for any of the E+P traffic conditions.

5.2 E+P TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus Project (Phase 1), Project (Phase 2), and Project (Buildout) traffic. The ADT and peak hour intersection turning movement volumes which can be expected for E+P (Phase 1) traffic conditions are shown on Exhibits 5-1 and 5-2, respectively. The ADT and peak hour intersection turning movement volumes which can be expected for E+P (Phase 2) traffic conditions are shown on Exhibits 5-3 and 5-4, respectively. The ADT and peak hour intersection turning movement volumes which can be expected for E+P (Project Buildout) traffic conditions are shown on Exhibits 5-5 and 5-6, respectively.

5.3 INTERSECTION OPERATIONS ANALYSIS

5.3.1 E+P (PHASE 1) CONDITIONS

E+P (Phase 1) peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TA. The intersection analysis results are summarized in Table 5-1, which indicates that with the addition of Project (Phase 1) traffic, there are no additional study area intersections anticipated to operate at an unacceptable LOS during the peak hours, in addition to the intersections identified under Existing (2020) traffic conditions. A summary of the peak hour intersection LOS for E+P (Phase 1) traffic conditions is shown on Exhibit 5-7. The intersection operations analysis worksheets for E+P (Phase 1) traffic conditions are included in Appendix 5.1 of this TA.

EXHIBIT 5-1: E+P (PHASE 1) AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

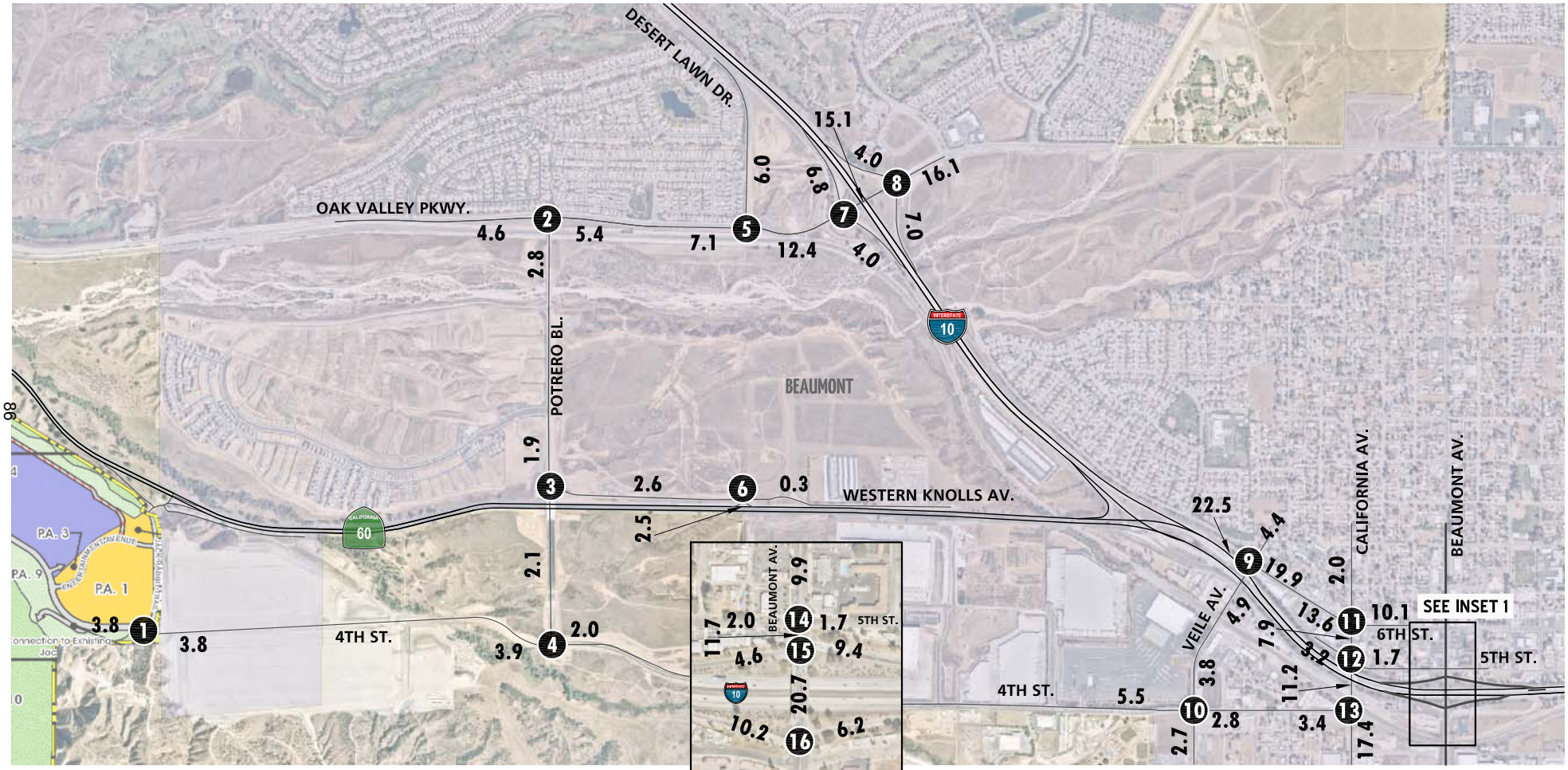

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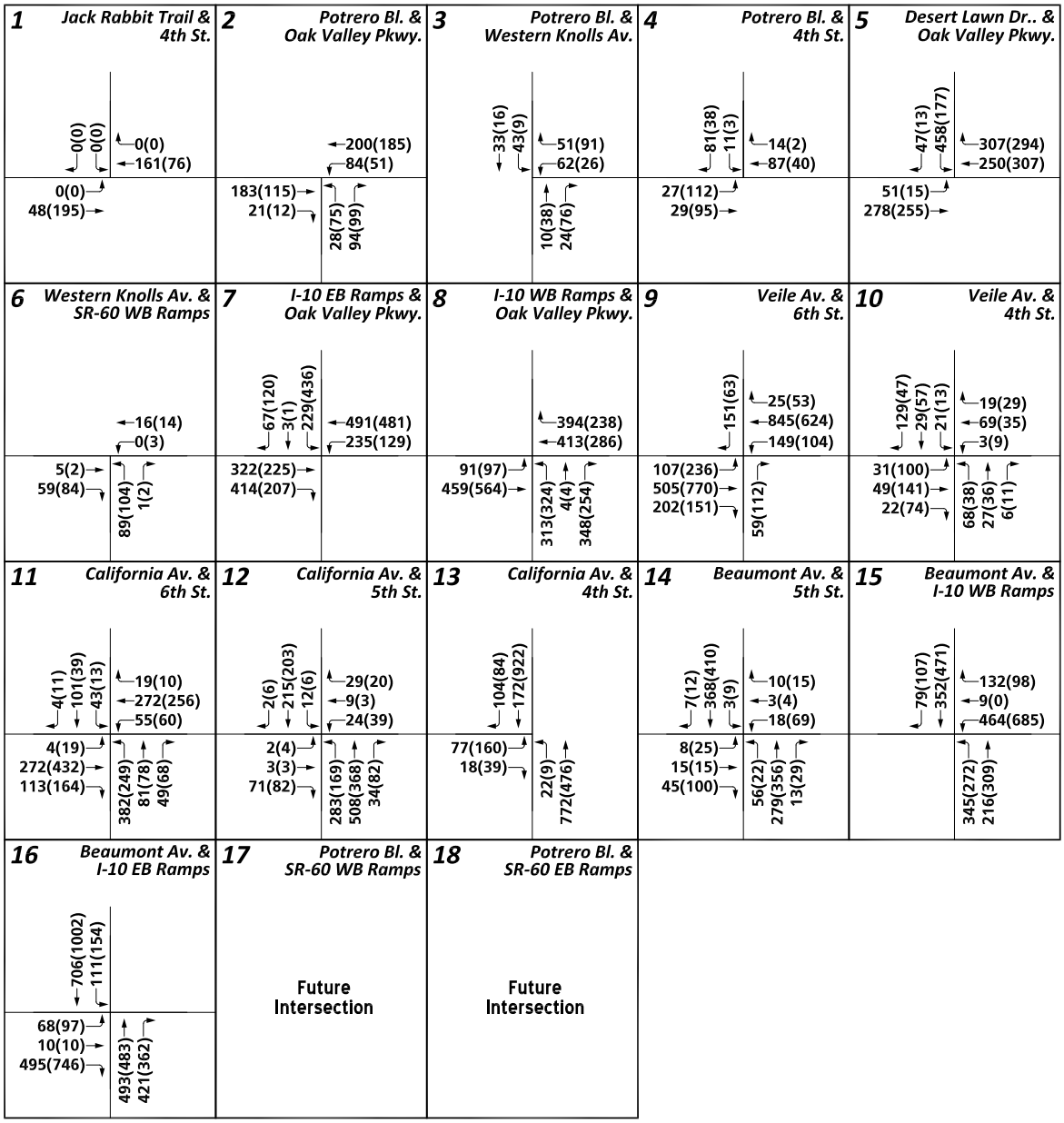
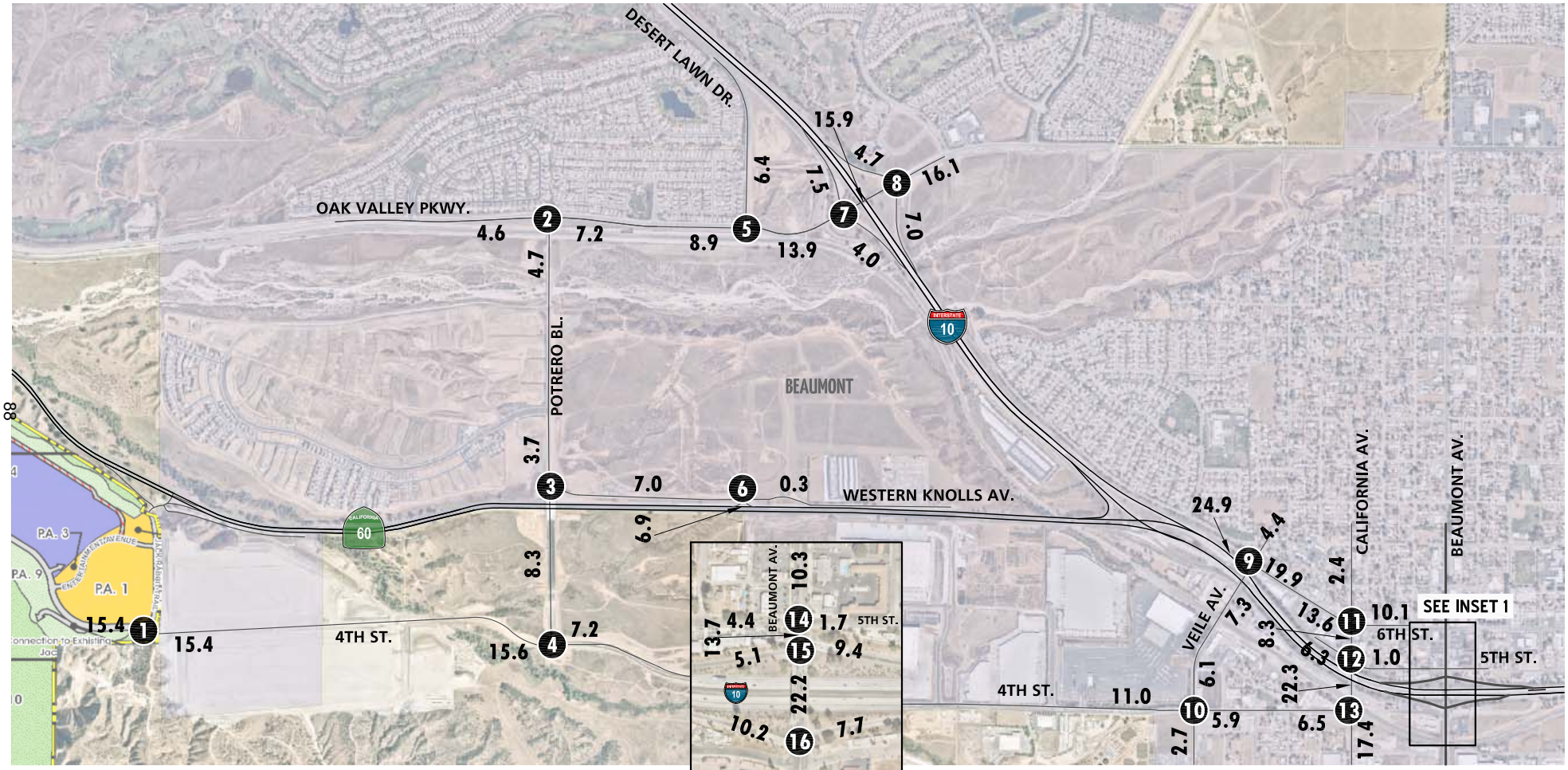
EXHIBIT 5-2: E+P (PHASE 1) TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

EXHIBIT 5-3: E+P (PHASE 2) AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

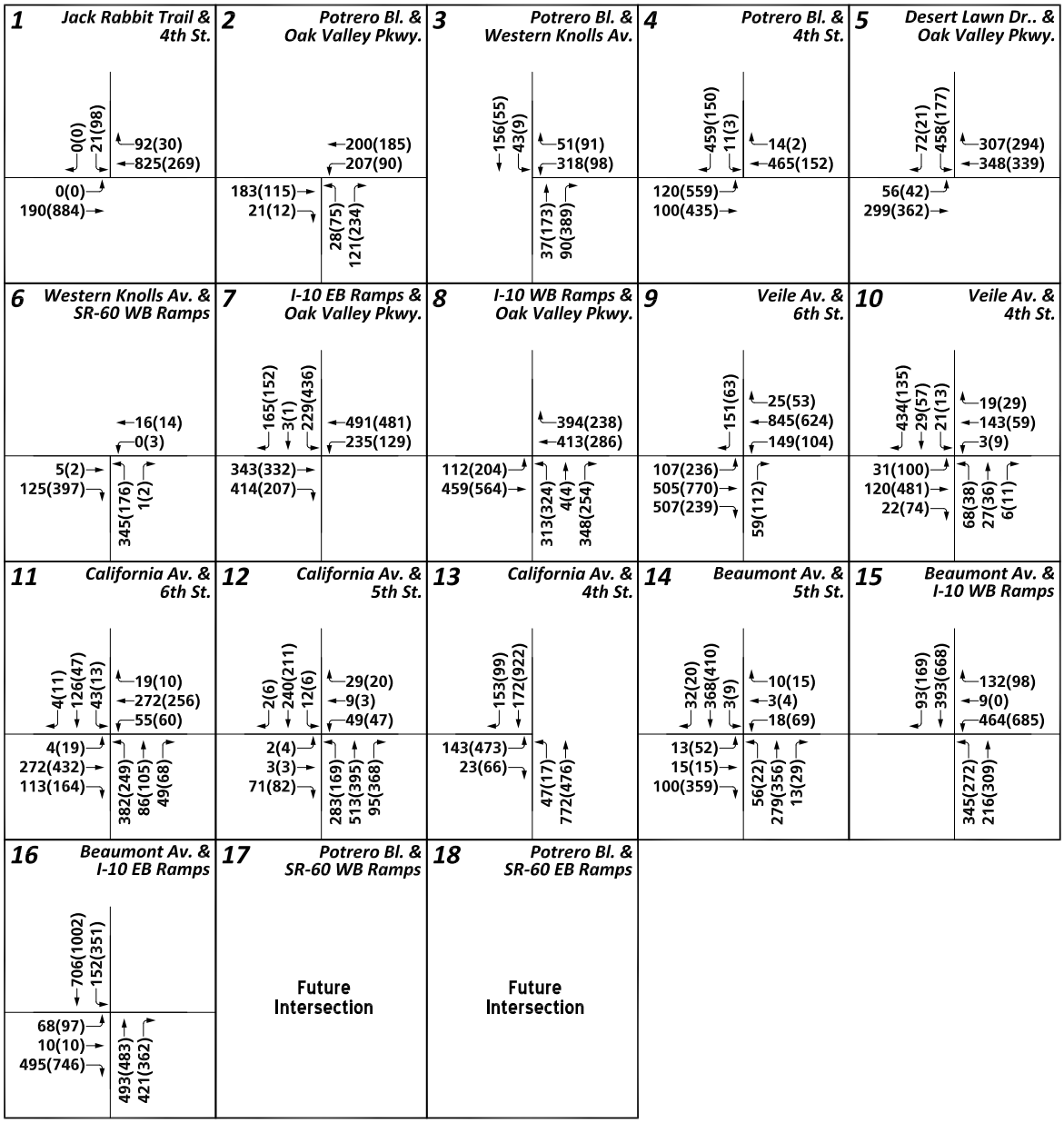


LEGEND:

10.0 *= VEHICLES PER DAY (1000'S)*

N

EXHIBIT 5-4: E+P (PHASE 2) TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

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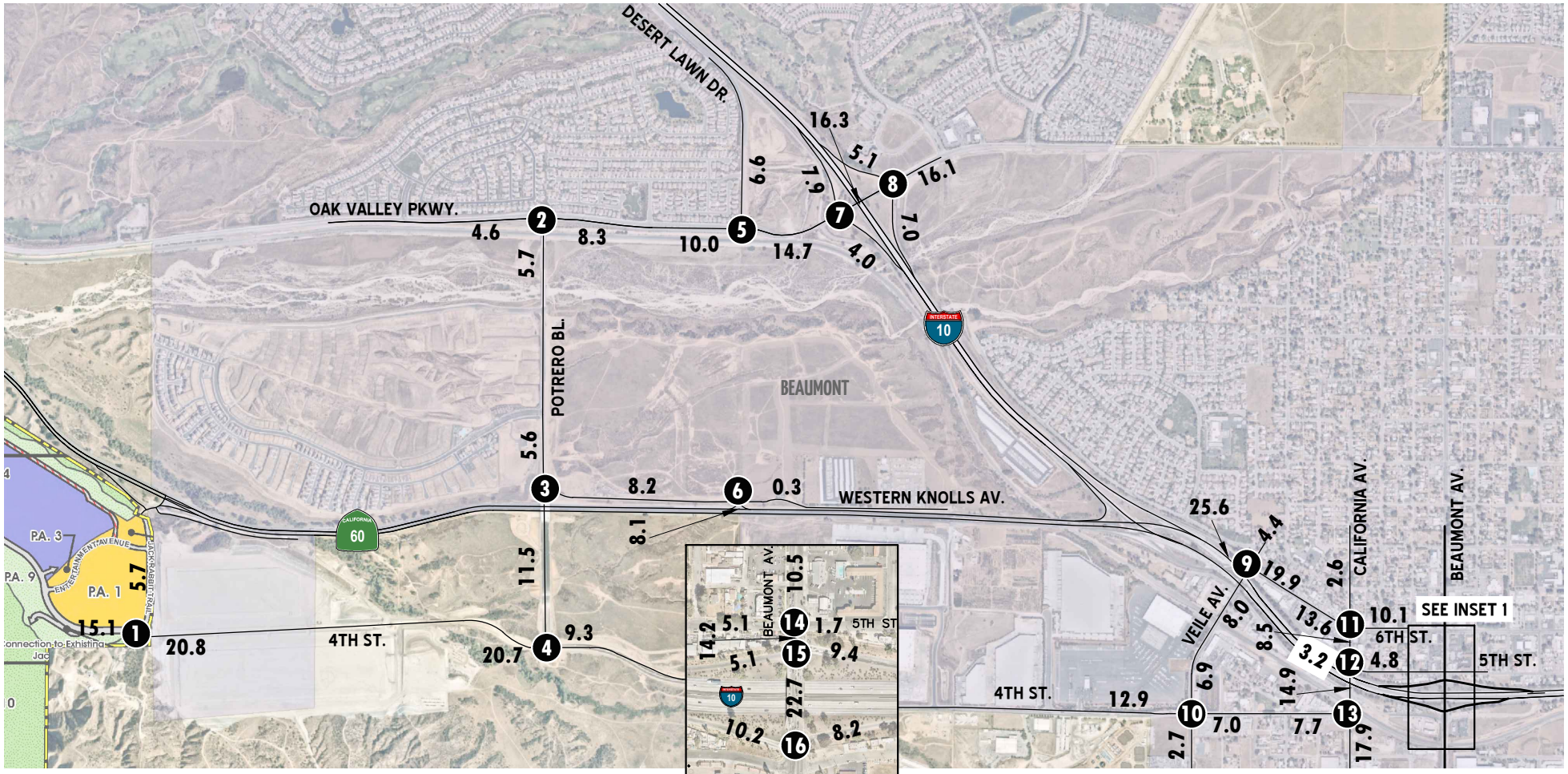
EXHIBIT 5-5: E+P (PROJECT BUILDOUT) AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

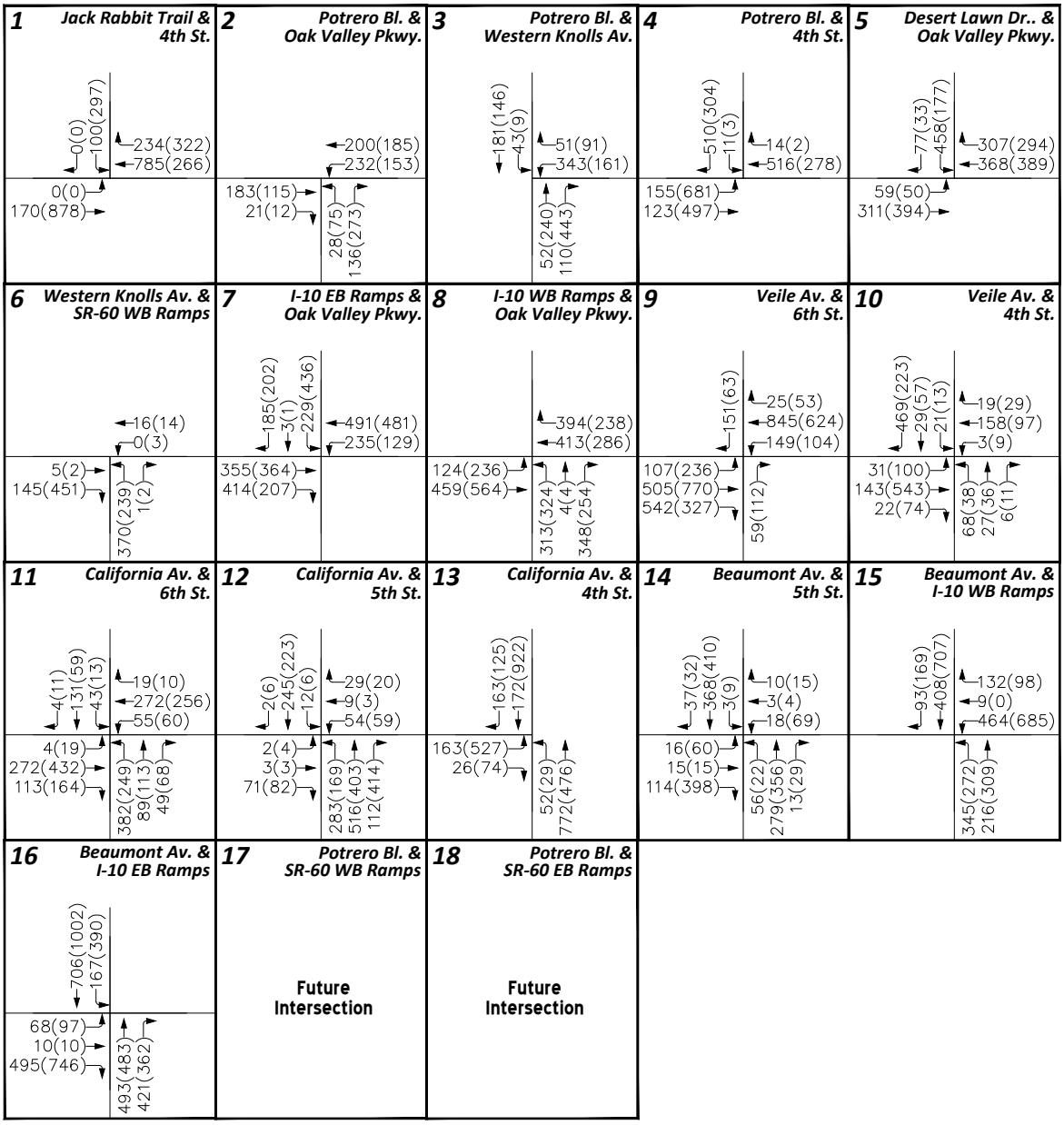


LEGEND:

10.0 *= VEHICLES PER DAY (1000'S)*

N

EXHIBIT 5-6: E+P (PROJECT BUILDOUT) TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

N

12396 - vols_b.dwg

EXHIBIT 5-7: E+P (PHASE 1) SUMMARY OF LOS

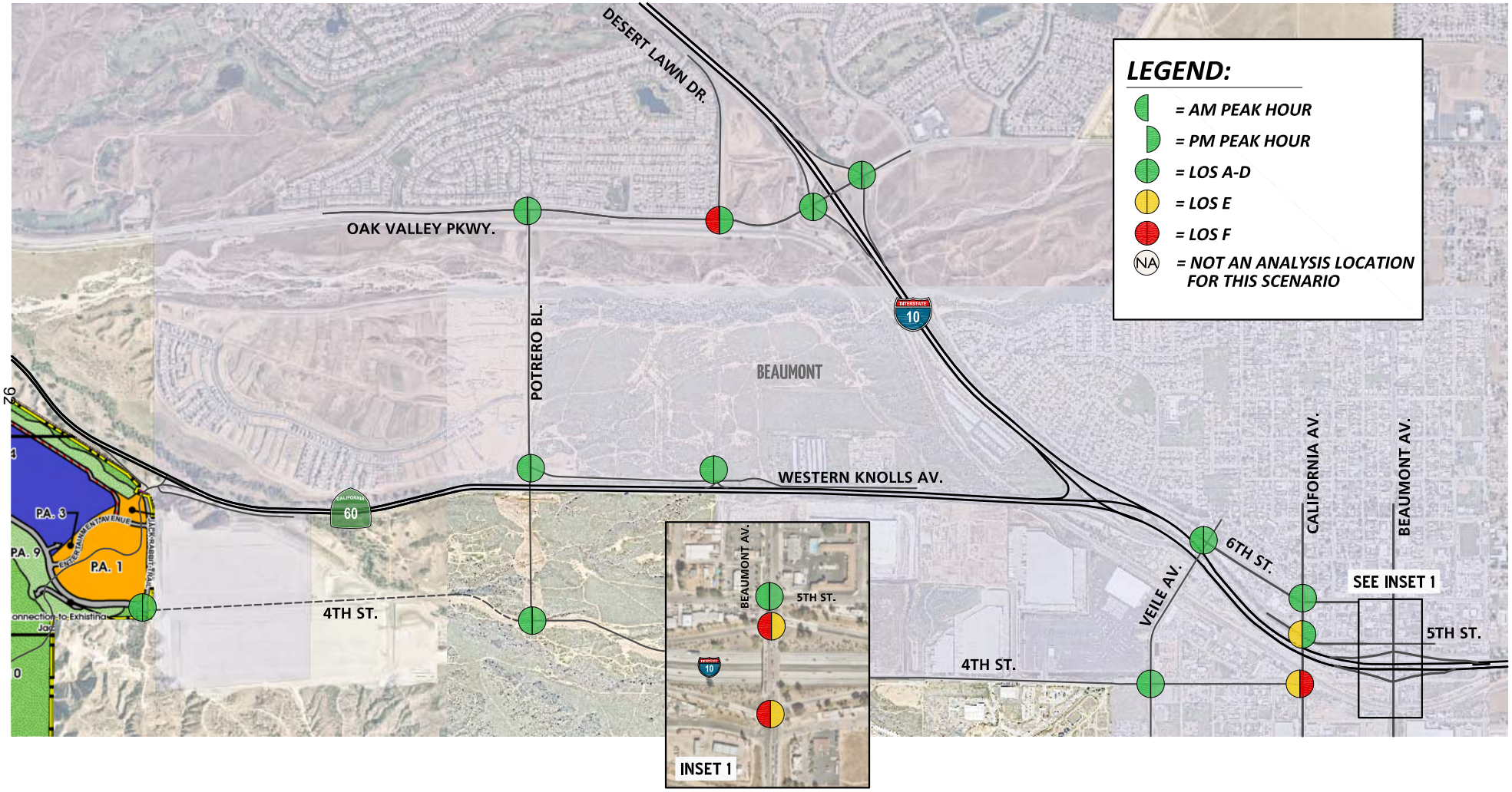


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Table 5-1

Intersection Analysis for E+P Conditions

#	Intersection	Traffic Control[2]	Existing (2020)				E+P (Phase 1)				E+P (Phase 2)				E+P (Buildout)			
			Delay[1] (secs.)		Level of Service		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	AM	PM	AM	PM
1	Jack Rabbit Tr. & 4th St.	**TS**	Future Intersection				1.8	1.6	A	A	5.4	8.9	A	A	8.1	12.9	A	B
2	Potrero Bl. & Oak Valley Pkwy.	AWS	8.6	8.3	A	A	8.8	8.5	A	A	10.3	9.7	B	A	10.9	10.8	B	B
3	Potrero Bl. & Western Knolls Av.	AWS	7.3	6.9	A	A	8.0	7.6	A	A	23.4	23.1	C	C	**36.6**	**86.0**	**E**	**F**
4	Potrero Bl. & 4th St.	TS	8.6	9.5	A	A	11.9	9.5	A	A	**112.6**	**>200.0**	**F**	**F**	**192.1**	**>100.0**	**F**	**F**
5	Desert Lawn Dr. & Oak Valley Pkwy.	AWS	**58.5**	10.2	**F**	B	**61.4**	10.8	**F**	B	**75.4**	13.8	**F**	B	**79.3**	15.9	**F**	C
6	SR-60 WB & Western Knolls Av.	CSS	9.9	10.7	A	B	11.5	11.6	B	B	33.4	16.8	D	C	34.8	22.4	D	C
7	I-10 EB Ramps & Oak Valley Pkwy.	TS	30.2	43.1	C	D	34.4	46.2	C	D	**67.9**	**71.2**	**E**	**E**	**77.7**	**90.9**	**E**	**F**
8	I-10 WB Ramps & Oak Valley Pkwy.	TS	33.9	31.0	C	C	34.0	31.3	C	C	34.8	43.2	C	D	37.9	47.9	D	D
9	Veile Av. & I-10 WB On-ramp/6th St.	CSS	14.6	13.6	B	B	14.6	13.6	B	B	14.6	14.8	B	B	14.6	15.7	B	C
10	Veile Av. & 4th St.	TS	17.6	17.8	B	B	17.4	17.8	B	B	17.3	17.8	B	B	17.3	17.8	B	B
11	California Av. & 6th St.	TS	33.5	30.4	C	C	33.8	31.0	A	C	34.2	32.0	C	C	34.2	33.2	C	C
12	California Av. & 5th St.	CSS	**55.9**	20.9	**F**	C	**86.0**	20.9	**F**	C	**>100.0**	23.5	**F**	C	**>100.0**	24.7	**F**	C
13	California Av. & 4th St.	CSS	**35.4**	**73.6**	**E**	**F**	**48.1**	**>100.0**	**E**	**F**	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
14	Beaumont Av. & 5th St.	TS	7.6	7.5	A	A	8.0	8.7	A	A	9.3	21.9	A	C	9.7	31.8	A	C
15	Beaumont Av. & I-10 WB Ramps[3]	TS	**106.7**	**66.9**	**F**	**E**	**106.7**	**70.9**	**F**	**E**	**115.2**	**71.4**	**F**	**E**	**115.5**	**72.7**	**F**	**E**
16	Beaumont Av. & I-10 EB Ramps[3]	TS	**87.5**	**66.8**	**F**	**E**	**111.3**	**68.2**	**F**	**E**	**111.3**	**81.3**	**F**	**F**	**123.5**	**88.5**	**F**	**F**
17	Potrero Bl. & I-10 WB Ramps		Future Intersection				Future Intersection				Future Intersection				Future Intersection			
18	Potrero Bl. & I-10 EB Ramps		Future Intersection				Future Intersection				Future Intersection				Future Intersection			

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

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

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

[3] Heavy northbound vehicle queues observed during the morning peak hours; heavy off-ramp queues during the evening peak hours.

5.3.2 E+P (PHASE 2) CONDITIONS

E+P (Phase 2) peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TA. The intersection analysis results are summarized in Table 5-1, which indicates that with the addition of Project (Phase 2) traffic, the following additional study area intersections are anticipated to operate at an unacceptable LOS during the peak hours, in addition to the intersections identified under Existing (2020) and E+P (Phase 1) traffic conditions:

- Potrero Boulevard & 4th Street (#4) – LOS F AM and PM peak hours

A summary of the peak hour intersection LOS for E+P (Phase 2) traffic conditions is shown on Exhibit 5-8. The intersection operations analysis worksheets for E+P (Phase 2) traffic conditions are included in Appendix 5.2 of this TA.

5.3.3 E+P (PROJECT BUILDOUT) CONDITIONS

E+P (Project Buildout) peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TA. The intersection analysis results are summarized in Table 5-1, which indicates that with the addition of Project (Buildout) traffic, the following additional study area intersection is anticipated to operate at an unacceptable LOS during the peak hours, in addition to the intersections identified under Existing (2020), E+P (Phase 1), and E+P (Phase 2) traffic conditions:

- Potrero Boulevard & Western Knolls Avenue (#3) – LOS E AM peak hour; LOS F PM peak hour

A summary of the peak hour intersection LOS for E+P (Project Buildout) traffic conditions is shown on Exhibit 5-9. The intersection operations analysis worksheets for E+P (Project Buildout) traffic conditions are included in Appendix 5.3 of this TA.

EXHIBIT 5-8: E+P (PHASE 2) SUMMARY OF LOS

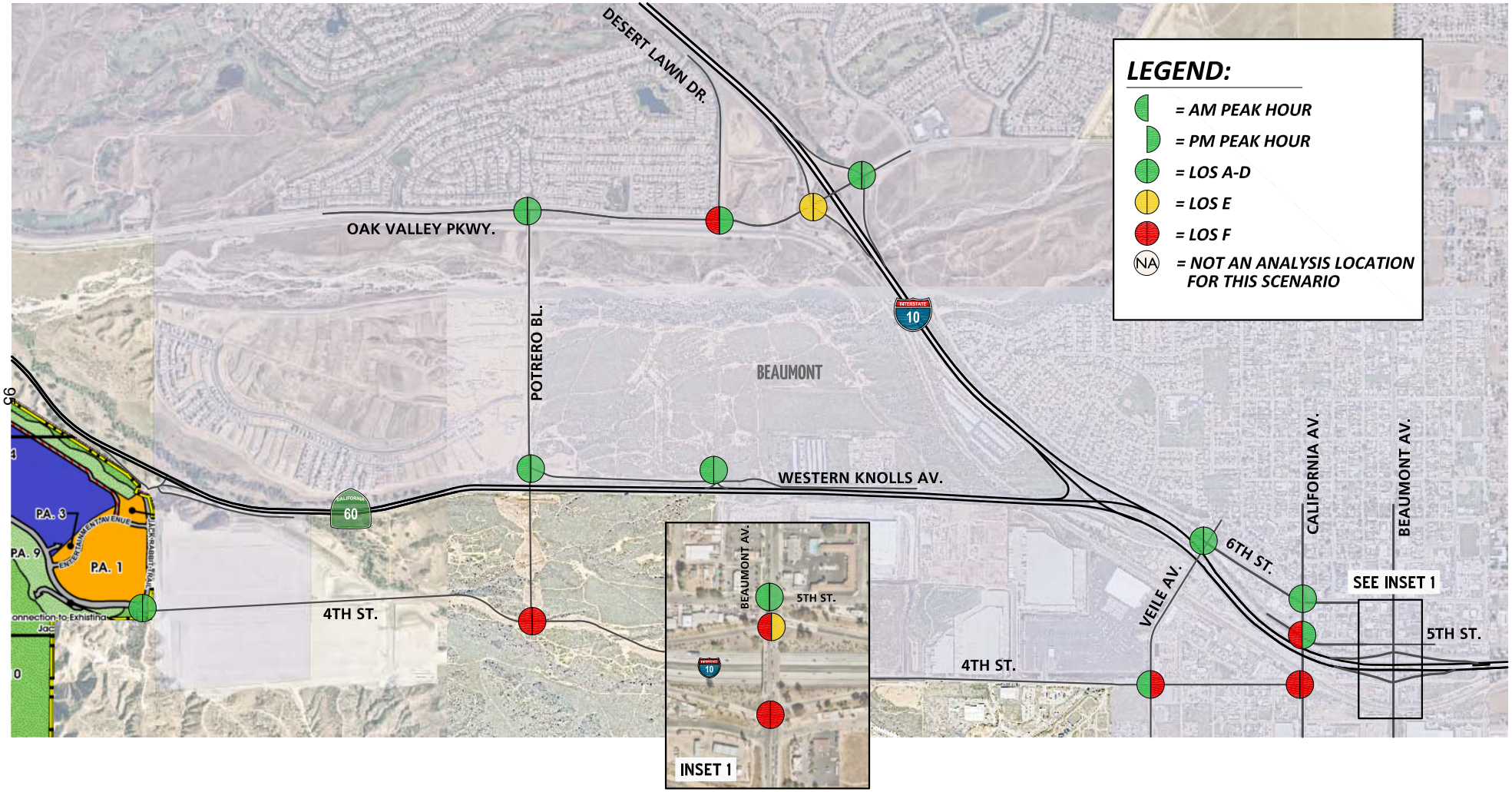

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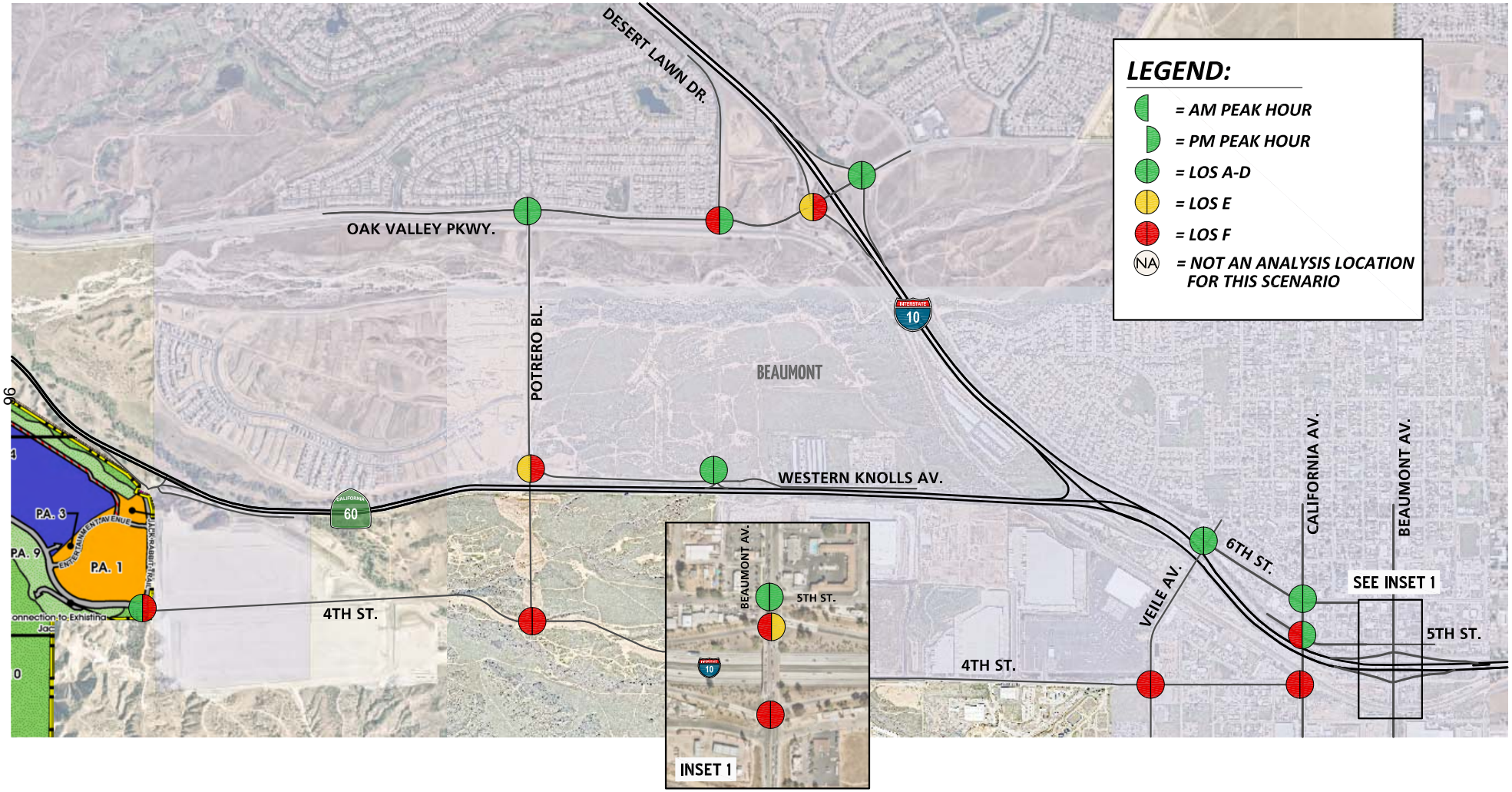
EXHIBIT 5-9: E+P (PROJECT BUILDOUT) SUMMARY OF LOS



5.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants have been performed (based on CA MUTCD) for E+P traffic conditions based on peak hour intersection turning movement volumes. There are no additional unsignalized study area intersections anticipated to meet a traffic signal warrant with the addition of Project (Phase 1) traffic for E+P (Phase 1) traffic conditions, in addition to the intersections previously identified under Existing (2020) conditions (see Appendix 5.4).

With the addition of Project (Phase 2) traffic, the following unsignalized study area intersections are anticipated to warrant a traffic signal for E+P (Phase 2) traffic conditions (see Appendix 5.5):

- Jack Rabbit Trail & 4th Street (#1)
- Potrero Boulevard & 4th Street (#4)
- California Avenue & 5th Street (#12)

With the addition of Project (Buildout) traffic, the following unsignalized study area intersection is anticipated to warrant a traffic signal for E+P (Project Buildout) traffic conditions (see Appendix 5.6):

- Veile Avenue & 4th Street (#10)

5.5 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for E+P (Phase 1, Phase 2, and Project Buildout) are presented in Table 5-2. As shown in Table 5-2 and consistent with Existing traffic conditions, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows with the addition of Project (Phase 1), Project (Phase 2), and Project Buildout traffic. Worksheets for E+P (Phase 1), E+P (Phase 2), and E+P (Project Buildout) traffic conditions off-ramp queuing analyses are provided in Appendices 5.7, 5.8, and 5.9, respectively.

5.6 FREEWAY FACILITY ANALYSIS

E+P (Phase 1), E+P (Phase 2), and E+P (Project Buildout) mainline directional volumes for the AM and PM peak hours are provided on Exhibits 5-10, 5-11, and 5-12, respectively. As shown in Table 5-3 and consistent with Existing traffic conditions, the study area freeway mainline segments and merge/diverge ramp junctions are anticipated to continue to operate at an acceptable LOS (i.e., LOS D or better) during the peak hours for E+P traffic conditions. E+P (Phase 1), E+P (Phase 2), and E+P (Project Buildout) freeway facility analysis worksheets are provided in Appendices 5.10, 5.11, and 5.12, respectively.

Table 5-2

Peak Hour Freeway Off-Ramp Queuing Summary for E+P Conditions

Intersection	Movement	Available Stacking Distance (Feet)	Existing (2020)				E+P (Phase 1)				E+P (Phase 2)				E+P (Buildout)			
			95th Percentile Queue (Feet)		Acceptable?[1]		95th Percentile Queue (Feet)		Acceptable?[1]		95th Percentile Queue (Feet)		Acceptable?[1]		95th Percentile Queue (Feet)		Acceptable?[1]	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
I-10 EB Ramps & Oak Valley Pwky.	SBL/T/R	1,150	327 [2]	463 [2]	Yes	Yes	357 [2]	479 [2]	Yes	Yes	491 [2]	524 [2]	Yes	Yes	519 [2]	594 [2]	Yes	Yes
I-10 WB Ramps & Oak Valley Pkwy.	NBL/T/R	1,220	468 [2]	376	Yes	Yes	468 [2]	376	Yes	Yes	468 [2]	376	Yes	Yes	468 [2]	386	Yes	Yes
Beaumont Av. & I-10 WB Ramps	WBL	485	221 [2]	266 [2]	Yes	Yes	232 [2]	278 [2]	Yes	Yes	232 [2]	278 [2]	Yes	Yes	232 [2]	278 [2]	Yes	Yes
	WBL/R	1,110	158	176	Yes	Yes	163	182	Yes	Yes	163	182	Yes	Yes	163	182	Yes	Yes
Beaumont Av. & I-10 EB Ramps	EBL/R	885	92	272 [2]	Yes	Yes	127	272 [2]	Yes	Yes	127	329 [2]	Yes	Yes	143 [2]	351 [2]	Yes	Yes
	EBR	235	87	236 [2,3]	Yes	Yes	124	236 [2]	Yes	Yes	124	281 [2,3]	Yes	Yes	141 [2]	298 [2,3]	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

[2] 95th percentile volume exceeds capacity, queue may be longer.

[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the I-10 Freeway mainline.

Table 5-3

Freeway Facility Analysis for E+P Conditions

Freeway	Direction[1]	Mainline Segment	Lanes[2]	Existing (2020)				E+P (Phase 1)				E+P (Phase 2)				E+P (Buildout)			
				Density[3]		LOS[4]		Density[3]		LOS[4]		Density[3]		LOS[4]		Density[3]		LOS[4]	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
I-10 Freeway	EB	West of Oak Valley Pkwy.	3	9.9	13.5	A	B	10.0	13.5	A	B	10.5	13.7	A	B	10.6	14.0	A	B
		Off-Ramp at Oak Valley Pkwy.	3	13.2	17.8	B	B	13.4	17.9	B	B	14.2	18.1	B	B	14.4	18.5	B	B
		On-Ramp at Beaumont Av.	4	17.3	15.7	B	B	17.3	15.9	B	B	17.4	16.2	B	B	17.4	16.2	B	B
		East of Beaumont Av.	4	17.9	17.0	B	B	18.0	17.0	B	B	18.0	17.1	B	B	18.0	17.1	B	B
	WB	West of Oak Valley Pkwy.	3	11.3	13.2	B	B	11.4	13.3	B	B	11.5	13.9	B	B	11.4	14.0	B	B
		On-Ramp at Oak Valley Pkwy.	3	11.9	13.3	B	B	12.0	13.5	B	B	12.2	14.4	B	B	12.3	14.6	B	B
		On-Ramp at Beaumont Av.	4	16.2	18.3	B	B	16.3	18.7	B	B	16.6	20.2	B	C	16.7	20.5	B	C
		West of Beaumont Av.	4	13.4	15.4	B	B	13.4	15.6	B	B	13.6	16.4	B	B	13.6	16.5	B	B
SR-60 Freeway	EB	West of I-10 Freeway	2	9.3	10.9	A	A	9.8	11.1	A	B	12.0	11.7	B	B	12.3	12.5	B	B
		Off-Ramp at 6th St.	2	11.3	13.2	B	B	11.9	13.5	B	B	14.6	14.2	B	B	14.9	15.1	B	B
	WB	East of Western Knolls Av.	2	9.0	10.8	A	A	9.4	11.0	A	A	11.3	11.6	B	B	11.5	11.9	B	B
		Off-Ramp at Western Knolls Av.	2	7.7	9.8	A	A	8.2	10.1	A	B	10.4	10.7	B	B	10.6	11.2	B	B
		On-Ramp at Western Knolls Av.	2	6.9	8.2	A	A	7.1	8.8	A	A	7.6	11.1	A	B	7.7	11.5	A	B
		West of Western Knolls Av.	2	9.1	10.2	A	A	9.3	10.8	A	A	9.7	13.1	A	B	9.8	13.6	A	B

[1] NB = Northbound; SB = Southbound

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

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

[4] LOS = Level of Service

EXHIBIT 5-10: E+P (PHASE 1) FREEWAY MAINLINE VOLUMES

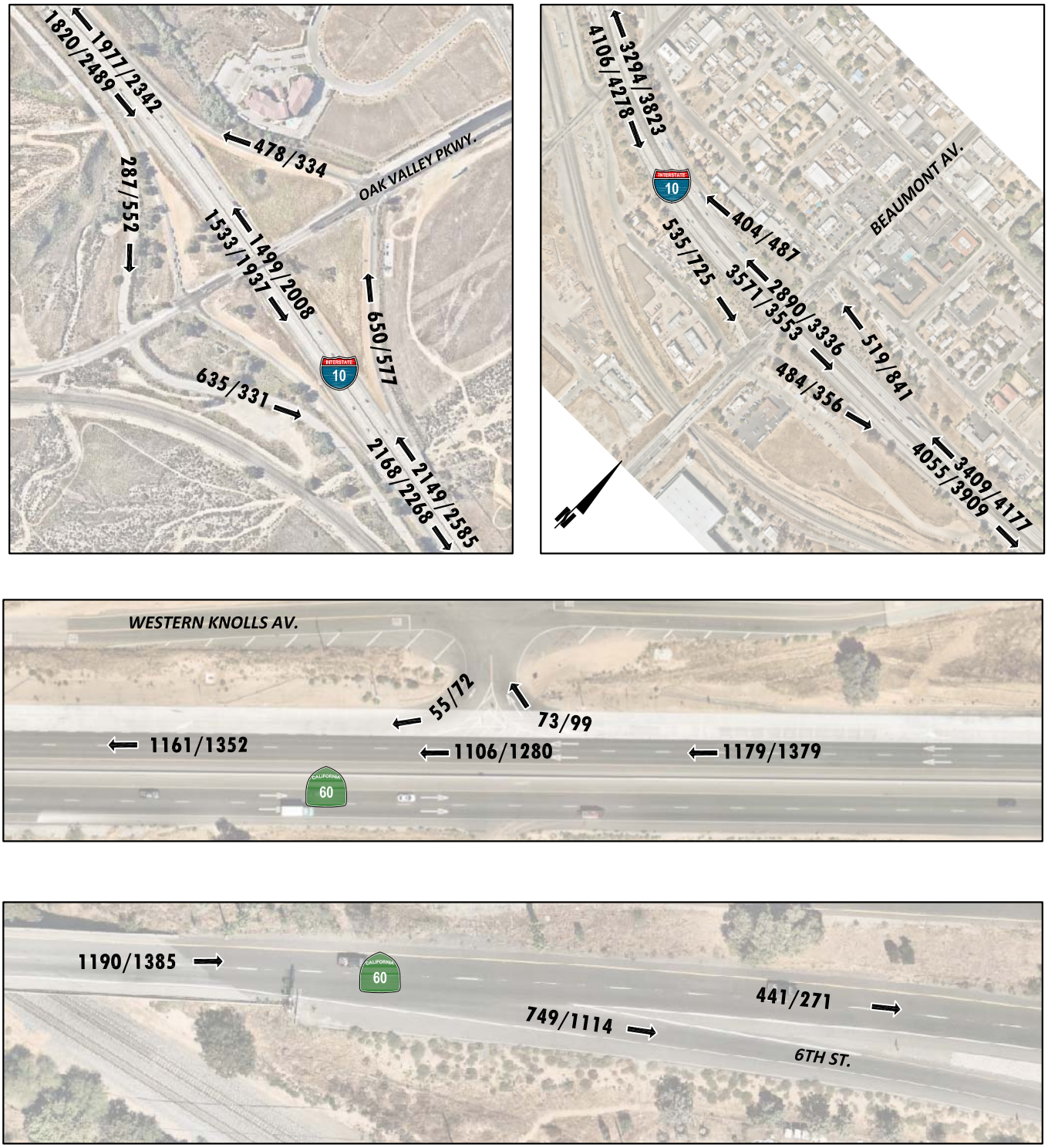
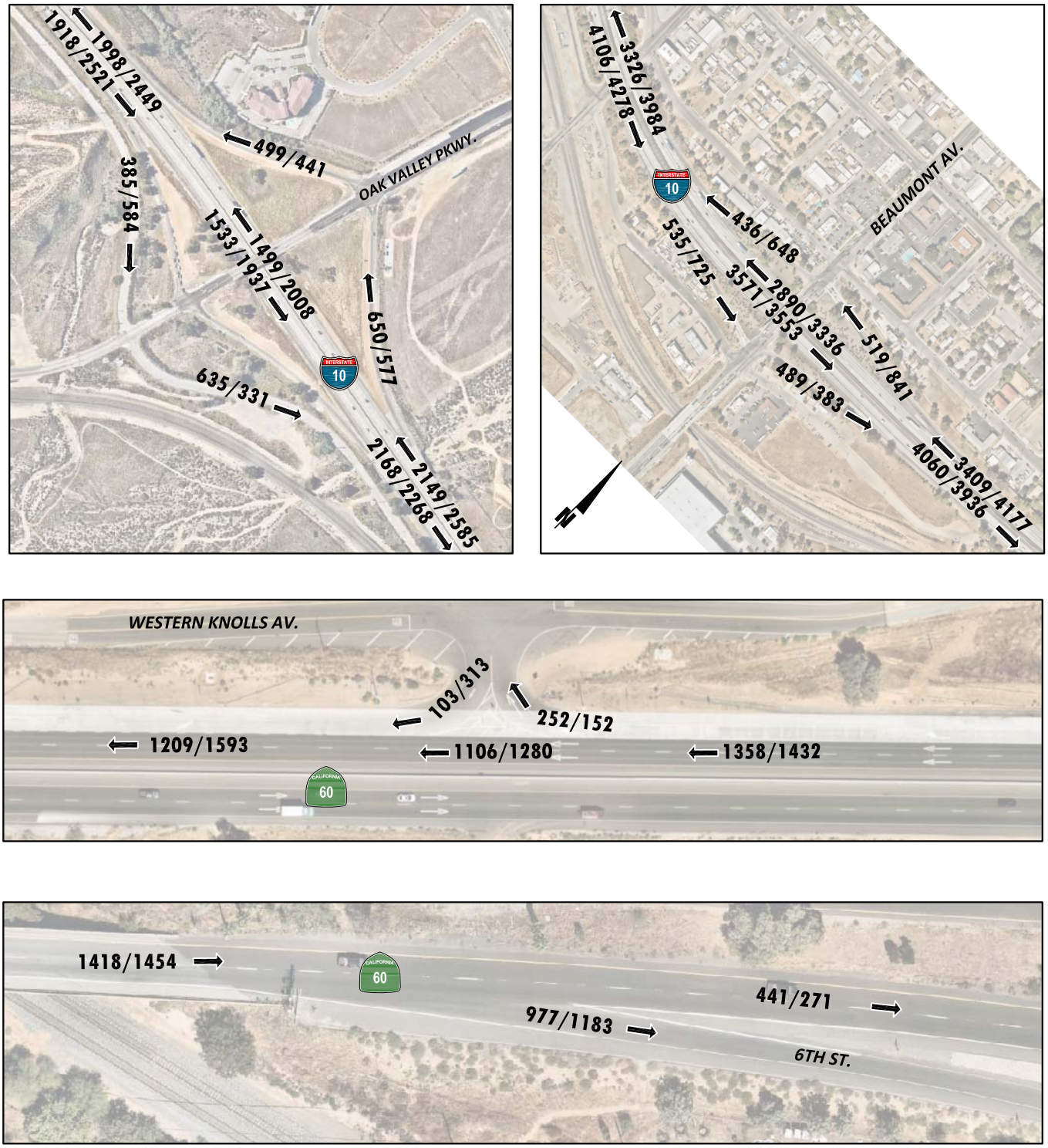


EXHIBIT 5-11: E+P (PHASE 2) FREEWAY MAINLINE VOLUMES



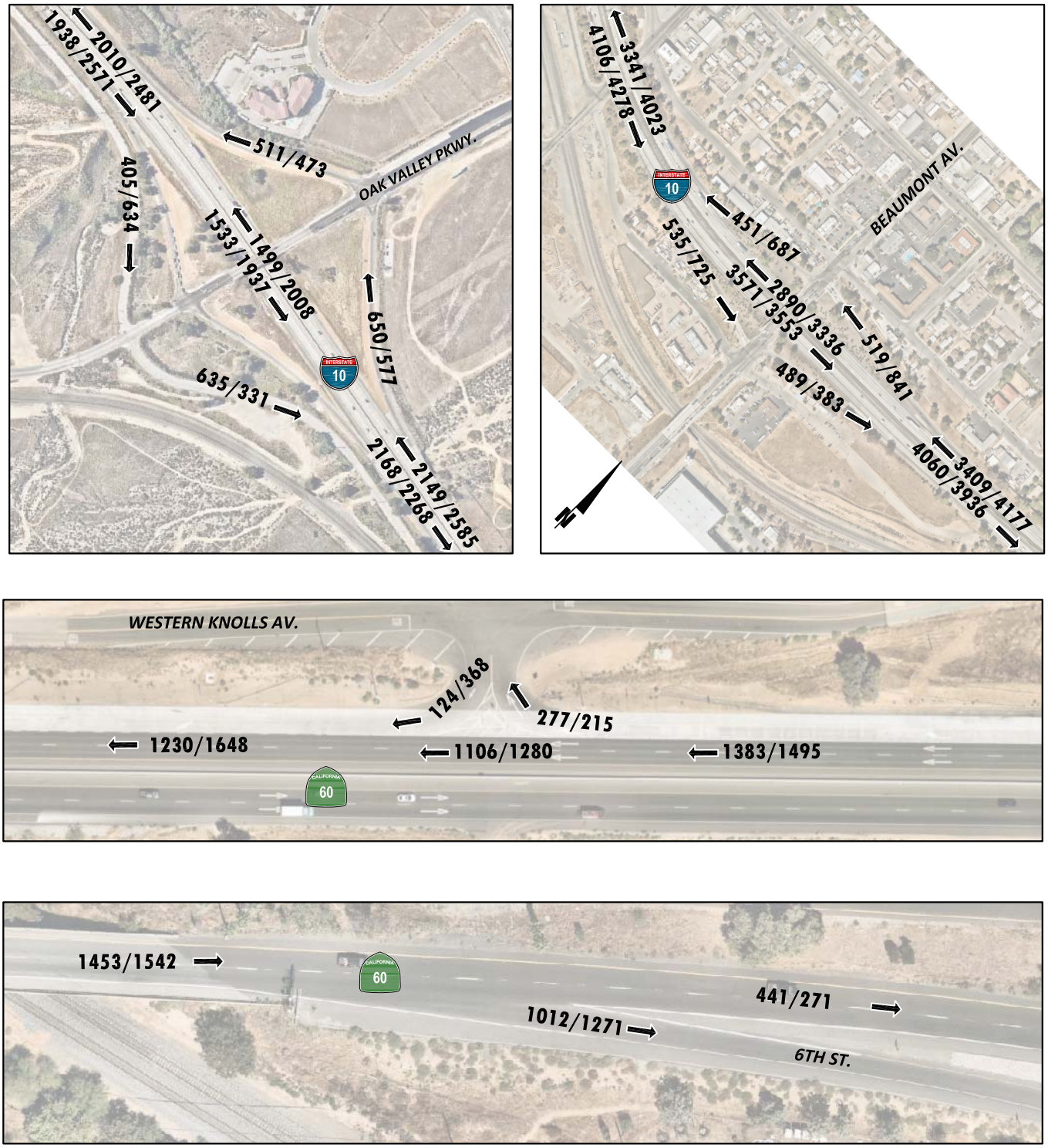
LEGEND:

⟵ 100/200 = AM/PM PEAK HOUR VOLUMES

NOTE: VOLUMES IN ACTUAL VEHICLES (NOT PCE)

N

EXHIBIT 5-12: E+P (PROJECT BUILDOUT) FREEWAY MAINLINE VOLUMES



5.7 DEFICIENCIES AND IMPROVEMENTS

This section provides a summary of deficiencies under E+P traffic conditions and improvements necessary to bring these deficiencies back to acceptable levels. Based on the City of Beaumont deficiency criteria discussed in Section 2.8 *Deficiency Criteria*, the following intersections were found to be deficient. Improvements necessary to improve E+P traffic deficiencies are also discussed below.

5.7.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

Table 5-4 indicates the improvements needed to address LOS deficiencies at each of the study area intersections under E+P traffic conditions.

The following improvements are recommended to improve the E+P (Phase 1) deficiencies back to acceptable levels and are consistent with Existing (2020) traffic conditions.

Desert Lawn Drive & Oak Valley Parkway (#5) – The following improvement is necessary to improve the existing deficiency to acceptable levels:

- Install a traffic signal.

California Avenue & 5th Street (#12) – The following improvement is necessary to improve the existing deficiency to acceptable levels:

- Install a traffic signal.

California Avenue & 4th Street (#13) – The following improvement is necessary to improve the existing deficiency to acceptable levels:

- Install a traffic signal.

Beaumont Avenue & I-10 Westbound Ramps (#15) – The following improvement is necessary to improve the existing deficiency to acceptable levels:

- Modify the traffic signal to accommodate a 120-second cycle length.

Beaumont Avenue & I-10 Eastbound Ramps (#16) – The following improvement is necessary to improve the existing deficiency to acceptable levels:

- Modify the traffic signal to accommodate a 120-second cycle length.

The following additional improvements are recommended to bring the E+P (Phase 2) deficiencies back to acceptable levels.

Potrero Boulevard & 4th Street (#4) – The following improvements are necessary to improve the existing deficiency to acceptable levels:

- Install a traffic signal.
- Add a 2nd eastbound left turn lane.
- Modify the traffic signal to implement overlap phasing for the southbound right turn lane.

Table 5-4

Intersection Analysis for E+P Conditions With 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
3	Potrero Bl. & Western Knolls Av.																	
	- Existing		Not Applicable															
	-E+P (Phase 1)		Not Applicable															
	-E+P (Phase 2)		Not Applicable															
	- E+P (Buildout)	**CSS**	0	**2**	0	**1**	**2**	0	0	0	0	0	1	0	34.3	27.3	D	D
4	Potrero Bl. & 4th St.																	
	- Existing		Not Applicable															
	-E+P (Phase 1)		Not Applicable															
	-E+P (Phase 2)	TS	0	0	0	2	0	**1>**	**2**	1	0	1	1	1	22.6	18.1	C	B
	- E+P (Buildout)	TS	0	0	0	2	0	**1>**	**2**	1	0	1	1	1	25.8	20.6	C	C
5	Desert Lawn Dr. & Oak Valley Pkwy.																	
	- Existing	**TS**	0	0	0	0	1	0	1	1	0	0	3	0	18.5	11.0	B	B
	-E+P (Phase 1)	**TS**	0	0	0	0	1	0	1	1	0	0	3	0	18.8	11.1	B	B
	-E+P (Phase 2)	**TS**	0	0	0	0	1	0	1	1	0	0	3	0	20.5	11.6	C	B
	- E+P (Buildout)	**TS**	0	0	0	0	1	0	1	1	0	0	3	0	21.0	11.8	C	B
7	I-10 EB Ramps & Oak Valley Pkwy.																	
	- Existing		Not Applicable															
	-E+P (Phase 1)		Not Applicable															
	-E+P (Phase 2)	TS	0	0	0	**1**	1	0	0	1	**1**	1	1	0	22.1	34.0	C	C
	- E+P (Buildout)	TS	0	0	0	**1**	1	0	0	1	**1**	1	1	0	22.4	34.0	C	C
12	California Av. & 5th St.																	
	- Existing	**TS**	1	1	d	0	1	d	0	1	d	0	1	d	15.4	12.0	B	B
	-E+P (Phase 1)	**TS**	1	1	d	0	1	d	0	1	d	0	1	d	15.4	12.0	B	B
	-E+P (Phase 2)	**TS**	1	1	d	0	1	d	0	1	d	0	1	d	15.4	12.0	B	B
	- E+P (Buildout)	**TS**	1	1	d	0	1	d	0	1	d	0	1	d	15.4	12.0	B	B
13	California Av. & 4th St.																	
	- Existing	**TS**	1	1	0	0	1	0	1	0	1	0	0	0	10.6	15.2	B	B
	-E+P (Phase 1)	**TS**	1	1	0	0	1	0	1	0	1	0	0	0	11.6	17.5	B	B
	-E+P (Phase 2)	**TS**	1	1	0	0	1	0	1	0	1	0	0	0	12.3	41.4	B	D
	- E+P (Buildout)	**TS**	1	1	0	0	1	0	1	0	1	0	0	0	12.8	51.1	B	D
15	Beaumont Av. & I-10 WB Ramps																	
	- Existing[4]	TS	1	2	0	0	2	0	0	0	0	1	1	0	45.5	45.1	D	D
	-E+P (Phase 1)[4]	TS	1	2	0	0	2	0	0	0	0	1	1	0	46.6	46.9	D	D
	-E+P (Phase 2)[4]	TS	1	2	0	0	2	0	0	0	0	1	1	0	47.0	47.4	D	D
	- E+P (Buildout)[4]	TS	1	2	0	0	2	0	0	0	0	1	1	0	47.3	47.8	D	D
16	Beaumont Av. & I-10 EB Ramps																	
	- Existing[4]	TS	0	2	0	1	2	0	0	1	1	0	0	0	29.4	51.6	C	D
	-E+P (Phase 1)[4]	TS	0	2	0	1	2	0	0	1	1	0	0	0	30.0	52.5	C	D
	-E+P (Phase 2)[4]	TS	0	2	0	1	2	0	0	1	1	0	0	0	32.5	52.8	C	D
	- E+P (Buildout)[4]	TS	0	2	0	1	2	0	0	1	1	0	0	0	34.2	54.0	C	D

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

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

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

[3] CSS = Cross-street Stop; TS = Traffic Signal; **CSS** = Improvement

[4] Improvement includes modifying the signal timing to accommodate a 120-second cycle length

I-10 Eastbound Ramps & Oak Valley Parkway (#7) – The following improvements are necessary to improve the existing deficiency to acceptable levels:

- Add a southbound left turn lane.
- Add an eastbound right turn lane.

The following additional improvements are recommended to improve the E+P (Project Buildout) deficiencies back to acceptable levels.

Potrero Boulevard & Western Knolls Avenue (#3) – The following improvements are necessary to improve the existing deficiency to acceptable levels:

- Remove the stop control on the northbound and southbound approaches, converting the intersection to a cross-street stop control.
- Add a 2nd northbound through lane.
- Add a southbound left turn lane.
- Add a 2nd southbound through lane.

Worksheets for E+P (Phase 1), E+P (Phase 2), and E+P (Project Buildout) traffic conditions intersection operations analysis, with improvements, worksheets are provided in Appendices 5.13, 5.14, and 5.15, respectively

5.7.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown in Table 5-2, there are no peak hour queuing issues at the study area interchanges for E+P traffic conditions. As such, no improvements are necessary.

5.7.3 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON FREEWAY FACILITIES

As shown in Table 5-3, the study area freeway segments and merge/diverge ramp junctions are anticipated to operate at an acceptable LOS for E+P traffic conditions. As such no improvements are necessary.

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6 OPENING YEAR (2023) TRAFFIC CONDITIONS

This section discusses the methods used to develop Opening Year (2023) Without and With Project traffic forecasts, and the resulting intersection operations, traffic signal warrant, off-ramp queuing, and freeway facility analyses.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year (2023) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Opening Year conditions only (e.g., intersection and roadway improvements along the Project's frontage and driveways).
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Opening Year conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages and driveways).
- The SR-60 Freeway/Potrero Boulevard interchange is assumed to be in place. The proposed configuration of the new interchange is shown on Exhibit 6-1.
- The SR-60 Freeway/Western Knolls Avenue interchange is assumed to be vacated.

6.2 OPENING YEAR (2023) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus an ambient growth factor of 6.12% plus 35% of the traffic from pending and approved but not yet constructed known development projects in the area. The ADT and peak hour intersection turning movement volumes which can be expected for Opening Year (2023) Without Project conditions are shown on Exhibits 6-2 and 6-3, respectively.

Based on a comparison of Opening Year (2023) forecasts to 2022 peak hour intersection counts conducted within the City for overlapping study area intersections, the Opening Year (2023) forecasts indicate much greater traffic volume than the actual intersection counts, which indicates the analysis presented in this TA is conservative and does not understate deficiencies and potential improvement needs (see end of Appendix 3.1 for volume comparison).

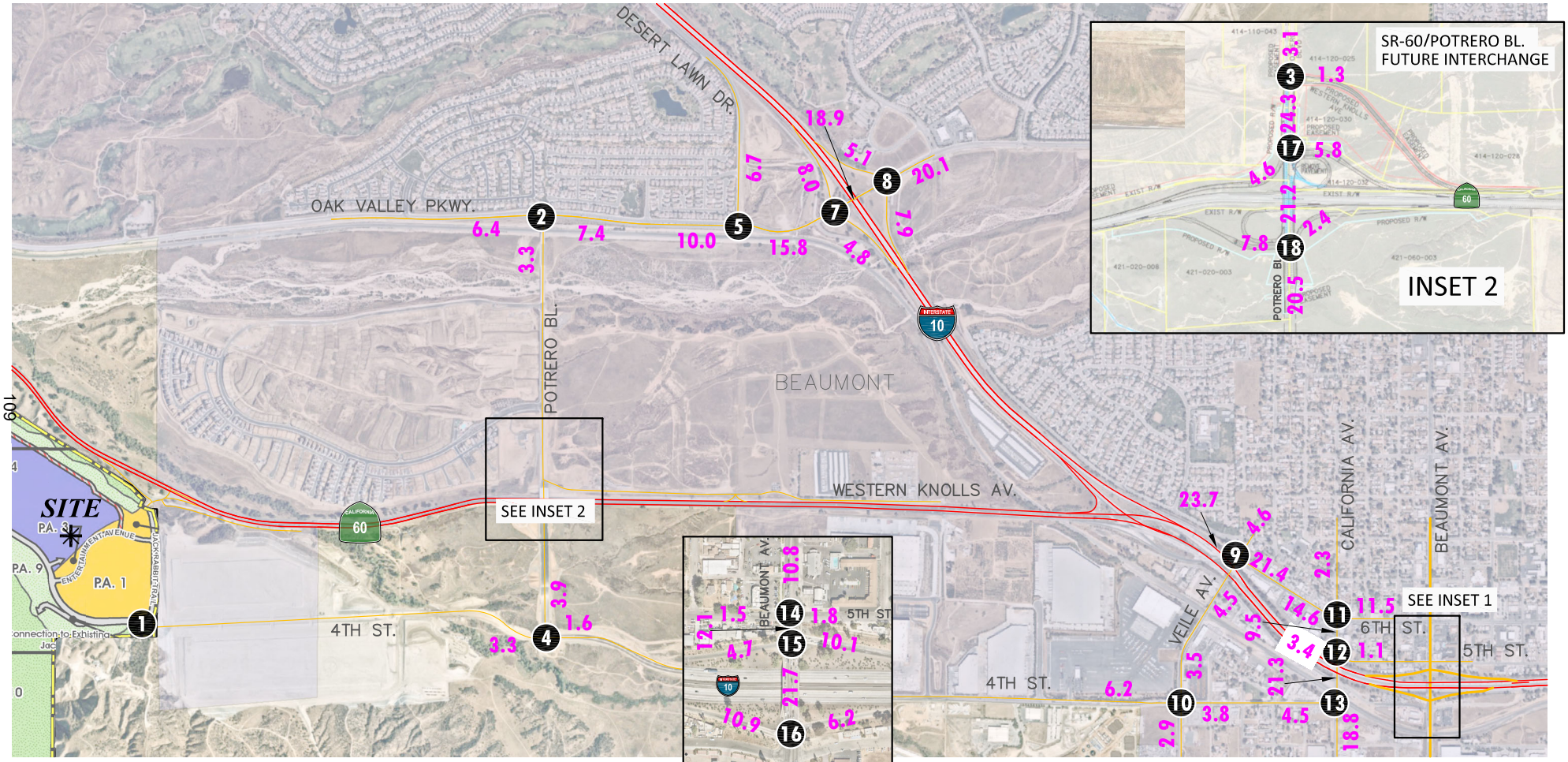
6.3 OPENING YEAR (2023) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes, an ambient growth factor of 6.12%, 35% of the traffic from pending and approved but not yet constructed known development projects in the area and the addition of Project (Phase 1) traffic. The ADT and peak hour intersection turning movement volumes which can be expected for Opening Year (2023) With Project conditions are shown on Exhibits 6-4 and 6-5, respectively.

EXHIBIT 6-1: SR-60 FREEWAY/POTRERO BOULEVARD INTERCHANGE CONCEPT PLAN

12396 - interchange concept.dwg

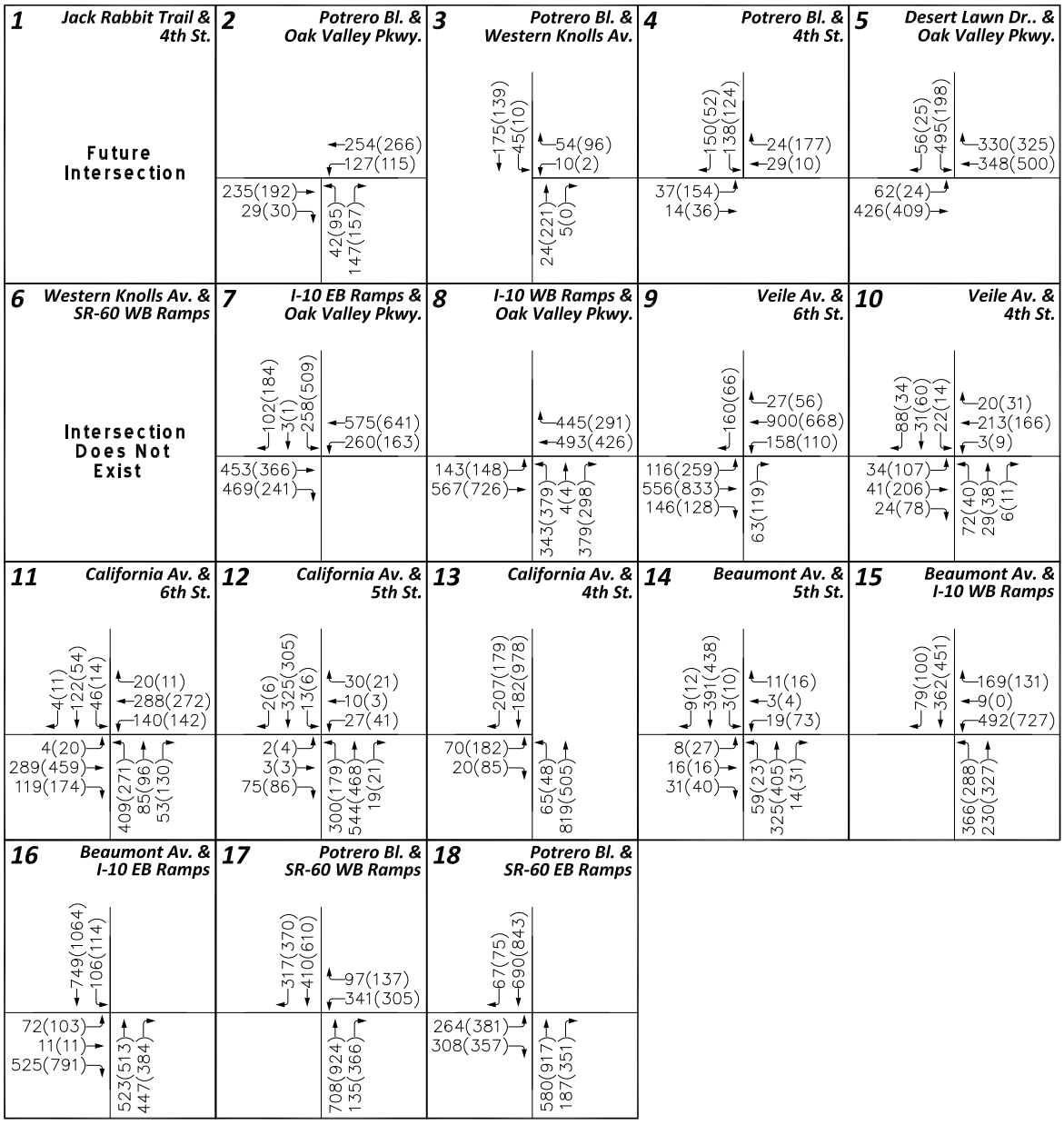
EXHIBIT 6-2: OPENING YEAR (2023) WITHOUT PROJECT AVERAGE DAILY TRAFFIC (ADT) (IN PCE)



LEGEND:

10.0 ***= VEHICLES PER DAY (1000'S)***

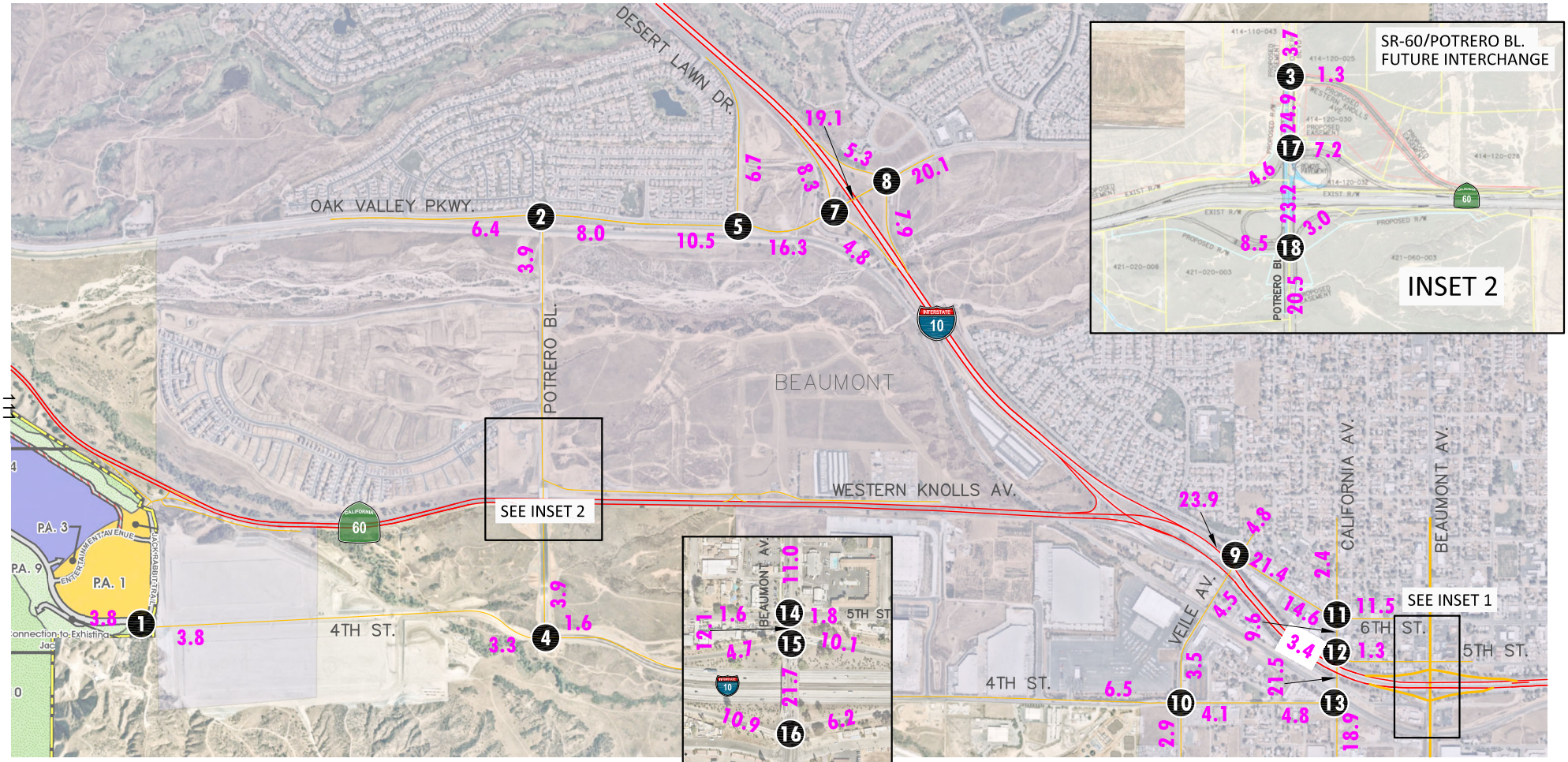
EXHIBIT 6-3: OPENING YEAR (2023) WITHOUT PROJECT TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

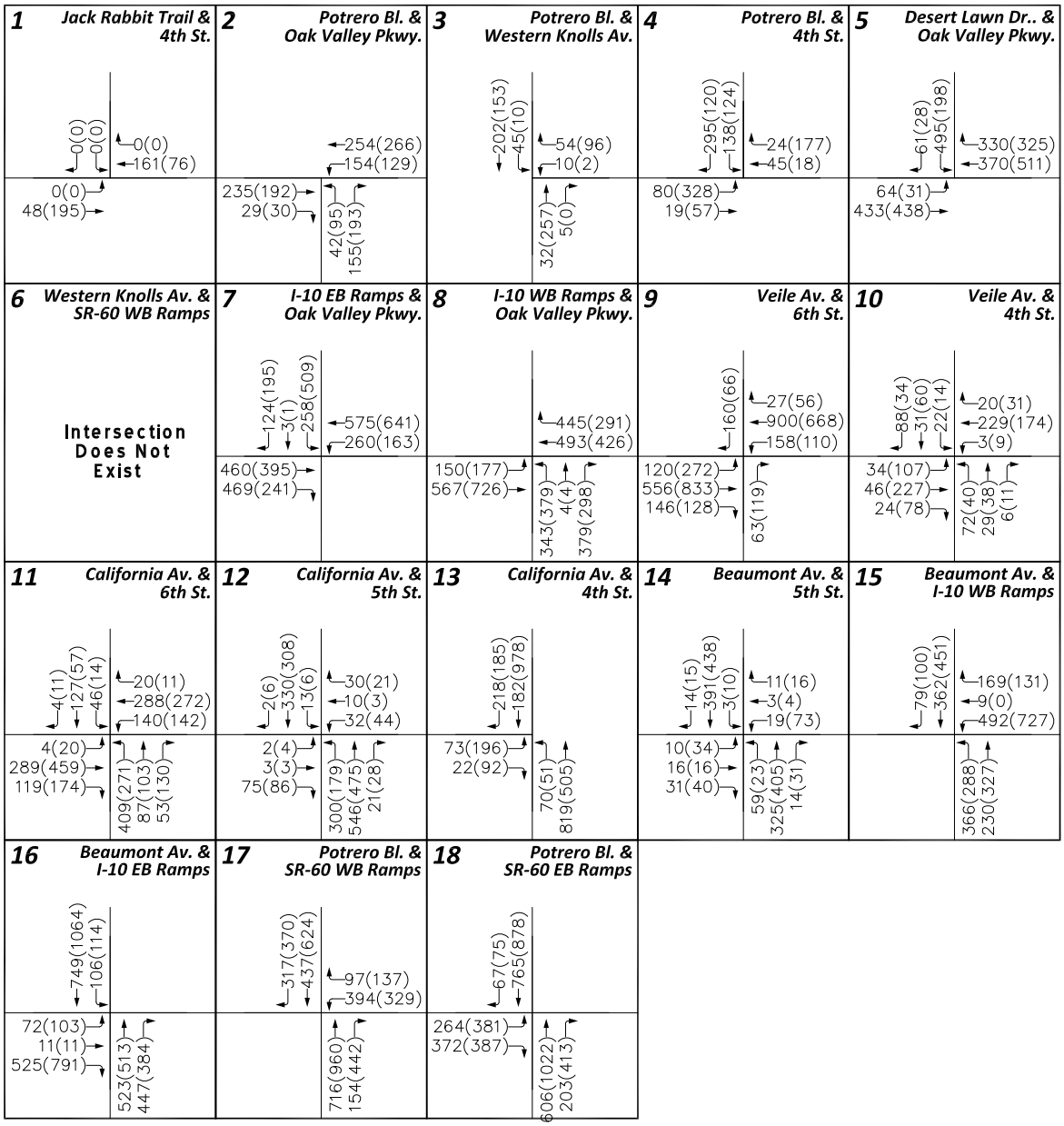
EXHIBIT 6-4: OPENING YEAR (2023) WITH PROJECT AVERAGE DAILY TRAFFIC (ADT) (IN PCE)



LEGEND:

10.0 ***= VEHICLES PER DAY (1000'S)***

EXHIBIT 6-5: OPENING YEAR (2023) WITH PROJECT TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

6.4 INTERSECTION OPERATIONS ANALYSIS

6.4.1 OPENING YEAR (2023) WITHOUT PROJECT TRAFFIC CONDITIONS

Opening Year (2023) 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 analysis results are summarized in Table 6-1, which indicate that the following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under Opening Year (2023) Without Project:

- Desert Lawn Drive & Oak Valley Parkway (#5) – LOS F AM peak hour only
- I-10 Eastbound Ramps & Oak Valley Parkway (#7) – LOS E AM peak hour; LOS F PM peak hour
- California Avenue & 5th Street (#12) – LOS F AM peak hour only
- California Avenue & 4th Street (#13) – LOS F AM and PM peak hours

A summary of the peak hour intersection LOS for Opening Year (2023) Without Project conditions is shown on Exhibit 6-6. The intersection operations analysis worksheets for Opening Year Without Project traffic conditions are included in Appendix 6.1 of this TA.

6.4.2 OPENING YEAR (2023) WITH PROJECT TRAFFIC CONDITIONS

As shown in Table 6-1 and illustrated on Exhibit 6-7, there are no additional study area intersections anticipated to operate at an unacceptable LOS with the addition of Project (Phase 1) traffic, in addition to the intersections previously identified under Opening Year (2023) Without Project traffic conditions. The intersection operations analysis worksheets for Opening Year (2023) With Project traffic conditions are included in Appendix 6.2 of this TA.

6.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants have been performed (based on CA MUTCD) for Opening Year (2023) traffic conditions based on peak hour intersection turning movements volumes. There are no additional unsignalized study area intersection anticipated to meet a traffic signal warrant under Opening Year (2023) Without Project and With Project traffic conditions (see Appendices 6.3 and 6.4, respectively), in addition to the intersections identified previously under Existing (2020), E+P (Phase 2), and E+P (Project Buildout) traffic conditions.

Table 6-1

Intersection Analysis for Opening Year (2023) Conditions

#	Intersection	Traffic Control[2]	2023 Without Project				2023 With Project			
			Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Jack Rabbit Tr. & 4th St.	**TS**	Future Intersection				1.8	1.6	A	A
2	Potrero Bl. & Oak Valley Pkwy.	AWS	10.2	10.1	B	B	10.5	10.5	B	B
3	Potrero Bl. & Western Knolls Av.	AWS	9.3	9.2	A	A	9.8	9.7	A	A
4	Potrero Bl. & 4th St.	TS	11.4	16.9	B	B	15.7	21.3	B	C
5	Desert Lawn Dr. & Oak Valley Pkwy.	AWS	**>100.0**	18.6	**F**	C	**>100.0**	21.6	**F**	C
6	SR-60 WB & Western Knolls Av.	CSS	Does Not Exist				Does Not Exist			
7	I-10 EB Ramps & Oak Valley Pkwy.	TS	**76.9**	**114.1**	**E**	**F**	**85.4**	**120.7**	**F**	**F**
8	I-10 WB Ramps & Oak Valley Pkwy.	TS	45.9	38.5	D	D	48.4	39.0	D	D
9	Veile Av. & I-10 WB On-ramp/6th St.	CSS	15.6	14.4	C	B	15.6	14.4	C	B
10	Veile Av. & 4th St.	TS	18.7	17.8	B	B	18.8	17.8	B	B
11	California Av. & 6th St.	TS	43.6	51.9	D	D	43.9	53.2	D	D
12	California Av. & 5th St.	CSS	**>100.0**	28.7	**F**	D	**>100.0**	28.7	**F**	D
13	California Av. & 4th St.	CSS	**96.1**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
14	Beaumont Av. & 5th St.	TS	7.4	7.2	A	A	7.5	7.2	A	A
15	Beaumont Av. & I-10 WB Ramps	TS	Not Applicable[3]				Not Applicable[3]			
16	Beaumont Av. & I-10 EB Ramps	TS	Not Applicable[3]				Not Applicable[3]			
17	Potrero Bl. & I-10 WB Ramps	**TS**	6.4	6.2	A	A	6.7	6.4	A	A
18	Potrero Bl. & I-10 EB Ramps	**TS**	7.8	8.0	A	A	7.9	8.1	A	A

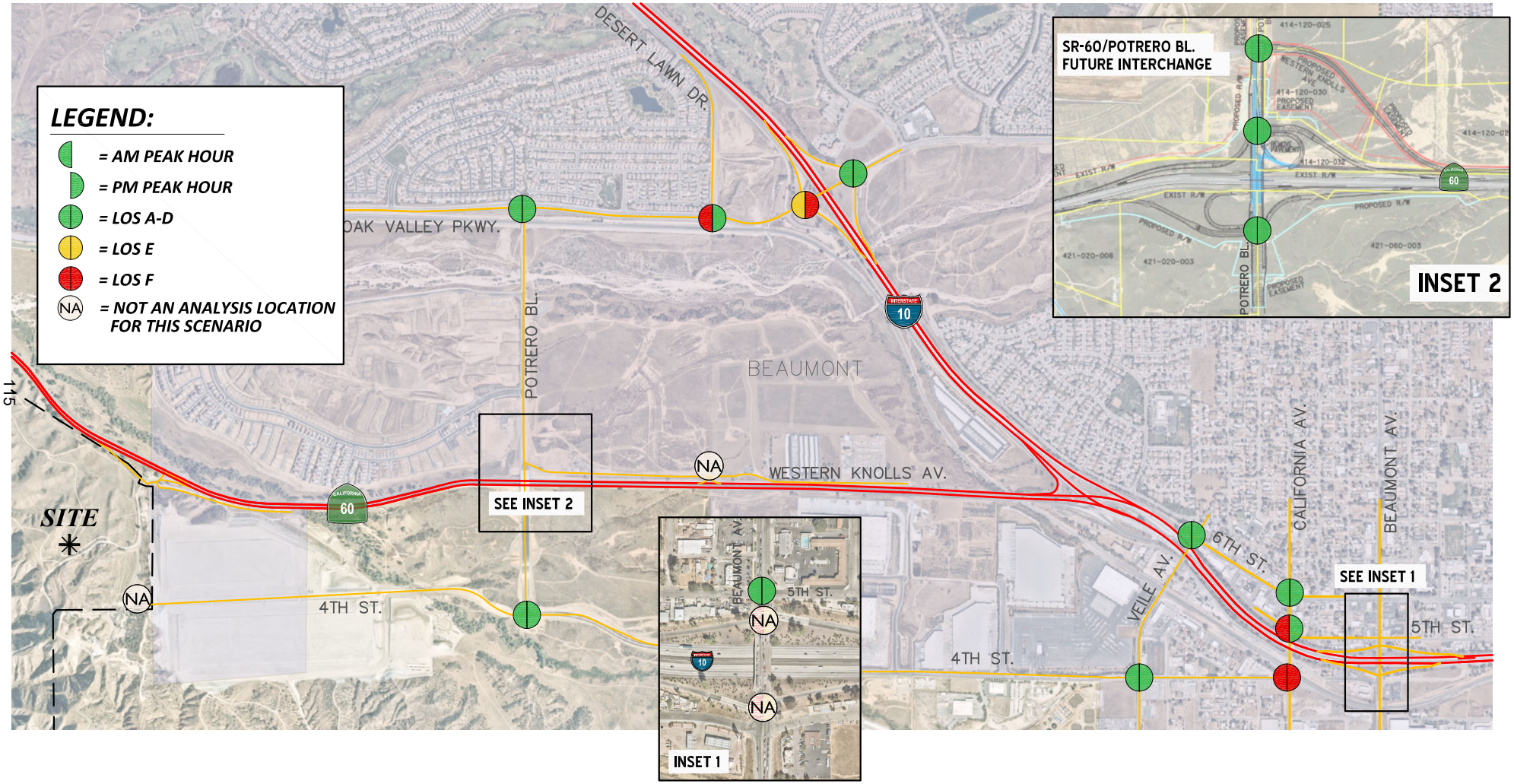
* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

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

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

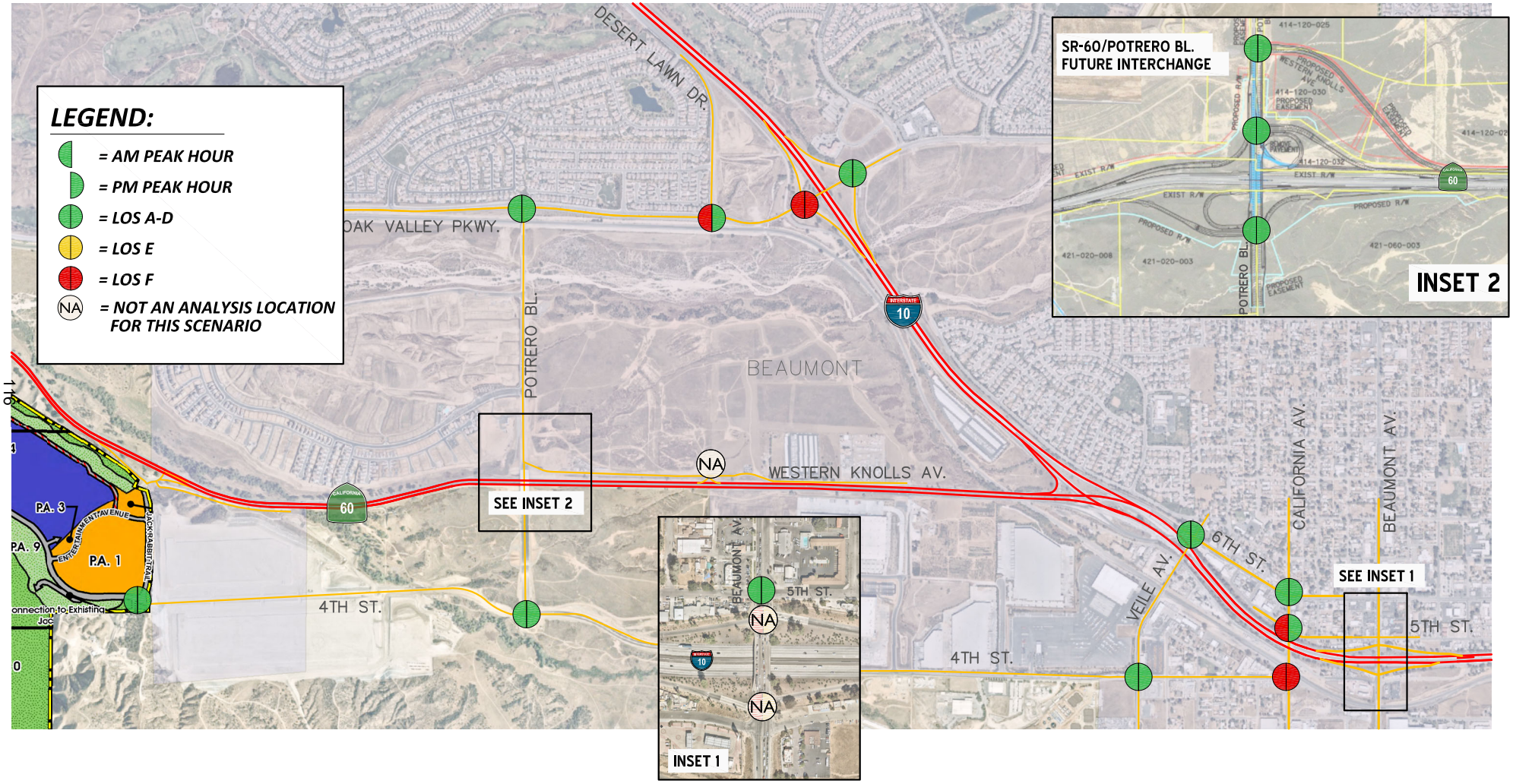
[3] Project is not anticipated to contribute any trips to this intersection. As such, the intersection has not been evaluated for this scenario.

EXHIBIT 6-6: OPENING YEAR (2023) WITHOUT PROJECT SUMMARY OF LOS



URBAN CROSSROADS

EXHIBIT 6-7: OPENING YEAR (2023) WITH PROJECT SUMMARY OF LOS



URBAN CROSSROADS

6.6 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for Opening Year (2023) are presented in Table 6-2. As shown in Table 6-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under Opening Year (2023) Without Project and With Project traffic conditions. Worksheets for Opening Year (2023) Without Project and With Project traffic conditions off-ramp queuing analyses are provided Appendices 6.5 and 6.6, respectively.

6.7 FREEWAY FACILITY ANALYSIS

Opening Year (2023) Without Project and With Project freeway mainline directional volumes for the AM and PM peak hours are provided on Exhibits 6-8 and 6-9, respectively. As shown in Table 6-3, the study area freeway mainline segments and merge/diverge ramp junctions are anticipated to continue to operate at an acceptable LOS (i.e., LOS D or better) during the peak hours for Opening Year (2023) Without Project and With Project traffic conditions. Opening Year (2023) Without Project and With Project freeway facility analysis worksheets are provided in Appendices 6.7 and 6.8, respectively.

6.8 DEFICIENCIES AND IMPROVEMENTS

This section provides a summary of deficiencies, based on the City of Beaumont's deficiency criteria discussed in Section 2.8 *Deficiency Criteria*, and improvements needed to improve operations back to acceptable levels.

6.8.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

The effectiveness of the recommended improvement strategies to address Opening Year (2023) traffic deficiencies are presented in Table 6-4. Worksheets for Opening Year (2023) Without and With Project conditions, with improvements, HCM calculation worksheets are provided in Appendices 6.9 and 6.10, respectively.

6.8.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 6-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for Opening Year (2023) traffic conditions. As such, no improvements are necessary.

6.8.3 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON FREEWAY FACILITIES

As shown previously in Table 6-3, the study area freeway segments and merge/diverge ramp junctions are anticipated to operate at an acceptable LOS for Opening Year (2023) traffic conditions. As such no improvements are necessary.

Table 6-2

Peak Hour Freeway Off-Ramp Queuing Summary for Opening Year (2023) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	2023 Without Project				2023 With Project			
			95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
I-10 EB Ramps & Oak Valley Pwky.	SBL/T/R	1,150	454 [2]	653 [2]	Yes	Yes	484 [2]	667 [2]	Yes	Yes
I-10 WB Ramps & Oak Valley Pkwy.	NBL/T/R	1,220	577 [2]	530 [2]	Yes	Yes	577 [2]	530 [2]	Yes	Yes
Beaumont Av. & I-10 WB Ramps	WBL	485	278 [2]	307 [2]	Yes	Yes	278 [2]	307 [2]	Yes	Yes
	WBL/R	1,110	217 [2]	234 [2]	Yes	Yes	217 [2]	234 [2]	Yes	Yes
Beaumont Av. & I-10 EB Ramps	EBL/R	885	112	296 [2]	Yes	Yes	112 [2]	296 [2]	Yes	Yes
	EBR	235	108	253 [2,3]	Yes	Yes	108 [2]	253 [2,3]	Yes	Yes
Potrero Bl. & I-10 WB Ramps	WBL	2,000	58	71	Yes	Yes	68	81	Yes	Yes
	WBR	500	13	19	Yes	Yes	13	19	Yes	Yes
Potrero Bl. & I-10 EB Ramps	EBL	1,800	42	86	Yes	Yes	44	97	Yes	Yes
	EBR	600	22	52	Yes	Yes	40	71	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

[2] 95th percentile volume exceeds capacity, queue may be longer.

[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the I-10 Freeway mainline.

Table 6-3

Freeway Facility Analysis for Opening Year (2023) Conditions

Freeway	Direction[1]	Mainline Segment	Lanes[2]	2023 Without Project				2023 With Project			
				Density[3]		LOS[4]		Density[3]		LOS[4]	
				AM	PM	AM	PM	AM	PM	AM	PM
I-10 Freeway	EB	West of Oak Valley Pkwy.	3	10.8	14.9	A	B	11.0	15.0	A	B
		Off-Ramp at Oak Valley Pkwy.	3	14.5	19.7	B	B	14.7	19.8	B	B
	WB	West of Oak Valley Pkwy.	3	12.4	14.4	B	B	12.4	14.4	B	B
		On-Ramp at Oak Valley Pkwy.	3	13.4	13.3	B	B	13.4	13.3	B	B
SR-60 Freeway	EB	West of Potrero Bl.	2	16.1	19.6	B	C	16.5	19.8	B	C
		Off-Ramp at Potrero Bl.	2	21.4	25.4	C	C	21.8	25.6	C	C
		On-Ramp at Potrero Bl.	2	14.8	17.4	B	B	14.9	17.9	B	B
		East of Potrero Bl.	2	10.2	12.5	A	B	10.3	13.0	A	B
	WB	West of Potrero Bl.	2	14.1	16.6	B	B	14.3	17.3	B	B
		Loop On-Ramp at Potrero Bl.	2	10.0	11.9	A	B	10.1	12.5	B	B
		Off-Ramp at Potrero Bl.	2	15.1	16.4	B	B	15.4	16.5	B	B
		East of Potrero Bl.	2	10.8	11.8	A	B	11.1	12.0	B	B

[1] NB = Northbound; SB = Southbound

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

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

[4] LOS = Level of Service

Table 6-4

Intersection Analysis for Opening Year (2023) Conditions With 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
5	Desert Lawn Dr. & Oak Valley Pkwy.																	
	- Without Project	**TS**	0	0	0	0	1	0	1	1	0	0	3	0	22.7	11.4	C	B
	- With Project	**TS**	0	0	0	0	1	0	1	1	0	0	3	0	23.2	11.6	C	B
7	I-10 EB Ramps & Oak Valley Pkwy.																	
	- Without Project	TS	0	0	0	**1**	1	0	0	1	**1**	1	1	0	21.5	41.8	C	D
	- With Project	TS	0	0	0	**1**	1	0	0	1	**1**	1	1	0	21.7	43.2	C	D
12	California Av. & 5th St.																	
	- Without Project	**TS**	1	1	d	1	1	d	0	1	d	0	1	d	21.6	12.9	C	B
	- With Project	**TS**	1	1	d	1	1	d	0	1	d	0	1	d	22.0	12.9	C	B
13	California Av. & 4th St.																	
	- Without Project	**TS**	1	1	0	0	1	**1**	1	0	1	0	0	0	11.8	17.0	B	B
	- With Project	**TS**	1	1	0	0	1	**1**	1	0	1	0	0	0	12.0	18.0	B	B

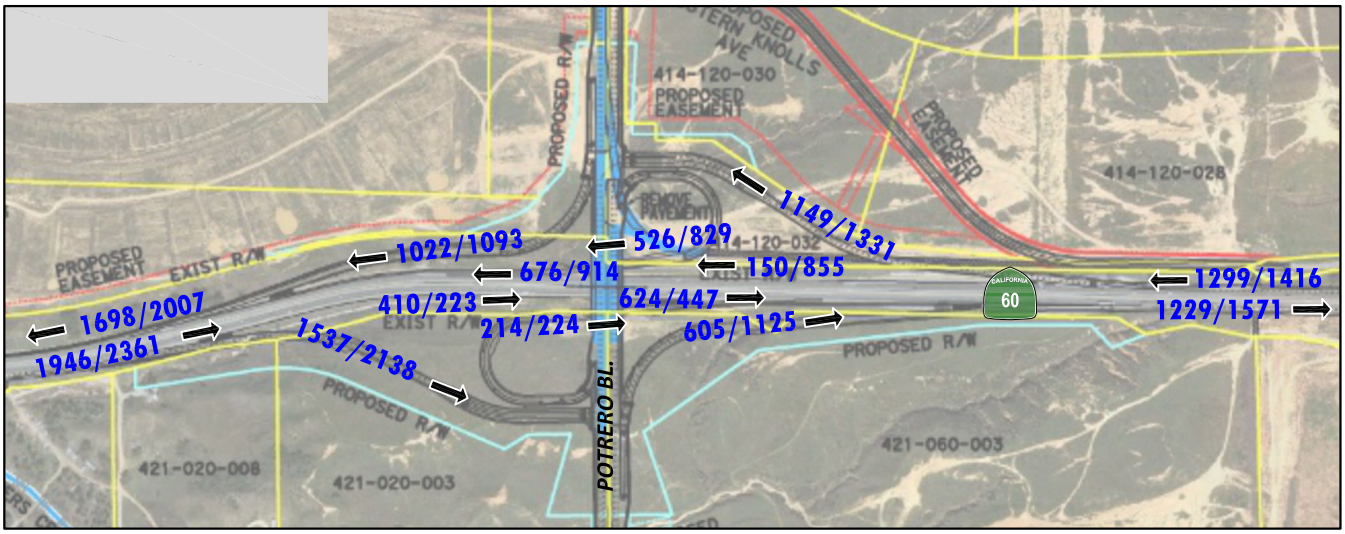
[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

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

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

[3] TS = Traffic Signal; **TS** = Improvement

EXHIBIT 6-8: OPENING YEAR (2023) WITHOUT PROJECT FREEWAY MAINLINE VOLUMES



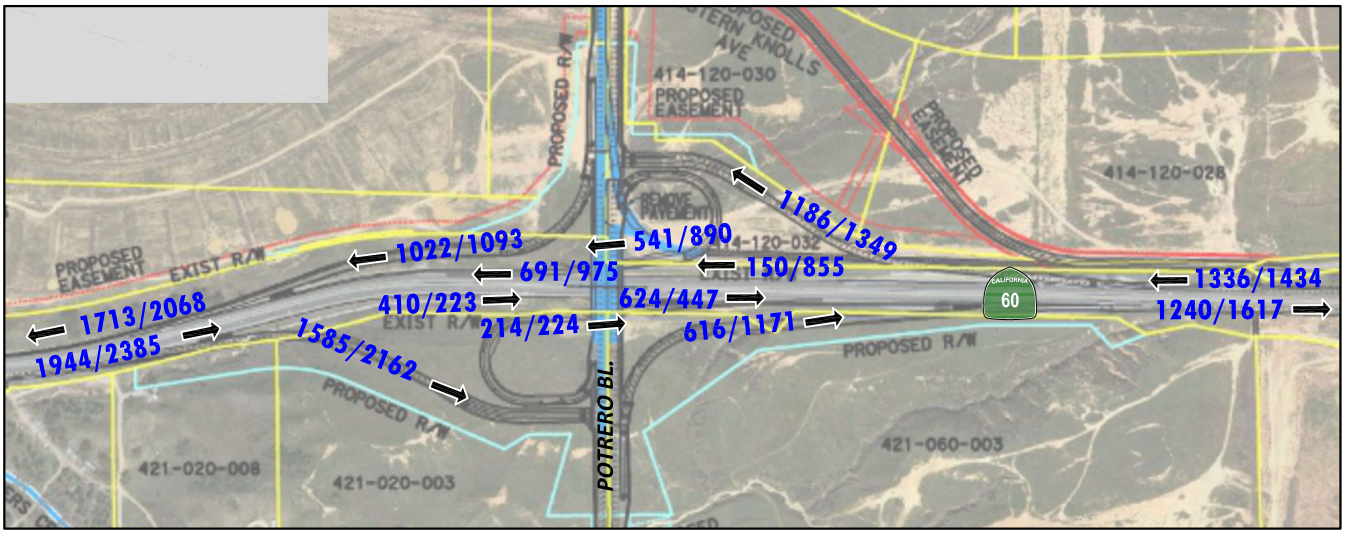
LEGEND:

⟵ 100/200 *= AM/PM PEAK HOUR VOLUMES*

NOTE: VOLUMES IN ACTUAL VEHICLES (NOT PCE)

N

EXHIBIT 6-9: OPENING YEAR (2023) WITH PROJECT FREEWAY MAINLINE VOLUMES



LEGEND:

⟵ 100/200 *= AM/PM PEAK HOUR VOLUMES*

NOTE: VOLUMES IN ACTUAL VEHICLES (NOT PCE)

N

7 OPENING YEAR (2025) TRAFFIC CONDITIONS

This section discusses the methods used to develop Opening Year (2025) Without and With Project traffic forecasts, and the resulting intersection operations, traffic signal warrant, off-ramp queuing, and freeway facility analyses.

7.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year (2025) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Opening Year conditions only (e.g., intersection and roadway improvements along the Project's frontage and driveways).
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Opening Year conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages and driveways).
- The SR-60 Freeway/Potrero Boulevard interchange is assumed to be in place (see Exhibit 6-1).
- The SR-60 Freeway/Western Knolls Avenue interchange is assumed to be vacated.

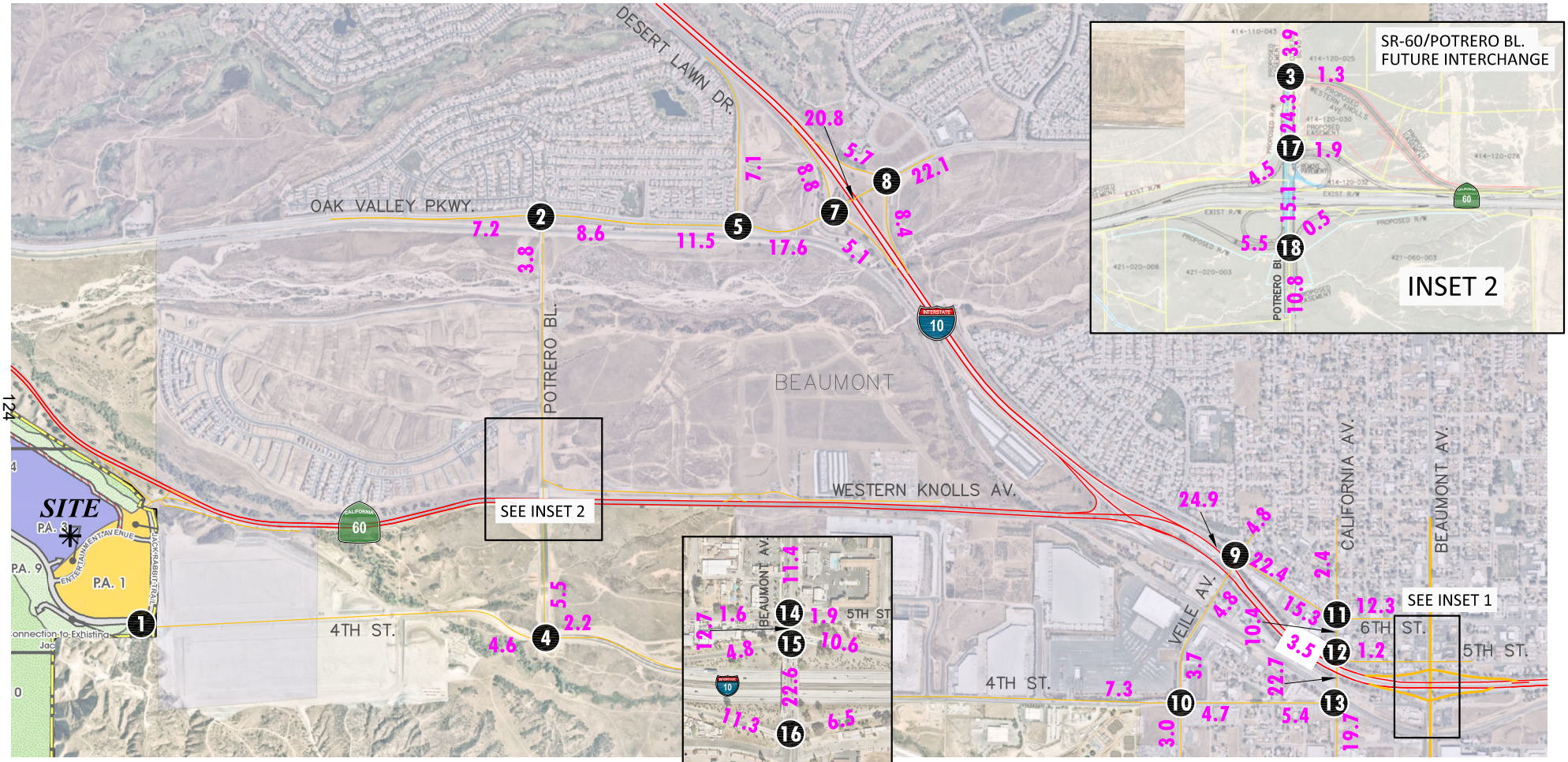
7.2 OPENING YEAR (2025) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus an ambient growth factor of 10.41% plus 50% of the traffic from pending and approved but not yet constructed known development projects in the area. The ADT and peak hour intersection turning movement volumes which can be expected for Opening Year (2025) Without Project conditions are shown on Exhibits 7-1 and 7-2, respectively.

7.3 OPENING YEAR (2025) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes, an ambient growth factor of 10.41%, 50% of the traffic from pending and approved but not yet constructed known development projects in the area and the addition of Project (Phase 2) traffic. The ADT and peak hour intersection turning movement volumes which can be expected for Opening Year (2025) With Project conditions are shown on Exhibits 7-3 and 7-4, respectively.

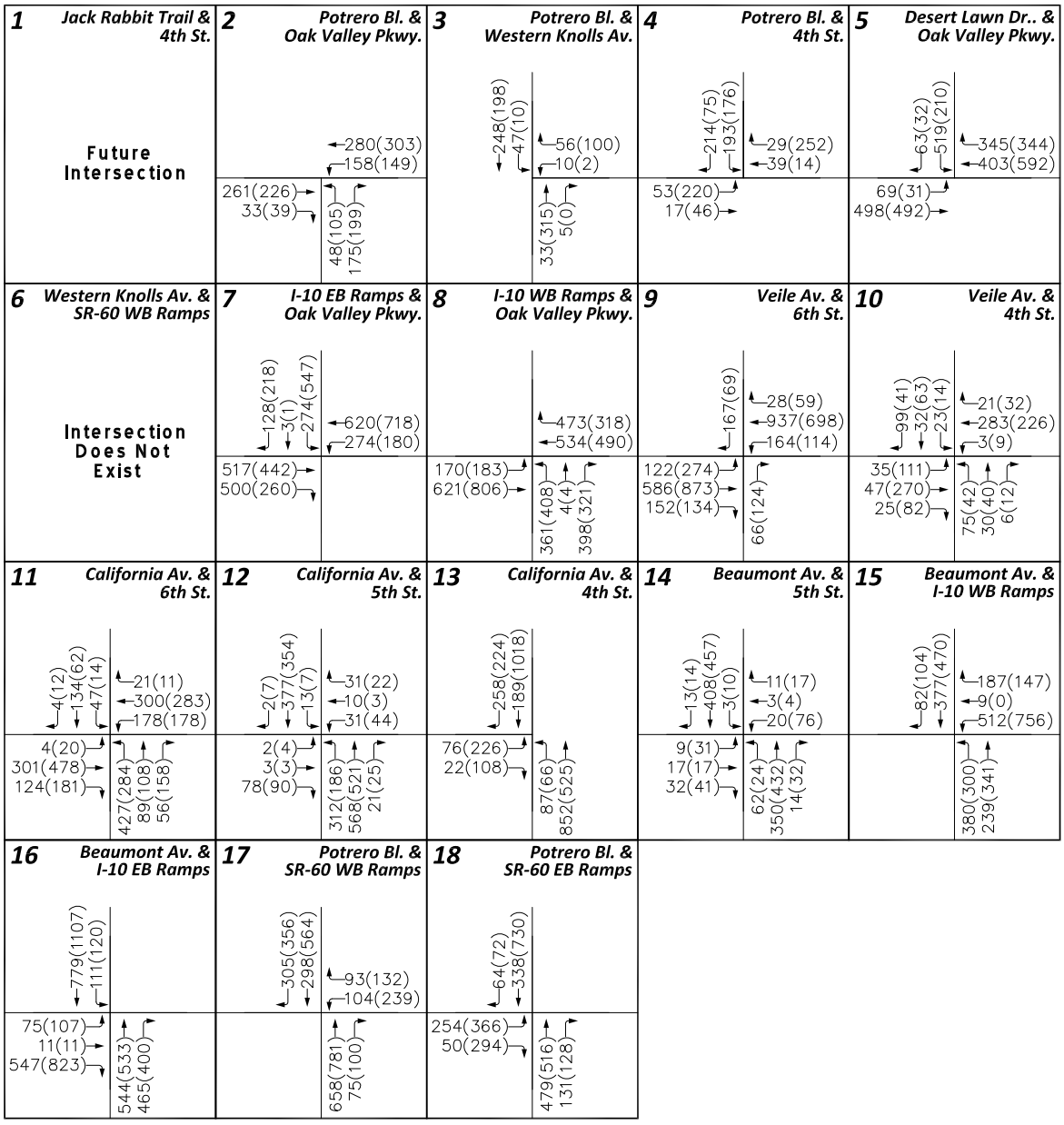
EXHIBIT 7-1: OPENING YEAR (2025) WITHOUT PROJECT AVERAGE DAILY TRAFFIC (ADT) (IN PCE)



LEGEND:

10.0 ***= VEHICLES PER DAY (1000'S)***

EXHIBIT 7-2: OPENING YEAR (2025) WITHOUT PROJECT TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

EXHIBIT 7-3: OPENING YEAR (2025) WITH PROJECT AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

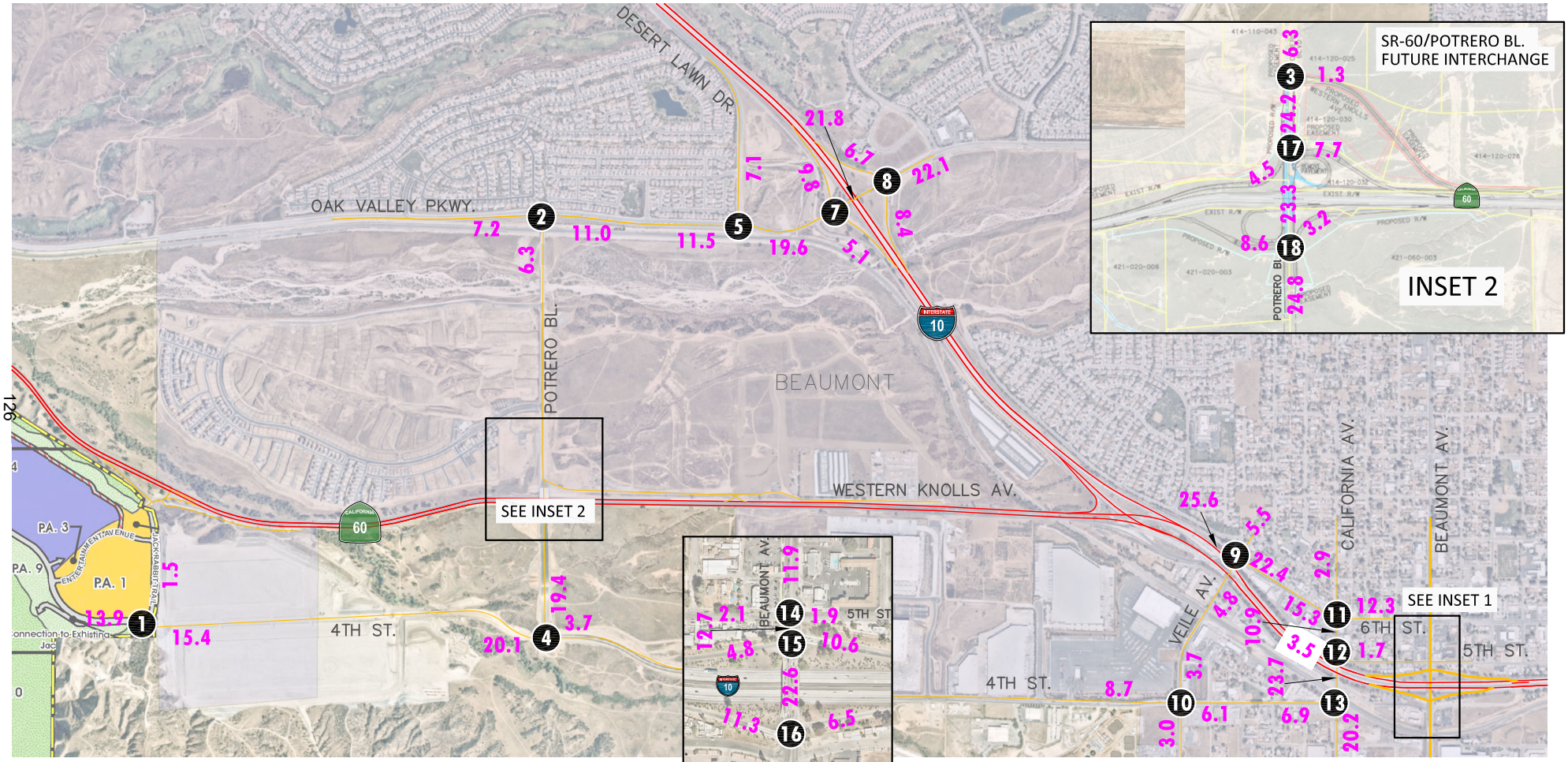
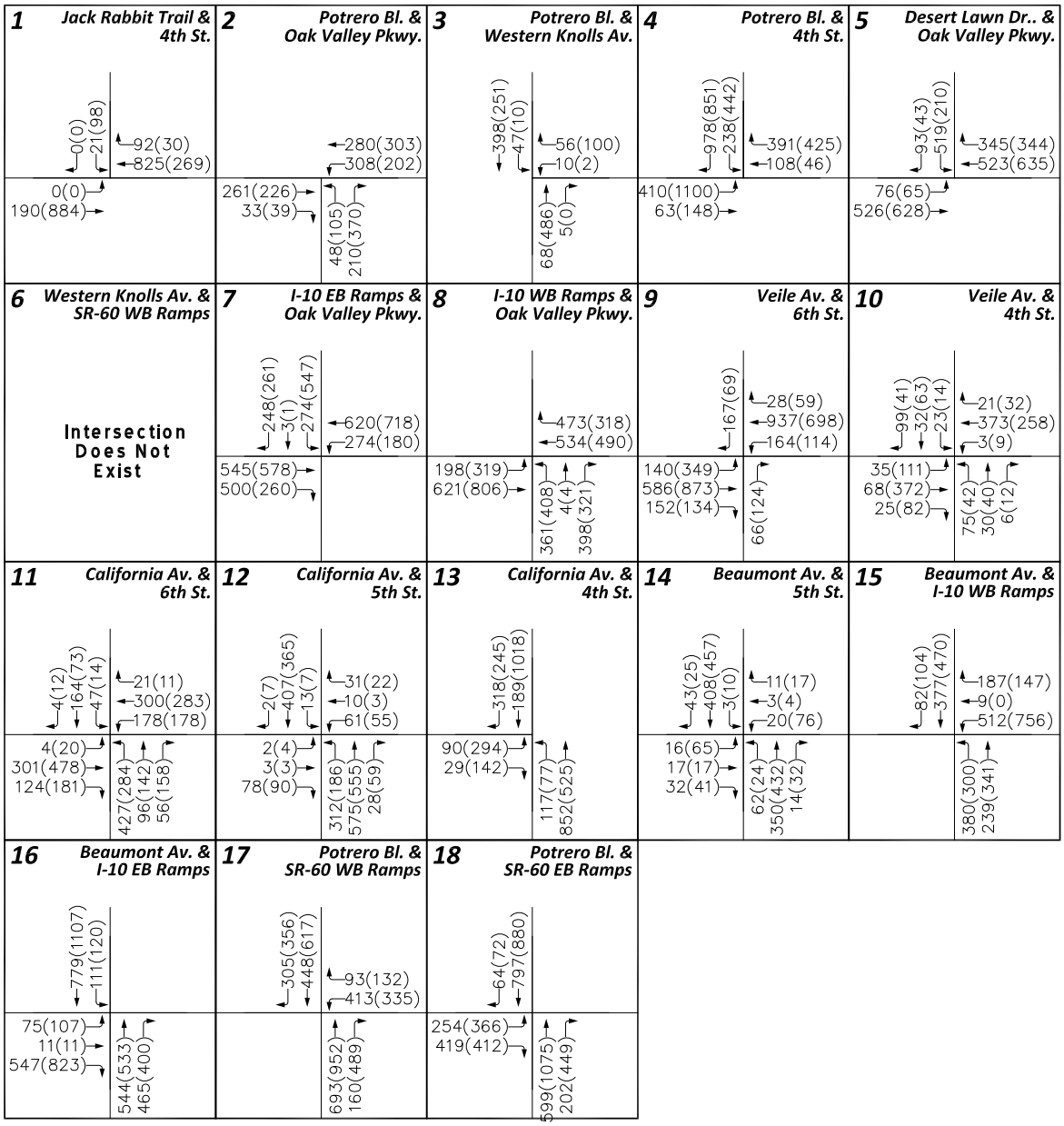


EXHIBIT 7-4: OPENING YEAR (2025) WITH PROJECT TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

7.4 INTERSECTION OPERATIONS ANALYSIS

7.4.1 OPENING YEAR (2025) WITHOUT PROJECT TRAFFIC CONDITIONS

Opening Year (2025) 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 analysis results are summarized in Table 7-1, which indicate that the following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under Opening Year (2025) Without Project:

- Desert Lawn Drive & Oak Valley Parkway (#5) – LOS F AM peak hour only
- I-10 Eastbound Ramps & Oak Valley Parkway (#7) – LOS F AM and PM peak hours
- I-10 Westbound Ramps & Oak Valley Parkway (#8) – LOS E AM peak hour only
- California Avenue & 6th Street (#11) – LOS E PM peak hour only
- California Avenue & 5th Street (#12) – LOS F AM peak hour only
- California Avenue & 4th Street (#13) – LOS F AM and PM peak hours

A summary of the peak hour intersection LOS for Opening Year (2025) Without Project conditions is shown on Exhibit 7-5. The intersection operations analysis worksheets for Opening Year Without Project traffic conditions are included in Appendix 7.1 of this TA.

7.4.2 OPENING YEAR (2025) WITH PROJECT TRAFFIC CONDITIONS

As shown in Table 7-1 and illustrated on Exhibit 7-6, the following additional study area intersections are anticipated to operate at an unacceptable LOS with the addition of Project (Phase 2) traffic, in addition to the intersections previously identified under Opening Year (2025) Without Project traffic conditions:

- Potrero Boulevard & 4th Street (#4) – LOS F AM and PM peak hours
- Veile Avenue & 4th Street (#10) – LOS E PM peak hour only

The intersection operations analysis worksheets for Opening Year (2025) With Project traffic conditions are included in Appendix 7.2 of this TA.

7.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants have been performed (based on CA MUTCD) for Opening Year (2025) traffic conditions based on peak hour intersection turning movements volumes. The following additional unsignalized study area intersection is anticipated to meet a traffic signal warrant under Opening Year (2025) Without Project traffic conditions (see Appendix 7.3), in addition to those warranted previously:

- Potrero Boulevard & Oak Valley Parkway (#2)

Table 7-1

Intersection Analysis for Opening Year (2025) Conditions

#	Intersection	Traffic Control[2]	2025 Without Project				2025 With Project			
			Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Jack Rabbit Tr. & 4th St.	**TS**	Future Intersection				5.4	8.9	A	A
2	Potrero Bl. & Oak Valley Pkwy.	AWS	11.2	11.3	B	B	15.6	16.4	C	C
3	Potrero Bl. & Western Knolls Av.	AWS	10.8	11.1	B	B	20.3	19.3	C	C
4	Potrero Bl. & 4th St.	TS	13.0	20.8	B	C	**>200.0**	**>200.0**	**F**	**F**
5	Desert Lawn Dr. & Oak Valley Pkwy.	AWS	**>100.0**	35.0	**F**	D	**>100.0**	**75.8**	**F**	**F**
6	SR-60 WB & Western Knolls Av.	CSS	Does Not Exist				Does Not Exist			
7	I-10 EB Ramps & Oak Valley Pkwy.	TS	**111.9**	**144.9**	**F**	**F**	**167.9**	**>200.0**	**F**	**F**
8	I-10 WB Ramps & Oak Valley Pkwy.	TS	**58.3**	42.5	**E**	D	**71.4**	**74.7**	**E**	**E**
9	Veile Av. & I-10 WB On-ramp/6th St.	CSS	16.4	15.1	C	C	16.4	15.1	C	C
10	Veile Av. & 4th St.	TS	19.4	18.3	B	B	20.0	18.5	C	B
11	California Av. & 6th St.	TS	54.7	**60.4**	D	**E**	54.8	**62.8**	D	**E**
12	California Av. & 5th St.	CSS	**>100.0**	33.7	**F**	D	**>100.0**	**38.8**	**F**	**E**
13	California Av. & 4th St.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
14	Beaumont Av. & 5th St.	TS	7.4	7.2	A	A	7.6	7.7	A	A
15	Beaumont Av. & I-10 WB Ramps	TS	Not Applicable[3]				Not Applicable[3]			
16	Beaumont Av. & I-10 EB Ramps	TS	Not Applicable[3]				Not Applicable[3]			
17	Potrero Bl. & I-10 WB Ramps	**TS**	5.7	6.0	A	A	6.7	6.4	A	A
18	Potrero Bl. & I-10 EB Ramps	**TS**	7.7	7.9	A	A	7.9	8.1	A	A

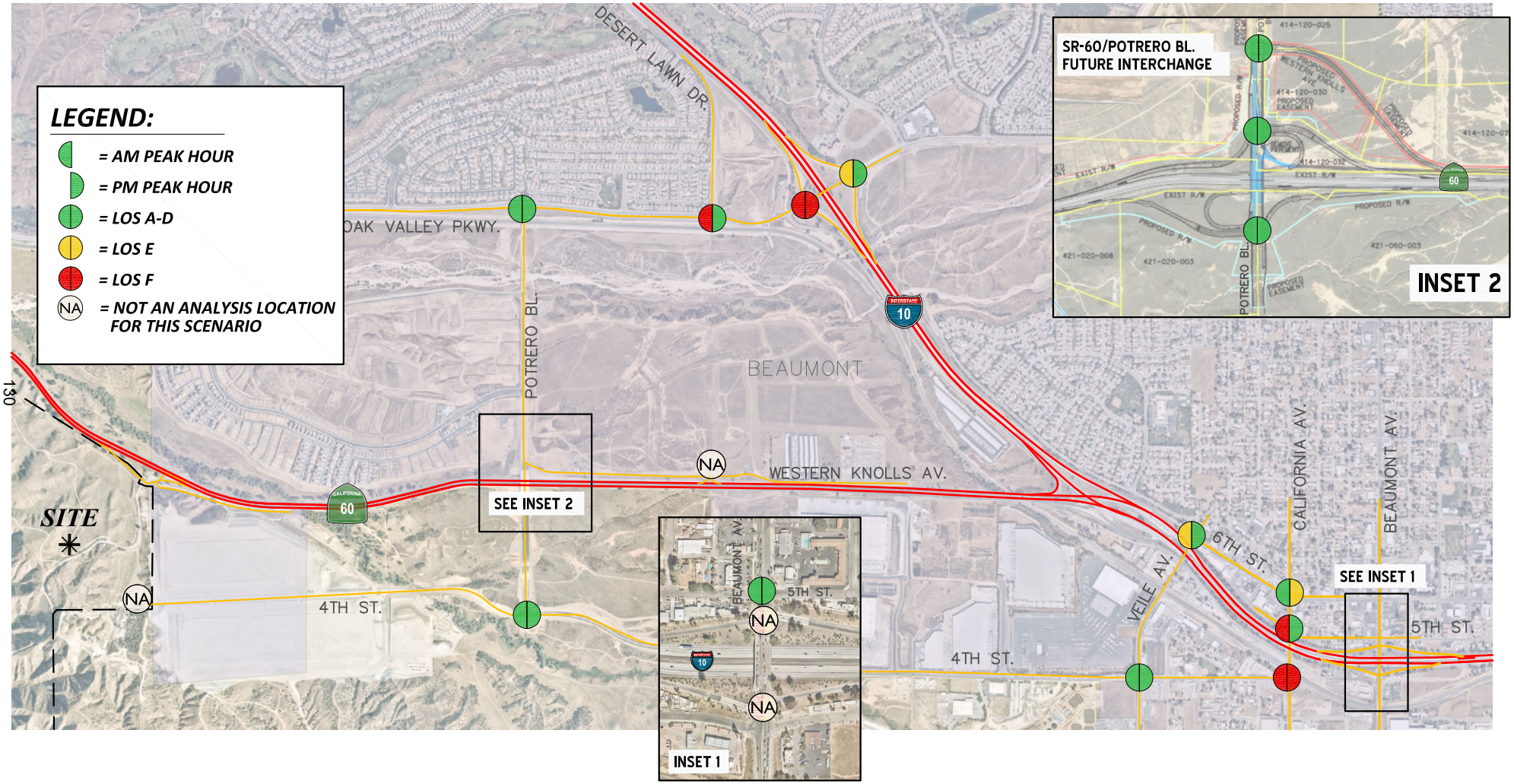
* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

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

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

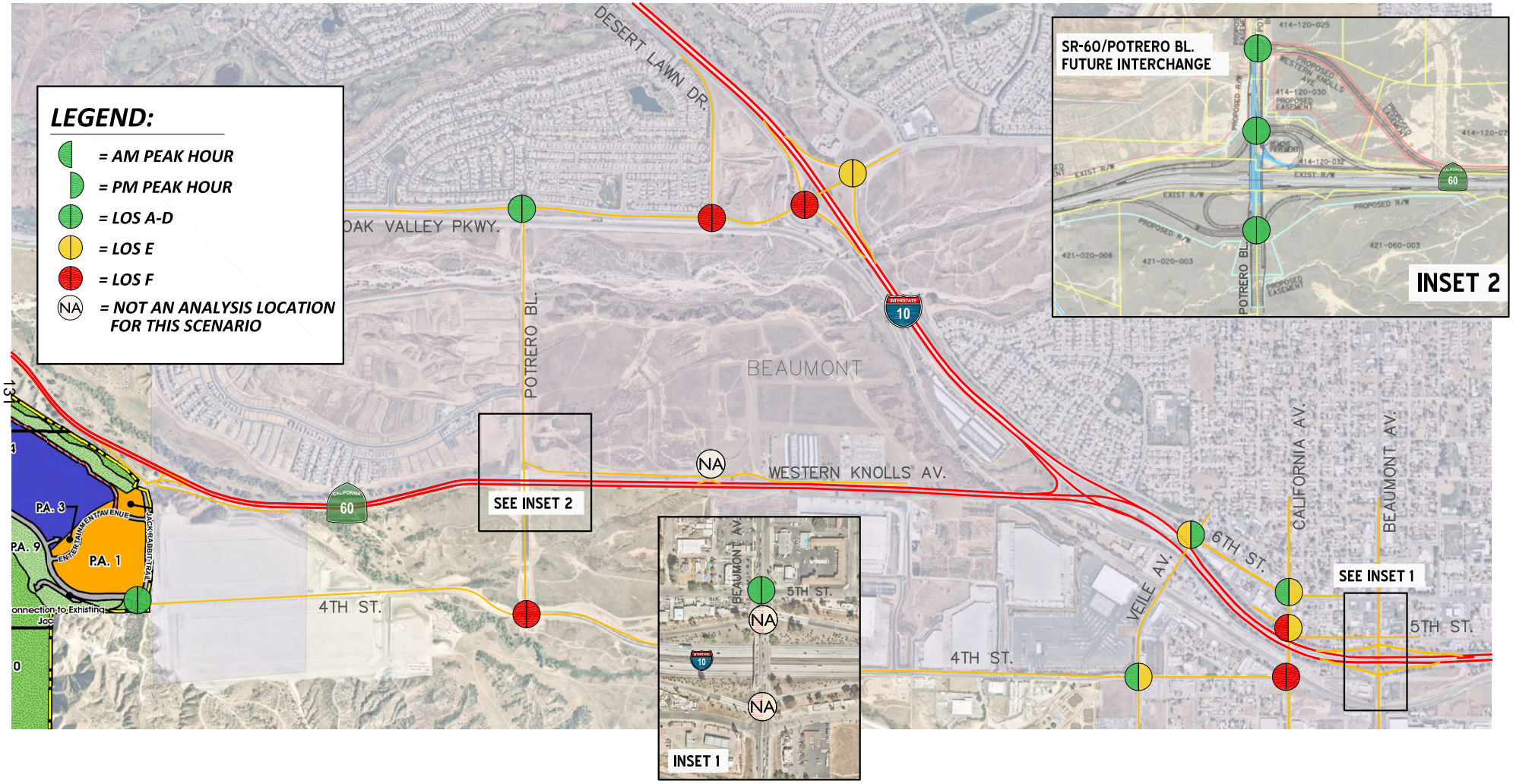
[3] Project is not anticipated to contribute any trips to this intersection. As such, the intersection has not been evaluated for this scenario.

EXHIBIT 7-5: OPENING YEAR (2025) WITHOUT PROJECT SUMMARY OF LOS



URBAN CROSSROADS

EXHIBIT 7-6: OPENING YEAR (2025) WITH PROJECT SUMMARY OF LOS



There are no additional unsignalized study area intersections anticipated to meet a traffic signal warrant under Opening Year (2025) With Project traffic conditions, in addition to the intersections identified previously under Existing (2020), E+P (Phase 2), E+P (Project Buildout), and Opening Year (2025) Without Project traffic conditions (see Appendix 7.4).

7.6 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for Opening Year (2025) are presented in Table 7-2. As shown in Table 7-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under Opening Year (2025) Without Project and With Project traffic conditions. Worksheets for Opening Year (2025) Without Project and With Project traffic conditions off-ramp queuing analyses are provided Appendices 7.5 and 7.6, respectively.

7.7 FREEWAY FACILITY ANALYSIS

Opening Year (2025) Without Project and With Project freeway mainline directional volumes for the AM and PM peak hours are provided on Exhibits 7-7 and 7-8, respectively. As shown in Table 7-3, the study area freeway mainline segments and merge/diverge ramp junctions are anticipated to continue to operate at an acceptable LOS (i.e., LOS D or better) during the peak hours for Opening Year (2025) Without Project and With Project traffic conditions. Opening Year (2025) Without Project and With Project freeway facility analysis worksheets are provided in Appendices 7.7 and 7.8, respectively.

7.8 DEFICIENCIES AND IMPROVEMENTS

This section provides a summary of deficiencies, based on the City of Beaumont deficiency criteria discussed in Section 2.8 *Deficiency Criteria*, and improvements needed to improve operations back to acceptable levels.

7.8.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

The effectiveness of the recommended improvement strategies to address Opening Year (2025) traffic deficiencies are presented in Table 7-4. Worksheets for Opening Year (2025) Without and With Project conditions, with improvements, HCM calculation worksheets are provided in Appendices 7.9 and 7.10, respectively.

7.8.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 7-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for Opening Year (2025) traffic conditions. As such, no improvements are necessary.

Table 7-2

Peak Hour Freeway Off-Ramp Queuing Summary for Opening Year (2025) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	2025 Without Project				2025 With Project			
			95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
I-10 EB Ramps & Oak Valley Pwky.	SBL/T/R	1,150	516 [2]	754 [2]	Yes	Yes	677 [2]	813 [2]	Yes	Yes
I-10 WB Ramps & Oak Valley Pkwy.	NBL/T/R	1,220	624 [2]	601 [2]	Yes	Yes	624 [2]	601 [2]	Yes	Yes
Beaumont Av. & I-10 WB Ramps	WBL	485	300 [2]	325 [2]	Yes	Yes	300 [2]	325 [2]	Yes	Yes
	WBL/R	1,110	232 [2]	263 [2]	Yes	Yes	232 [2]	263 [2]	Yes	Yes
Beaumont Av. & I-10 EB Ramps	EBL/R	885	127	317 [2]	Yes	Yes	127	317 [2]	Yes	Yes
	EBR	235	124	273 [2,3]	Yes	Yes	124	273 [2,3]	Yes	Yes
Potrero Bl. & I-10 WB Ramps	WBL	2,000	17	42	Yes	Yes	71	84	Yes	Yes
	WBR	500	10	15	Yes	Yes	13	19	Yes	Yes
Potrero Bl. & I-10 EB Ramps	EBL	1,800	32	60	Yes	Yes	46	102	Yes	Yes
	EBR	600	6	22	Yes	Yes	54	85	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

[2] 95th percentile volume exceeds capacity, queue may be longer.

[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the I-10 Freeway mainline.

Table 7-3

Freeway Facility Analysis for Opening Year (2025) Conditions

Freeway	Direction[1]	Mainline Segment	Lanes[2]	2025 Without Project				2025 With Project			
				Density[3]		LOS[4]		Density[3]		LOS[4]	
				AM	PM	AM	PM	AM	PM	AM	PM
I-10 Freeway	EB	West of Oak Valley Pkwy.	3	11.4	15.7	B	B	12.1	16.0	B	B
		Off-Ramp at Oak Valley Pkwy.	3	15.3	20.7	B	C	16.3	21.1	B	C
	WB	West of Oak Valley Pkwy.	3	13.0	15.3	B	B	13.2	16.1	B	B
		On-Ramp at Oak Valley Pkwy.	3	14.2	16.0	B	B	14.4	17.1	B	B
SR-60 Freeway	EB	West of Potrero Bl.	2	17.3	20.7	B	C	20.0	21.8	C	C
		Off-Ramp at Potrero Bl.	2	22.7	26.7	C	C	25.8	27.9	C	C
		On-Ramp at Potrero Bl.	2	15.3	18.3	B	B	15.9	21.0	B	C
		East of Potrero Bl.	2	10.6	13.4	A	B	11.0	16.0	A	B
	WB	West of Potrero Bl.	2	14.9	17.8	B	B	15.3	20.8	B	C
		Loop On-Ramp at Potrero Bl.	2	10.3	12.7	B	B	10.8	15.6	B	B
		Off-Ramp at Potrero Bl.	2	15.9	17.1	B	B	18.6	17.8	B	B
		East of Potrero Bl.	2	11.5	12.5	B	B	13.8	13.1	B	B

[1] NB = Northbound; SB = Southbound

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

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

[4] LOS = Level of Service

Table 7-4

Intersection Analysis for Opening Year (2025) Conditions With 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
4	Potrero Bl. & 4th St.																	
	- Without Project	TS	0	0	0	2	0	**1>**	**2**	1	0	1	1	1	10.7	13.7	B	B
	- With Project	TS	0	0	0	2	0	**1>**	**2**	1	0	1	1	1	31.1	51.0	C	D
5	Desert Lawn Dr. & Oak Valley Pkwy.																	
	- Without Project	**TS**	0	0	0	0	1	0	1	1	0	0	3	0	26.4	11.7	C	B
	- With Project	**TS**	0	0	0	0	1	0	1	1	0	0	3	0	30.4	12.5	C	B
7	I-10 EB Ramps & Oak Valley Pkwy.																	
	- Without Project	TS	0	0	0	**1**	1	0	0	**2**	**1**	1	1	0	21.6	47.4	C	D
	- With Project	TS	0	0	0	**1**	1	0	0	**2**	**1**	1	1	0	22.9	48.5	C	D
8	I-10 WB Ramps & Oak Valley Pkwy.																	
	- Without Project	TS	**1**	1	0	0	0	0	1	1	0	0	1	1	28.5	34.1	C	C
	- With Project	TS	**1**	1	0	0	0	0	1	1	0	0	1	1	29.4	37.5	C	D
12	California Av. & 5th St.																	
	- Without Project	**TS**	1	1	d	1	1	d	0	1	d	0	1	d	27.8	13.7	C	B
	- With Project	**TS**	1	1	d	1	1	d	0	1	d	0	1	d	44.6	14.5	D	B
13	California Av. & 4th St.																	
	- Without Project	**TS**	1	1	0	0	1	**1**	1	0	1	0	0	0	13.2	24.1	B	C
	- With Project	**TS**	1	1	0	0	1	**1**	1	0	1	0	0	0	14.3	34.0	B	C

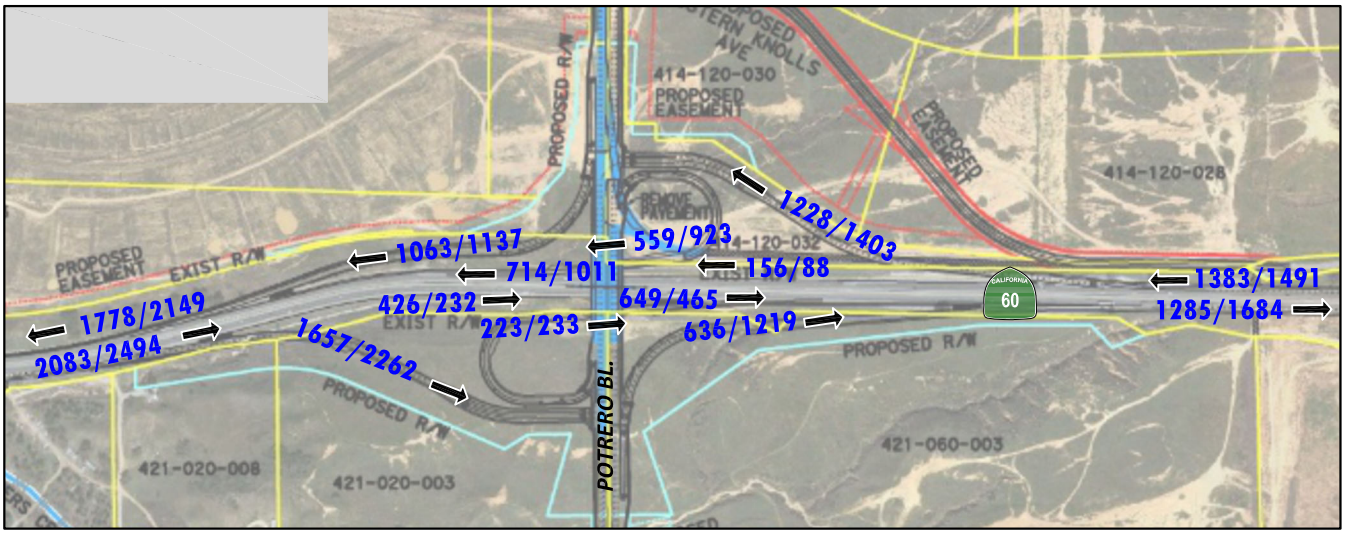
[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

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

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

[3] CSS = Cross-street Stop; TS = Traffic Signal; **TS** = Improvement

EXHIBIT 7-7: OPENING YEAR (2025) WITHOUT PROJECT FREEWAY MAINLINE VOLUMES



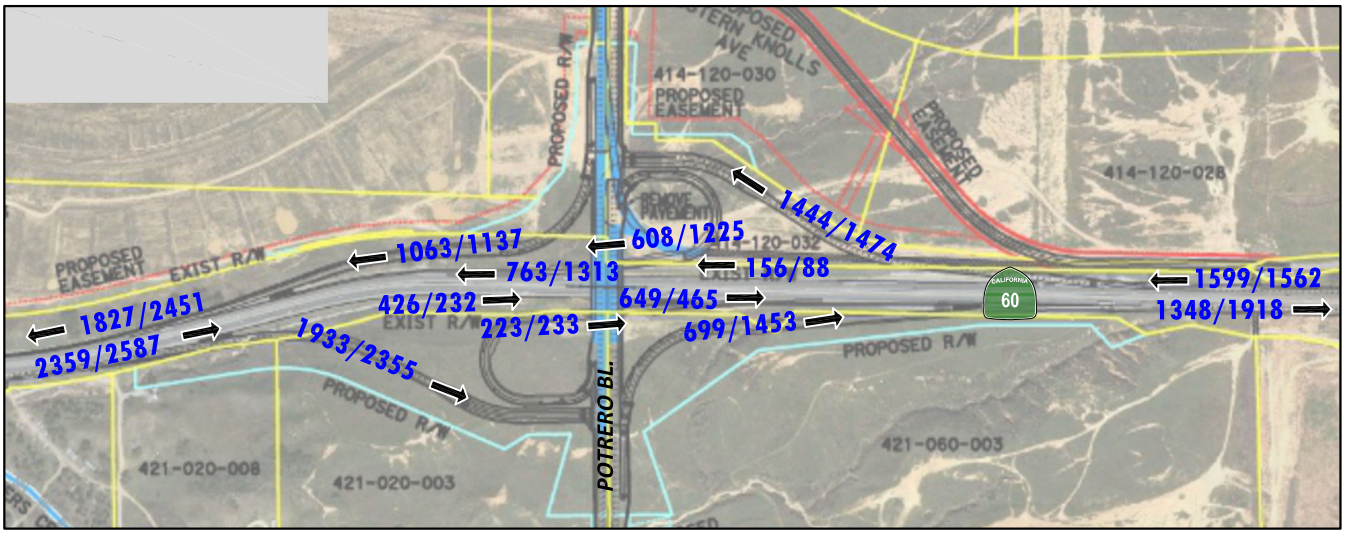
LEGEND:

⟵ 100/200 *= AM/PM PEAK HOUR VOLUMES*

NOTE: VOLUMES IN ACTUAL VEHICLES (NOT PCE)

N

EXHIBIT 7-8: OPENING YEAR (2025) WITH PROJECT FREEWAY MAINLINE VOLUMES



LEGEND:

⟵ 100/200 *= AM/PM PEAK HOUR VOLUMES*

NOTE: VOLUMES IN ACTUAL VEHICLES (NOT PCE)

7.8.3 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON FREEWAY FACILITIES

As shown previously in Table 7-3, the study area freeway segments and merge/diverge ramp junctions are anticipated to operate at an acceptable LOS for Opening Year (2025) traffic conditions. As such no improvements are necessary.

8 OPENING YEAR (2027) TRAFFIC CONDITIONS

This section discusses the methods used to develop Opening Year (2027) Without and With Project traffic forecasts, and the resulting intersection operations, traffic signal warrant, off-ramp queuing, and freeway facility analyses.

8.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year (2027) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Opening Year conditions only (e.g., intersection and roadway improvements along the Project's frontage and driveways).
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Opening Year conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages and driveways).
- The SR-60 Freeway/Potrero Boulevard interchange is assumed to be in place (see Exhibit 6-1).
- The SR-60 Freeway/Western Knolls Avenue interchange is assumed to be vacated.

8.2 OPENING YEAR (2027) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus an ambient growth factor of 14.87% plus 100% of the traffic from pending and approved but not yet constructed known development projects in the area. The ADT and peak hour intersection turning movement volumes which can be expected for Opening Year (2027) Without Project conditions are shown on Exhibits 8-1 and 8-2, respectively.

8.3 OPENING YEAR (2027) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes, an ambient growth factor of 14.87%, 100% of the traffic from pending and approved but not yet constructed known development projects in the area and the addition of Project Buildout traffic. The ADT and peak hour intersection turning movement volumes which can be expected for Opening Year (2027) With Project conditions are shown on Exhibits 8-3 and 8-4, respectively.

EXHIBIT 8-1: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

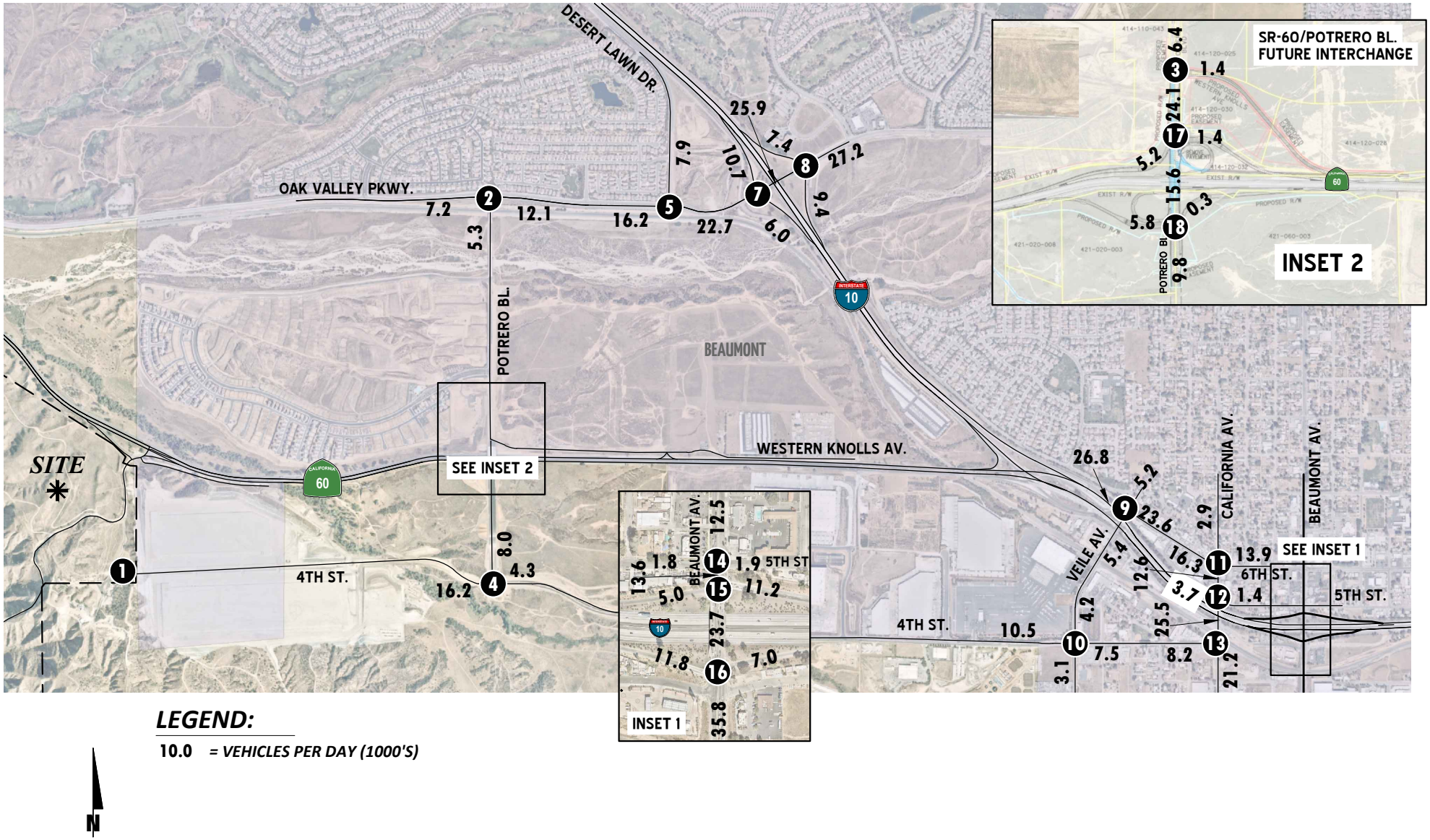
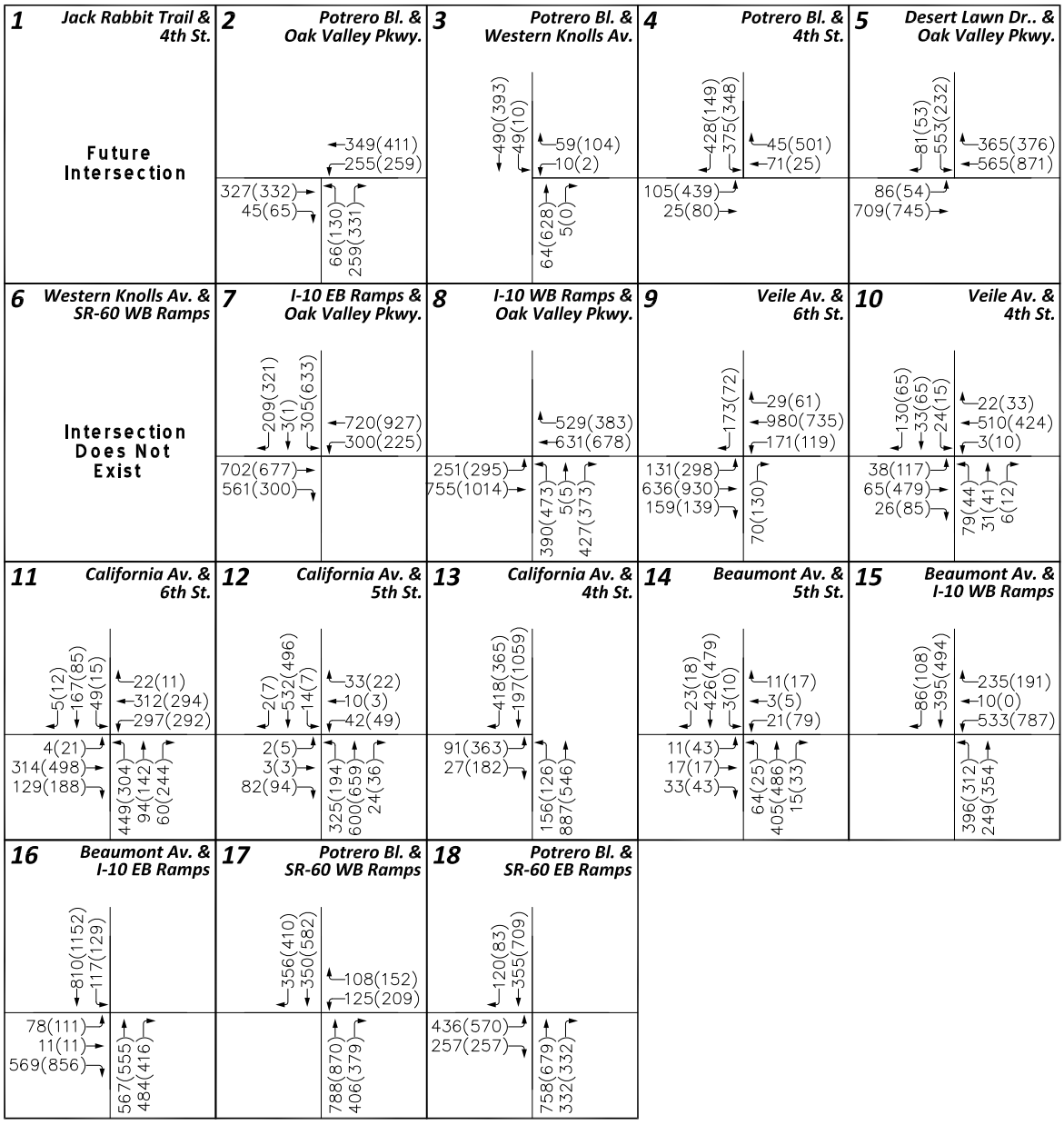


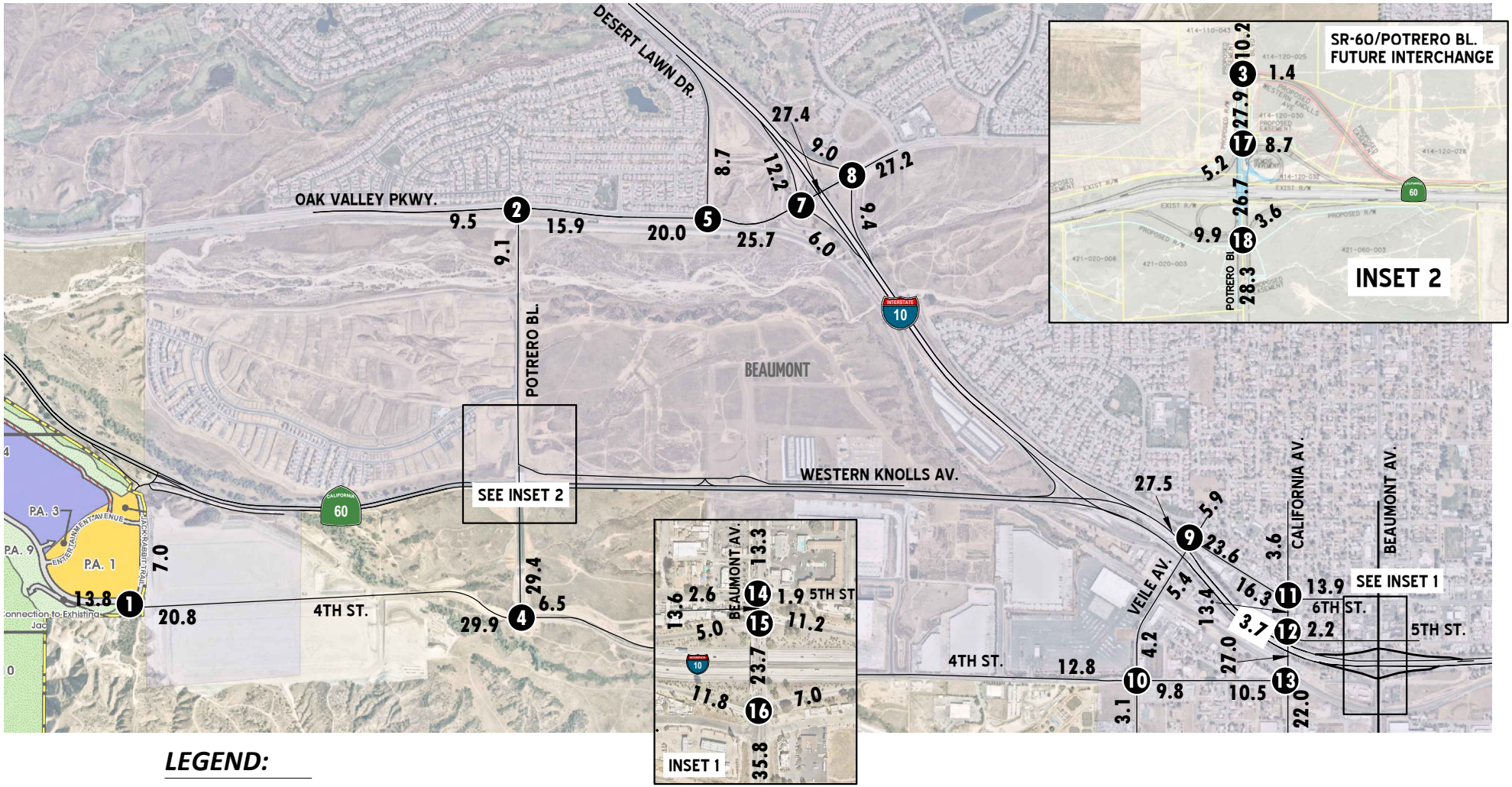
EXHIBIT 8-2: OPENING YEAR (2027) WITHOUT PROJECT TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

EXHIBIT 8-3: OPENING YEAR CUMULATIVE (2027) WITH PROJECT AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

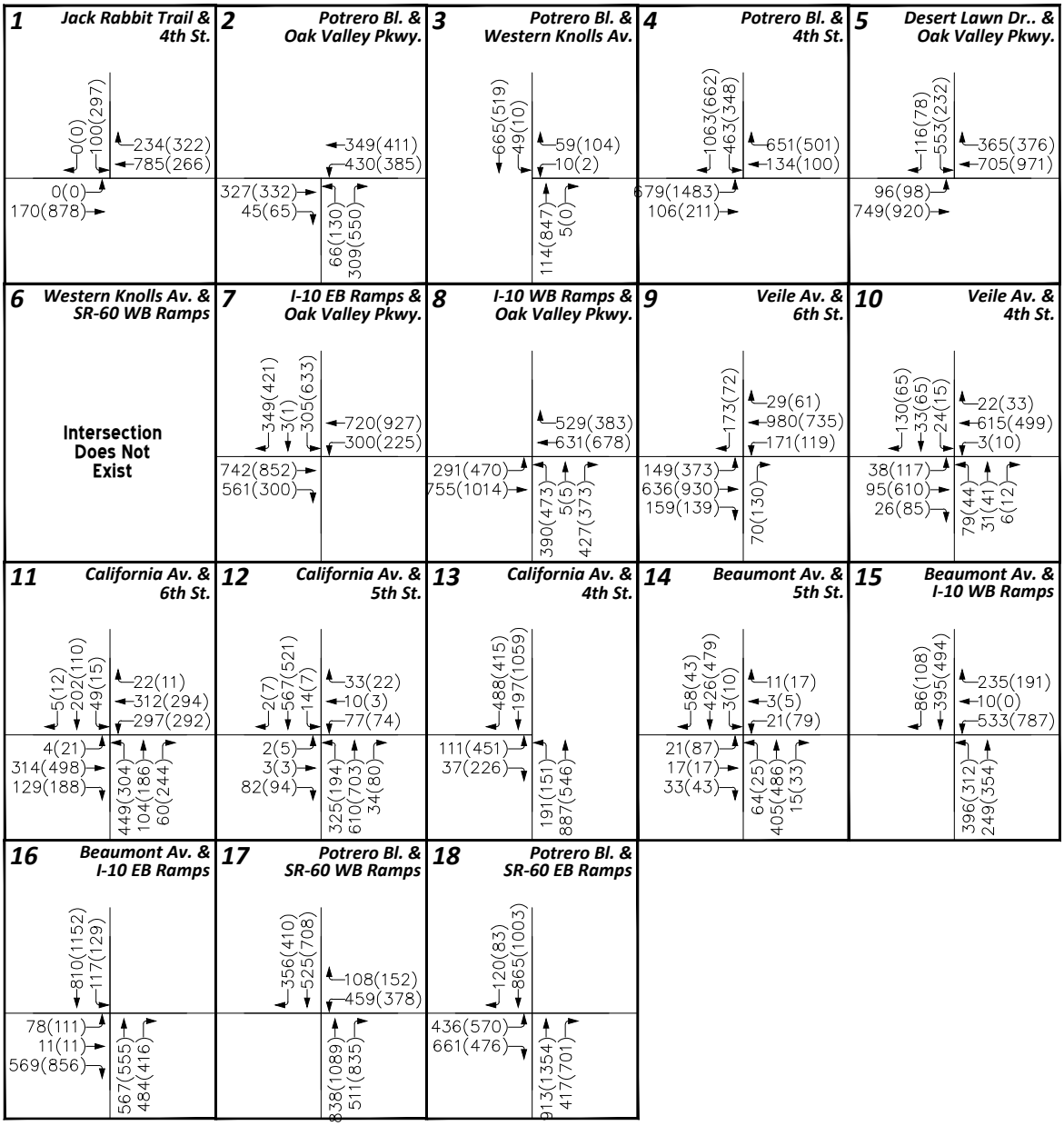


LEGEND:

10.0 ***= VEHICLES PER DAY (1000'S)***

N

EXHIBIT 8-4: OPENING YEAR CUMULATIVE (2027) WITH PROJECT TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

N

8.4 INTERSECTION OPERATIONS ANALYSIS

8.4.1 OPENING YEAR (2027) WITHOUT PROJECT TRAFFIC CONDITIONS

Opening Year (2027) 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 analysis results are summarized in Table 8-1, which indicate that the following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under Opening Year (2027) Without Project:

- Potrero Boulevard & Oak Valley Parkway (#3) – LOS E AM peak hour; LOS F PM peak hour
- Potrero Boulevard & 4th Street (#4) – LOS F AM and PM peak hours
- Desert Lawn Drive & Oak Valley Parkway (#5) – LOS F AM and PM peak hours
- I-10 Eastbound Ramps & Oak Valley Parkway (#7) – LOS F AM and PM peak hours
- I-10 Westbound Ramps & Oak Valley Parkway (#8) – LOS F AM and PM peak hours
- California Avenue & 6th Street (#11) – LOS F AM and PM peak hours
- California Avenue & 5th Street (#12) – LOS F AM and PM peak hours
- California Avenue & 4th Street (#13) – LOS F AM and PM peak hours

A summary of the peak hour intersection LOS for Opening Year (2027) Without Project conditions is shown on Exhibit 8-5. The intersection operations analysis worksheets for Opening Year Without Project traffic conditions are included in Appendix 8.1 of this TA.

8.4.2 OPENING YEAR (2027) WITH PROJECT TRAFFIC CONDITIONS

As shown in Table 8-1 and illustrated on Exhibit 8-6, the following additional study area intersection is anticipated to operate at an unacceptable LOS with the addition of Project (Buildout) traffic, in addition to the intersections previously identified under Opening Year (2027) Without Project traffic conditions:

- Potrero Boulevard & Oak Valley Parkway (#2) – LOS E AM peak hour only

The intersection operations analysis worksheets for Opening Year (2027) With Project traffic conditions are included in Appendix 8.2 of this TA.

Table 8-1

Intersection Analysis for Opening Year (2027) Conditions

#	Intersection	Traffic Control[2]	2027 Without Project				2027 With Project			
			Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Jack Rabbit Tr. & 4th St.	**TS**	Future Intersection				8.1	12.9	A	B
2	Potrero Bl. & Oak Valley Pkwy.	AWS	16.7	19.8	C	C	**45.8**	19.8	**E**	C
3	Potrero Bl. & Western Knolls Av.	AWS	**42.7**	**65.2**	**E**	**F**	**>100.0**	**65.2**	**F**	**F**
4	Potrero Bl. & 4th St.	TS	23.9	**142.3**	C	**F**	**>100.0**	**>100.0**	**F**	**F**
5	Desert Lawn Dr. & Oak Valley Pkwy.	AWS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
6	SR-60 WB & Western Knolls Av.	CSS	Does Not Exist				Does Not Exist			
7	I-10 EB Ramps & Oak Valley Pkwy.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
8	I-10 WB Ramps & Oak Valley Pkwy.	TS	**112.7**	**130.1**	**F**	**F**	**138.2**	**130.1**	**F**	**F**
9	Veile Av. & I-10 WB On-ramp/6th St.	CSS	17.3	16.0	C	C	17.3	16.0	C	C
10	Veile Av. & 4th St.	TS	25.7	22.2	C	C	36.6	26.8	D	C
11	California Av. & 6th St.	TS	**114.6**	**129.6**	**F**	**F**	**116.2**	**129.6**	**F**	**F**
12	California Av. & 5th St.	CSS	**>100.0**	**59.5**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
13	California Av. & 4th St.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
14	Beaumont Av. & 5th St.	TS	7.3	7.2	A	A	7.5	7.2	A	A
15	Beaumont Av. & I-10 WB Ramps	TS	Not Applicable[3]				Not Applicable[3]			
16	Beaumont Av. & I-10 EB Ramps	TS	Not Applicable[3]				Not Applicable[3]			
17	Potrero Bl. & I-10 WB Ramps	**TS**	5.7	5.9	A	A	7.1	5.9	A	A
18	Potrero Bl. & I-10 EB Ramps	**TS**	7.9	8.1	A	A	9.5	8.1	A	A

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

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

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

[3] Project is not anticipated to contribute any trips to this intersection. As such, the intersection has not been evaluated for this scenario.

EXHIBIT 8-5: OPENING YEAR (2027) WITHOUT PROJECT SUMMARY OF LOS

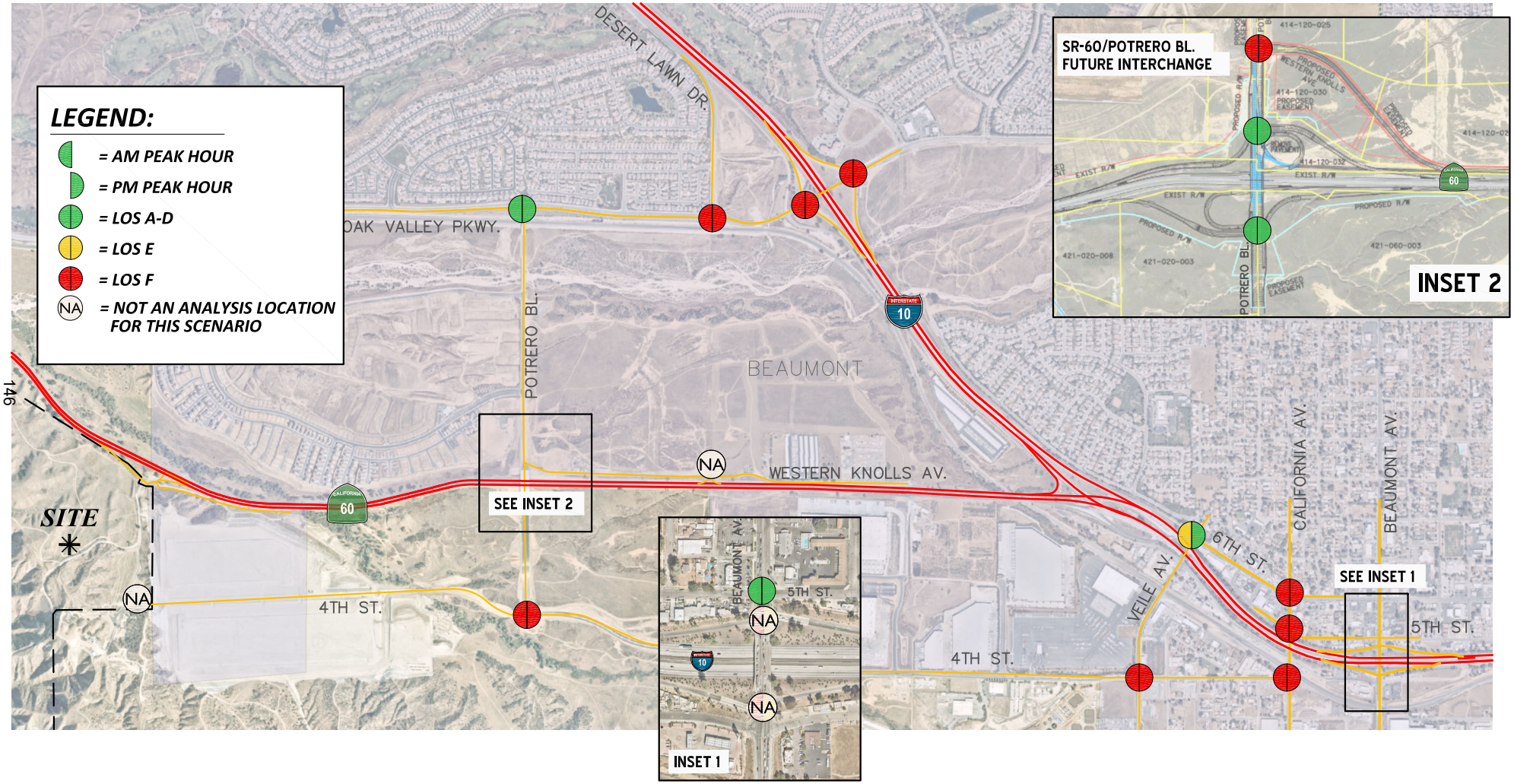
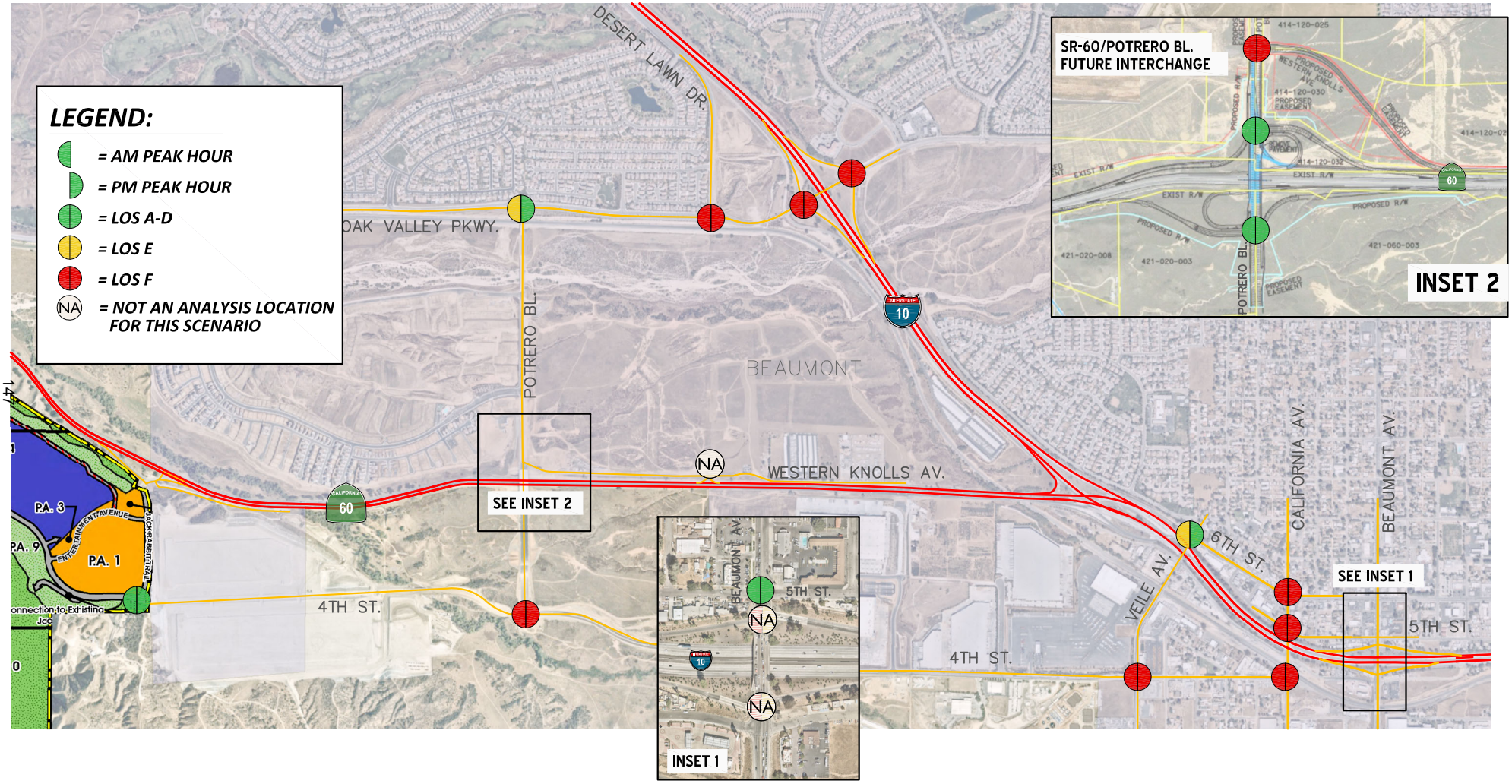


EXHIBIT 8-6: OPENING YEAR (2027) WITH PROJECT SUMMARY OF LOS



URBAN CROSSROADS

8.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants have been performed (based on CA MUTCD) for Opening Year (2027) traffic conditions based on peak hour intersection turning movements volumes. The following additional unsignalized study area intersection is anticipated to meet a traffic signal warrant under Opening Year (2027) Without Project traffic conditions (see Appendix 8.3), in addition to the locations previously warranted:

- Potrero Boulevard & Oak Valley Parkway (#3)

Since all unsignalized study area intersections have previously warranted a traffic signal warrant under previous scenarios, no traffic signal warrants have been evaluated for Opening Year (2027) With Project traffic conditions.

8.6 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for Opening Year (2027) are presented in Table 8-2. As shown in Table 8-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under Opening Year (2027) Without Project and With Project traffic conditions. Worksheets for Opening Year (2027) Without Project and With Project traffic conditions off-ramp queuing analyses are provided Appendices 8.4 and 8.5, respectively.

8.7 FREEWAY FACILITY ANALYSIS

Opening Year (2027) Without Project and With Project freeway mainline directional volumes for the AM and PM peak hours are provided on Exhibits 8-7 and 8-8, respectively. As shown in Table 8-3, the study area freeway mainline segments and merge/diverge ramp junctions are anticipated to continue to operate at an acceptable LOS (i.e., LOS D or better) during the peak hours for Opening Year (2027) Without Project and With Project traffic conditions. Opening Year (2027) Without Project and With Project freeway facility analysis worksheets are provided in Appendices 8.6 and 8.7, respectively.

Table 8-2

Peak Hour Freeway Off-Ramp Queuing Summary for Opening Year (2027) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	2027 Without Project				2027 With Project			
			95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
I-10 EB Ramps & Oak Valley Pwky.	SBL/T/R	1,150	675 [2]	1,018 [2]	Yes	Yes	861 [2]	1,146 [2]	Yes	Yes
I-10 WB Ramps & Oak Valley Pkwy.	NBL/T/R	1,220	704 [2]	766 [2]	Yes	Yes	704 [2]	766 [2]	Yes	Yes
Beaumont Av. & I-10 WB Ramps	WBL	485	343 [2]	344 [2]	Yes	Yes	343 [2]	344 [2]	Yes	Yes
	WBL/R	1,110	236 [2]	321 [2]	Yes	Yes	236 [2]	321 [2]	Yes	Yes
Beaumont Av. & I-10 EB Ramps	EBL/R	885	143 [2]	341 [2]	Yes	Yes	143 [2]	341 [2]	Yes	Yes
	EBR	235	141 [2]	291 [2,3]	Yes	Yes	141 [2]	291 [2,3]	Yes	Yes
Potrero Bl. & I-10 WB Ramps	WBL	2,000	28	46	Yes	Yes	107	46	Yes	Yes
	WBR	500	15	19	Yes	Yes	17	19	Yes	Yes
Potrero Bl. & I-10 EB Ramps	EBL	1,800	85	111	Yes	Yes	109	111	Yes	Yes
	EBR	600	22	21	Yes	Yes	163	21	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

[2] 95th percentile volume exceeds capacity, queue may be longer.

[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the I-10 Freeway mainline.

Table 8-3

Freeway Facility Analysis for Opening Year (2027) Conditions

Freeway	Direction[1]	Mainline Segment	Lanes[2]	2027 Without Project				2027 With Project			
				Density[3]		LOS[4]		Density[3]		LOS[4]	
				AM	PM	AM	PM	AM	PM	AM	PM
I-10 Freeway	EB	West of Oak Valley Pkwy.	3	12.4	17.2	B	B	13.2	17.7	B	B
		Off-Ramp at Oak Valley Pkwy.	3	16.6	22.7	B	C	17.8	23.4	B	C
	WB	West of Oak Valley Pkwy.	3	14.2	16.8	B	B	14.4	17.8	B	B
		On-Ramp at Oak Valley Pkwy.	3	15.6	17.9	B	B	15.9	19.3	B	B
SR-60 Freeway	EB	West of Potrero Bl.	2	19.5	22.9	C	C	23.0	24.7	C	C
		Off-Ramp at Potrero Bl.	2	25.3	28.9	C	D	29.1	30.7	D	D
		On-Ramp at Potrero Bl.	2	15.8	20.5	B	C	16.7	23.0	B	C
		East of Potrero Bl.	2	10.9	15.6	A	B	11.7	18.0	B	B
	WB	West of Potrero Bl.	2	15.6	20.3	B	C	16.5	24.2	B	C
		Loop On-Ramp at Potrero Bl.	2	10.8	14.7	B	B	11.6	18.1	B	B
		Off-Ramp at Potrero Bl.	2	17.5	18.1	B	B	20.4	19.6	C	B
		East of Potrero Bl.	2	12.9	13.4	B	B	15.3	14.6	B	B

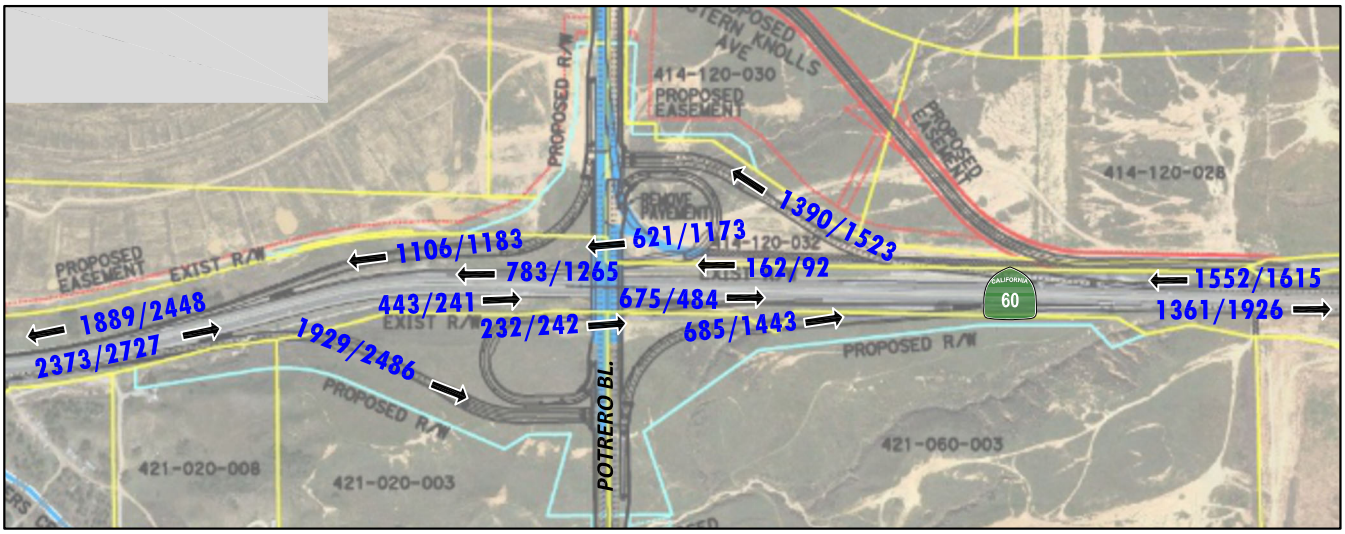
[1] NB = Northbound; SB = Southbound

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

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

[4] LOS = Level of Service

EXHIBIT 8-7: OPENING YEAR (2027) WITHOUT PROJECT FREEWAY MAINLINE VOLUMES



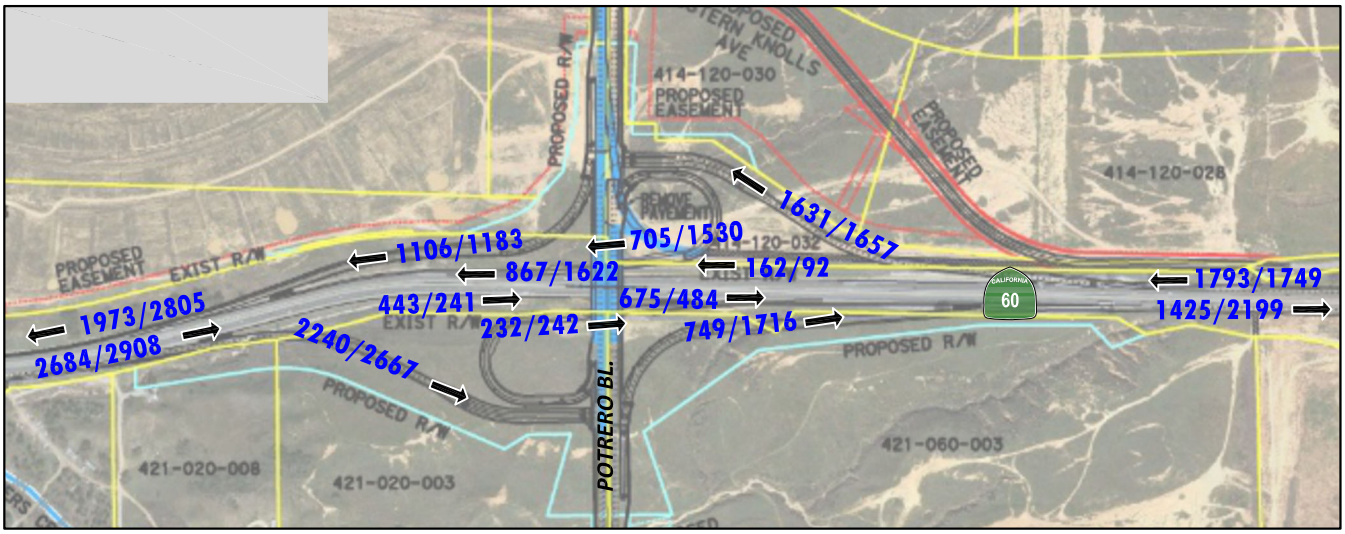
LEGEND:

⟵ **100/200** *= AM/PM PEAK HOUR VOLUMES*

NOTE: VOLUMES IN ACTUAL VEHICLES (NOT PCE)

N

EXHIBIT 8-8: OPENING YEAR (2027) WITH PROJECT FREEWAY MAINLINE VOLUMES



LEGEND:

⟵ **100/200** *= AM/PM PEAK HOUR VOLUMES*

NOTE: VOLUMES IN ACTUAL VEHICLES (NOT PCE)

N

8.8 DEFICIENCIES AND IMPROVEMENTS

This section provides a summary of deficiencies, based on the City of Beaumont deficiency criteria discussed in Section 2.8 *Deficiency Criteria*, and improvements needed to improve operations back to acceptable levels.

8.8.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

The effectiveness of the recommended improvement strategies to address Opening Year (2027) traffic deficiencies are presented in Table 8-4. Worksheets for Opening Year (2027) Without and With Project conditions, with improvements, HCM calculation worksheets are provided in Appendices 8.8 and 8.9, respectively.

8.8.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 8-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for Opening Year (2027) traffic conditions. As such, no improvements are necessary.

8.8.3 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON FREEWAY FACILITIES

As shown previously in Table 8-3, the study area freeway segments and merge/diverge ramp junctions are anticipated to operate at an acceptable LOS for Opening Year (2027) traffic conditions. As such no improvements are necessary.

Table 8-4

Intersection Analysis for Opening Year (2027) Conditions With 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
2	Potrero Bl. & Oak Valley Pkwy.																	
	- Without Project	**TS**	1	0	1	0	0	0	0	2	1	1	2	0	15.6	16.4	B	B
	- With Project	**TS**	1	0	1	0	0	0	0	2	1	1	2	0	26.3	38.4	C	D
3	Potrero Bl. & Western Knolls Av.																	
	- Without Project	**CSS**	0	**2**	0	**1**	**2**	0	0	0	0	0	1	0	9.8	13.0	A	B
	- With Project	**CSS**	0	**2**	0	**1**	**2**	0	0	0	0	0	1	0	10.3	15.7	B	C
4	Potrero Bl. & 4th St.																	
	- Without Project	TS	0	0	0	2	0	**1>**	**2**	1	0	1	1	1	12.5	34.6	B	C
	- With Project	TS	0	0	0	2	0	**1>**	**2**	1	0	1	1	1	34.8	46.7	C	D
5	Desert Lawn Dr. & Oak Valley Pkwy.																	
	- Without Project	**TS**	0	0	0	0	1	0	1	**2**	0	0	3	0	30.3	12.3	C	B
	- With Project	**TS**	0	0	0	0	1	0	1	**2**	0	0	3	0	36.4	14.0	D	B
7	I-10 EB Ramps & Oak Valley Pkwy.																	
	- Without Project	TS	0	0	0	**2**	1	0	0	**2**	**1**	1	**2**	0	24.8	40.4	C	D
	- With Project	TS	0	0	0	**2**	1	0	0	**2**	**1**	1	**2**	0	32.6	43.7	C	D
8	I-10 WB Ramps & Oak Valley Pkwy.																	
	- Without Project	TS	**1**	1	0	0	0	0	1	**2**	0	0	**2**	1	34.2	45.9	C	D
	- With Project	TS	**1**	1	0	0	0	0	1	**2**	0	0	**2**	1	33.3	48.3	C	D
11	California Av. & 6th St.																	
	- Without Project	TS	1	1	0	1	1	0	1	**2**	**0**	1	**2**	**0**	52.6	49.4	D	D
	- With Project	TS	1	1	0	1	1	0	1	**2**	**0**	1	**2**	**0**	54.2	52.6	D	D
12	California Av. & 5th St.																	
	- Without Project	**TS**	1	1	d	0	1	d	0	1	d	0	1	d	19.9	18.0	B	B
	- With Project	**TS**	1	1	d	0	1	d	0	1	d	0	1	d	39.6	23.6	D	C
13	California Av. & 4th St.																	
	- Without Project	**TS**	1	**2**	0	0	**2**	**1>**	1	0	1	0	0	0	9.8	17.4	A	B
	- With Project	**TS**	1	**2**	0	0	**2**	**1>**	1	0	1	0	0	0	11.3	22.4	B	C

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

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

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

[3] CSS = Cross-street Stop; TS = Traffic Signal; **CSS** = Improvement

9 HORIZON YEAR (2045) TRAFFIC CONDITIONS

This section discusses the methods used to develop Horizon Year (2045) Without and With Project traffic forecasts, and the resulting intersection operations, traffic signal warrant, off-ramp queuing, and freeway facility analyses.

9.1 ROADWAY IMPROVEMENTS

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

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Horizon Year conditions only (e.g., intersection and roadway improvements along the Project's frontage and driveways).
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Horizon Year conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages and driveways).
- Other parallel facilities, that although not evaluated for the purposes of this analysis, are anticipated to be in place for Horizon Year traffic conditions and would affect the travel patterns within the study area.
- The SR-60 Freeway/Potrero Boulevard interchange is assumed to be in place (see Exhibit 6-1).
- The SR-60 Freeway/Western Knolls Avenue interchange is assumed to be vacated.

9.2 HORIZON YEAR (2045) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-process volumes obtained from the RivTAM plus an ambient growth factor of 10.10% (see Section 4.7 *Horizon Year Traffic Forecasts* of this TA for a detailed discussion on the post-processing methodology). The weekday ADT and weekday AM and PM peak hour volumes which can be expected for Horizon Year (2045) Without Project traffic conditions are shown on Exhibits 9-1 and 9-2, respectively.

9.3 HORIZON YEAR (2045) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-process volumes obtained from the RivTAM plus an ambient growth factor of 10.10%, plus the traffic generated by the buildout of the proposed Project. The weekday ADT and weekday AM and PM peak hour volumes which can be expected for Horizon Year (2045) With Project traffic conditions are shown on Exhibits 9-3 and 9-4, respectively.

EXHIBIT 9-1: HORIZON YEAR (2045) WITHOUT PROJECT AVERAGE DAILY TRAFFIC (ADT) (IN PCE)

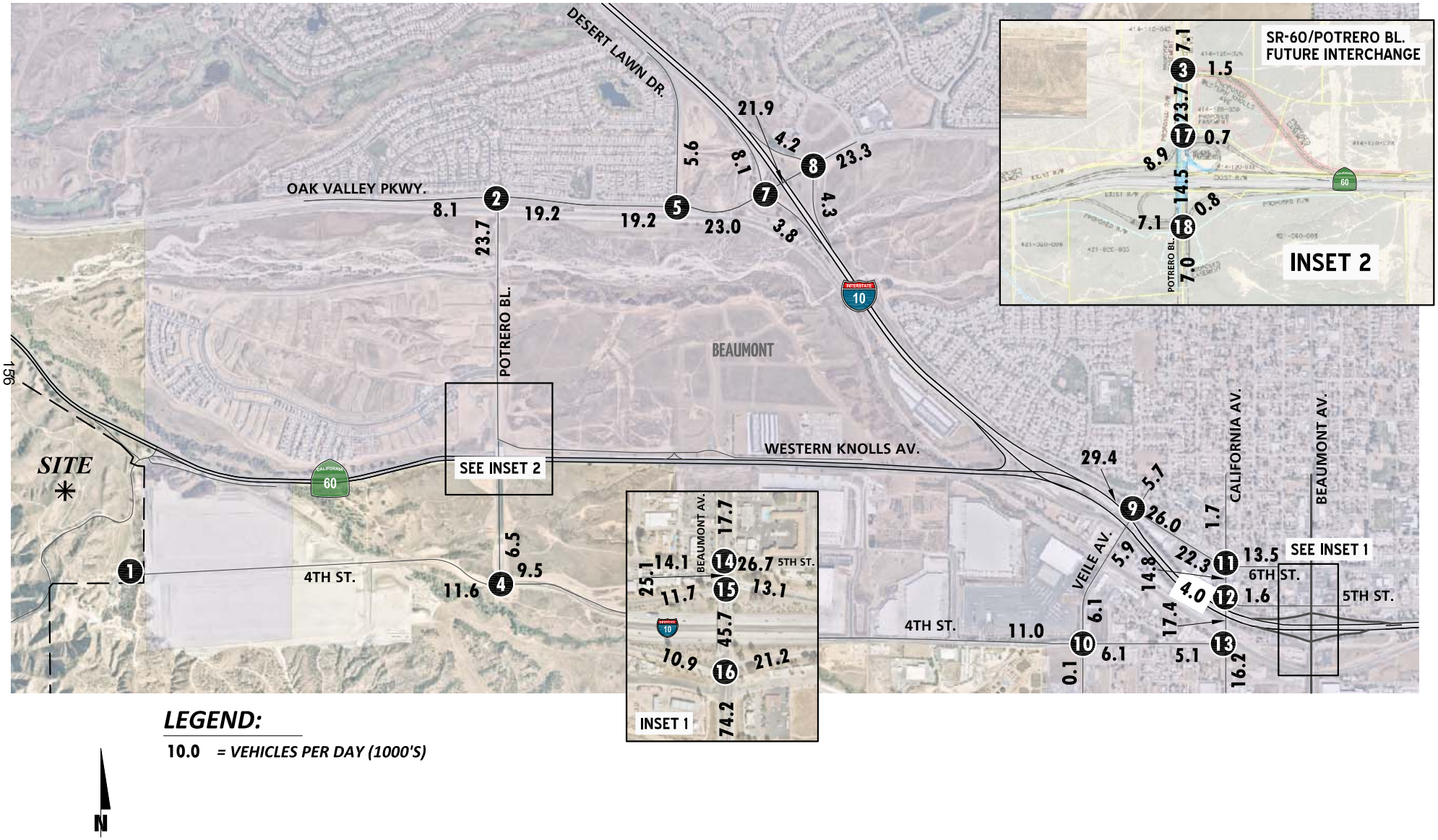


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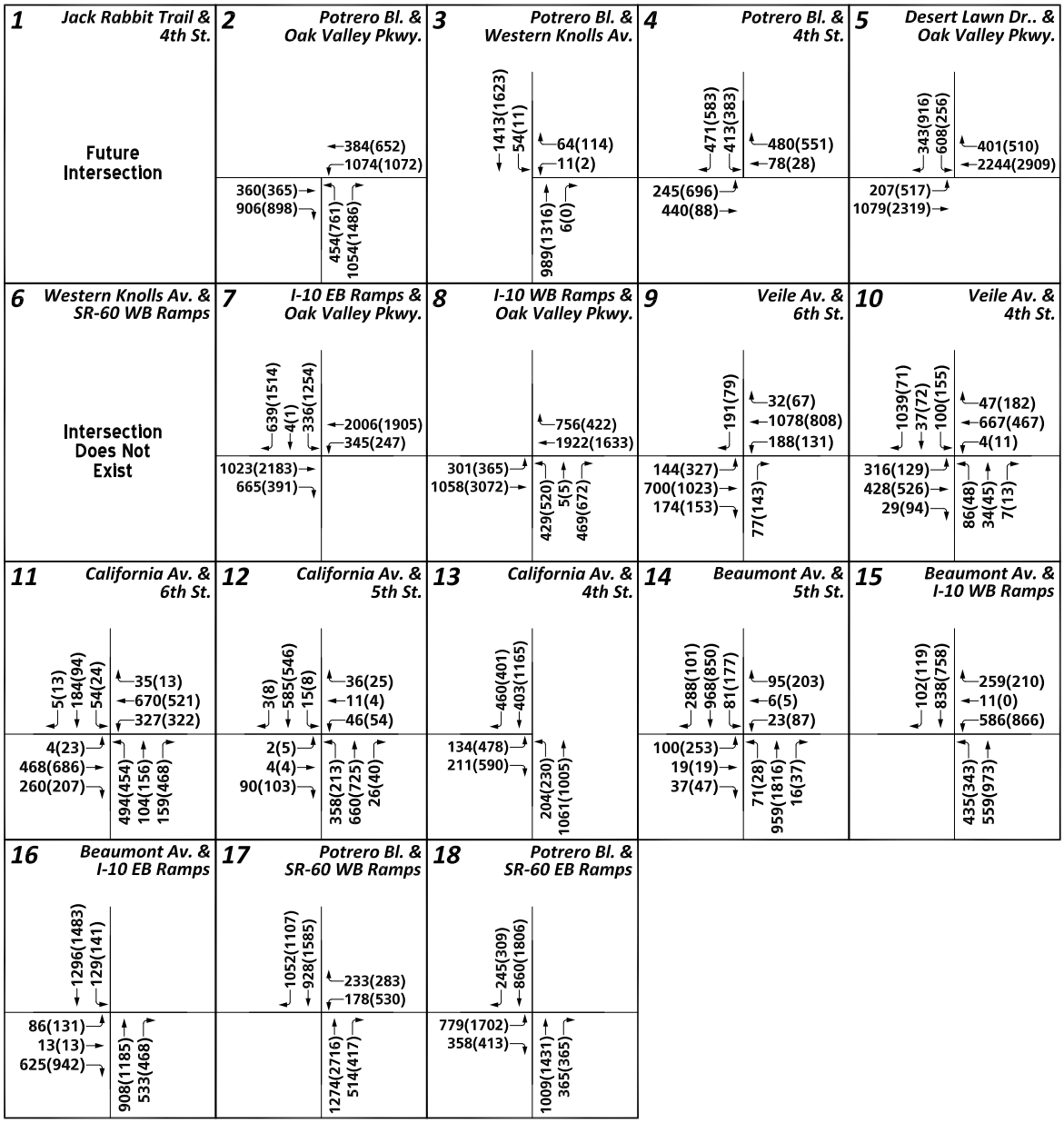
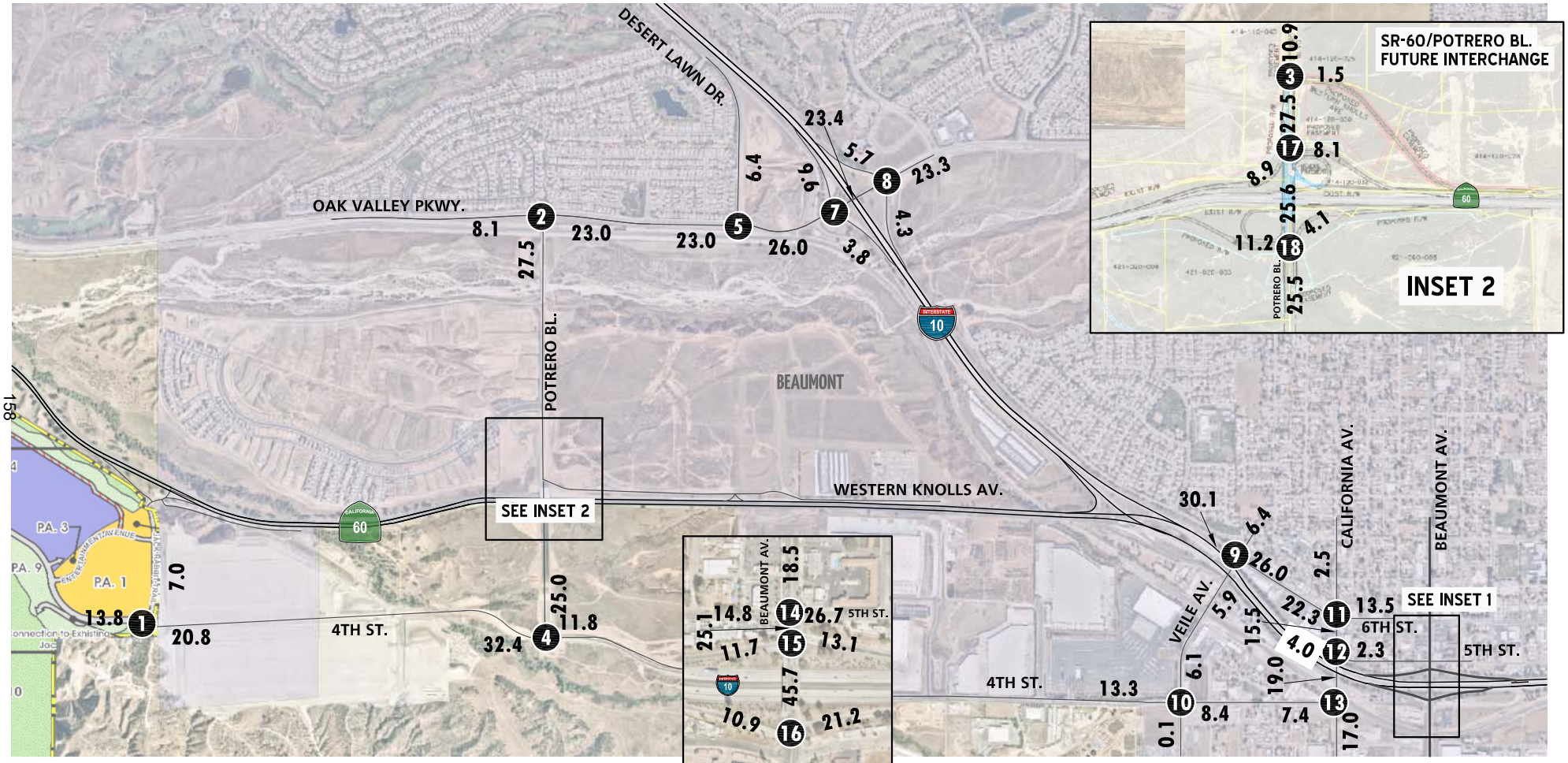
EXHIBIT 9-2: HORIZON YEAR (2045) WITHOUT PROJECT TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

EXHIBIT 9-3: HORIZON YEAR (2045) WITH PROJECT AVERAGE DAILY TRAFFIC (ADT) (IN PCE)



158

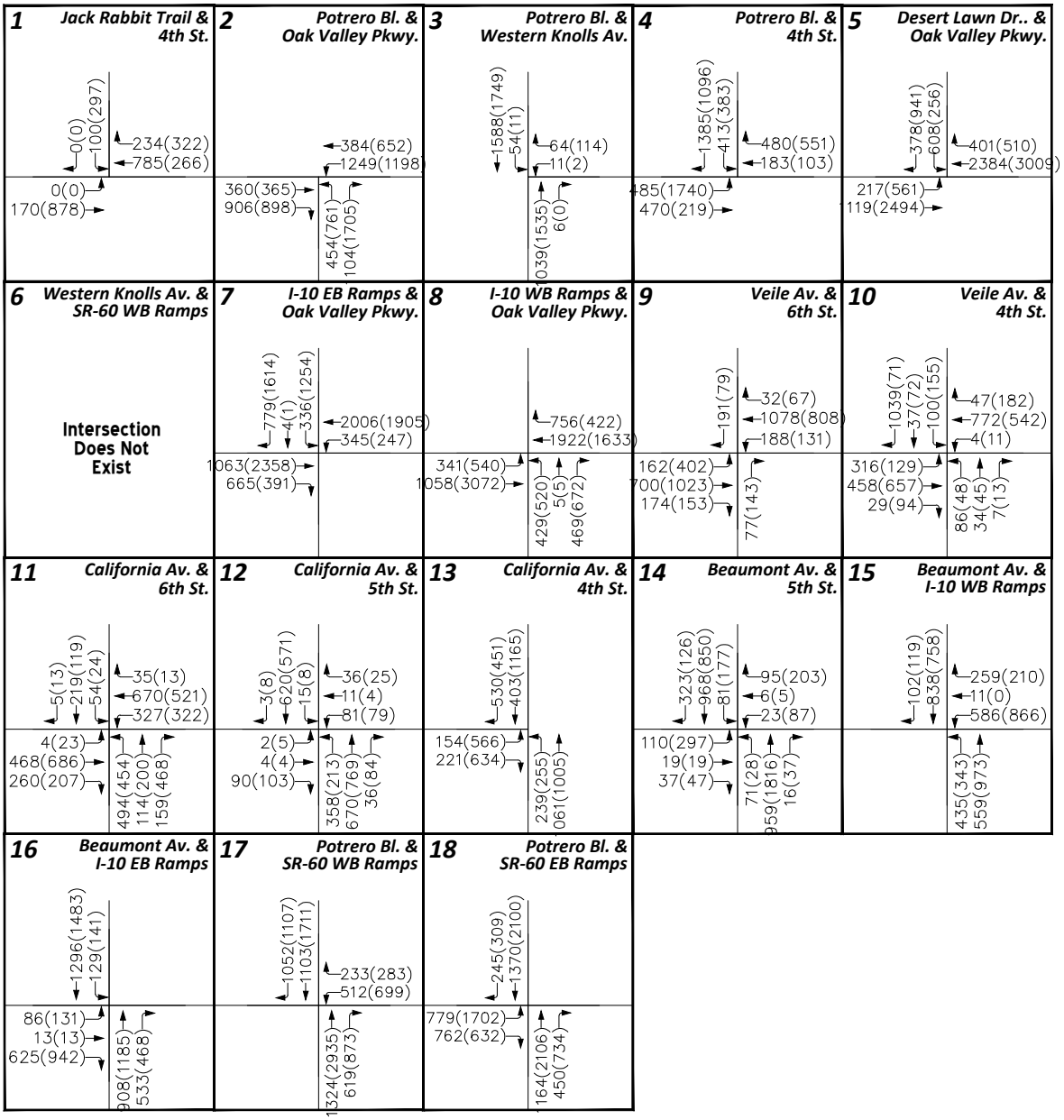
LEGEND:

10.0 ***= VEHICLES PER DAY (1000'S)***

N

URBAN CROSSROADS

EXHIBIT 9-4: HORIZON YEAR (2045) WITH PROJECT TRAFFIC VOLUMES (IN PCE)



LEGEND:

10(10) ***= AM(PM) PEAK HOUR INTERSECTION VOLUMES***

N

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9.4 INTERSECTION OPERATIONS ANALYSIS

9.4.1 HORIZON YEAR (2045) WITHOUT PROJECT TRAFFIC CONDITIONS

Horizon Year (2045) 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 analysis results are summarized in Table 9-1, which indicate that the following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under Horizon Year (2045) Without Project:

- Potrero Boulevard & Oak Valley Parkway (#2) – LOS F AM and PM peak hours
- Potrero Boulevard & Western Knolls Avenue (#3) – LOS F AM and PM peak hours
- Potrero Boulevard & 4th Street (#4) – LOS F AM and PM peak hours
- Desert Lawn Drive & Oak Valley Parkway (#5) – LOS F AM peak hour only
- I-10 Eastbound Ramps & Oak Valley Parkway (#7) – LOS F AM and PM peak hours
- I-10 Westbound Ramps & Oak Valley Parkway (#8) – LOS F AM and PM peak hours
- California Avenue & 6th Street (#11) – LOS F AM and PM peak hours
- California Avenue & 5th Street (#12) – LOS F AM and PM peak hours
- California Avenue & 4th Street (#13) – LOS F AM and PM peak hours

A summary of the peak hour intersection LOS for Horizon Year (2045) Without Project conditions is shown on Exhibit 9-5. The intersection operations analysis worksheets for Horizon Year (2045) Without Project traffic conditions are included in Appendix 9.1 of this TA.

9.4.2 OPENING YEAR (2027) WITH PROJECT TRAFFIC CONDITIONS

As shown in Table 9-1 and illustrated on Exhibit 9-6, there are no additional study area intersections anticipated to operate at an unacceptable LOS with the addition of Project (Buildout) traffic, in addition to the intersections previously identified under Horizon Year (2045) traffic conditions. The intersection operations analysis worksheets for Horizon Year (2045) With Project traffic conditions are included in Appendix 9.2 of this TA.

9.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

All unsignalized study area intersections are anticipated to meet a peak hour volume-based traffic signal warrant under a previous analysis scenario. As such, no traffic signal warrants have been evaluated for Horizon Year (2045) Without Project and With Project traffic conditions.

Table 9-1

Intersection Analysis for Horizon Year (2045) Conditions

#	Intersection	Traffic Control[2]	2045 Without Project				2045 With Project			
			Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Jack Rabbit Tr. & 4th St.	**TS**	Future Intersection				8.1	12.9	A	B
2	Potrero Bl. & Oak Valley Pkwy.	AWS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
3	Potrero Bl. & Western Knolls Av.	AWS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
4	Potrero Bl. & 4th St.	TS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
5	Desert Lawn Dr. & Oak Valley Pkwy.	AWS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
6	SR-60 WB & Western Knolls Av.	CSS	Does Not Exist				Does Not Exist			
7	I-10 EB Ramps & Oak Valley Pkwy.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
8	I-10 WB Ramps & Oak Valley Pkwy.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
9	Veile Av. & I-10 WB On-ramp/6th St.	CSS	20.3	18.1	C	C	20.3	18.1	C	C
10	Veile Av. & 4th St.	TS	50.3	37.0	D	D	50.3	37.0	D	D
11	California Av. & 6th St.	TS	**169.9**	**184.1**	**F**	**F**	**171.5**	**184.2**	**F**	**F**
12	California Av. & 5th St.	CSS	16.7	**36.7**	C	**E**	16.7	**36.7**	C	**E**
13	California Av. & 4th St.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
14	Beaumont Av. & 5th St.	TS	12.2	25.3	B	C	12.7	27.5	B	C
15	Beaumont Av. & I-10 WB Ramps	TS	Not Applicable[3]				Not Applicable[3]			
16	Beaumont Av. & I-10 EB Ramps	TS	Not Applicable[3]				Not Applicable[3]			
17	Potrero Bl. & I-10 WB Ramps	**TS**	6.0	13.5	A	B	9.2	21.3	A	C
18	Potrero Bl. & I-10 EB Ramps	**TS**	10.2	47.1	B	D	13.1	48.1	B	D

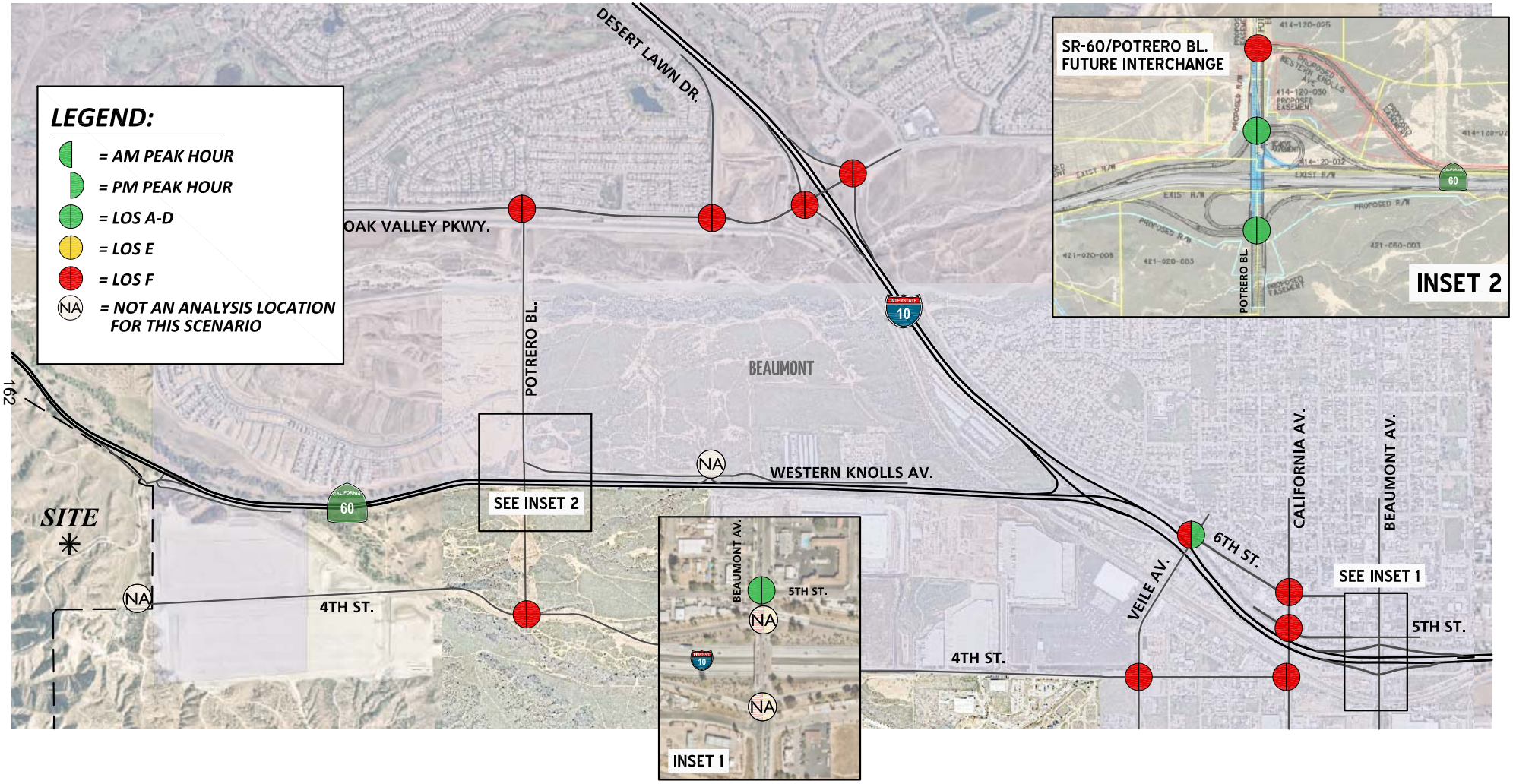
* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

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

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

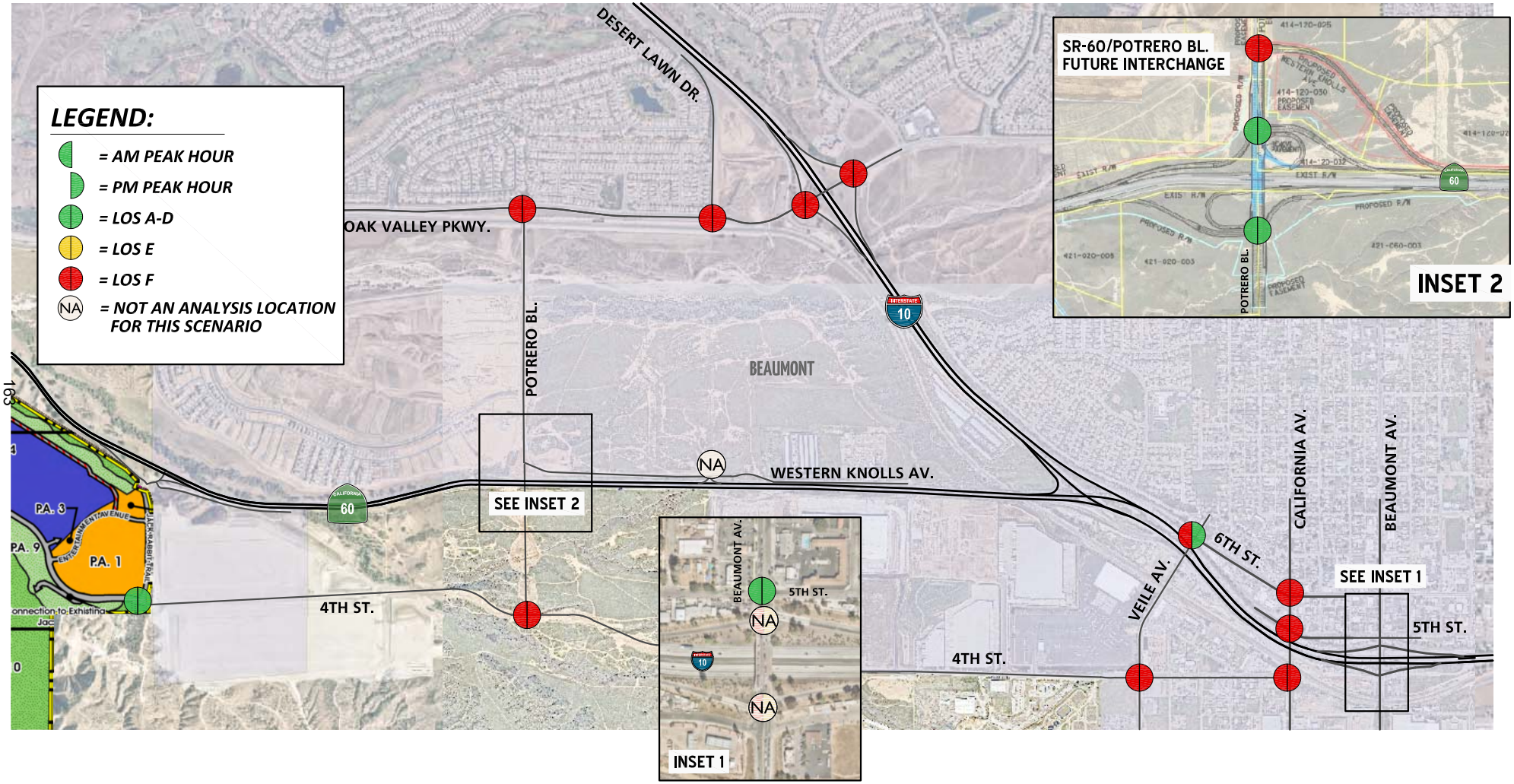
[3] Project is not anticipated to contribute any trips to this intersection. As such, the intersection has not been evaluated for this scenario.

EXHIBIT 9-5: HORIZON YEAR (2045) WITHOUT PROJECT SUMMARY OF LOS



URBAN CROSSROADS

EXHIBIT 9-6: HORIZON YEAR (2040) WITH PROJECT SUMMARY OF LOS



URBAN CROSSROADS

9.6 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for Horizon Year (2045) traffic conditions are shown in Table 7-2. As shown in Table 9-2, the following movements are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under Horizon Year (2045) Without Project and With Project traffic conditions:

- I-10 Eastbound Ramps & Oak Valley Parkway (#7), Southbound shared left-through-right turn lane – AM and PM peak hours
- I-10 Westbound Ramps & Oak Valley Parkway (#8), Northbound shared left-through-right turn lane – PM peak hour only

Worksheets for Horizon Year (2045) Without and With Project traffic conditions off-ramp queuing analysis are provided in Appendices 9.3 and 9.4, respectively.

9.7 FREEWAY FACILITY ANALYSIS

Horizon Year (2045) Without Project and With Project mainline directional volumes for the AM and PM peak hours are provided on Exhibits 9-7 and 9-8, respectively. As shown in Table 9-3, the following study area freeway mainline segments and merge/diverge ramp junctions are anticipated to operate at an unacceptable LOS (i.e., LOS E or worse) during the peak hours for Horizon Year (2045) Without Project traffic conditions:

- I-10 Freeway Eastbound, West of Oak Valley Parkway (#1) – LOS E PM peak hour only
- I-10 Freeway Eastbound, Off-Ramp at Oak Valley Parkway (#2) – LOS E PM peak hour only
- SR-60 Freeway Eastbound, West of Potrero Boulevard (#5) – LOS F AM and PM peak hours
- SR-60 Freeway Eastbound, Off-Ramp at Potrero Boulevard (#6) – LOS F AM and PM peak hours
- SR-60 Freeway Eastbound, West of Potrero Boulevard (#7) – LOS E AM peak hour only

With the addition of Project Buildout traffic, the following additional study area freeway mainline segments and merge/diverge ramp junctions are anticipated to operate at an unacceptable LOS (i.e., LOS E or worse) during the peak hours for Horizon Year (2045) Without Project traffic conditions:

- SR-60 Freeway Eastbound, East of Potrero Boulevard (#8) – LOS F PM peak hour only
- SR-60 Freeway Westbound, West of Potrero Boulevard (#9) – LOS E PM peak hour only

Horizon Year (2045) Without Project and With Project freeway facility analysis worksheets are provided in Appendices 9.5 and 9.6, respectively.

Table 9-2

Peak Hour Freeway Off-Ramp Queuing Summary for Horizon Year (2045) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	2045 Without Project				2045 With Project			
			95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
I-10 EB Ramps & Oak Valley Pwky.	SBL/T/R	1,150	**1,337** [2]	**3,480** [2]	**No**	**No**	**1,531** [2]	**3,611** [2]	**No**	**No**
I-10 WB Ramps & Oak Valley Pkwy.	NBL/T/R	1,220	845 [2]	**1,240** [2]	Yes	**No**	845 [2]	**1,240** [2]	Yes	**No**
Beaumont Av. & I-10 WB Ramps	WBL	485	Not Applicable[3]				Not Applicable[3]			
	WBL/R	1,110								
Beaumont Av. & I-10 EB Ramps	EBL/R	885	Not Applicable[3]				Not Applicable[3]			
	EBR	235								
Potrero Bl. & I-10 WB Ramps	WBL	2,000	86	250	Yes	Yes	234	346	Yes	Yes
	WBR	500	98	144	Yes	Yes	100	145	Yes	Yes
Potrero Bl. & I-10 EB Ramps	EBL	1,800	227	907 [2]	Yes	Yes	307	917 [2]	Yes	Yes
	EBR	600	68	138	Yes	Yes	351	211	Yes	Yes

* **BOLD** = Queue length exceeds available stacking distance.

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

[2] 95th percentile volume exceeds capacity, queue may be longer.

[3] Project is not anticipated to contribute any trips to this off-ramp. As such, the queues have not been evaluated for this scenario.

Table 9-3

Freeway Facility Analysis for Horizon Year (2045) Conditions

Freeway	Direction[1]	Mainline Segment	Lanes[2]	2045 Without Project				2045 With Project			
				Density[3]		LOS[4]		Density[3]		LOS[4]	
				AM	PM	AM	PM	AM	PM	AM	PM
I-10 Freeway	EB	West of Oak Valley Pkwy.	3	19.8	**38.8**	C	**E**	20.7	**40.0**	C	**E**
		Off-Ramp at Oak Valley Pkwy.	3	25.3	**40.4**	C	**E**	26.3	**41.1**	C	**E**
	WB	West of Oak Valley Pkwy.	3	21.0	23.0	C	C	21.2	24.2	C	C
		On-Ramp at Oak Valley Pkwy.	3	22.9	23.8	C	C	23.2	25.2	C	C
SR-60 Freeway	EB	West of Potrero Bl.	2	**45.0**	**45.0**	**F**	**F**	**45.0**	**45.0**	**F**	**F**
		Off-Ramp at Potrero Bl.	2	**43.4**	**43.4**	**F**	**F**	**43.4**	**43.4**	**F**	**F**
		On-Ramp at Potrero Bl.	2	**36.5**	28.5	**E**	D	**36.5**	**29.6**	**E**	**F**
		East of Potrero Bl.	2	34.0	22.9	D	C	34.0	**24.3**	D	**F**
	WB	West of Potrero Bl.	2	22.1	30.9	C	D	23.2	**36.9**	C	**E**
		Loop On-Ramp at Potrero Bl.	2	18.1	24.4	B	C	18.8	27.7	B	C
		Off-Ramp at Potrero Bl.	2	17.2	28.9	B	D	20.1	30.2	C	D
		East of Potrero Bl.	2	12.6	22.9	B	C	15.0	24.2	B	C

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

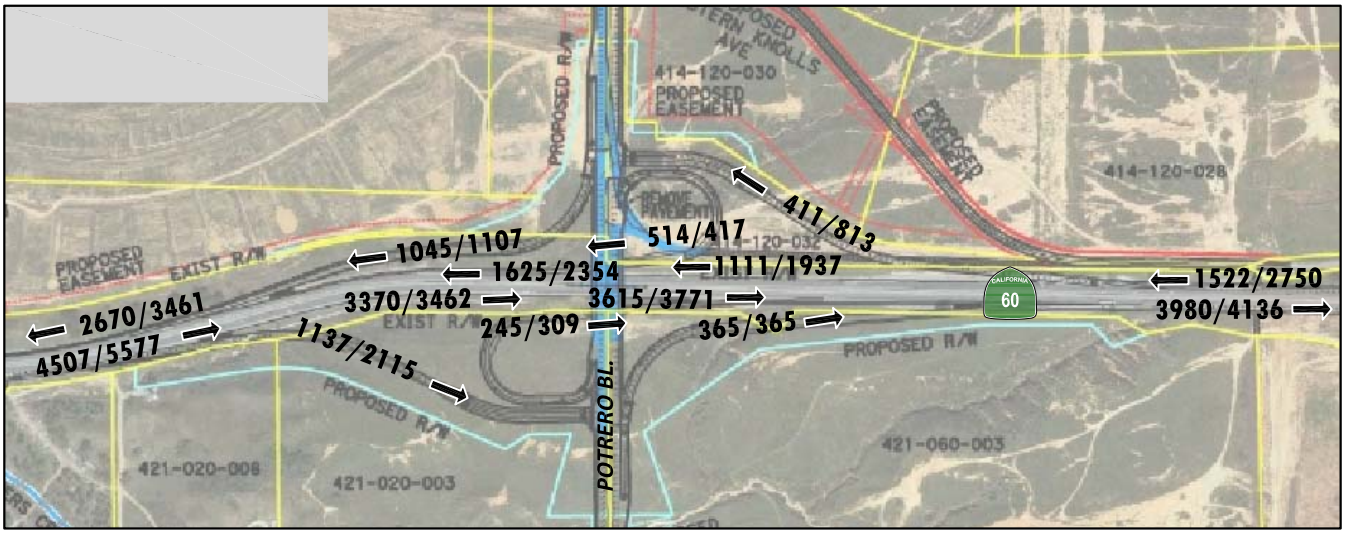
[1] NB = Northbound; SB = Southbound

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

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

[4] LOS = Level of Service

EXHIBIT 9-7: HORIZON YEAR (2045) WITHOUT PROJECT FREEWAY MAINLINE VOLUMES



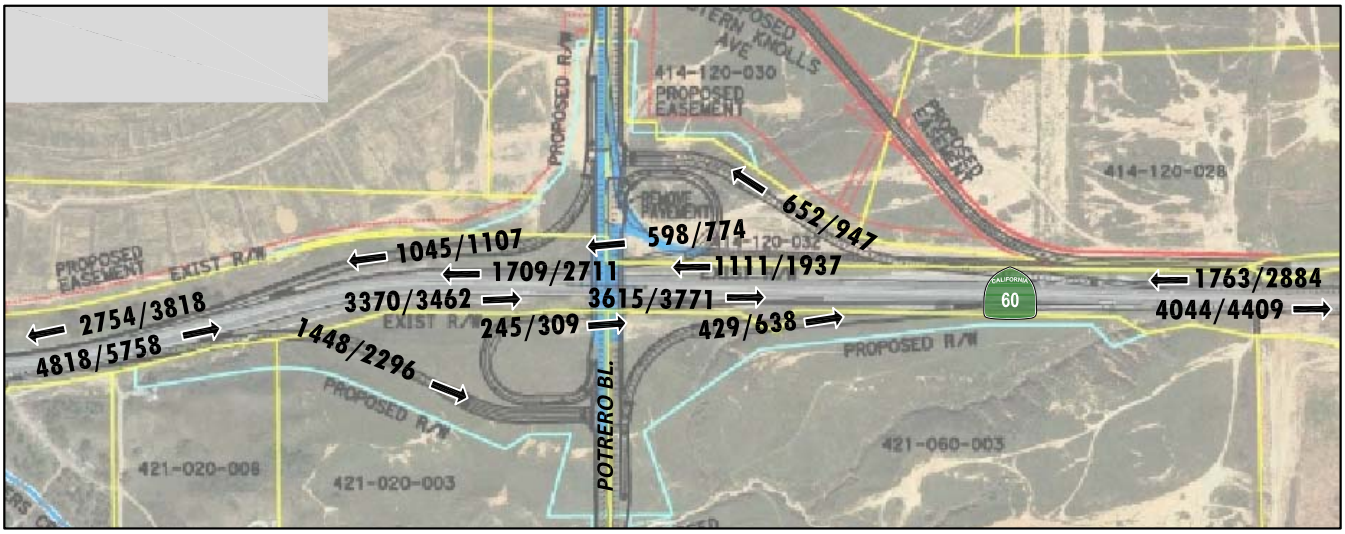
LEGEND:

⟵ 100/200 *= AM/PM PEAK HOUR VOLUMES*

NOTE: VOLUMES IN ACTUAL VEHICLES (NOT PCE)

N

EXHIBIT 9-8: HORIZON YEAR (2045) WITH PROJECT FREEWAY MAINLINE VOLUMES



LEGEND:

⟵ 100/200 *= AM/PM PEAK HOUR VOLUMES*

NOTE: VOLUMES IN ACTUAL VEHICLES (NOT PCE)

N

9.8 DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

This section provides a summary of deficiencies, based on the City of Beaumont deficiency criteria discussed in Section 2.8 *Deficiency Criteria*, and improvements needed to improve operations back to acceptable levels.

9.8.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

The effectiveness of the recommended improvement strategies to address Horizon Year (2045) traffic deficiencies are presented in Table 9-4. The Project Applicant shall contribute to these improvements through construction (with applicable credits), payment DIF/TUMF fees or fair share contribution as identified in Table 1-4. Worksheets for Horizon Year (2045) Without and With Project conditions, with improvements, HCM calculation worksheets are provided in Appendices 9.7 and 9.8, respectively.

9.8.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 9-2, there are movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under Horizon Year (2045) traffic conditions. Table 9-5 shows the effectiveness of the improvement strategies at the intersections that experience off-ramp queuing issues during Horizon Year (2045) traffic conditions. With the proposed intersection improvements at the study area freeway ramp-to-arterial intersection as identified on Table 9-4, the analysis indicates that there are no queuing issues anticipated that may potentially "spill back" onto the I-10 Freeway mainline during the peak hours for Horizon Year (2045) Without Project and With Project traffic conditions (see Table 9-5). Off-ramp queuing analysis worksheets with improvements for Horizon Year (2045) Without Project and With Project traffic conditions are provided in Appendices 9.9 and 9.10, respectively.

9.8.3 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON FREEWAY FACILITIES

As shown previously in Table 9-3, there are study area freeway mainline segments and ramp junctions that are anticipated to operate at an unacceptable LOS for Horizon Year (2045) traffic conditions. However, there are no planned improvements to the SR-60 Freeway or I-10 Freeway at this time. As such, no improvements have been evaluated for Horizon Year (2045) traffic conditions. Neither Caltrans nor the State have adopted a fee program that can ensure that locally contributed impact fees will be tied to improvements to freeway mainlines, and only Caltrans has the jurisdiction over mainline improvements. Because Caltrans has exclusive control over state highway improvements, ensuring that fair share contributions to mainline improvements are part of a fee program tied to implementation is within the jurisdiction of Caltrans.

Table 9-4

Intersection Analysis for Horizon Year (2045) Conditions With 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
2	Potrero Bl. & Oak Valley Pkwy.																	
	- Without Project	**TS**	**2**	0	1	0	0	0	0	2	1	**2**	**3**	0	34.7	32.2	C	C
	- With Project	**TS**	**2**	0	1	0	0	0	0	2	1	**2**	**3**	0	51.5	38.6	D	D
3	Potrero Bl. & Western Knolls Av.																	
	- Without Project	**CSS**	0	**3**	0	**1**	**3**	0	0	0	0	0	1	0	22.4	24.8	C	C
	- With Project	**CSS**	0	**3**	0	**1**	**3**	0	0	0	0	0	1	0	25.0	32.8	D	D
4	Potrero Bl. & 4th St.																	
	- Without Project	TS	0	0	0	2	0	**1>**	**2**	1	0	0	1	1	11.5	17.3	B	B
	- With Project	TS	0	0	0	2	0	**1>**	**2**	1	0	0	1	1	51.7	52.1	D	D
5	Desert Lawn Dr. & Oak Valley Pkwy.																	
	- Without Project	**TS**	0	0	0	**2**	0	**1>**	**2**	**3**	0	0	3	**1**	24.3	43.5	C	D
	- With Project	**TS**	0	0	0	**2**	0	**1>**	**2**	**3**	0	0	3	**1**	26.5	51.5	C	D
7	I-10 EB Ramps & Oak Valley Pkwy.																	
	- Without Project	TS	0	0	0	**2**	1	**1**	0	**3**	**1**	**2**	**3**	0	21.4	42.7	C	D
	- With Project	TS	0	0	0	**2**	1	**1**	0	**3**	**1**	**2**	**3**	0	24.2	52.7	C	D
8	I-10 WB Ramps & Oak Valley Pkwy.																	
	- Without Project	TS	**1**	1	0	0	0	0	**2**	**3**	0	0	**3**	**1**	35.0	44.3	C	D
	- With Project	TS	**1**	1	0	0	0	0	**2**	**3**	0	0	**3**	**1**	35.5	46.0	D	D
11	California Av. & 6th St.																	
	- Without Project	TS	1	1	0	1	1	0	1	**2**	**0**	1	**2**	**0**	50.6	48.2	D	D
	- With Project	TS	1	1	0	1	1	0	1	**2**	**0**	1	**2**	**0**	54.9	52.4	D	D
12	California Av. & 5th St.																	
	- Without Project	**TS**	1	1	d	1	1	d	0	1	d	0	1	d	9.1	12.3	A	B
	- With Project	**TS**	1	1	d	1	1	d	0	1	d	0	1	d	22.8	14.1	C	B
13	California Av. & 4th St.																	
	- Without Project	**TS**	1	**2**	0	0	**2**	**1>**	1	0	1	0	0	0	11.1	36.4	B	D
	- With Project	**TS**	1	**2**	0	0	**2**	**1>**	1	0	1	0	0	0	11.6	47.2	B	D

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

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

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

[3] CSS = Cross-street Stop; TS = Traffic Signal; **CSS** = Improvement

Table 9-5

Peak Hour Freeway Off-Ramp Queuing Summary for Horizon Year (2045) Conditions With Improvements

Intersection	Movement[4]	Available Stacking Distance (Feet)[5]	2045 Without Project				2045 With Project			
			95th Percentile Queue (Feet)		Acceptable?[1]		95th Percentile Queue (Feet)		Acceptable?[1]	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
I-10 EB Ramps & Oak Valley Pwky.	SBL	1,150	141	549	Yes	Yes	141	549	Yes	Yes
	SBT/R	**1,150**	346	993 [2]	Yes	Yes	444	1,089 [2]	Yes	Yes
	SBR	**1,000**	290	868 [2]	Yes	Yes	382	961 [2]	Yes	Yes
I-10 WB Ramps & Oak Valley Pkwy.	NBL	1,220	429	572 [2]	Yes	Yes	429	572 [2]	Yes	Yes
	NBT/R	**500**	467 [2]	901 [2,3]	Yes	Yes	467 [2]	901 [2,3]	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

[2] 95th percentile volume exceeds capacity, queue may be longer.

[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the I-10 Freeway mainline.

[4] **SBT** = Improvement

[5] **500** = Improvement

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10 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements within the City of Beaumont are funded through a combination of improvements constructed by the Project, development impact fee programs or fair share contributions. Fee programs applicable to the Project are described below.

10.1 RIVERSIDE COUNTY TRANSPORTATION UNIFORM MITIGATION FEE (TUMF)

The TUMF program is administered by the Western Riverside Council of Governments (WRCOG) based upon a regional Nexus Study most recently updated in 2016 to address major changes in right of way acquisition and improvement cost factors. (11) 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.

10.2 CITY OF BEAUMONT DEVELOPMENT IMPACT FEE (DIF) PROGRAM

The City of Beaumont has created its own local 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 includes Street & Bridges Impact Fee, Traffic Signal Impact Fee, and Railroad Crossing Impact Fee. Under the City's DIF program, the City may grant 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 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. 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.

10.3 MEASURE A

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

10.4 FAIR SHARE CONTRIBUTION

Project improvements may include a combination of fee payments to established programs, construction of specific improvements, payment of a fair share contribution toward future improvements or a combination of these approaches. Improvements constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate (to be determined at the City's discretion). When off-site improvements are identified with a minor share of responsibility assigned to proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. Detailed fair share calculations, for each peak hour, have been provided in Table 10-1 for the applicable deficient study area intersection and for each applicable phase. These fees are collected with the proceeds solely used as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases.

Table 10-1

Project Fair Share Calculations

#	Intersection	Existing (2020) Traffic	Phase 1				Phase 2				Project Buildout				Horizon Year (2045)			
			Project (Phase 1) Traffic	2023 With Project Traffic	Total New Traffic	Project % of New Traffic	Project (Phase 2) Traffic	2025 With Project Traffic	Total New Traffic	Project % of New Traffic	Project (Buildout) Traffic	2027 With Project Traffic	Total New Traffic	Project % of New Traffic	Project (Buildout) Traffic	2045 With Project Traffic	Total New Traffic	Project % of New Traffic
4	Potrero Bl. & 4th St.																	
	AM:	39	--	--	--	--	1,128	2,189	2,150	**52.5%**	1,289	3,097	3,058	42.2%	1,289	5,185	5,146	25.0%
	PM:	19	--	--	--	--	1,281	3,011	2,992	42.8%	1,763	3,306	3,287	**53.6%**	1,763	6,928	6,909	**25.5%**
5	Desert Lawn Dr. & Oak Valley Pkwy.																	
	AM:	1,354	36	1,754	400	9.0%	--	--	--	--	225	2,584	1,230	18.3%	225	5,108	3,754	**6.0%**
	PM:	1,010	50	1,532	522	**9.6%**	--	--	--	--	344	2,676	1,666	**20.6%**	344	7,770	6,760	5.1%
12	California Av. & 5th St.[1]																	
	AM:	1,161	14	1,364	203	6.9%	--	--	--	--	--	--	--	--	--	--	--	--
	PM:	900	20	1,165	265	**7.5%**	--	--	--	--	--	--	--	--	--	--	--	--

BOLD = Denotes highest fair share percentage.

[1] Since the Project is not anticipated to contribute any trips to this intersection once the future SR-60 Freeway/Potrero interchange is in place, fair share has been calculated for near-term conditions based on Existing and E+P (Buildout) volumes.

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11 REFERENCES

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