

**PROJECT STUDY REPORT
(Project Development Support)
PSR (PDS)**

To

**Request Approval of a Locally Funded Project to Proceed to
Project Approval and Environmental Document (PA&ED)**

On Interstate 15

Between 68th Street Overcrossing

And Bellegrave Avenue Overcrossing

APPROVAL RECOMMENDED:



PATRICIA ROMO, DEPUTY DIRECTOR
RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT,
*Accepts Risks Identified in this PSR-PDS and Attached Risk
Register*



JOHN PAGANO, PE
PROJECT MANAGER

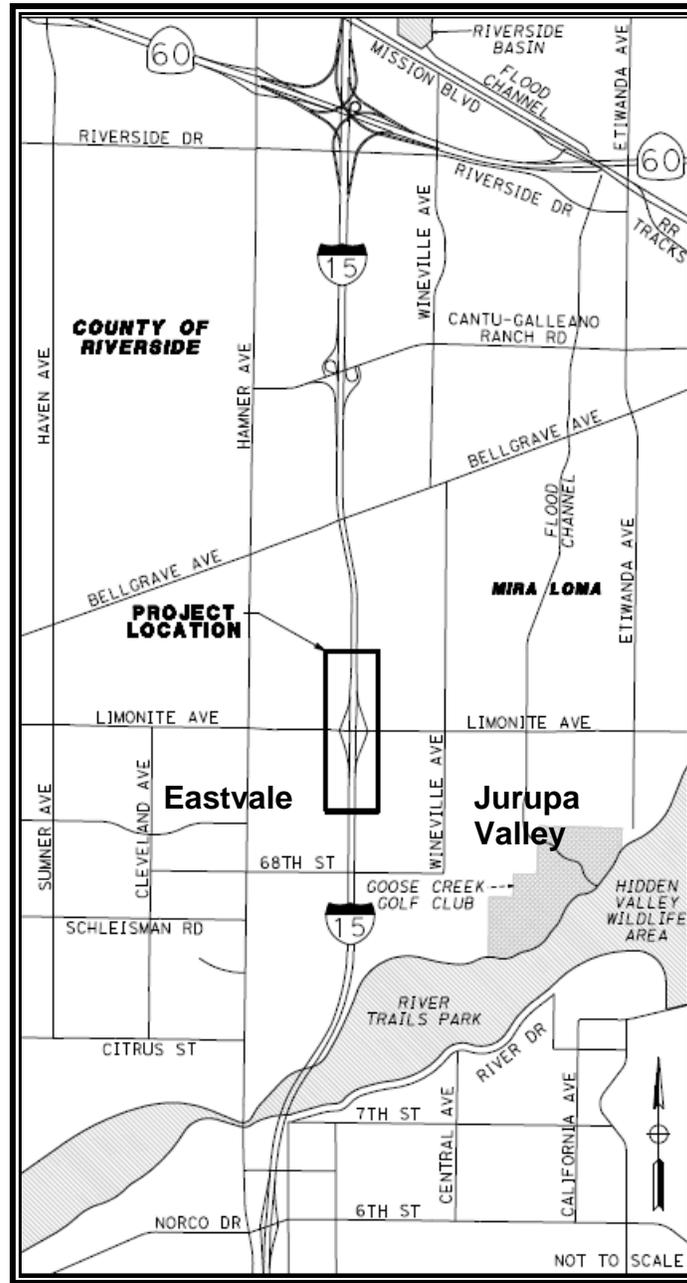
APPROVED:



FOR BASEM MUALLEM, PE
DISTRICT DIRECTOR

9/12/2012
DATE

VICINITY MAP



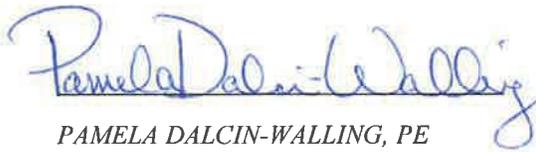
On **Interstate 15**

Between **68th Street Overcrossing**

And **Bellegrave Avenue Overcrossing**

08-RIV-15-PM 47.6/48.9
400.00/HE 11
PN 0800020201 (EA 0E150K)
August 2012

This Project Study Report (Project Development Support) has been prepared under the direction of the following Registered Engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.



PAMELA DALCIN-WALLING, PE
REGISTERED CIVIL ENGINEER



8/17/12
DATE

Table of Contents

1.	INTRODUCTION	1
2.	BACKGROUND	2
3.	PURPOSE AND NEED STATEMENT	3
4.	TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT	3
5.	DEFICIENCIES.....	8
6.	CORRIDOR AND SYSTEM COORDINATION	12
7.	ALTERNATIVES	14
8.	RIGHT OF WAY, UTILITIES, AND RAILROADS	25
9.	STAKEHOLDER INVOLVEMENT	25
10.	ENVIRONMENTAL DETERMINATION/DOCUMENT.....	26
11.	FUNDING	27
12.	SCHEDULE	28
13.	FHWA COORDINATION.....	29
14.	DISTRICT CONTACTS	29
15.	PROJECT REVIEWS	29
16.	ATTACHMENTS	29

1. INTRODUCTION

The Interstate 15 (I-15)/Limonite Avenue interchange is an essential access point to the Cities of Eastvale and Jurupa Valley in Riverside County (see Attachment A). Full build-out of these cities, based on the Riverside County General Plan (RCGP) for Jurupa Valley, and the newly adopted Eastvale General Plan, will require a number of transportation and circulation improvements, including improvements to the I-15/Limonite Avenue interchange. This Project Study Report (Project Development Support) (PSR (PDS)) is initiated and sponsored by the Riverside County Transportation Department to address projected capacity and operational deficiencies from the growth and development that is taking place in these surrounding communities.

Three project alternatives were considered for this initial level of study: the No-Build (Alternative 1), the Diamond Interchange (Alternative 2), and the Partial Cloverleaf (Alternative 3). Following is a summary of the capital costs for the project:

Number of Alternatives	3
Capital Outlay Support for PA&ED	\$510,000
Capital Outlay Construction Cost Range	\$20,000,000 to \$30,000,000
Capital Outlay Right-of-Way Cost Range	\$2,000,000 to \$8,000,000
Number of Structures	1

The objective of this PSR (PDS) is to program only the support costs for the Project Approval & Environmental Document (PA&ED) phase of the project. The remaining support, right of way, and construction components of the project are preliminary estimates and are not suitable for programming purposes. Either a Supplemental PSR or Project Report will serve as the programming document for the remaining support and capital components for the project. A Project Report will serve as approval of the “selected” alternative.

The PA&ED phase of the project has been tentatively scheduled for completion by December 2013. Funding for PA&ED and subsequent phases of the project is anticipated from the Mira Loma Road and Bridge Benefit District funds. In addition, State and Federal funds in the State Transportation Improvement Program may also be available for use in subsequent phases of this project. The selected alternative for this project is expected to receive full local agency support after the successful completion of the PA&ED phase.

This project has been tentatively assigned a Project Development Category 4A because the proposed project substantially increases traffic capacity by reconfiguring an existing freeway interchange. This category assignment will be confirmed during PA&ED.

2. BACKGROUND

The I-15/Limonite Avenue interchange was constructed in 1989 as a tight diamond (Type L-1) configuration, with two-lane on-ramps and single-lane off-ramps that widen to three lanes at the signalized ramp terminal intersections. The existing two-span overcrossing structure is a cast-in-place prestressed box girder bridge that is 227 feet long and provides 16.8 feet of vertical clearance above the existing I-15 roadbed.

In 2006, interim improvements to the I-15/Limonite Avenue interchange were made to accommodate the rapid growth in the area. The on-and off-ramps were widened and the overcrossing was restriped to provide dual left turn lanes onto each of the on-ramps. At that time it was acknowledged that the interchange would require additional improvements to accommodate long range traffic forecasts.

Limonite Avenue is oriented in the east-west direction and is a four-lane facility with narrow, non-standard shoulders and disconnected sidewalk segments between the I-15 freeway ramp intersections. Eastbound and westbound Limonite Avenue each have two left-turn lanes to the I-15 freeway on-ramps. Outside the interchange area, Limonite Avenue is a six-lane facility west of the interchange (three westbound/three eastbound lanes, narrow shoulders and sidewalks) and a four-lane facility east of the interchange (two westbound/two eastbound lanes, narrow shoulders and sidewalks). According to the RCGP and Eastvale General Plan, Limonite Avenue is characterized as an Urban Arterial roadway with a six-lane facility as the proposed build out. Based on the County's most recent traffic counts, collected in July 2011, Limonite Avenue through the interchange area carries an average of 34,700 vehicles per day (vpd).

I-15 is a major north-south truck/passenger route that begins at the junction with I-5 in San Diego, California and ends at the United States/Canadian border. Its main use is interstate/interregional movement of people and goods. I-15 is functionally classified by the Federal Highway Administration (FHWA) as a Rural/Urban Principal Arterial and is part of the Freeway and Expressway System. I-15 is part of the National Highway System, the Strategic Highway Corridor Network of National Defense, and the Federal Surface Transportation Assistance Act (STAA) National Network for oversized trucks. It is a primary link between major economic centers and geographic regions in Riverside County and is classified as a "High Emphasis" and "Gateway" route in the Interregional Road System (IRRS).

Within the project limits, I-15 is currently a six-lane access controlled freeway with three mixed flow lanes in each direction separated by an unpaved, depressed median. The freeway carries approximately 11,000 vehicles during the peak hour and approximately 150,000 vehicles per day (Source: Caltrans Web Site – Traffic Data Branch, 2010). An existing, trapezoidal, concrete-lined open channel parallels the westerly edge of I-15 within Caltrans right-of-way. The *Route Concept Fact Sheet* for I-15 states that the ultimate facility is a 10-lane freeway (4 mixed flow [MF] + 1 high-occupancy vehicle [HOV] in each direction) through the study area. However, Riverside County Transportation Commission (RCTC) and Caltrans District 8, as part of the Corridor Improvement Project (CIP) (Reference EA – 0J0800), are currently working to improve the traffic capacity and operations on I-15 and are exploring alternatives that would

provide a 12-lane ultimate facility. Therefore, for the purposes of this study, a 12-lane configuration (four MF lanes and two HOV/tolled lanes in each direction) is assumed to be constructed after 2019.

Several other interchanges exist along I-15 in the immediate project vicinity, including the I-15/SR-60 freeway-to-freeway interchange (3 miles north of Limonite Avenue), the I-15/ Cantu Galleano Ranch Road interchange (2 miles north of Limonite Avenue), and the I-15/6th Street interchange (2.7 miles south of Limonite Avenue).

The proposed project contains features that will make it consistent with the context of its surroundings and that provide safe mobility for all users in accordance with the guidelines in Deputy Directive 64.

The project sponsor, the Riverside County Transportation Department, has been actively involved in the development of the purpose and need of the project through their participation in Project Development Team meetings and their overall coordination of the project development process.

3. PURPOSE AND NEED STATEMENT

3.1 Purpose

The purpose of the project is to:

- Address increased travel associated with existing and planned development located in Eastvale and Jurupa Valley.
- Relieve congestion, improve traffic flow on the regional transportation system.

3.2 Need

The project is needed to alleviate traffic congestion associated with planned area development. Based on the most recent update of the Riverside County General Plan, the Cities of Eastvale and Jurupa Valley will add numerous residences and businesses in the coming years, resulting in substantial traffic and requiring a number of transportation and circulation improvements, including improvements to the I-15/Limonite Avenue Interchange. Operation of the I-15/Limonite Avenue Interchange ramps is currently approaching a deficient condition and will continue to degrade as development occurs in the area unless improvements are made to the transportation system.

4. TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT

A draft PSR for this project was substantially complete prior to the establishment of the new PSR-PDS Guidelines. As such, a full traffic report has been completed and was approved in November 2011. Following is a summary of this report:

4.1 Traffic Study Area and Timeframes

The traffic study included intersections at the I-15/Cantu Galleano interchange north of Limonite Avenue, the I-15/6th Street interchange south of Limonite Avenue and the following five intersections along Limonite Avenue:

1. Limonite Avenue/Hamner Avenue
2. Limonite Avenue/Eastvale Gateway Shopping Center Driveway
3. Limonite Avenue/I-15 SB On/Off-Ramps
4. Limonite Avenue/I-15 NB On/Off-Ramps
5. Limonite Avenue/Pats Ranch Road

The study focused on assessing existing conditions and then analyzing the project alternatives in the Year 2015, the proposed opening day for both Limonite Avenue build alternatives, and the Year 2035.

The proposed I-15/Limonite Avenue Project is not expected to result in any traffic diversion to adjacent interchanges. The I-15/Cantu Galleano Ranch Road and I-15/6th Street interchanges were included in accordance with guidance contained in Caltrans Design Information Bulletin (DIB) 77 and the FHWA Interstate System Access Information Guide.

4.2 General Assessment of Existing Conditions

I-15/Cantu Galleano Ranch Road Interchange Intersections

The I-15/Cantu Galleano interchange is located along I-15 north of Limonite Avenue. The interchange was improved in 2007 to provide loop ramps that eliminate all left-turn movements onto the freeway, with the exception of the westbound left-turn movement to northbound I-15. The bridge structure has been widened to provide sufficient capacity for at least a six-lane cross-section.

The land uses adjacent to the interchange are a mix of industrial and farmland. Peak hour traffic volumes at the interchange are fairly light and the new interchange has more than sufficient capacity to accommodate existing traffic volumes.

I-15/Limonite Avenue Interchange Intersections

The I-15/Limonite Avenue interchange is a traditional tight-diamond interchange that provides two eastbound and westbound through lanes and back-to-back dual left-turn lanes on the bridge structure.

The interchange was constructed when the surrounding area was generally undeveloped. In recent years, residential developments have sprung up in the project vicinity. More significantly, a regional shopping center, called the Eastvale Gateway Shopping Center Phase 1, was constructed on the north side of Limonite Avenue west of I-15 and Phase 2 was constructed on the south side of Limonite Avenue. Together the projects will ultimately provide a total of 848,000 square-feet of retail space on the combined 75+ acre

site. A new shopping center is also in operation on the south side of Limonite Avenue east of I-15. The Eastvale Gateway projects have facilitated the widening of Limonite Avenue to a six-lane facility between Hamner Avenue to the west and I-15 to the east, and provided for interim striping improvements at the freeway ramp intersections, which are currently in place.

Field observations indicate that the Limonite Avenue interchange intersections currently experience significant queuing and delays during peak hour operations. In addition, traffic volumes are forecasted to increase significantly in the future as the area is further developed.

I-15/6th Street Interchange Intersections

The I-15/6th Street interchange is located along I-15 south of Limonite Avenue. The interchange is a tight diamond configuration with two eastbound and two westbound through lanes and back-to-back single left-turn lanes over the freeway. The interchange southbound ramp termini are located only 300 feet east of Hamner Road and the northbound ramps are located only 270 feet west of Sierra Avenue resulting in vehicle queues extending from one intersection to the next.

The topography at the interchange is generally rolling and the areas adjacent to the interchange are mostly developed. The topography, level of development and intersection spacing at this interchange would make any future capacity enhancements difficult.

I-15 Freeway Operations

Within the project limits, I-15 is currently a six-lane access controlled freeway with three mixed-flow lanes in each direction separated by an unpaved, depressed median. The six-lane freeway section and ramp layouts are generally sufficient to provide acceptable levels of service during peak hours.

4.3 Future Traffic Forecasts

Traffic counts for this project were originally taken in January 2008 and traffic/freeway forecasts were then developed the following year. Traffic forecasts for the study intersections were generally based on the RivTAM model and were developed with oversight by the County of Riverside and Caltrans. Freeway forecasts were based on both the RivTAM model and freeway data provided by Caltrans. The initial freeway forecasts were also reviewed and approved by the County and Caltrans.

The original traffic counts and traffic forecasts were documented in the “Volume Development Methodology, I-15/Limonite Avenue Interchange, Riverside, California”, June 2, 2010. This volumes report, which was approved by Caltrans on June 10, 2010, is provided in Appendix A and is hereafter referred to as the Approved Volumes Report.

New traffic counts were conducted in July 2011 to ensure that the most up-to-date conditions were reflected in the analysis. The future traffic forecasts, which utilized the existing vehicle mix to calculate passenger-car equivalents (PCEs) were re-applied to the

RivTAM-based peak hour volumes and then re-balanced east-west across each of the study interchanges. Those updated traffic forecasts were utilized to perform the traffic analysis presented in this document.

Future volume forecasts for the Years 2015 and Years 2035 for each of the project alternatives were performed consistent with the methodologies presented in the approved volumes report. It was assumed that the vehicle mix for existing conditions (truck percentages) would be the same in the future as they are today. RivTAM model data was adjusted to reflect the vehicle mix observed in the existing volumes, proportioned to develop turning movement volumes and then adjusted so that the volumes along Cantu Galleano Road, Limonite Avenue and 6th Street would balance between intersections. Freeway forecasts were performed using the same methodology provided in the approved volumes report with forecast ramp volumes adjusted to reflect the updated peak hour freeway ramp intersection volumes.

4.4 Assessment of Forecast Year 2015 Conditions

I-15/Cantu Galleano Ranch Road Interchange Intersections

The future levels-of-service at the Cantu Galleano Ranch Road intersections are unaffected by improvements, or lack thereof, at the Limonite Avenue interchange. Traffic volumes along Cantu Galleano Ranch Road are the same with or without the construction of improvements along Limonite Avenue. Intersection operations at the Cantu Galleano Ranch Road intersections are forecast to be at LOS B or better for both the AM and PM peak hours.

I-15/Limonite Avenue Interchange Intersections

Intersection levels of service (LOS) at the Limonite Avenue Ramp intersections are forecast to be acceptable in the Year 2015 for Alternative 1 (“no build”). Alternative 3 provides the best intersection levels of service because it replaces left-turn movements on the bridge structure with right-turn movements that can utilize new loop on-ramps. Both Alternatives 2 and 3 provide peak hour intersection levels of service of LOS C or better.

I-15/6th Street Interchange Intersections

In the Year 2015, the forecast levels-of-service at the 6th Street ramp intersections are unaffected by improvements, or lack thereof, at the Limonite Avenue interchange. Traffic volumes along 6th Street are the same with or without the construction of improvements along Limonite Avenue.

Ramp intersection operations in the future further degrade with traffic growth that occurs between the existing conditions and Year 2015 with poor levels of service (LOS D or worse for both ramp intersections during the PM peak hour) and significant intersection queuing capacity deficiencies.

I-15 Freeway Operations

As forecast traffic volumes increase on I-15 between existing conditions and the Year 2015, freeway operations degrade as the six-lane freeway cross-section and ramp access geometries becomes less able to accommodate the forecasted traffic demand.

4.5 Assessment of Forecast Year 2035 Conditions

I-15/Cantu Galleano Ranch Road Interchange Intersections

The future levels of service at the Cantu Galleano Ranch Road ramp intersections are unaffected by improvements, or lack thereof, at the Limonite Avenue interchange. Traffic volumes along Cantu Galleano Ranch Road are the same with or without the construction of improvements along Limonite Avenue. Intersection operations at the Cantu Galleano Ranch Road interchange are forecast to be LOS B at both ramp intersections during the AM and PM peak hours.

I-15/Limonite Avenue Interchange Intersections

Intersection levels of service at the Limonite Avenue ramp intersections are forecast to be very poor in the Year 2035 for Alternative 1 (“no build”) and Alternative 2 conditions. The existing intersection geometries cannot handle the significant increase in traffic volumes. While Alternative 2 provides much needed east-west through capacity on Limonite Avenue across the freeway, the back-to-back dual left-turn lanes require a signalized left-turn phase, which utilizes a significant portion of the signal cycle length. Turn-lane storage is also insufficient at the freeway intersections, under Alternative 2, to accommodate forecast design queue lengths. Alternatives 1 and 2 do not meet the target of LOS D or better at one or both intersections during both the AM and PM peak hours.

Alternative 3 provides the best Limonite Avenue freeway ramp intersection operations for forecast Year 2035 conditions. Alternative 3 provides the best intersection levels of service because it replaces left-turn movements on the bridge structure with right-turn movements that utilize new loop on-ramps. With construction of Alternative 3, both Limonite Avenue freeway ramp intersections meet the target LOS D or better during both the AM and PM peak hours.

I-15/6th Street Interchange Intersections

In the Year 2035, the forecast levels of service at the 6th Street intersections are unaffected by improvements, or lack thereof, at the Limonite Avenue interchange. Traffic volumes along 6th Street are the same with or without the construction of improvements along Limonite Avenue. Future intersection operations degrade with traffic growth that is forecast to occur between the Year 2015 and the Year 2035 with very poor levels of service and intersection queuing capacity deficiencies.

I-15 Freeway Operations

Freeway improvements proposed under the I-15 Corridor Improvement Project (CIP) should be sufficient to provide for acceptable levels of service under each of the proposed Limonite Avenue “build” project alternatives (Alternatives 2 and 3).

5. DEFICIENCIES

A *Traffic Operations Analysis Report* was prepared for the I-15/Limonite Avenue Interchange Project to evaluate existing and projected traffic operations in the project area. This report, which covers the I-15 freeway corridor and intermediate interchanges from 6th Street north to Cantu Galleano Road, evaluated the current Limonite Avenue interchange configuration with existing traffic volumes as well as with projected volumes for the Opening Year (2015) and the Design Year (2035). The operations analysis was performed using Synchro and is summarized below for the existing interchange configuration.

5.1 Intersection Traffic Operations

For traffic signals at freeway ramp termini, Caltrans considers LOS “D” as the minimum standard. **Table 1** shows that the studied intersections at the I-15/Limonite Avenue interchange currently operate at an acceptable LOS and will continue to do so through the year 2015 without any improvements. (It should be noted that field observations indicate that delays are longer than shown in the optimized Synchro analysis for existing conditions. This is indicative of existing signal timing issues which are difficult to reflect in the analysis software parameters). However, by 2035 the existing ramp intersections at the I-15/Limonite Avenue interchange will have insufficient capacity to accommodate the forecasted traffic demand.

TABLE 1: “No Build” Intersection Level-Of-Service

Intersection	Existing Year 2011		Year 2015		Year 2035	
	LOS - Delay (sec.)		LOS - Delay (sec.)		LOS - Delay (sec.)	
	AM	PM	AM	PM	AM	PM
Cantu Galleano/I-15 SB On/Off-Ramps	B - 19.6	C - 22.1	B - 16.2	B - 15.8	B - 12.4	B - 13.8
Cantu Galleano/I-15 NB On/Off-Ramps	B - 19.7	B - 18.0	B - 16.5	B - 16.4	B - 14.0	B - 16.5
Limonite Avenue/Hamner Avenue	C - 29.8	C - 32.9	C - 31.1	D - 36.0	F - 157.7	F - 239.6
Limonite Avenue/Eastvale Shopping Center	B - 18.2	C - 31.5	B - 11.3	C - 30.9	C - 21.2	F - 337.9
Limonite Avenue/I-15 SB On/Off-Ramps	C - 24.3	C - 24.0	B - 16.9	C - 27.4	F - 151.3	F - 196.6
Limonite Avenue/I-15 NB On/Off-Ramps	B - 19.6	C - 33.8	C - 21.7	D - 49.8	F - 103.2	F - 278.2
Limonite Avenue/Pats Ranch Road	B - 12.2	B - 13.0	A - 10.0	B - 11.2	C - 21.0	F - 88.6
6th Street/I-15 SB Ramps	C - 24.4	C - 26.4	C - 25.4	D - 41.4	F - 214.5	F - 419.2
6th Street/I-1 NB Ramps	C - 22.9	C - 27.3	C - 31.9	E - 58.7	F - 281.9	F - 648.1

LOS = Level of Service

Delay = Average control delay in seconds.

5.2 Merge/Diverge Traffic Operations

For peak hour freeway operations, Caltrans generally accepts LOS D as the minimum standard. **Table 2** shows the results of the ramp merge/diverge analysis for the I-15/Limonite Avenue interchange.

TABLE 2: “No Build” Merge/Diverge Traffic Operations

Segment	Existing Year 2011		Year 2015		Year 2035 *	
	LOS		LOS		LOS	
	AM	PM	AM	PM	AM	PM
I-15 Northbound						
6th Street Off-Ramp	D	D	D	F	E	E
6th Street On-ramp	D	D	E	F	E	E
Limonite Avenue Off-Ramp	D	D	D	F	E	F
Limonite Avenue On-Ramp	E	D	F	D	D	D
Cantu Galleano Off-Ramp	D	D	D	D	D	D
I-15 Southbound						
Cantu Galleano Slip On-Ramp	D	D	D	E	C	B
Limonite Avenue Off-Ramp	D	D	D	D	C	C
Limonite Avenue On-Ramp	E	D	E	D	D	D
6th Street Off-Ramp	D	D	D	D	C	D
6th Street On-ramp	E	D	E	D	D	D

*Reflects addition of a 4th mixed flow lane to I-15 (I-15 Corridor Improvement Project, EA - 0J0800)

The results indicate that the merge/diverge operations associated with the northbound I-15 off-ramp to Limonite Avenue function at an acceptable LOS level in 2011, but that the northbound I-15 on-ramp to Limonite Avenue functions at an unacceptable LOS E for this same time period. In 2015, conditions further degrade with the northbound I-15 off-ramp to Limonite Avenue functioning at an unacceptable LOS level (LOS F) during the PM peak hours and the Northbound I-15 on-ramp to Limonite Avenue functioning at an unacceptable LOS level (LOS F) during the AM peak hours. The 2035 Design Year reflects construction of the “ I-15 Corridor Improvement Project.” Nonetheless, if the I-15 / Limonite Avenue Interchange project is not constructed, the northbound I-15 off-ramp to Limonite Avenue will continue to function at an unacceptable LOS level (LOS E and F) during both the AM and PM peak hours, respectively. Conversely, the northbound I-15 on-ramp to Limonite Avenue will function at an acceptable LOS level (LOS D) during both AM and PM peak hours in Design Year 2035.

The merge/diverge operations associated with the southbound I-15 off-ramp to Limonite Avenue function at an acceptable LOS level in 2011, but the southbound I-15 on-ramp to Limonite Avenue functions at an unacceptable LOS E in the AM for this same time

period. This condition continues in 2015 with the southbound I-15 off-ramp to Limonite Avenue functioning at an acceptable LOS, but the southbound I-15 on-ramp to Limonite Avenue functioning at an unacceptable LOS E. In the 2035 Design Year, with the construction of the "I-15 Corridor Improvement Project", both of the southbound ramps to Limonite Avenue function at an acceptable LOS for AM and PM peak hours.

5.3 Freeway Segment Analysis

For freeway mainline level-of-service, Caltrans has generally indicated that LOS D or better is acceptable for peak hour freeway mainline segment operations. In the existing condition, **Table 3** shows that the freeway segments north and south of Limonite Avenue (outside of the sphere-of-influence of the freeway ramps) currently operate at or below an acceptable LOS, and will further degrade to unacceptable levels by 2015. These freeway segment operations show improvement in 2035 due to the addition of the HOV and general purpose lanes to the I-15 freeway.

TABLE 3: "No Build" Freeway Segment Traffic Operations

Segment	Existing Year 2011		Year 2015		Year 2035 *	
	LOS		LOS		LOS	
	AM	PM	AM	PM	AM	PM
I-15 Northbound						
South of 6th Street Off-Ramp	D	E	E	F	E	D
6th Street Off-Ramp to 6th Street On-Ramp	D	D	D	D	D	C
6th Street On-Ramp to Limonite Avenue Off-Ramp	D	E	E	F	E	E
Limonite Avenue Off-Ramp to Limonite Avenue On-Ramp	D	D	D	D	D	C
Limonite Avenue On-Ramp to Cantu Galleano Off-Ramp	E	D	F	E	D	D
Cantu Galleano Off-Ramp to Cantu Galleano Loop On-Ramp	E	D	E	D	D	C
North of Cantu Galleano Loop On-Ramp	E	D	F	E	E	D

TABLE 3: “No Build” Freeway Segment Traffic Operations (continued)

Segment	Existing		Year 2015		Year 2035 *	
	LOS		LOS		LOS	
	AM	PM	AM	PM	AM	PM
I-15 Southbound						
North of Cantu Galleano Off-Ramp	E	D	E	E	C	C
Cantu Galleano Off-Ramp to Cantu Calleano Loop On-Ramp	D	D	D	D	B	C
Cantu Galleano Loop On-Ramp to Slip On-Ramp	C	C	C	C	B	B
Cantu Galleano Slip On-Ramp to Limonite Avenue Off-Ramp	D	D	D	D	C	C
Limonite Avenue Off-Ramp to Limonite Avenue On-Ramp	D	D	D	C	B	B
Limonite Avenue On-Ramp to 6th Street Off-Ramp	E	D	E	D	C	C
6th Street Off-Ramp to 6th Street On-Ramp	D	D	D	D	C	B
South of 6th Street On-Ramp	E	D	E	D	C	C

*Reflects addition of a 4th mixed flow lane to I-15 (I-15 Corridor Improvement Project, EA - 0J0800)

5.4 Accident Rates

An accident analysis was performed based on Traffic Accident Surveillance and Analysis System (TASAS) records on file at Caltrans for the segment I-15 PM 47.5/49.0, which included the four associated interchange ramps at Limonite Avenue. The TASAS accident data was reviewed for a three-year period, from July 2007 through June 2010, in which a total of 159 accidents were reported. **Table 4** provides a summary of these accident rates per million vehicle miles compared to statewide averages for similar types of facilities.

TABLE 4: TASAS Accident Rates at the I-15/Limonite Interchange (July 1, 2007 to June 30, 2010)

SEGMENT	ACTUAL RATES			AVERAGE RATES		
	Fatal	Fatal + Injury	Actual Total	Fatal	Fatal + Injury	Average Total
	(per million vehicles miles)			(per million vehicles miles)		
I-15 NB (PM 47.5/49.0)	0.000	0.15	0.34	0.011	0.35	1.09
I-15 SB (PM 47.5/49.0)	0.016	0.16	0.42	0.011	0.35	1.09
	(per million vehicles)			(per million vehicles)		
Limonite NB On-Ramp	0.000	0.17	0.58	0.002	0.26	0.75
Limonite SB On-Ramp	0.000	0.30	0.84	0.002	0.26	0.75
Limonite NB Off-Ramp	0.000	0.23	2.05	0.004	0.42	1.20
Limonite SB Off-Ramp	0.000	0.08	1.83	0.004	0.42	1.20

*Bold exceeds statewide average

An analysis of the accident data along northbound and southbound I-15 mainline in the vicinity of the Limonite interchange indicates that the actual total accident rate is lower in most categories than the statewide average for similar types of facilities. The most common accident type with approximately 40% of the collisions was rear-end accidents. Sideswipe accidents and hit objects were the next most common collision types at 30% and 22%, respectively.

The accident data also shows that the on-ramps have roughly the same accident rates as the statewide average for similar facilities, while the accident rates of the off-ramps is about twice the statewide average. The total number of accidents along the ramps during this period was 67, with no fatalities and 10 injury accidents. Traffic accident data provided by the County of Riverside for Limonite Avenue through the interchange area reveals that the total number of accidents along Limonite Avenue during this period was 32, with no fatalities and 10 injury accidents. The types of accidents along the interchange ramps and Limonite Avenue consisted of roughly 60% rear-end accidents, 25% broadside and 6% sideswipe/hit object. The congestion and off-ramp queuing during the peak periods likely contributes to the above-average accident rate on the off-ramps.

A TASAS Selective Accident Retrieval (TSAR) summary of the types of accidents for the project area, comprised of Caltrans and County of Riverside traffic accident data, is shown in **Table 5**.

**TABLE 5: Accident By Collision Type at the I-15/Limonite Interchange
 (July 1, 2007 to June 30, 2010)**

ACCIDENT TYPE	MAINLINE I-15		ON & OFF RAMPS		LIMONITE AVENUE	
	#	%	#	%	#	%
Head-on	0	0	0	0	0	0
Sideswipe	27	29	13	19	2	6
Rear-end	37	40	38	57	20	63
Broadside	1	1	12	18	8	25
Hit Object	20	22	2	3	2	6
Overturn	5	6	0	0	0	0
Pedestrian	1	1	0	0	0	0
Other	1	1	2	3	0	0

6. CORRIDOR AND SYSTEM COORDINATION

6.1 Caltrans Planning

I-15 is listed in the following state planning documents: Route Concept Fact Sheet District 8: Interstate Route 15 (March 1999) and the California Transportation Plan 2030.

6.2 Regional Planning

The I-15/Limonite Avenue Interchange Project is listed in the Southern California Association of Governments (SCAG) 2012 Regional Transportation Plan (RTP), adopted on April 4, 2012. Approximately \$29,211,000 is currently programmed to complete the project. The project is also listed in the SCAG 2011 Federal Transportation Improvement Program (FTIP) as project number RIV011233, which received Federal approval on December 14, 2010. The current description in the FTIP and RTP is consistent with the proposed Alternative 3. Updates to the project description and programmed funding in the RTP and FTIP will occur during the PA&ED phase of the project.

6.3 Local Planning

Limonite Avenue is listed as an Urban Arterial in the RCGP and the Eastvale General Plan. The Eastvale General Plan refers to the RCGP for the Eastvale Area where no trails or bikeway systems are planned for the project area. The interchange project is included in the Riverside County Transportation Department *Mira Loma Road and Bridge Benefit District* document as an interchange improvement project. The Western Riverside Council of Governments (WRCOG) lists this interchange project in the 2011 Northwest Transportation Uniform Mitigation Fee (TUMF) Zone Transportation Improvement Program with approximately \$309,000 programmed for engineering.

6.4 Transportation Planning Scoping Information Sheet

A copy of the Transportation Planning Scoping Information Sheet is included in **Attachment F**. It addresses the following pertinent topics:

- Funding for PA&ED and subsequent phases of the project is anticipated from TUMF funds and Road and Bridge Benefit District funds. In addition, State and Federal funds in the State Transportation Improvement Program may also be available for use in subsequent phases of this project.
- Community involvement will be encouraged through comment during circulation of the environmental document. During this time, a community meeting may be held.
- Context sensitive solutions (aesthetic themes, bike/pedestrian improvements) will be incorporated into the project.
- Class 2 bike lanes will be provided with the project and all freeway on- and off-ramps will be squared up with Limonite Avenue to provide safer bicycle crossing at intersections.
- ADA compliant sidewalks, curb ramps and cross walks will be provided throughout the project.

7. ALTERNATIVES

7.1 Alternative 1: No Build Alternative

The No Build Alternative proposes to maintain the existing interchange configuration. However, this alternative does not preclude the construction of future improvements. For this alternative, arterial and interchange capacity and operational improvements will not be implemented and the increased demand will not be addressed. The existing overcrossing will not accommodate the anticipated I-15 widening. The project layout and study area boundary exhibit for Alternative 1 (No Build) is included in **Attachment B**.

Cost Estimates

Because no improvements are proposed with Alternative 1, there are no capital costs associated with it.

Traffic Operations

Traffic operations for Alternative 1 will be identical to those of the existing interchange. As shown in **Table 1** in **Section 5.1**, local development will cause traffic operations at all of the Limonite Avenue intersections in the interchange area to degrade, with LOS F being the predominant service level by Design Year 2035.

In addition, the ramp merge/diverge operations at the I-15/Limonite Avenue interchange will operate at unacceptable LOS F at the northbound ramps by 2015 and continue to degrade through the year 2035 (see **Table 2, Section 5.2**).

The freeway segment operations north and south of Limonite Avenue will also degrade as traffic volumes increase in the future, and will continue to do so unless capacity improvements are made along I-15 (see **Table 3, Section 5.3**).

Based on the overall traffic results, this alternative does not address the operational deficiencies at the interchange and it is not consistent with the regional development plans of Riverside County.

A more detailed discussion of the Alternative 1 traffic results can be found in the approved *Traffic Operations Analysis (November 2011)*.

Non-Standard Design Features

The existing north- and southbound off-ramps currently have a pre-existing, non-standard superelevation rate. In addition, the north- and southbound on-ramps currently have a pre-existing, non-standard angle of intersection. These non-standard design features will not be addressed with Alternative 1 because no improvements are proposed.

Required Approvals

The No-Build alternative will not change existing conditions and will therefore not require any approvals.

Stormwater

Because no improvements are proposed with Alternative 1, no stormwater BMPs will be implemented.

Context Sensitive Solutions/Complete Streets

Because no improvements are proposed with Alternative 1, no context sensitive solutions or improvements providing for safe multimodal mobility will be implemented.

Constructability

Because no improvements are proposed with Alternative 1, there are no constructability issues associated with this alternative.

7.2 Alternative 2: Diamond Interchange

Alternative 2, shown in **Attachment B**, proposes to widen the existing on-and off-ramps, widen Limonite Avenue to 3 lanes in each direction through the interchange area and replace the existing Limonite Avenue overcrossing structure. The three-lane on-ramps will have California Highway Patrol (CHP) enforcement areas and maintenance pads, and will be metered, with one lane on each ramp dedicated to High Occupancy Vehicles (HOVs). The off-ramps will consist of two lanes at the freeway diverge point and will widen to four lanes at the ramp intersections. Each of the on- and off-ramps will have increased acceleration and deceleration lane lengths at the freeway merge/diverge points. The proposed overcrossing structure consists of a two-span cast-in-place prestressed concrete box girder bridge that will accommodate six travel lanes, 10-foot shoulders/bike lanes, 8-foot sidewalks, and two 12-foot left-turn lanes, and will accommodate the future widening of I-15 to a 12-lane facility. Typical cross sections for Alternative 2 are shown in **Attachment C**.

Cost Estimates

The estimated total project cost for Alternative 2, including right of way, construction, and environmental mitigation, is approximately \$25,000,000 (in escalated dollars). A cost estimate breakdown for Alternative 2 is included in **Attachment D**.

Traffic Operations

Based on the traffic analysis performed for Alternative 2, the intersections at the I-15/Limonite Avenue interchange will operate at an acceptable LOS through Opening Year 2015, but will degrade to LOS F by 2035 as shown in **Table 6**. The critical intersections that fail in 2035 are the I-15/Limonite Avenue SB on-and off-ramp and the NB off-ramp.

TABLE 6: Intersection Level-of-Service (Alternative 2)

Intersection	Year 2015		Year 2035	
	LOS - Delay (sec.)		LOS - Delay (sec.)	
	AM	PM	AM	PM
Cantu Galleano/I-15 SB On/Off-Ramps	B - 16.2	B - 15.8	B - 12.4	B - 13.8
Cantu Galleano/I-15 NB On/Off-Ramps	B - 16.5	B - 16.4	B - 14.0	B - 16.5
Limonite Avenue/Hamner Avenue	C - 33.6	C - 30.6	F - 163.8	F - 469.3
Limonite Avenue/Eastvale Shopping Center	B - 16.3	C - 21.4	C - 33.7	F - 234.9
Limonite Avenue/I-15 SB On/Off-Ramps	C - 23.2	C - 24.7	F - 106.7	F - 106.5
Limonite Avenue/I-15 NB On/Off-Ramps	C - 20.2	C - 21.0	D - 38.3	F - 144.5
Limonite Avenue/Pats Ranch Road	A - 9.6	B - 13.5	A - 7.9	B - 19.6
6th Street/I-15 SB Ramps	C - 25.4	D - 41.4	F - 214.5	F - 419.2
6th Street/I-1 NB Ramps	C - 31.9	E - 58.7	F - 281.9	F - 648.1

LOS = Level of Service

Delay = Average control delay in seconds.

Table 7 shows that the ramp merge/diverge operations at the Limonite Avenue interchange will operate at acceptable levels with the Alternative 2 improvements. In addition, the merge/diverge operation is further improved by 2035 due to the addition of the HOV and mixed flow lanes to I-15.

TABLE 7: Merge/Diverge Traffic Operations (Alternative 2)

Segment	Year 2015		Year 2035 *	
	LOS		LOS	
	AM	PM	AM	PM
I-15 Northbound				
6th Street Off-Ramp	D	F	E	E
6th Street On-ramp	E	F	E	E
Limonite Avenue Off-Ramp	A	B	A	A
Limonite Avenue On-Ramp	D	D	C	D
Cantu Galleano Off-Ramp	D	D	D	D
I-15 Southbound				
Cantu Galleano Slip On-Ramp	D	E	C	B
Limonite Avenue Off-Ramp	A	A	A	A
Limonite Avenue On-Ramp	D	D	C	D
6th Street Off-Ramp	D	D	C	D
6th Street On-ramp	E	D	D	D

*Reflects addition of a 4th mixed flow lane to I-15 (I-15 Corridor Improvement Project, EA - 0J0800)

Table 8 shows that with the Alternative 2 improvements, some of the freeway segments will operate at an unacceptable LOS F in 2015. However, when compared to Alternative 1 (No- Build), there is no change in the freeway operations for either 2015 or 2035, indicating that the proposed project will not have a detrimental effect on freeway segment operations. The freeway segment operations in 2035 are improved to acceptable levels due to the addition of the HOV and general purpose lanes to the I-15 freeway.

TABLE 8: Freeway Segment Traffic Operations (Alternative 2)

Segment	Year 2015		Year 2035 *	
	LOS		LOS	
	AM	PM	AM	PM
I-15 Northbound				
South of 6th Street Off-Ramp	E	F	E	D
6th Street Off-Ramp to 6th Street On-Ramp	D	D	D	C
6th Street On-Ramp to Limonite Avenue Off-Ramp	E	F	E	E
Limonite Avenue Off-Ramp to Limonite Avenue On-Ramp	D	D	D	C
Limonite Avenue On-Ramp to Cantu Galleano Off-Ramp	F	E	D	D
Cantu Galleano Off-Ramp to Cantu Galleano Loop On-Ramp	E	D	D	C
North of Cantu Galleano Loop On-Ramp	F	E	E	D
I-15 Southbound				
North of Cantu Galleano Off-Ramp	E	E	C	C
Cantu Galleano Off-Ramp to Cantu Calleano Loop On-Ramp	D	D	B	C
Cantu Galleano Loop On-Ramp to Slip On-Ramp	C	C	B	B
Cantu Galleano Slip On-Ramp to Limonite Avenue Off-Ramp	D	D	C	C
Limonite Avenue Off-Ramp to Limonite Avenue On-Ramp	D	C	B	B
Limonite Avenue On-Ramp to 6th Street Off-Ramp	E	D	C	C
6th Street Off-Ramp to 6th Street On-Ramp	D	D	C	B
South of 6th Street On-Ramp	E	D	C	C

*Reflects addition of a 4th mixed flow lane to I-15 (I-15 Corridor Improvement Project, EA - 0J0800)

Based on these results, it has been determined that while the proposed improvements will increase the capacity of the facility, some of the intersections at the interchange will

continue to operate at an unacceptable LOS. As a result, Alternative 2 does not meet the need and purpose of the Project.

A more detailed discussion of the Alternative 2 traffic results can be found in the approved *Traffic Operations Analysis (November 2011)* for this project.

Non-Standard Design Features

The following mandatory and advisory design exceptions may be required to obtain project approval of Alternative 2. The need for these exceptions will be determined during the PA&ED phase:

- (Mandatory) Non-Standard Superelevation Rate (Highway Design Manual (HDM) 202.2): The northbound and southbound off-ramps, which currently have a pre-existing non-standard superelevation rate, are proposed to be widened. The full standard superelevation rate is not attainable due to the proximity of curve radii (500 feet) to the ramp terminals. The curve radii and proximity to ramp terminals were maintained to conform to the existing land use and minimize impacts to the adjacent commercial development.
- (Mandatory) Non-Standard Shoulder Width (HDM 302.1): The existing left paved shoulder on I-15 is a non-standard width of 5' instead of the required 10'. The project does not propose any work within the mainline median.
- (Advisory) Non-Standard Angle of Intersection (HDM 403.3): The north- and southbound on-ramps, which currently have a pre-existing, non-standard angle of intersection, are proposed to be widened. The current angles of intersections are approximately 70° and were maintained to conform to the existing land use and minimize impacts to the adjacent commercial development.

Required Approvals

Approval from FHWA will be required due to the access modifications proposed by this alternative. This approval will be obtained through the submission of a Modified Access Report during PA&ED.

Stormwater

Alternative 2 has the potential to increase the volume of runoff and the urban pollutant load of this runoff due to the increase in impervious area. In addition, the project may temporarily increase sediment load in the runoff due to the grading activities associated with the project. To mitigate these impacts, temporary and permanent treatment Best Management Practices (BMPs) will be incorporated into the project. These BMPs are proposed to be located between the on/off ramps and I-15 mainline or within the loop ramp area within Caltrans right of way.

Temporary construction site BMPs anticipated to be used for this project include fiber rolls for slope stability and sediment control, stabilized construction entrances to prevent sediment tracking on paved surfaces, temporary drainage inlet protection, temporary concrete washouts for concrete spoils, street sweeping, contour grading, temporary silt fence, temporary check dams, temporary hydraulic mulch, plastic fencing, tire /wheel

washes, covers for stockpiles against wind erosion and multiple mobilizations.

Permanent treatment BMPs that may be used for this project include infiltration and detention basins, biofiltration swales, and media filters.

Stormwater impacts will be further minimized by disturbing existing slopes only when necessary, minimizing cut and fill areas, avoiding soils that will be difficult to re-stabilize, providing slopes flat enough to re-vegetate, rounding slopes to reduce concentrated flows and collecting concentrated flows in stabilized channels. The design will allow for ease of maintenance. The project will be scheduled to minimize soil-disturbing work during the rainy season. If applicable, permanent water pollution controls will be installed early to be used during construction.

Context Sensitive Solutions/Complete Streets

Alternative 2 contains numerous features that provide for the safe mobility of all users, including sidewalks, bike lanes, bike detectors, Americans with Disabilities Act (ADA) compliant grades and ramps, and controlled movements at all intersections (i.e. no free right turns).

In addition, the proposed project fits within the context of its surroundings in that the retaining walls, structure type and aesthetic features will be consistent with those of the adjacent interchanges and the provided cross sectional features (bike lanes, sidewalks, etc.) will be consistent with those along the existing corridor.

Constructability

Construction of the interchange modifications associated with Alternative 2 will require a staged approach in order to allow the interchange to stay open to traffic during construction. The overcrossing will need to be constructed in two halves. Traffic will be diverted via adjacent ramps during a night closure of I-15 to erect falsework for this structure. No long term closures or detours are anticipated.

7.3 Alternative 3: Partial Clover Leaf Interchange

Alternative 3, shown in **Attachment B**, proposes to replace the existing on-and off-ramps with wider ramps, widen Limonite Avenue to 3 lanes in each direction through the interchange area, replace the existing overcrossing structure and construct loop ramps in the southeast and northwest quadrants. The three-lane freeway on-ramps will have CHP enforcement areas and maintenance pads, and will be metered with one lane on each ramp dedicated to HOVs. Two-lane freeway off-ramps will be provided and will widen to four lanes at the ramp intersections. Each of the on- and off-ramps will have increased acceleration and deceleration lane lengths at the freeway merge/diverge points. The overcrossing structure, a proposed two-span cast-in-place prestressed concrete box girder bridge, will accommodate six traveled lanes, two right-turn-only lanes, 10-foot shoulders/bike lanes, 8-foot sidewalks, and a 14-foot raised median and will also accommodate the future widening of I-15 to a 12-lane facility. Typical cross sections for Alternative 3 are shown in **Attachment C**.

Alternative 3 was developed to address the operational deficiencies at the Limonite Avenue/I-15 interchange without negatively impacting the I-15 freeway operations.

Cost Estimates

The estimated total project cost for Alternative 3, including right of way, construction, and environmental mitigation, is approximately \$37,000,000 (in escalated dollars). A cost estimate breakdown for Alternative 3 is included within **Attachment D**.

Traffic Operations

With the improvements proposed in Alternative 3, **Table 9** shows that the intersections at the I-15/Limonite Avenue interchange will operate at an acceptable LOS through the year 2035.

TABLE 9: Intersection Level-of-Service (Alternative 3)

Intersection	Year 2015		Year 2035	
	LOS - Delay (sec.)		LOS - Delay (sec.)	
	AM	PM	AM	PM
Cantu Galleano/I-15 SB On/Off-Ramps	B - 16.2	B - 15.8	B - 12.4	B - 13.8
Cantu Galleano/I-15 NB On/Off-Ramps	B - 16.5	B - 16.4	B - 14.0	B - 16.5
Limonite Avenue/Hamner Avenue	C - 29.2	C - 30.4	F - 186.2	F - 234.9
Limonite Avenue/Eastvale Shopping Center	B - 13.1	C - 23.1	C - 33.7	F - 234.9
Limonite Avenue/I-15 SB On/Off-Ramps	A - 9.5	C - 22.9	C - 25.7	D - 41.8
Limonite Avenue/I-15 NB On/Off-Ramps	B - 12.8	B - 14.1	B - 17.0	D - 50.4
Limonite Avenue/Pats Ranch Road	B - 10.3	B - 12.3	B - 10.1	B - 19.6
6th Street/I-15 SB Ramps	C - 25.4	D - 41.4	F - 214.5	F - 419.2
6th Street/I-1 NB Ramps	C - 31.9	E - 58.7	F - 281.9	F - 648.1

LOS = Level of Service

Delay = Average control delay in seconds.

Table 10 shows that at the I-15/Limonite Avenue interchange, the ramp merge/diverge operations will operate at acceptable levels with the Alternative 3 improvements. In addition, the merge/diverge operation is further improved by 2035 due to the addition of the HOV and mixed flow lanes to I-15.

TABLE 10: Merge/Diverge Traffic Operations (Alternative 3)

Segment	Year 2015		Year 2035 *	
	LOS		LOS	
	AM	PM	AM	PM
I-15 Northbound				
6th Street Off-Ramp	D	F	E	E
6th Street On-ramp	E	F	E	E
Limonite Avenue Off-Ramp	A	B	A	A
Limonite Avenue On-Ramp	C	B	B	B
Cantu Galleano Off-Ramp	D	D	D	D
I-15 Southbound				
Cantu Galleano Slip On-Ramp	D	E	C	B
Limonite Avenue Off-Ramp	A	A	A	A
Limonite Avenue On-Ramp	B	B	B	B
6th Street Off-Ramp	D	D	C	D
6th Street On-ramp	E	D	D	D

*Reflects addition of a 4th mixed flow lane to I-15 (I-15 Corridor Improvement Project, EA - 0J0800)

Table 11 shows that with the Alternative 3 improvements, some of the freeway segments will operate at an unacceptable LOS in 2015. However, when compared to Alternative 1 (No- Build), there is no change in the freeway operations for either 2015 or 2035. This indicates that the proposed project will not have a detrimental effect on freeway segment operations. By 2035 the freeway segment operations are improved to acceptable levels due to RCTC's freeway widening project (CIP – Reference EA – 0J0800).

TABLE 11: Freeway Segment Traffic Operations (Alternative 3)

Segment	Year 2015		Year 2035 *	
	LOS		LOS	
	AM	PM	AM	PM
I-15 Northbound				
South of 6th Street Off-Ramp	E	F	E	D
6th Street Off-Ramp to 6th Street On-Ramp	D	D	D	C
6th Street On-Ramp to Limonite Avenue Off-Ramp	E	F	E	E
Limonite Avenue Off-Ramp to Limonite Avenue Loop On-Ramp	D	D	D	C
Limonite Avenue Loop On-Ramp to Limonite Avenue Slip On-Ramp	C	C	C	C
Limonite Avenue On-Ramp to Cantu Galleano Off-Ramp	F	E	D	D
Cantu Galleano Off-Ramp to Cantu Galleano Loop On-Ramp	E	D	D	C
North of Cantu Galleano Loop On-Ramp	F	E	E	D
I-15 Southbound				
North of Cantu Galleano Off-Ramp	E	E	C	C
Cantu Galleano Off-Ramp to Cantu Calleano Loop On-Ramp	D	D	B	C
Cantu Galleano Loop On-Ramp to Slip On-Ramp	C	C	B	B
Cantu Galleano Slip On-Ramp to Limonite Avenue Off-Ramp	D	D	C	C
Limonite Avenue Off-Ramp to Limonite Avenue Loop On-Ramp	D	C	B	B
Limonite Avenue Loop On-Ramp to Limonite Avenue Slip On-Ramp	C	C	B	B
Limonite Avenue Slip On-Ramp to 6th Street Off-Ramp	E	D	C	C
6th Street Off-Ramp to 6th Street On-Ramp	D	D	C	B
South of 6th Street On-Ramp	E	D	C	C

*Reflects addition of a 4th mixed flow lane to I-15 (I-15 Corridor Improvement Project, EA - 0J0800)

Based on these results, Alternative 3 will provide acceptable forecast longer-term (Year 2035) freeway levels of service in the vicinity of Limonite Avenue as well as acceptable levels of service at the I-15/Limonite Avenue ramp intersections. In addition, it is anticipated that the ramp improvements proposed by Alternative 3 will reduce the congestion-related collisions currently experienced in the project area.

A more detailed discussion of the Alternative 3 traffic analysis can be found in the approved *Traffic Operations Analysis (November 2011)* prepared for this project.

Non-Standard Design Features

The following mandatory and advisory design exceptions may be required to obtain project approval of Alternative 3. The need for these exceptions will be determined during the PA&ED phase:

- (Mandatory) Non-Standard Superelevation Transition (HDM 202.5[1]): The loop on-ramps in both the north- and southbound directions, as well as the off-ramps in both directions, all have non-standard superelevation transitions. Due to the desire to conform to existing land use and minimize impacts to adjacent commercial development, the beginning/ending of the horizontal curves were placed in close proximity to the ramp intersection with Limonite Avenue. Standard superelevation transitions, based on curve radii, were not attainable along the off-ramps and loop-on-ramps because of their close proximity to ramp terminal intersections along Limonite Avenue. Design speed was taken into account when deciding which superelevation transition rates were to be used.
- (Mandatory) Non-Standard Curvature (HDM 203.3): The north- and southbound loop on-ramps each have a non-standard radius curve. These loop on-ramps were designed with a 150 foot radius curve in an effort to conform to existing land use and minimize impacts to adjacent commercial development. All traffic will make a slow speed turn before entering the curve and will potentially be stopped by ramp metering. The design speed throughout the curve will be 25 mph.
- (Mandatory) Non-Standard Shoulder Width (HDM 302.1): The existing left paved shoulder on I-15 is a non-standard width of 5' instead of the required 10'. The project does not propose any work within the mainline median.
- (Advisory) Non-Standard Design Speed (HDM 504.3[1]): The north- and southbound loop on-ramps each have a non-standard radius curve, which does not allow for a design speed greater than 25 mph. These loop on-ramps were designed with a 150 foot radius curve in an effort to conform to existing land use and minimize impacts to adjacent commercial development. All traffic will make a slow speed turn before entering the curve and will potentially be stopped by ramp metering. The design speed throughout the curve will be 25 mph. The tangent portions of the loop on-ramps will be designed to allow adequate acceleration length from the end of the 150-foot radius curve to the merge point with the freeway.

Required Approvals

Approval from FHWA will be required due to the access modifications proposed by this alternative. This approval will be obtained through the submission of a Modified Access Report during PA&ED. Approval from FHWA will also be required for Mandatory Fact Sheets.

Stormwater

Alternative 3 has the potential to increase the volume of runoff and the urban pollutant load of this runoff due to the increase in impervious area. In addition, the project may temporarily increase sediment load in the runoff due to the grading activities associated with the project. To mitigate these impacts, temporary and permanent treatment BMPs will be incorporated into the project. These BMPs are proposed to be located between the on/off ramps and I-15 mainline or within the loop area within Caltrans right of way.

Temporary construction site BMPs anticipated to be used for this project include fiber rolls for slope stability and sediment control, stabilized construction entrances to prevent sediment tracking on paved surfaces, temporary drainage inlet protection, temporary concrete washouts for concrete spoils, street sweeping, contour grading, temporary silt fence, temporary check dams, temporary hydraulic mulch, plastic fencing, tire /wheel washes, covers for stockpiles against wind erosion and multiple mobilizations.

Permanent treatment BMPs that may be used for this project include infiltration and detention basins, biofiltration swales, and media filters.

Stormwater impacts will be further minimized by disturbing existing slopes only when necessary, minimizing cut and fill areas, avoiding soils that will be difficult to re-stabilize, providing slopes flat enough to re-vegetate, rounding slopes to reduce concentrated flows and collecting concentrated flows in stabilized channels. The design will allow for ease of maintenance. The project will be scheduled to minimize soil-disturbing work during the rainy season. If applicable, permanent water pollution controls will be installed early to be used during construction.

Context Sensitive Solutions/Complete Streets

Alternative 3 contains numerous features that provide for the safe mobility of all users, including sidewalks, bike lanes, bike detectors, ADA compliant grades and ramps, and controlled movements at all intersections (i.e. no free right turns).

In addition, the proposed project fits within the context of its surroundings in that the retaining walls, structure type and aesthetic features will be consistent with those of adjacent interchanges and the provided cross sectional features (bike lanes, sidewalks, etc.) will be consistent with those along the existing corridor.

Constructability

Construction of the interchange modifications associated with Alternative 3 will require a staged approach in order to allow the interchange to stay open to traffic during construction. The overcrossing will need to be constructed in two halves. Traffic will be diverted via adjacent ramps during a night closure of I-15 to erect falsework for this structure. No long term closures or detours are anticipated.

8. RIGHT OF WAY, UTILITIES, AND RAILROADS

8.1 Right of Way

Right of way acquisition will not be needed for Alternative 1.

Alternatives 2 and 3 will require the acquisition of private property to accommodate the interchange reconfiguration. Right of way acquisition is required along each of the diagonal ramps (except the southbound off-ramp) and along the north and south side of Limonite Avenue west of I-15. The proposed right of way areas are shown on the alternative exhibits (see **Attachment B**). A Right Of Way Conceptual Cost Estimate for these alternatives is included in **Attachment G**.

8.2 Utilities

The following utilities were determined to exist within the project vicinity:

- A 36-inch gas line located north of the Limonite Avenue overcrossing
- A 30-inch water line located south of the Limonite Avenue overcrossing
- A communications conduit is located within the overcrossing structure

No utilities will be impacted by Alternative 1.

Alternatives 2 and 3 will require potholing to determine if underground utilities will require relocation. Utilities not located parallel to the existing Limonite Avenue will be realigned with Limonite Avenue and utilities located within the existing overcrossing structure will be relocated into the new overcrossing structure. Relocation of longitudinal facilities is not anticipated. These measures will be coordinated with the utility owners during the design process.

The agency responsible for the costs of any utility relocation will be determined based on research of ownership, prior rights, and Master Agreements. Once this determination is made, a “determination of liability” will be completed to appropriately allocate funds for the design and relocation of the affected utilities.

8.3 Railroad

There are no railroad facilities in the project area. Therefore, none of the alternatives will have impacts to railroad lines.

9. STAKEHOLDER INVOLVEMENT

Representatives of Riverside County Transportation Department and Caltrans attended Project Development Team (PDT) meetings during the Project Initiation Document (PID) phase to develop the purpose and need and identify the alternatives studied for the I-15/Limonite Avenue Interchange Project. Identified concerns and objectives included the

need for timely rights of entry to perform the necessary technical studies and coordination related to the impacts on the Park and Ride lot.

Regular PDT meetings will continue to be held during the PA&ED phase to discuss the various coordination aspects of the project and will expand to include representatives from the newly formed Cities of Eastvale and Jurupa Valley. In addition, the PDT will evaluate the need for a public meeting during circulation of the environmental document.

10. ENVIRONMENTAL DETERMINATION/DOCUMENT

Caltrans has statutory obligation to maintain and operate the State Highway System (SHS) as the owner of the SHS, and accordingly, is the California Environmental Quality Act (CEQA) Lead Agency for all improvement projects on the SHS.

Section 6005(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (P.L. 109-59), codified as Section 327 of amended Chapter 3 of Title 23, United States Code (23 U.S.C. 327), establishes a Surface Transportation Project Delivery Pilot Program that allows the Secretary of the United States Department of Transportation (USDOT) to assign, and a State to assume, the USDOT Secretary's responsibilities under the National Environmental Policy Act of 1969 (42 U.S.C. 4321, et seq.), and all or part of the USDOT Secretary's responsibilities for environmental review, consultation, or other action required under any Federal environmental law with respect to one or more highway projects within the State. The FHWA and Caltrans entered into a Memorandum of Understanding (MOU) dated June 7, 2007 that assigned FHWA's responsibilities for determining whether certain projects are categorically excluded from the requirement to prepare environmental assessments or environmental impact statements to Caltrans. The June 7, 2007 MOU (renewed on June 7, 2010) also assigns certain other environmental responsibilities for categorical exclusion projects. Effective July 1, 2007, Caltrans has been assigned environmental review and consultation responsibilities under the National Environmental Policy Act (NEPA) pursuant to 23 U.S.C. 327. The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327. On the Effective Date, all responsibilities concerning categorical exclusion determinations not assigned by FHWA and assumed by Caltrans under the June 7, 2007 6004 MOU are assigned by the FHWA and assumed by Caltrans under the 6005 MOU.

Caltrans is the lead agency in conjunction with completion of all NEPA compliance requirements and associated documentation for this project.

Based on the location and scope of work of the proposed project, preparation of an Initial Study (IS) has been determined to be the appropriate environmental documentation for CEQA compliance. The IS will be prepared in accordance with Caltrans' environmental procedures, as well as State and federal environmental regulations. After the public circulation period, all comments will be considered, and the Project Development Team will select a Preferred Alternative and Caltrans will make the final determination of the

project's effect on the environment. In accordance with CEQA, if no unmitigable significant adverse impacts are identified, Caltrans expects to approve a Negative Declaration (ND) or Mitigated ND.

Regarding documentation of NEPA compliance, it is anticipated that the proposed project will be eligible to receive a Section 6005 Categorical Exclusion (6005 CE) determination under Section 6005 of 23 U.S.C. 327. The Department's Categorical Exemption/Categorical Exclusion (CE/CE) Determination Form will be utilized to document compliance with NEPA requirements.

The final determination regarding the applicable CEQA and NEPA compliance documentation will be made by Caltrans in conjunction with completion of the required Technical Studies for this proposed project.

Based on the results of the Preliminary Environmental Analysis Report (PEAR), included as **Attachment E**, among the Technical Studies expected to be prepared for this project are the Historic Property Survey Report, the Natural Environment Study, the Initial Site Assessment, the Noise Study Report, the Air Quality Report, Air Quality Conformity Analysis Report, Paleontological Identification Report, Location Hydraulic Study and Floodplain Encroachment Report.

Whether the project may require permits from resource agencies, construction windows, biological or Native American Monitoring, or compensatory mitigation will be determined during completion of Technical Studies. An Environmental Commitments Record will be required to ensure implementation of all Avoidance, Minimization, and/or Mitigation Measures required to address impacts resulting from the proposed project.

If the scope of work (including utility relocation requirements—if any) or limits for this project change prior to completion of the preliminary engineering (PA&ED phase), or during the final design (PS&E phase), or during the construction phase, performance of an Environmental Re-Validation/Re-Evaluation will be required to confirm if the IS determined to be the appropriate environmental documentation for CEQA compliance, and/or the anticipated Section 6005 CE determination for NEPA compliance documentation remain appropriate. An Environmental Certification will be required at the end of the PS&E phase, and a Certificate of Compliance (CEC) will be required following completion of construction of the project.

11. FUNDING

11.1 Capital Costs

The capital cost estimate for the alternatives identified for programming in the 2012 STIP are summarized in the **Table 12**.

TABLE 12: Capital Outlay Estimate

Alternative	Range for Total Cost	STIP	Federal	TUMF	Local Benefit District
1	\$0				
2	\$25M-\$30M	X	X	X	X
3	\$40M-\$45M	X	X	X	X

The level of detail available to develop these capital cost estimates is only accurate to within the above ranges and is useful for long-range planning purposes only. The capital costs should not be used to program or commit capital funds. The Project Report will serve as the appropriate document from which the remaining support and capital components of the project will be programmed.

11.2 Capital Support

Capital Support Estimate for the Programmable PA&ED in the 2012 STIP for this project: \$510,000.

12. SCHEDULE

TABLE 13: Project Schedule

HQ Milestones	Delivery Date (Month, Year)
Begin Environmental	August 2012
Circulate Draft Environmental Document (DED)	May 2013
PA&ED Approval	December 2013
Project PS&E	May 2014
Regular Right of Way	July 2014
Right of Way Certification	July 2014
Ready to List	August 2014
Approve Contract	November 2014
Contract Acceptance	January 2015
End Project	May 2016

This schedule is based on the following assumptions:

- The Caltrans Cooperative agreement will be executed in August 2012.
- Review can be completed and comments provided within the 4 to 6 week period allotted per review task.
- Design will proceed, at risk, concurrent with PA&ED up until the 95% milestone.

- Right of way acquisition is not anticipated to involve eminent domain.
- Permitting can be accomplished within 10 months of environmental approval.

13. FHWA COORDINATION

This report has been reviewed by Anthony Ng, Caltrans' FHWA Liaison Engineer on 4/17/12 and has determined that, per the current Joint Stewardship and Oversight Agreement between the California Department of Transportation and FHWA, dated October 2010, this project is considered to be an Assigned Project. However, should any future situation/circumstance that will potentially classify the project as a High Profile Project arises, Caltrans shall notify FHWA and reassess this project using the High Profile Project selection criteria outlined in the Agreement.

Submittal of an unsigned Project Study Report or an unsigned Project Report to FHWA is required to request federal "engineering and operational acceptability" determination of a new or modified access to the Interstate. Federal "engineering and operational acceptability" determination must be obtained prior to circulation of the environmental document.

Sufficient funding is expected to be reasonably available at the time of approval of the environmental document to allow for the inclusion of the fully funded preferred alternative in the financially constrained Metropolitan Planning Organization (MPO) RTPFTIP. The proposed sources of funding are listed in section "11. FUNDING" above. In addition, the County will apply for Congestion Management and Air Quality (CMAQ) Improvement Programs funds during subsequent project phases for improvements where pedestrian facilities are being newly constructed and improved upon.

14. DISTRICT CONTACTS

Caltrans, District 8

John Pagano, PE, Project Manager, (909) 383-5921

Matthew Maestas, Office Chief (Acting), Pre-Programming/Engineering Studies
(909) 383-4825

Diane Morales, Contract Manager (909) 383-4625

15. PROJECT REVIEWS

Headquarters (HQ)

Design Coordinator Luis Betancourt Date 04/18/2012

HQ Design Reviewer Anthony Ng Date 04/17/2012

16. ATTACHMENTS

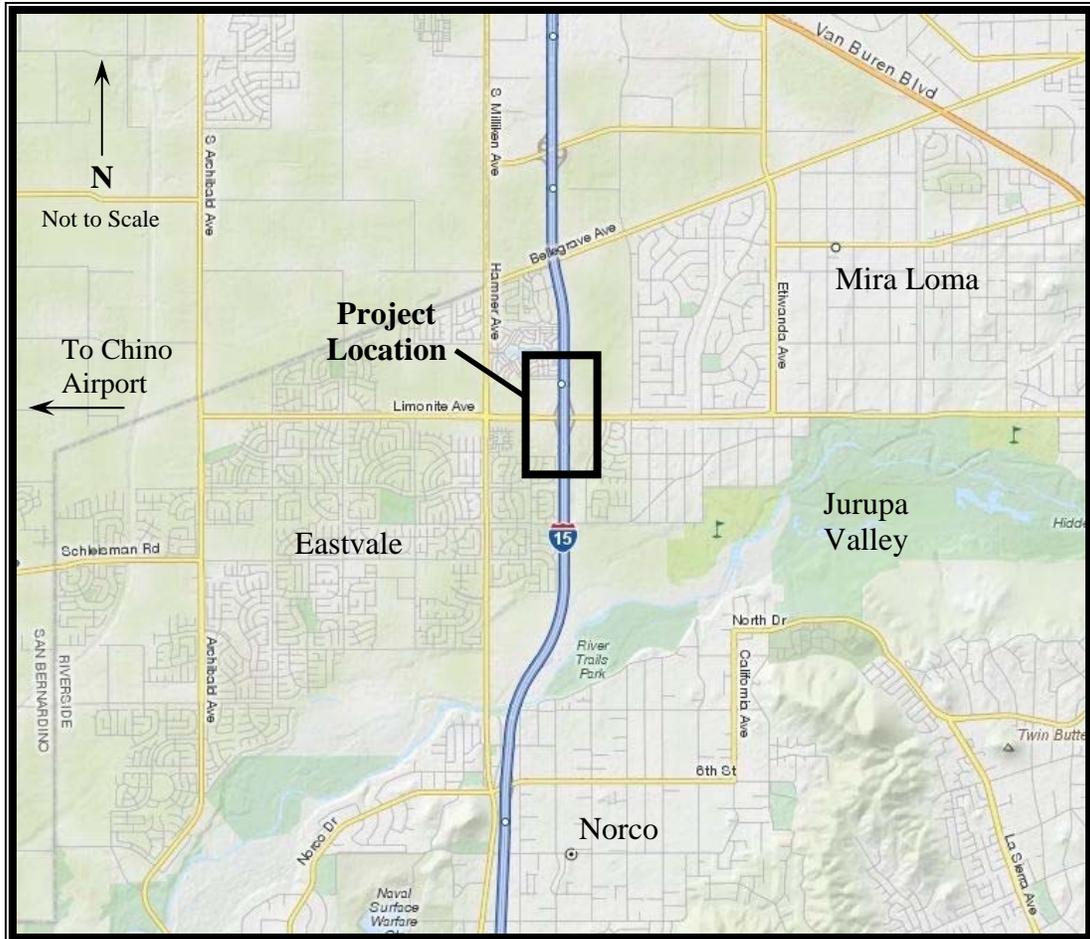
- A. Vicinity Map
- B. Alternatives' Exhibits

- C. Typical Cross Sections
- D. Cost Estimates
- E. PEAR
- F. Transportation Planning Scoping Information Sheet
- G. Conceptual Cost Estimate – Right Of Way Component
- H. Risk Register

ATTACHMENT A

Vicinity Map

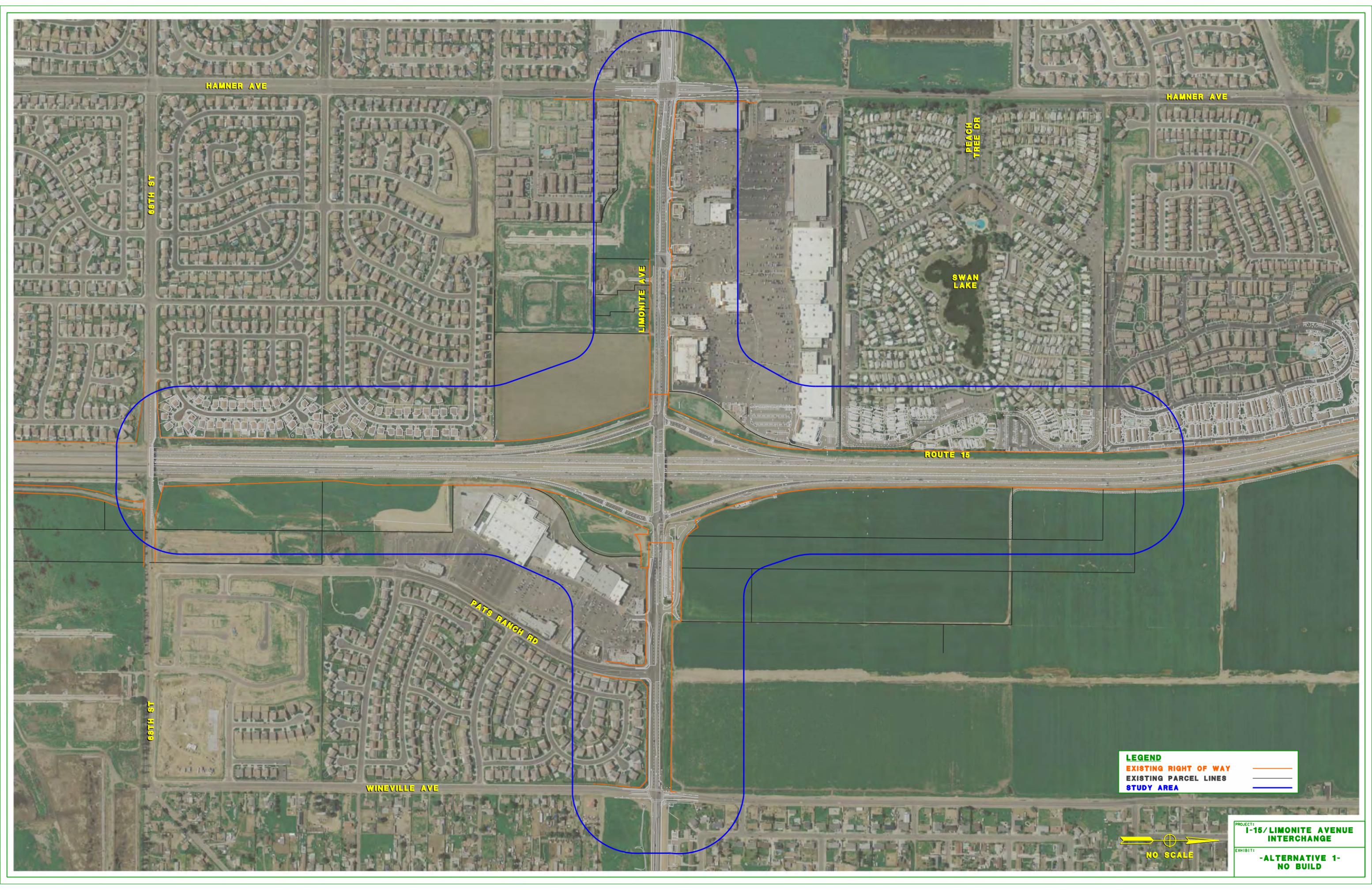
ATTACHMENT A: Vicinity Map



On Interstate 15 from 0.7 miles south of Limonite Avenue
to 0.7 miles north of Limonite Avenue

ATTACHMENT B

**Plan View Exhibits
For Alternatives 1, 2 & 3**



HAMNER AVE

HAMNER AVE

68TH ST

BEACH TREE DR

LIMONITE AVE

SWAN LAKE

ROUTE 15

68TH ST

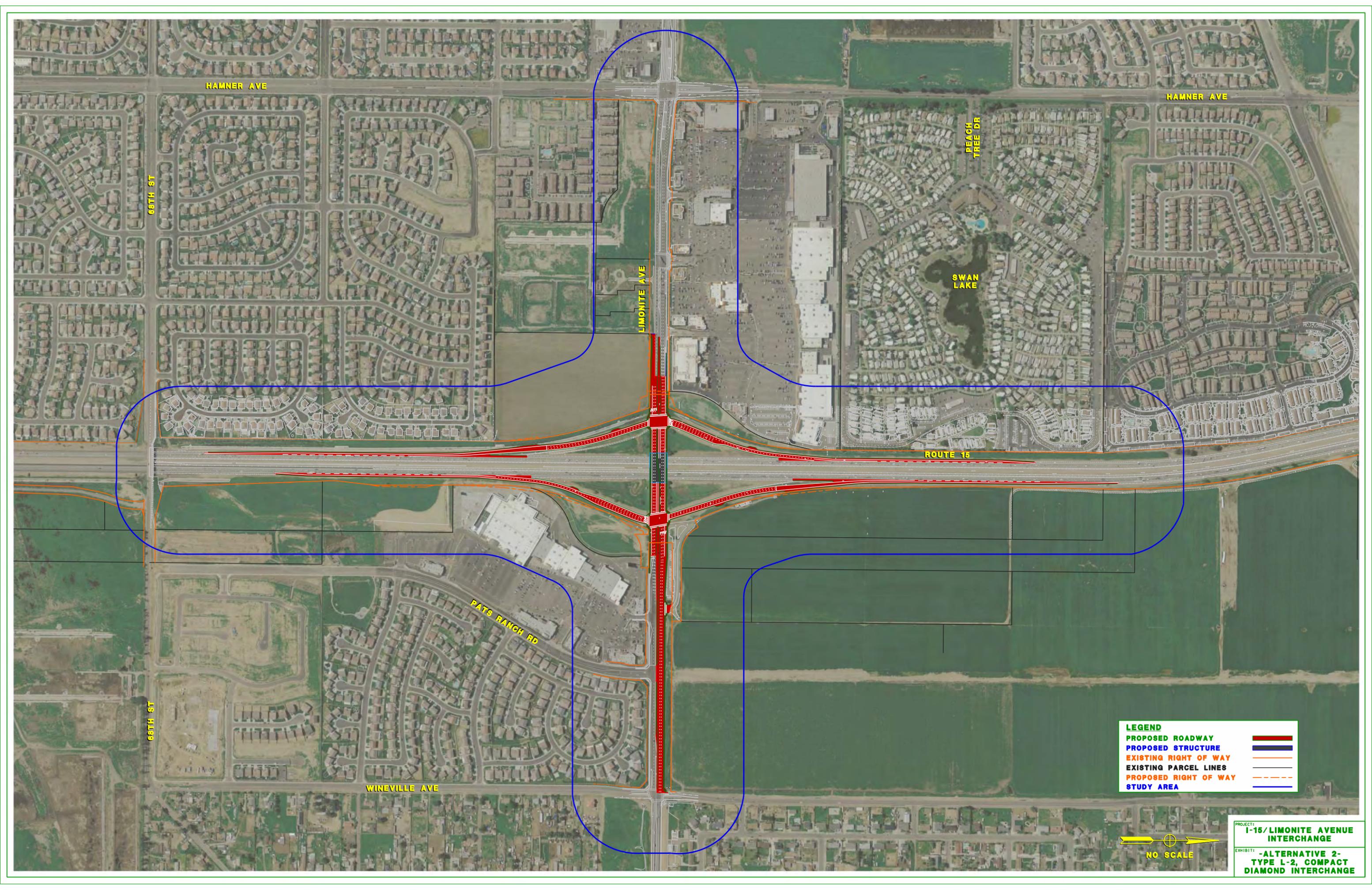
PATS RANCH RD

WINEVILLE AVE

LEGEND
 EXISTING RIGHT OF WAY
 EXISTING PARCEL LINES
 STUDY AREA



PROJECT: I-15/LIMONITE AVENUE INTERCHANGE
 EXHIBIT: ALTERNATIVE 1- NO BUILD



HAMNER AVE

HAMNER AVE

68TH ST

LIMONITE AVE

BEACH TREE DR

SWAN LAKE

ROUTE 15

PATS RANCH RD

68TH ST

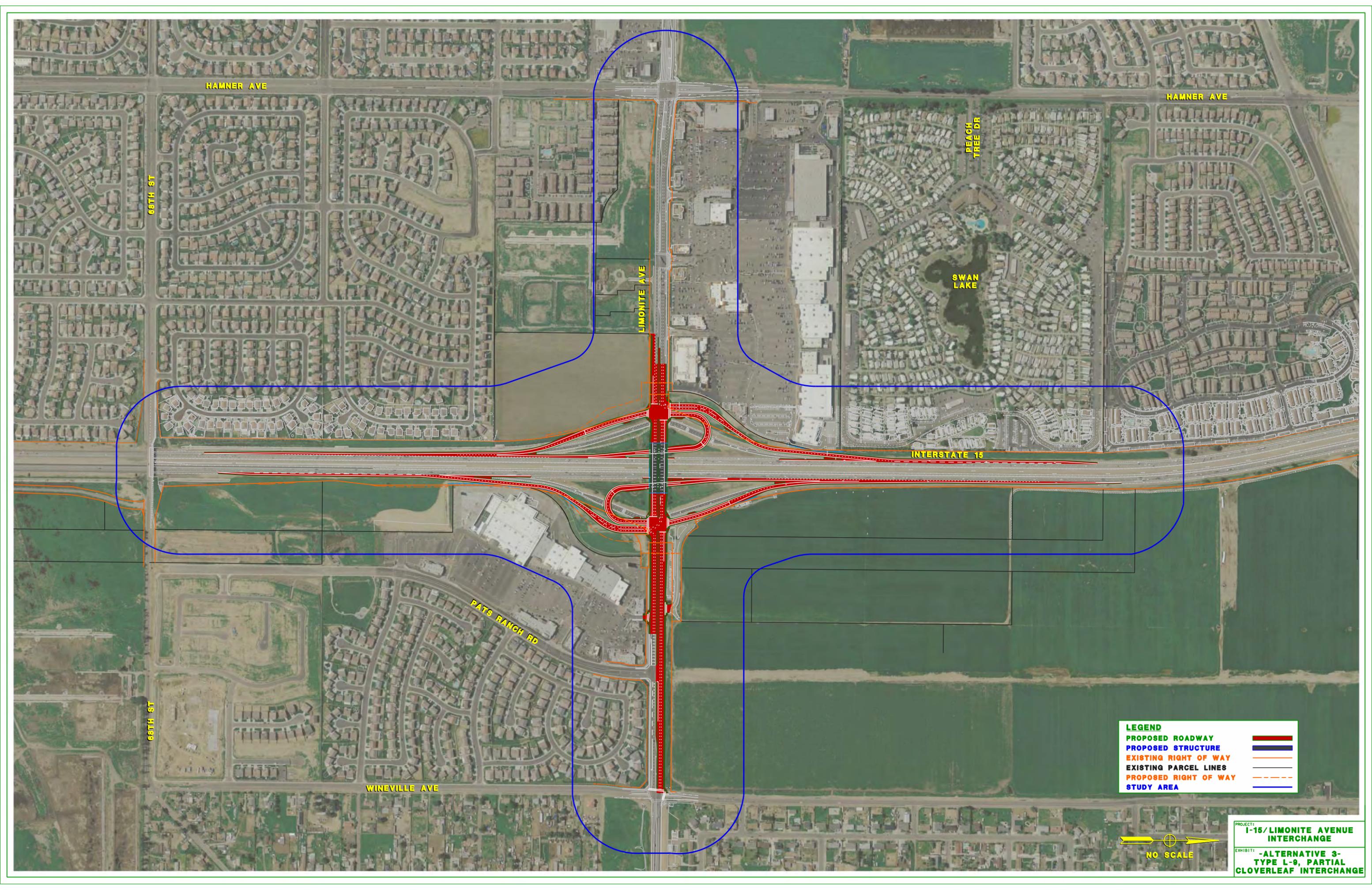
WINEVILLE AVE

LEGEND

PROPOSED ROADWAY	
PROPOSED STRUCTURE	
EXISTING RIGHT OF WAY	
EXISTING PARCEL LINES	
PROPOSED RIGHT OF WAY	
STUDY AREA	



PROJECT: I-15/LIMONITE AVENUE INTERCHANGE
 EXHIBIT: -ALTERNATIVE 2- TYPE L-2, COMPACT DIAMOND INTERCHANGE



HAMNER AVE

HAMNER AVE

68TH ST

BEACH
TREE DR

LIMONITE AVE

SWAN
LAKE

INTERSTATE 15

PATS RANCH RD

68TH ST

WINEVILLE AVE

LEGEND	
PROPOSED ROADWAY	
PROPOSED STRUCTURE	
EXISTING RIGHT OF WAY	
EXISTING PARCEL LINES	
PROPOSED RIGHT OF WAY	
STUDY AREA	

NO SCALE

PROJECT: I-15/LIMONITE AVENUE INTERCHANGE
 EXHIBIT: -ALTERNATIVE 3- TYPE L-0, PARTIAL CLOVERLEAF INTERCHANGE

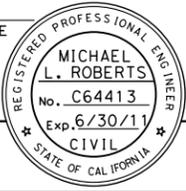
ATTACHMENT C

**Typical Section Sheets
For Alternatives 2 & 3**

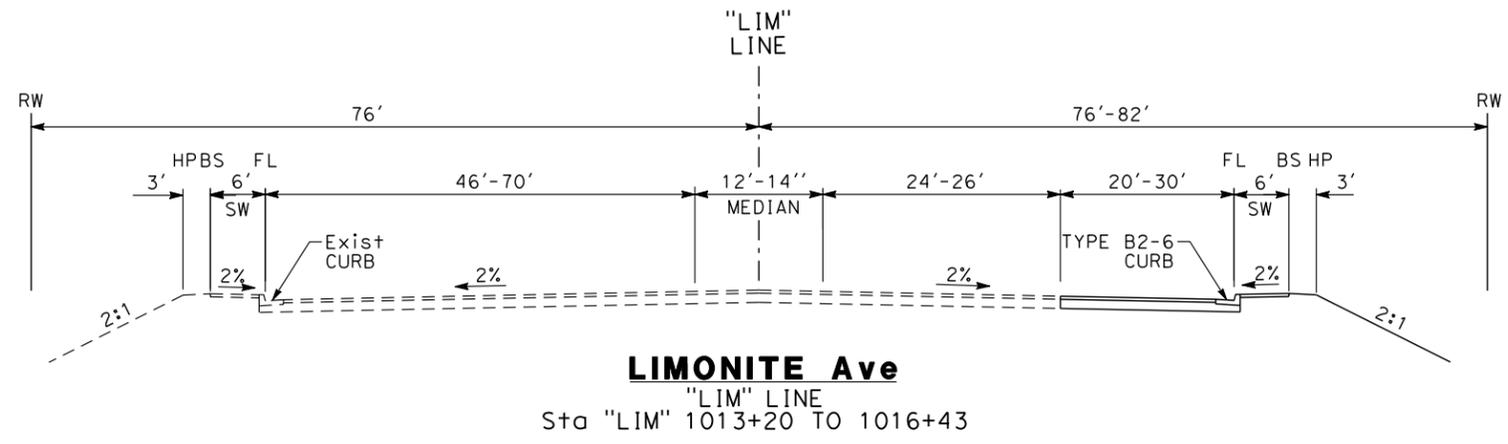
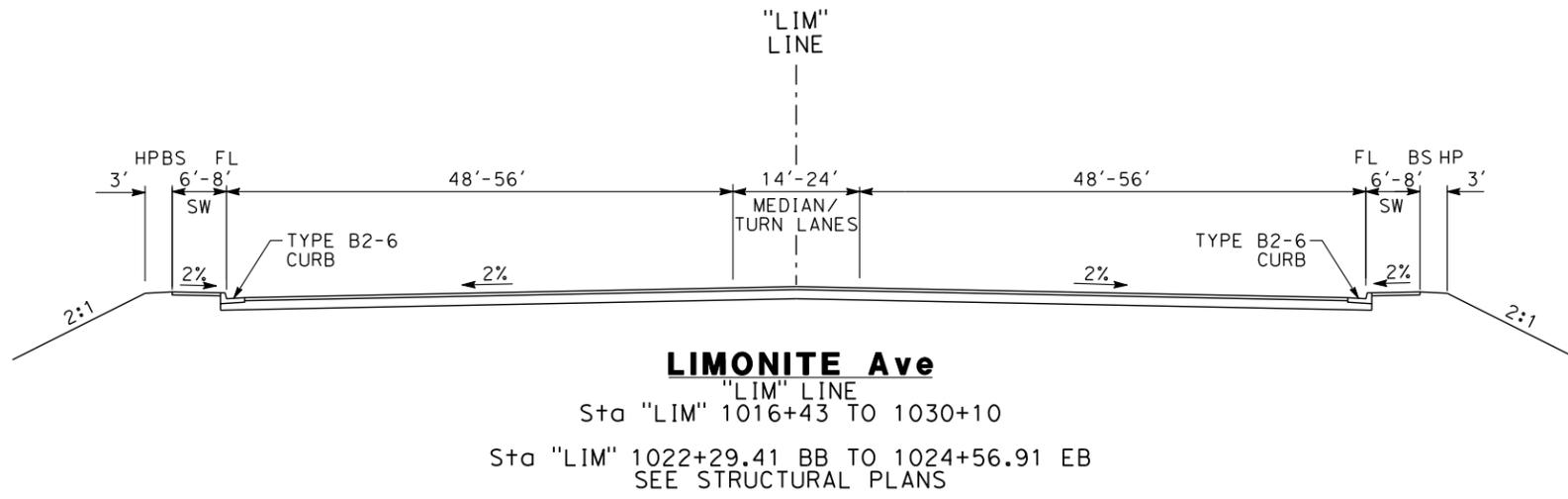
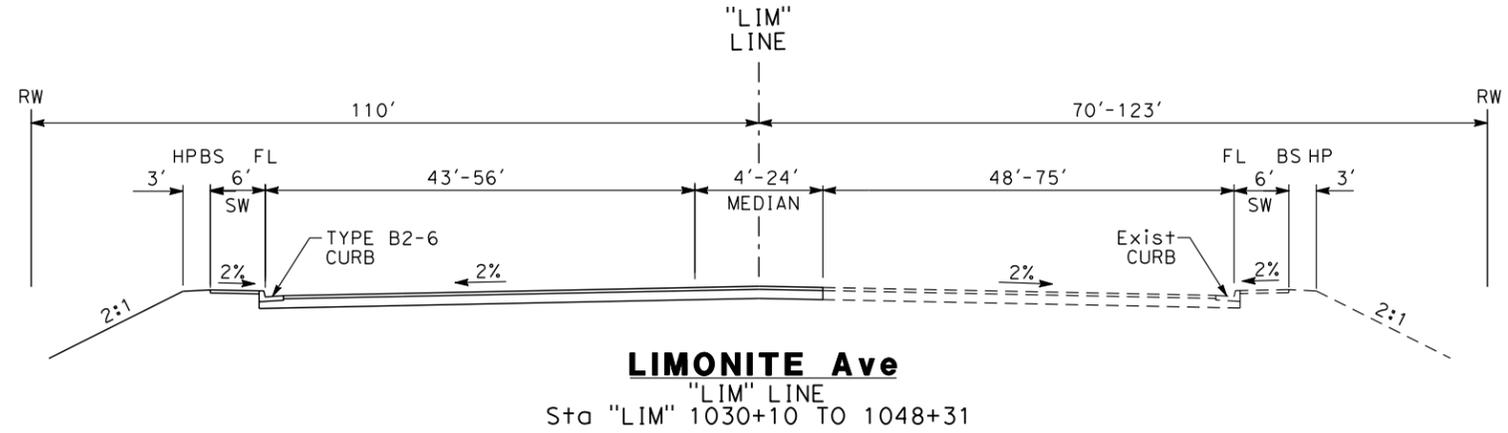
FOR DESIGN STUDY ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	15	PM 47.6/48.9		

REGISTERED CIVIL ENGINEER DATE _____
 PLANS APPROVAL DATE _____
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



DOKKEN ENGINEERING
 41707 WINCHESTER ROAD
 SUITE 201
 TEMECULA, CA 92590



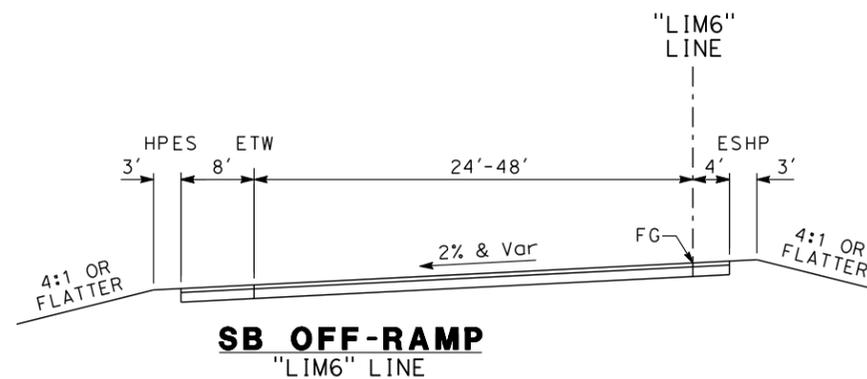
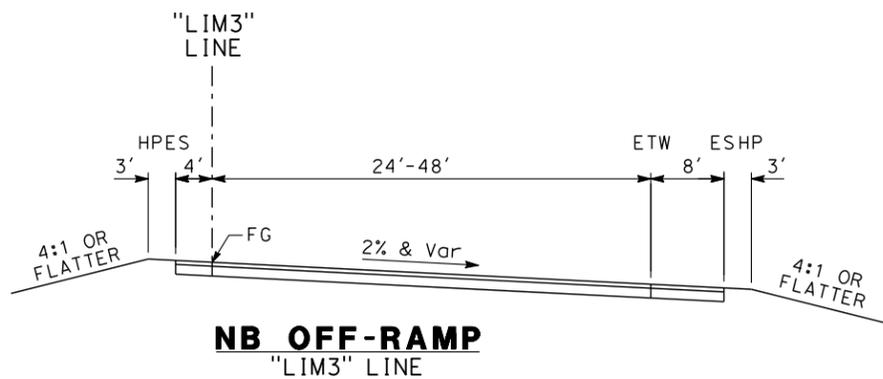
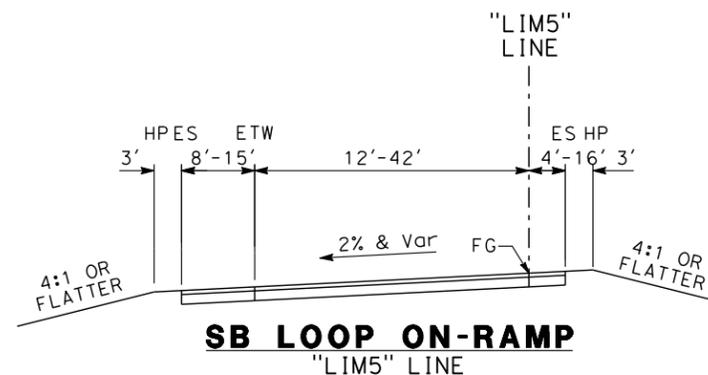
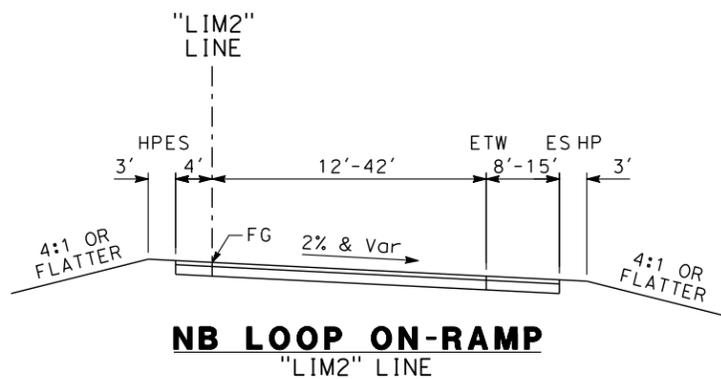
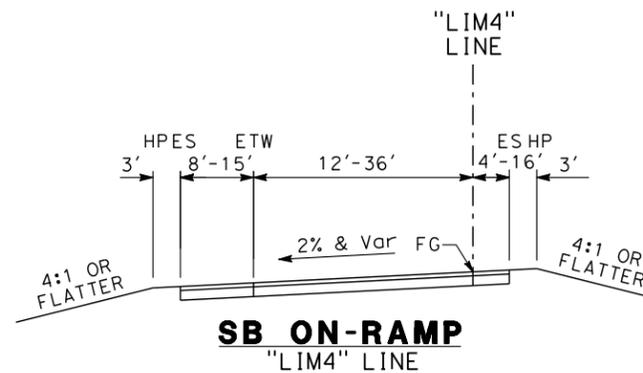
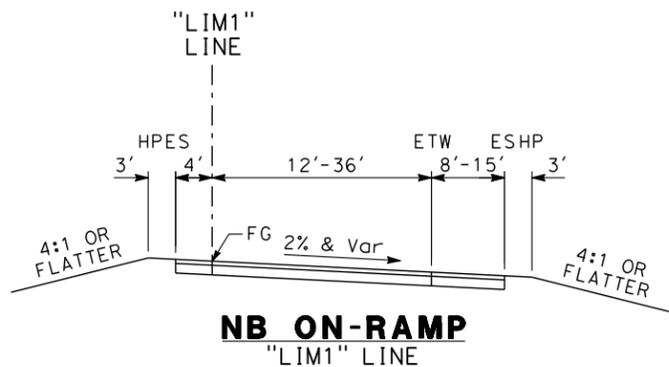
ALTERNATIVE 2
TYPICAL CROSS SECTIONS
 NO SCALE

X-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR
Caltrans	MIKE ROBERTS	CHECKED BY	DATE REVISED

FOR DESIGN STUDY ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	15	PM 47.6/48.9		
REGISTERED CIVIL ENGINEER DATE					
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
DOKKEN ENGINEERING 41707 WINCHESTER ROAD SUITE 201 TEMECULA, CA 92590					



ALTERNATIVE 3
TYPICAL CROSS SECTIONS
 NO SCALE

X-1

REVISOR	DATE	REVISION
CALCULATED-DESIGNED BY	CHECKED BY	DATE
CONSULTANT FUNCTIONAL SUPERVISOR	MIKE ROBERTS	
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		

FOR DESIGN STUDY ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	15	PM 47.6/48.9		

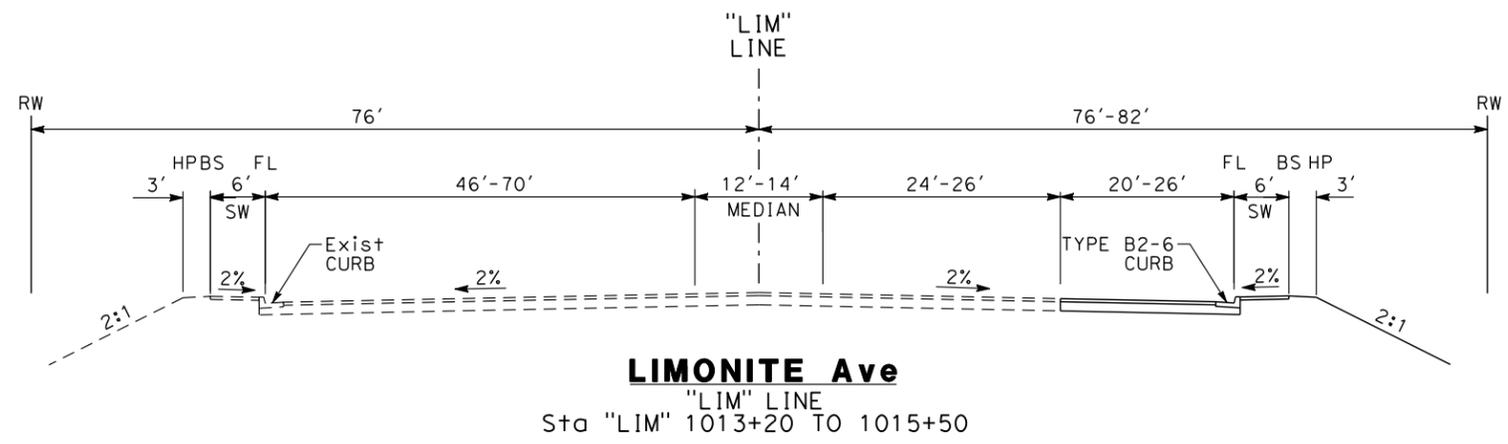
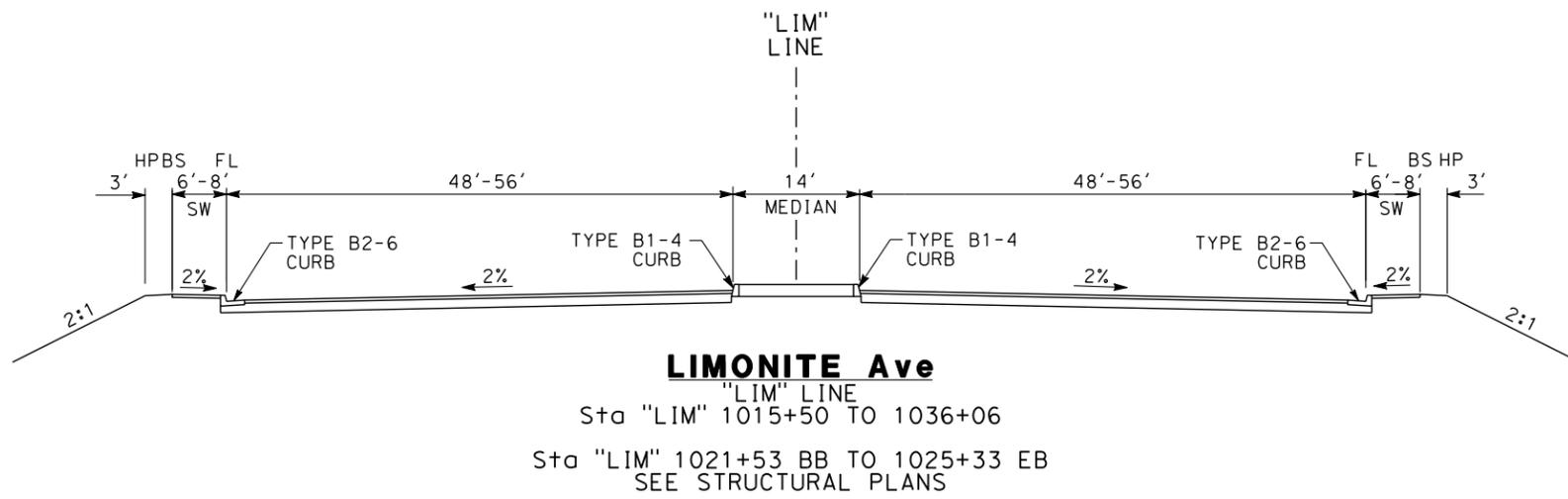
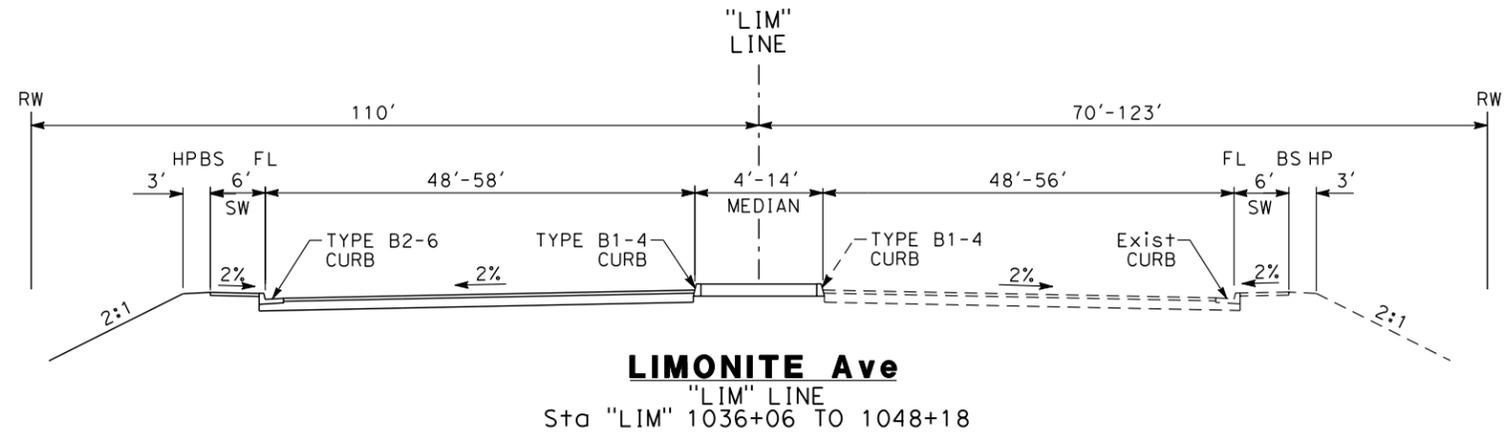
REGISTERED CIVIL ENGINEER DATE _____

PLANS APPROVAL DATE _____

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



DOKKEN ENGINEERING
41707 WINCHESTER ROAD
SUITE 201
TEMECULA, CA 92590



ALTERNATIVE 3 TYPICAL CROSS SECTIONS NO SCALE

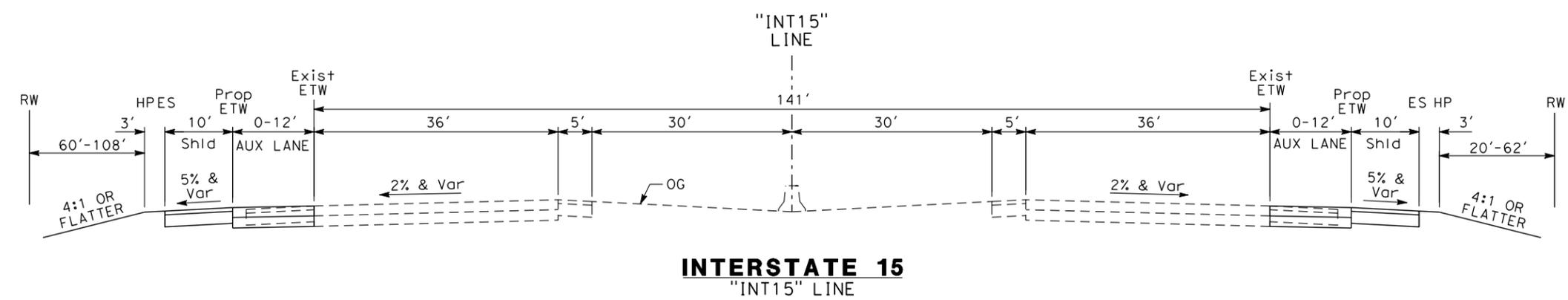
X-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR BY
Caltrans	MIKE ROBERTS	CHECKED BY	DATE REVISED

FOR DESIGN STUDY ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	15	PM 47.6/48.9		
REGISTERED CIVIL ENGINEER DATE _____					
PLANS APPROVAL DATE _____					
<div style="display: flex; justify-content: space-between;"> <div style="font-size: 8px;"> THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET. </div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;"> REGISTERED PROFESSIONAL ENGINEER No. _____ Exp. _____ CIVIL STATE OF CALIFORNIA </div> </div>					
DOKKEN ENGINEERING 41707 WINCHESTER ROAD SUITE 201 TEMECULA, CA 92590					

x									
x									
x									
x									
x									
x									
x									
x									
x									
x									



INTERSTATE 15
"INT15" LINE

ALTERNATIVE 3
TYPICAL CROSS SECTIONS
NO SCALE
X-3

ATTACHMENT D

**Cost Estimates
For Alternatives 2 & 3**

Preliminary
PROJECT COST ESTIMATE SUMMARY

Type of Estimate : PSR
 Program Code : CAXT3
 PIP Number :

08-RIV-15, PM 47.6-48.9
Interchange On I-15 at Limonite Avenue
In the County of Riverside
Improvements to Existing IC
EA 0E150K

PROJECT DESCRIPTION : Improvements to Existing Interchange at I-15/Limonite Avenue

LIMITS : At the Limonite Avenue Interchange
 near the City of Mira Loma and the City of Norco

PROPOSED IMPROVEMENTS : Reconfiguration of Existing Interchange and CIP/PS Concrete Box Girder Replacement

Alternative : 2 - Enhanced Capacity Diamond Interchange

	2011/2012 Value	Annual Escalated Rate	2014/2015 Escalated Value
ROADWAY ITEMS	\$14,194,000	3.5%	\$15,738,000
STRUCTURE ITEMS	\$5,410,000	3.5%	\$5,999,000
SUBTOTAL CONSTRUCTION	\$19,604,000		\$21,737,000
RIGHT OF WAY	\$1,589,000	3.5%	\$1,702,000
ENVIRONMENTAL MITIGATION	\$745,000	3.5%	\$826,000
TOTAL PROJECT COST	\$21,900,000	----	\$24,300,000

Prepared By: _____ Date _____
Project Engineer Mike Roberts, PE
 Reviewed By: _____ Date _____
Project Manager Rafih Achy, PM

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

08-RIV-15, PM 47.6-48.9
 Interchange On I-15 at Limonite Avenue
 In the County of Riverside
 Improvements to Existing IC
 EA 0E150K

I. ROADWAY ITEMS

	QUANTITY	UNIT	UNIT COST	COST	SECTION COST
SECTION 1. Earthwork					
Roadway Excavation	7,380	yd ³	\$15	\$110,700	
Imported Borrow	41,900	yd ³	\$10	\$419,000	
Clearing & Grubbing	1	LS	\$50,000	\$50,000	
Develop Water Supply	1	LS	\$50,000	\$50,000	
Total Earthwork Section					\$629,700
SECTION 2. Structural Section					
Hot Mix Asphalt (Type A)	33,550	ton	\$90	\$3,019,500	
Aggregate Base (Class 2)	41,500	yd ³	\$25	\$1,037,500	
Place Asphalt Concrete Dike	17,000	ft	\$2	\$34,000	
Grind Existing Concrete Pavement	5,000	ft ²	\$0.50	\$2,500	
Remove Base and Surfacing	5,000	yd ³	\$25	\$125,000	
Minor Concrete (Sidewalk)	470	yd ³	\$300	\$141,000	
Minor Concrete (Curb & Gutter)	12,189	ft	\$10	\$121,890	
Minor Concrete (Textured Paving)	32,300	ft ²	\$15	\$484,500	
Minor Concrete (Minor Structure)	150	yd ³	\$1,500	\$225,000	
Total Structural Section					\$5,190,890
SECTION 3. Drainage					
Project Drainage (5% roadway construction cost)	1	LS	\$465,647	\$465,647	
Total Drainage Section					\$465,647

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

08-RIV-15, PM 47.6-48.9
 Interchange On I-15 at Limonite Avenue
 In the County of Riverside
 Improvements to Existing IC
 EA 0E150K

	QUANTITY	UNIT	UNIT COST	COST	SECTION COST
SECTION 4. Specialty Items					
Progress Schedule (Critical Path Method)	1	LS	\$50,000	\$50,000	
Landscaping & Irrigation	1	LS	\$1,500,000	\$1,500,000	
Erosion Control	1	LS	\$50,000	\$50,000	
Lead Compliance Plan	1	LS	\$5,000	\$5,000	
Move In/Move Out (Erosion Control)	1	LS	\$10,000	\$10,000	
Water Pollution Control	1	LS	\$250,000	\$250,000	
Regulatory Permits	1	LS	\$8,000	\$8,000	
			Total Specialty Items		\$1,873,000
SECTION 5. Traffic Items					
Signals & Lighting	1	LS	\$700,000	\$700,000	
Ramp Metering System	2	EA	\$75,000	\$150,000	
Modify Sign Structure	2	EA	\$5,000	\$10,000	
Roadside Sign (One Post)	50	EA	\$350	\$17,500	
Relocate Roadside Sign	5	EA	\$200	\$1,000	
Traffic Striping	50,000	ft	\$1	\$50,000	
Construction Area Signs	50	EA	\$200	\$10,000	
Painting Pavement Markings	4,000	ft ²	\$3.00	\$12,000	
Portable Changeable Message Signs	8	EA	\$8,000	\$64,000	
Traffic Plastic Drum	500	EA	\$30	\$15,000	
Temp. Crash Cushion Module	100	EA	\$280	\$28,000	
			Total Traffic Items		\$1,057,500
SUBTOTAL SECTIONS 1-5					\$9,216,737

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

08-RIV-15, PM 47.6-48.9
Interchange On I-15 at Limonite Avenue
In the County of Riverside
Improvements to Existing IC
EA 0E150K

				COST	SECTION COST
SECTION 6. Minor Items					
Subtotal Sections 1-5		\$9,216,737	x	10%	\$921,674
TOTAL MINOR ITEMS					\$921,674
SECTION 7. Roadway Mobilization					
Subtotal Sections 1-5		\$9,216,737			
Minor Items		\$921,674			
	SUM	\$10,138,411	x	10%	\$1,013,841
TOTAL ROADWAY MOBILIZATION					\$1,013,841
SECTION 8. Roadway Additions					
<u>Supplemental</u>					
Subtotal Sections 1-5		\$9,216,737			
Minor Items		\$921,674			
	SUM	\$10,138,411	x	5%	\$506,921
<u>Contingencies</u>					
Subtotal Sections 1-5		\$9,216,737			
Minor Items		\$921,674			
	SUM	\$10,138,411	x	25%	\$2,534,603
TOTAL ROADWAY ADDITIONALS					\$3,041,523
TOTAL ROADWAY ITEMS (Total of Sections 1-8)					\$14,193,775

ROUND OFF TO :	\$14,194,000
-----------------------	---------------------

Estimate Prepared By : _____

Phone # _____
Date _____

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

08-RIV-15, PM 47.6-48.9
Interchange On I-15 at Limonite Avenue
In the County of Riverside
Improvements to Existing IC
EA 0E150K

II. STRUCTURES ITEMS

	LIMONITE AVENUE OC
Bridge Name	
Structure Type	CIP/PS Box Girder
Width in feet-out to out	138
Span Length in feet	227
Total Area in square feet	31,326
Bridge Cost	\$5,030,000
Cost Per square foot (incl. 25% contingency & 10% mobilization)	\$161
Remove Existing Bridge	\$380,000
SUBTOTAL FOR STRUCTURE	\$5,410,000
TOTAL COST FOR STRUCTURE	\$5,410,000

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

08-RIV-15, PM 47.6-48.9
Interchange On I-15 at Limonite Avenue
In the County of Riverside
Improvements to Existing IC
EA 0E150K

III. RIGHT OF WAY

Right of Way estimates should consider the probable highest and best use and type and intent of improvements at the time of acquisition. Assume acquisition including utility relocation occurs at the right of way certification milestone as shown in the Funding and Scheduling Section of the PSR. For further guidance see Chapter I, Caltrans, Right of Way Procedural Handbook.

	Current Value	Escalated Rate	Escalated Value
Acquisition, including Excess Lands, Damages and Goodwill	\$1,169,280	3.5%	\$1,252,562
Utility Relocation	\$350,000	3.5%	\$374,929
Clearance/Demolition	\$0	0%	\$0
RAP	\$0	0%	\$0
Title and Escrow Fees	\$70,000	3.5%	\$74,986
Condemnation Costs	\$0	3.5%	\$0
Real Property Services	\$0	3.5%	\$0
TOTAL RIGHT OF WAY (CURRENT VALUE) :	\$1,589,280		\$1,702,476
TOTAL ESCALATED VALUE:			
	ROUND OFF TO :		
	\$1,589,000		

Preliminary
PROJECT COST ESTIMATE SUMMARY

Type of Estimate : PSR
 Program Code : CAXT3
 PIP Number :

08-RIV-15, PM 47.6-48.9
Interchange On I-15 at Limonite Avenue
In the County of Riverside
Improvements to Existing IC
EA 0E150K

PROJECT DESCRIPTION : **Improvements to Existing Interchange at I-15/Limonite Avenue**

LIMITS : At the Limonite Avenue Interchange
near the City of Mira Loma and the City of Norco

PROPOSED IMPROVEMENTS : Reconfiguration of Existing Interchange and CIP/PS Concrete Box Girder Replacement

Alternative : 3 - Partial Cloverleaf Interchange

	2011/2012 Value	Annual Escalated Rate	2014/2015 Escalated Value
ROADWAY ITEMS	\$16,870,000	3.5%	\$18,705,000
STRUCTURE ITEMS	\$8,790,000	3.5%	\$9,746,000
SUBTOTAL CONSTRUCTION	\$25,660,000		\$28,451,000
RIGHT OF WAY	\$7,122,000	3.5%	\$7,630,000
ENVIRONMENTAL MITIGATION	\$745,000	3.5%	\$826,000
TOTAL PROJECT COST	\$33,500,000	-----	\$37,000,000

Prepared By: _____ Date _____
Project Engineer Mike Roberts, PE
 Reviewed By: _____ Date _____
Project Manager Rafih Achy, PM

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

08-RIV-15, PM 47.6-48.9
Interchange On I-15 at Limonite Avenue
In the County of Riverside
Improvements to Existing IC
EA 0E150K

I. ROADWAY ITEMS

	QUANTITY	UNIT	UNIT COST	COST	SECTION COST
SECTION 1. Earthwork					
Roadway Excavation	29,400	yd ³	\$15	\$441,000	
Imported Borrow	69,900	yd ³	\$10	\$699,000	
Clearing & Grubbing	1	LS	\$50,000	\$50,000	
Develop Water Supply	1	LS	\$50,000	\$50,000	
					Total Earthwork Section
					\$1,240,000
SECTION 2. Structural Section					
Hot Mix Asphalt (Type A)	44,892	ton	\$90	\$4,040,280	
Aggregate Base (Class 2)	55,422	yd ³	\$25	\$1,385,550	
Place Asphalt Concrete Dike	19,763	ft	\$2	\$39,526	
Grind Existing Concrete Pavement	5,000	ft ²	\$0.50	\$2,500	
Remove Base and Surfacing	7,100	yd ³	\$16	\$113,600	
Minor Concrete (Sidewalk)	500	yd ³	\$300	\$150,000	
Minor Concrete (Curb & Gutter)	11,862	ft	\$10	\$118,620	
Minor Concrete (Textured Paving)	29,491	ft ²	\$15	\$442,365	
Minor Concrete (Minor Structure)		yd ³		\$0	
					Total Structural Section
					\$6,292,441
SECTION 3. Drainage					
Project Drainage (5% roadway construction cost)	1	LS	\$376,622	\$376,622	
					Total Drainage Section
					\$376,622

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

08-RIV-15, PM 47.6-48.9
 Interchange On I-15 at Limonite Avenue
 In the County of Riverside
 Improvements to Existing IC
 EA 0E150K

	QUANTITY	UNIT	UNIT COST	COST	SECTION COST
SECTION 4. Specialty Items					
Progress Schedule (Critical Path Method)	1	LS	\$50,000	\$50,000	
Landscaping & Irrigation	1	LS	\$1,560,000	\$1,560,000	
Erosion Control	1	LS	\$50,000	\$50,000	
Lead Compliance Plan	1	LS	\$5,000	\$5,000	
Move In/Move Out (Erosion Control)	1	LS	\$10,000	\$10,000	
Water Pollution Control	1	LS	\$90,000	\$90,000	
Regulatory Permits	1	LS	\$8,000	\$8,000	
					Total Specialty Items
					\$1,773,000
SECTION 5. Traffic Items					
Signals & Lighting	1	LS	\$750,000	\$750,000	
Ramp Metering System	4	LS	\$75,000	\$300,000	
Modify Sign Structure	2	EA	\$5,000	\$10,000	
Roadside Sign (One Post)	55	EA	\$350	\$19,250	
Relocate Roadside Sign	5	EA	\$200	\$1,000	
Traffic Striping	55,000	ft	\$1	\$55,000	
Construction Area Signs	55	EA	\$200	\$11,000	
Painting Pavement Markings	6,000	ft ²	\$3.00	\$18,000	
Portable Changeable Message Signs	8	EA	\$8,000	\$64,000	
Traffic Plastic Drum	550	EA	\$30	\$16,500	
Temp. Crash Cushion Module	100	EA	\$280	\$28,000	
					Total Traffic Items
					\$1,272,750
SUBTOTAL SECTIONS 1-5					\$10,954,813

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

08-RIV-15, PM 47.6-48.9
Interchange On I-15 at Limonite Avenue
In the County of Riverside
Improvements to Existing IC
EA 0E150K

					COST	SECTION COST
SECTION 6. Minor Items						
Subtotal Sections 1-5		\$10,954,813	x	10%	\$1,095,481	
						TOTAL MINOR ITEMS
						\$1,095,481
SECTION 7. Roadway Mobilization						
Subtotal Sections 1-5		\$10,954,813				
Minor Items		\$1,095,481				
	SUM	\$12,050,294	x	10%	\$1,205,029	
						TOTAL ROADWAY MOBILIZATION
						\$1,205,029
SECTION 8. Roadway Additions						
<u>Supplemental</u>						
Subtotal Sections 1-5		\$10,954,813				
Minor Items		\$1,095,481				
	SUM	\$12,050,294	x	5%	\$602,515	
<u>Contingencies</u>						
Subtotal Sections 1-5		\$10,954,813				
Minor Items		\$1,095,481				
	SUM	\$12,050,294	x	25%	\$3,012,574	
						TOTAL ROADWAY ADDITIONALS
						\$3,615,088
						TOTAL ROADWAY ITEMS
						\$16,870,412
						(Total of Sections 1-8)

ROUND OFF TO :	\$16,870,000
-----------------------	---------------------

Estimate Prepared By : _____

Phone # _____
Date _____

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

08-RIV-15, PM 47.6-48.9
Interchange On I-15 at Limonite Avenue
In the County of Riverside
Improvements to Existing IC
EA 0E150K

II. STRUCTURES ITEMS

	LIMONITE AVENUE OC
Bridge Name	
Structure Type	CIP/PS Box Girder
Width in feet-out to out	144
Span Length in feet	380
Total Area in square feet	54,720
Bridge Cost	\$8,410,000
Cost Per square foot (incl. 25% contingency & 10% mobilization)	\$154
Remove Existing Bridge	\$380,000
SUBTOTAL FOR STRUCTURE	\$8,790,000
TOTAL COST FOR STRUCTURE	\$8,790,000

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

08-RIV-15, PM 47.6-48.9
Interchange On I-15 at Limonite Avenue
In the County of Riverside
Improvements to Existing IC
EA 0E150K

III. RIGHT OF WAY

Right of Way estimates should consider the probable highest and best use and type and intent of improvements at the time of acquisition. Assume acquisition including utility relocation occurs at the right of way certification milestone as shown in the Funding and Scheduling Section of the PSR. For further guidance see Chapter I, Caltrans, Right of Way Procedural Handbook.

	Current Value	Escalated Rate	Escalated Value
Acquisition, including Excess Lands, Damages and Goodwill	\$6,709,227	3.5%	\$7,187,092
Utility Relocation	\$350,000	3.5%	\$374,929
Clearance/Demolition	\$0	0%	\$0
RAP	\$0	0%	\$0
Title and Escrow Fees	\$63,000	3.5%	\$67,487
Condemnation Costs	\$0	3.5%	\$0
Real Property Services	\$0	3.5%	\$0
TOTAL RIGHT OF WAY (CURRENT VALUE) :	\$7,122,227		\$7,629,508
TOTAL ESCALATED VALUE:			
	ROUND OFF TO :		
	\$7,122,000		

Sheet 6 of 6

ATTACHMENT E

Preliminary Environmental Assessment Report (PEAR)



PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

1. Project Information

District 8	County RIV	Route 15	PM 47.6/48.9	EA 0E150K
Project Title: I-15/Limonite Avenue Interchange Improvements				
Caltrans Project Manager John Pagano			Phone # (909) 383-5921	
Caltrans Project Engineer Matthew Maestas			Phone # (909) 383-4825	
Caltrans Environmental Branch Chief James Shankel			Phone # (909) 383-6379	
PEAR Preparer (on behalf of and for County of Riverside) Cherry Zamora (Associate Environmental Planner with Dokken Engineering)			Phone # (916) 858-0642	

2. Project Description

The County of Riverside, in cooperation with the California Department of Transportation (Caltrans), the City of Eastvale and the City of Jurupa Valley, proposes to improve the existing freeway interchange at Interstate 15 (I-15) and Limonite Avenue, located within the cities of Eastvale and Jurupa Valley in Riverside County. Within the project limits, I-15 currently is a six lane, three mixed flow lanes in each direction, accessed controlled freeway. The median of this freeway is unimproved and depressed with Type K barriers north of the proposed new interchange along the northbound outside edge of median shoulder and south of the proposed new interchange along the southbound outside edge of median shoulder. The project extends along Limonite Avenue from Hamner Avenue to Wineville Avenue. Along I-15, improvements are proposed from approximately 0.60 miles south to 0.60 miles north of the existing Limonite Avenue overcrossing (OC). The Limonite Avenue OC, an east-west roadway, currently provides two traffic lanes in each direction and two left-turn lanes at the ramp intersections. This project proposes replacing the existing Limonite Avenue OC and widening the roadway from four lanes to six lanes.

Three alternatives are under consideration. Alternative 1, the No-Build Alternative, proposes to maintain the existing interchange configuration. Alternative 2, the Enhanced Capacity Diamond Alternative (Type L-1), proposes modifying the existing entrance and exit ramps and replacing the existing Limonite Avenue OC structure. Alternative 3, the Partial Clover Leaf Alternative (Type L-7), proposes replacing the existing OC structure and constructing loop ramps in the southeast and northwest quadrants. The selected alternative for this project is expected to receive full local agency support after the

successful completion of the Project Report and Environmental Studies.

The project is proposed for funding from the County of Riverside and the Western Riverside County Transportation Uniform Mitigation Fee (TUMF) Zone Transportation Improvement Program. As shown in the Southern California Association of Governments' 2011 Federal Transportation Improvement Program, approximately \$28,902,000 is programmed from the County of Riverside and approximately \$309,000 for is programmed from TUMF funds. The project total cost is estimated to be \$29,211,000 for engineering, right-of-way, and construction.

Proposed improvements to the I-15/Limonite Avenue Interchange are included in Southern California Association of Government's 2011 Federal Transportation Improvement Program (2011 FTIP) and 2012 Regional Transportation Plan (2012 RTP).

Purpose and Need

Purpose

The purpose of the project is to:

- Address increased travel associated with existing and planned development located in Eastvale and Jurupa Valley.
- Relieve congestion, improve traffic flow on the regional transportation system.

Need

The project is needed to alleviate traffic congestion associated with planned area development. Based on the most recent update of the Riverside County General Plan, the Cities of Eastvale and Jurupa Valley will add numerous residences and businesses in the coming years, resulting in substantial traffic and requiring a number of transportation and circulation improvements, including improvements to the I-15/Limonite Avenue Interchange. Operation of the I-15/Limonite Avenue Interchange ramps is currently approaching a deficient condition and will continue to degrade as development occurs in the area unless improvements are made to the transportation system.

Intersection Traffic Operations

For traffic signals at freeway ramp termini, Caltrans considers LOS "D" as the minimum standard. Table 1 shows that the studied intersections at the I-15/Limonite Avenue interchange currently operate at an acceptable LOS and will continue to do so through the year 2015 without any improvements. (It should be noted that field observations indicate that delays are longer than shown in the optimized Synchro analysis for existing conditions. This is indicative of existing signal timing issues which are difficult to reflect in the analysis software parameters). However, by 2035 the existing ramp intersections at

the I-15/Limonite Avenue interchange will have insufficient capacity to accommodate the forecasted traffic demand.

TABLE 1: “No-Build” Intersection Level-Of-Service

Intersection	Existing Year 2011		Year 2015		Year 2035	
	LOS - Delay (sec.)		LOS - Delay (sec.)		LOS - Delay (sec.)	
	AM	PM	AM	PM	AM	PM
Cantu Galleano/I-15 SB On/Off-Ramps	B - 19.6	C - 22.1	B - 16.2	B - 15.8	B - 12.4	B - 13.8
Cantu Galleano/I-15 NB On/Off-Ramps	B - 19.7	B - 18.0	B - 16.5	B - 16.4	B - 14.0	B - 16.5
Limonite Avenue/Hamner Avenue	C - 29.8	C - 32.9	C - 31.1	D - 36.0	F - 157.7	F - 239.6
Limonite Avenue/Eastvale Shopping Center	B - 18.2	C - 31.5	B - 11.3	C - 30.9	C - 21.2	F - 337.9
Limonite Avenue/I-15 SB On/Off-Ramps	C - 24.3	C - 24.0	B - 16.9	C - 27.4	F - 151.3	F - 196.6
Limonite Avenue/I-15 NB On/Off-Ramps	B - 19.6	C - 33.8	C - 21.7	D - 49.8	F - 103.2	F - 278.2
Limonite Avenue/Pats Ranch Road	B - 12.2	B - 13.0	A - 10.0	B - 11.2	C - 21.0	F - 88.6
6th Street/I-15 SB Ramps	C - 24.4	C - 26.4	C - 25.4	D - 41.4	F - 214.5	F - 419.2
6th Street/I-1 NB Ramps	C - 22.9	C - 27.3	C - 31.9	E - 58.7	F - 281.9	F - 648.1

LOS = Level of Service

Delay = Average control delay in seconds.

Merge/Diverge Traffic Operations

For peak hour freeway operations, Caltrans generally accepts LOS D as the minimum standard. Table 2 shows the results of the ramp merge/diverge analysis for the I-15/Limonite Avenue Interchange.

TABLE 2: “No-Build” Merge/Diverge Traffic Operations

Segment	Existing Year 2011		Year 2015		Year 2035 *	
	LOS		LOS		LOS	
	AM	PM	AM	PM	AM	PM
I-15 Northbound						
6th Street Off-Ramp	D	D	D	F	E	E
6th Street On-ramp	D	D	E	F	E	E
Limonite Avenue Off-Ramp	D	D	D	F	E	F
Limonite Avenue On-Ramp	E	D	F	D	D	D
Cantu Galleano Off-Ramp	D	D	D	D	D	D

* Reflects addition of a fourth mixed-flow lane to I-15 (I-15 Corridor Improvement Project, Reference EA – 0J0800)

TABLE 2: “No-Build” Merge/Diverge Traffic Operations (continued)

Segment	Existing Year 2011		Year 2015		Year 2035 *	
	LOS		LOS		LOS	
	AM	PM	AM	PM	AM	PM
I-15 Southbound						
Cantu Galleano Slip On-Ramp	D	D	D	E	C	B
Limonite Avenue Off-Ramp	D	D	D	D	C	C
Limonite Avenue On-Ramp	E	D	E	D	D	D
6th Street Off-Ramp	D	D	D	D	C	D
6th Street On-ramp	E	D	E	D	D	D

* Reflects addition of a fourth mixed-flow lane to I-15 (I-15 Corridor Improvement Project, Reference EA – 0J0800)

The results indicate that the merge/diverge operations associated with the northbound I-15 off-ramp to Limonite Avenue function at an acceptable LOS level in 2011, but that the northbound I-15 on-ramp to Limonite Avenue functions at an unacceptable LOS E for this same time period. In 2015, conditions further degrade with the northbound I-15 off-ramp to Limonite Avenue functioning at an unacceptable LOS level (LOS F) during the PM peak hours and the Northbound I-15 on-ramp to Limonite Avenue functioning at an unacceptable LOS level (LOS F) during the AM peak hours. The 2035 Design Year reflects construction of the “ I-15 Corridor Improvement Project.” Nonetheless, if the I-15 / Limonite Avenue Interchange project is not constructed, the northbound I-15 off-ramp to Limonite Avenue will continue to function at an unacceptable LOS level (LOS E and F) during both the AM and PM peak hours, respectively. Conversely, the northbound I-15 on-ramp to Limonite Avenue will function at an acceptable LOS level (LOS D) during both AM and PM peak hours in Design Year 2035.

The merge/diverge operations associated with the southbound I-15 off-ramp to Limonite Avenue function at an acceptable LOS level in 2011, but the southbound I-15 on-ramp to Limonite Avenue functions at an unacceptable LOS E in the AM for this same time period. This condition continues in 2015 with the southbound I-15 off-ramp to Limonite Avenue functioning at an acceptable LOS, but the southbound I-15 on-ramp to Limonite Avenue functioning at an unacceptable LOS E. In the 2035 Design Year, with the construction of the ”I-15 Corridor Improvement Project”, both of the southbound ramps to Limonite Avenue function at an acceptable LOS for AM and PM peak hours.

Freeway Segment Analysis

For freeway mainline level-of-service, Caltrans has generally indicated that LOS D or better is acceptable for peak hour freeway mainline segment operations. In the existing condition, Table 3 shows that the freeway segments north and south of Limonite Avenue (outside of the sphere-of-influence of the freeway ramps) operate at or below an acceptable LOS, and will further degrade to unacceptable levels by 2015. These freeway segment operations show improvement in 2035 due to the addition of the HOV and general purpose lanes to the I-15 freeway.

TABLE 3: “No-Build” Freeway Segment Traffic Operations

Segment	Existing Year 2011		Year 2015		Year 2035 *	
	LOS		LOS		LOS	
	AM	PM	AM	PM	AM	PM
I-15 Northbound						
South of 6th Street Off-Ramp	D	E	E	F	E	D
6th Street Off-Ramp to 6th Street On-Ramp	D	D	D	D	D	C
6th Street On-Ramp to Limonite Avenue Off-Ramp	D	E	E	F	E	E
Limonite Avenue Off-Ramp to Limonite Avenue On-Ramp	D	D	D	D	D	C
Limonite Avenue On-Ramp to Cantu Galleano Off-Ramp	E	D	F	E	D	D
Cantu Galleano Off-Ramp to Cantu Galleano Loop On-Ramp	E	D	E	D	D	C
North of Cantu Galleano Loop On-Ramp	E	D	F	E	E	D
I-15 Southbound						
North of Cantu Galleano Off-Ramp	E	D	E	E	C	C
Cantu Galleano Off-Ramp to Cantu Galleano Loop On-Ramp	D	D	D	D	B	C
Cantu Galleano Loop On-Ramp to Slip On-Ramp	C	C	C	C	B	B
Cantu Galleano Slip On-Ramp to Limonite Avenue Off-Ramp	E	D	D	D	C	C
Limonite Avenue Off-Ramp to Limonite Avenue On-Ramp	D	D	D	C	B	B
Limonite Avenue On-Ramp to 6th Street Off-Ramp	E	D	E	D	C	C
6th Street Off-Ramp to 6th Street On-Ramp	D	D	D	D	C	B
South of 6th Street On-Ramp	E	D	E	D	C	C

* Reflects addition of a fourth mixed-flow lane to I-15 (I-15 Corridor Improvement Project, Reference EA – 0J0800)

Improvements of the I-15/Limonite Avenue Interchange are also included in applicable local and regional plans, which consist of the County of Riverside General Plan, City of Eastvale General Plan, and Southern California Association of Governments Regional Transportation Plan.

Description of work

The project proposes to modify the interchange at Limonite Avenue and Interstate 15, in the County of Riverside. The project limits would extend approximately 0.6 miles north of the interchange to 0.6 miles south of the interchange along I-15. Along Limonite Avenue, the project limits would extend from Hamner Avenue on the west, to Wineville Road on the east.

Alternatives

Three alternatives including Alternative 1, the “No-Build” Alternative, are being considered. Both of the build alternatives (Alternatives 2 and 3) would involve modifications to the Limonite Avenue interchange on I-15.

Alternative 1: No-Build Alternative

The No-Build Alternative proposes to maintain the existing interchange configuration. However, this alternative does not preclude the construction of future improvements.

Alternative 2: Diamond Interchange

Alternative 2 proposes to widen the existing on-and off-ramps, widen Limonite Avenue to 3 lanes in each direction through the interchange area and replace the existing Limonite Avenue overcrossing structure. The three-lane on-ramps will have California Highway Patrol (CHP) enforcement areas and maintenance pads, and will be metered with one lane on each ramp dedicated to High Occupancy Vehicles (HOVs). The off-ramps will consist of two lanes at the freeway diverge point and will widen to four lanes at the ramp intersections. Each of the on- and off-ramps will have increased acceleration and deceleration lane lengths at the freeway merge/diverge points. The overcrossing structure, a proposed two-span cast-in-place prestressed concrete box girder bridge, will accommodate six travel lanes, 10-foot shoulders, 8-foot sidewalks, and two 12-foot left-turn lanes, and will accommodate the future widening of I-15 to a 12-lane facility.

Alternative 3: Partial Clover Leaf Interchange

Alternative 3 proposes to replace the existing on-and off-ramps with wider ramps, widen Limonite Avenue to 3 lanes in each direction through the interchange area, replace the existing overcrossing structure and construct loop ramps in the southeast and northwest quadrants. The three-lane freeway on-ramps will have California Highway Patrol (CHP) enforcement areas and maintenance pads, and will be metered with one lane on each ramp dedicated to HOVs. Two-lane freeway off-ramps will be provided and will widen to four lanes at the ramp intersections. Each of the on- and off-ramps will have increased

acceleration and deceleration lane lengths at the freeway merge/diverge points. The overcrossing structure, a proposed two-span cast-in-place prestressed concrete box girder bridge, will accommodate six traveled lanes, two right-turn-only lanes, 10-foot shoulders, 8-foot sidewalks, and a 14-foot raised median and will also accommodate the future widening of I-15 to a 12-lane facility.

Alternatives 2 and 3 were developed to address the operational deficiencies at the Limonite Avenue/I-15 interchange without negatively impacting the I-15 freeway operations.

3. Anticipated Environmental Approval

Check the anticipated environmental determination or document for the proposed project in the table below.

CEQA		NEPA	
Environmental Determination			
Statutory Exemption	<input type="checkbox"/>		
Categorical Exemption	<input type="checkbox"/>	Categorical Exclusion (Section 6005)	<input checked="" type="checkbox"/>
Environmental Document			
Initial Study or Focused Initial Study with Negative Declaration or Mitigated ND	<input checked="" type="checkbox"/>	Environmental Assessment with Finding of No Significant Impact	<input type="checkbox"/>
Environmental Impact Report	<input type="checkbox"/>	Environmental Impact Statement	<input type="checkbox"/>
CEQA Lead Agency (if determined):		Caltrans	
Estimated length of time (months) to obtain environmental approval:		16	
Estimated person hours to complete identified tasks:		2,818	

Effective July 1, 2007, the Department has been assigned environmental review and consultation responsibilities under the National Environmental Policy Act (NEPA) pursuant to 23 USC 327. For this proposed project, Caltrans is the NEPA Lead Agency.

4. Special Environmental Considerations

Alternative 1: There are no special considerations since it is the No-Build Alternative.
 Alternative 2 & 3: Alternatives 2 and 3 do not have special environmental considerations that are beyond those noted in “Anticipated Environmental Commitments,” below.

5. Anticipated Environmental Commitments

Although this will not be confirmed until completion of all required Technical Studies, it is not anticipated that Alternative 1, the No-Build Alternative, will require any avoidance, minimization, and/or mitigation measures. All required Technical Studies will need to be

completed to confirm what avoidance, minimization and/or mitigation measures may be required for build Alternatives 2 or 3, however, based on the setting and anticipated scope of work of the proposed project, the following measures have been implemented for similar transportation projects.

- Noise abatement or mitigation—A sound wall may be required.
- Biological resources—Potential habitat mitigation may be required.
- Scenic resources—Aesthetic treatments are anticipated to be consistent with adopted plans and Caltrans policies and requirements.
- Other: Air quality permits and/or plans related to construction are anticipated.

6. Permits and Approvals

An NPDES General Permit for Discharges of Storm Water Associated with Construction Activity from the State Water Resources Control Board (SWRCB) would be required for both Alternatives 2 and 3. As part of the NPDES General Permit, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared. The anticipated cost of the NPDES permit is \$1,500.

The projected timeframe for obtaining required permits from Resource Agencies, is approximately 10 months following Caltrans’s signature approval of the Environmental Compliance Document(s), for CEQA and NEPA, as well as Caltrans signature approval of the Project Report for this project.”

7. Level of Effort: Risks and Assumptions

The analysis performed in conjunction with preparation of this PEAR is based on the limited preliminary design information available, and data readily available regarding the existing setting of the proposed project.

8. PEAR Technical Summaries

Preliminary analyses of resources are below. Also see Attachment A, Environmental Studies Checklist, for a list of the environmental technical studies recommended for this project.

- 8.1 Land Use: No substantial impacts to land use in the project area are anticipated, from either of the Build Alternatives, and no impacts to land use are expected from the No-Build Alternative. Land use effects are anticipated to be limited to the acquisition of additional minimal right of way for the proposed project.”
- 8.2 Growth: The proposed project is not anticipated to have a substantial influence on growth in the project area. Caltrans’ [*Guidance for Preparers of Growth-related, Indirect Impact Analyses*](#) will be utilized for this analysis.

- 8.3 Farmlands/Timberlands: Portions of the proposed project are on soils mapped as 'Prime Farmland, with Irrigation,' by NRCS, however the County of Riverside has indicated these same lands have already been designated for planned future development. Due to the limited area involved, a stand-alone Technical Study is not anticipated to be required, however, all applicable documentation requirements for both CEQA and NEPA will be satisfied
- 8.4 Community Impacts: For both Alternatives 2 and 3, acquisition of some additional right of way is anticipated to be necessary. The additional right of way expected to be involved will include parcels designated for commercial use. A "Focused CIA" will be prepared, with content consistent with guidance provided in AO for IS/EA.
- 8.5 Visual/Aesthetics: The proposed project area, for both Alternatives 2 and 3, does not have officially designated State or County Scenic Highways, nor does it have National Scenic Byways. No eligible State Scenic Highways are within the proposed project, either. It is anticipated that an SRE will be prepared with the level of VIA to be determined although it is not anticipated that the VIA will be complex. Before and after simulations from all four directions will be expected.
- 8.6 Cultural Resources: Preparation of an HPSR and ASR will be required for the proposed project. Preparation of an HRER may be determined to be required. Identification of an Area of Potential Effect, an archaeological survey, background research, and a new records search from the University of California at Riverside, Eastern Information Center would be part of these technical studies.

For background, a records search was requested from the University of California at Riverside, Eastern Information Center on June 11, 2003. In addition, the National Register of Historic Places web site, the Office of Historic Preservation County Listings web site, the California Points of Historical Interest (1992), California Historical Landmarks (1996) were consulted on June 11, 2003. The Eastern Information Center reported no historic archaeological sites, no historic structure/archaeological site locations, and no National Register Properties within a half mile of the proposed project area. A field reconnaissance was conducted on June 13, 2003. Swan Lakes Country Estates was identified to be within the Area of Potential Effects. However, more research needs to be conducted on the Swan Lake Country Estates trailer park, 5800 Hamner Avenue, Eastvale, CA. A new record search will need to be conducted as part of the Section 106 study

- 8.7 Hydrology and Floodplain: The project footprint of Alternatives 2 and 3, specifically grading, is anticipated to minimally encroach onto the 100-year floodplain, as shown in the FEMA FIRM 06065C0681G. Zone A is delineated adjacent to Limonite Avenue at the northeast quadrant. It is anticipated that a Location Hydraulic Study and a Summary Floodplain Encroachment Report will be prepared.

- 8.8 Water Quality and Storm Water Runoff: No natural water bodies are in the vicinity of Alternatives 2 and 3. A concrete-lined drainage ditch running parallel to I-15 within the project area is anticipated not to have a hydrologic connection to “waters of the U.S.” To verify this, and to determine if there are any other potential “waters of the U.S.” at the project site, the Natural Environment Study (NES) (also see discussion in 8.15) will include a jurisdictional delineation.

The project is within the following two watersheds: Middle Santa Ana River Watershed and the Chino Creek Watershed. Within the Middle Santa Ana River Watershed, the project is within the East Etiwanda Creek-Santa Ana River SubWatershed, Hydrologic Unit Code #180702030804, and is approximately 1.3 mi north of the Santa Ana River, Reach 3. The Santa Ana River, Reach 3, is a 303(d) listed waterbody for Pathogens. Within the Chino Creek Watershed, the project is within the Lower Cucamonga Creek SubWatershed, Hydrologic Unit Code #180702030705, and is approximately 3 miles east of Cucamonga Creek, Valley Reach. The Cucamonga Creek, Valley Reach, is a 303(d) listed waterbody for Coliform bacteria. A *Scoping Questionnaire for Water Quality Issues* will be prepared. Based on the results, preparation of a *Water Quality Assessment Report* may be required.

Increased impervious surfaces by either Alternative 2 and 3 would increase stormwater run-off from the interchange. Drainage improvements would be incorporated into the proposed design as necessary to control additional runoff, and as mentioned above, further investigation would be necessary to determine if the existing flood control channel is adequate for diverting the extra runoff. With the appropriate mitigation, any additional runoff created by the improvements is not expected to exceed the capacity of storm water drainage systems.

Additional traffic lanes from the project would be a source of potential pollutants, especially suspended solids and petroleum hydrocarbons from increased stormwater runoff from the proposed roadway surface. Permanent design pollution prevention Best Management Practices (BMPs), in compliance with Caltrans’ Statewide Stormwater Management Plan, would be required to treat additional runoff.

The construction of the proposed project would operate under an NPDES General Permit with Best Management Practices as required by the County of Riverside and Regional Water Quality Control Board to minimize water erosion of exposed soils and resultant sediment and surface contaminant loading into the storm drain system and downstream water bodies. As part of the NPDES General Permit, a SWPPP would be prepared. Consequently, the proposed project is not expected to violate any water quality or waste discharge standard, in this regard.

Following the Caltrans Highway Design Manual, storm water management strategies would be incorporated. Construction site BMPs would also be implemented for temporary construction impacts. Discussion should be included in the environmental document.

- 8.9 Geology, Soils, Seismic and Topography: The project would be in compliance with Caltrans and federal guidelines for safety and design standards.
- 8.10 Paleontology: Preparation of a PIR is anticipated. Preparation of any subsequent Paleo-focused Technical Studies will be contingent upon the results of the PIR.
- 8.11 Hazardous Waste/Materials: An Initial Site Assessment (ISA) was prepared for the project in 2009 to evaluate whether the proposed project could be affected by any recorded or visible hazardous waste problems. Development of the ISA report entailed a governmental records search, select agency interviews, aerial photography and topographic map review, and visual site survey.

The following items were observed during investigation of the project site are pertinent for Alternatives 2 and 3:

- Potential for Asbestos Containing Materials (ACM) in the existing Limonite Avenue bridge structure over I-15
- Potential lead and heavy metals associated with pavement striping along the existing roadways within the project boundaries
- Potential elevated levels of lead in the exposed soil from vehicle exhaust emissions (aerially deposited lead) located within 50 feet of I-15 and along the existing on- and off-ramps
- Potential PCB's in pole- or pad-mounted electrical transformers within the project boundaries
- Potential explosive hazard associated with The Gas Company pipeline should construction activities extend into the pipeline easement
- Potential for underground fuel storage tank leaks from existing gas stations and other businesses that store fuel within or near to the project boundaries

The following actions are recommended to verify the presence/extent of Recognized Environmental Conditions (RECs) and evaluate the potential for remediation during the PS&E phase of the I-15 at Limonite Avenue Interchange Improvement Project:

- Conduct asbestos surveys utilizing a certified consultant prior to any modification to or demolition of the Limonite Avenue bridge structure, which may be altered or demolished to accommodate the planned construction.
- To avoid impacts from pavement striping during construction it is recommended that testing and removal requirements for yellow striping and pavement marking materials be performed in accordance with Caltrans Standard Special Provision 15-300 REMOVE TRAFFIC STRIPE AND PAVEMENT MARKINGS.

- Perform a preliminary aerially deposited lead (ADL) investigation in areas of exposed soil within 50 feet of the paved surfaces of I-15 and associated on- and off-ramps to determine the possible presence and levels of aerially deposited lead from motor vehicle exhaust emissions.
- Any leaking transformers observed during the course of the project should be considered a potential polychlorinated biphenyl (PCB) hazard.
- Based on preliminary plans, right-of-way acquisition is not expected at the Ralphs Gas Station property (located in the southwest quadrant of the intersection of Limonite Avenue and Hamner Avenue), which is immediately adjacent to the project on the southwest corner of Limonite Avenue and Hamner Avenue. Should final plans indicate that a portion of this parcel will be acquired for new right-of-way, a Preliminary Site Investigation (comprised of limited subsurface sampling and laboratory analysis) should be performed for potentially elevated levels of petroleum hydrocarbons and MTBE contamination within the limits of proposed construction, and/or right-of-way acquisition, adjacent to the existing Ralphs Gas Station.
- The north side of Limonite Avenue parallels agricultural parcels (east of I-15) upon which pesticides and herbicides have likely been applied over many years. It is possible that residuals of these chemicals can build up in the surface soil. This condition is not expected to be significant for a paving project; however, if soils are to be exported off-site, the upper 24 inches of soil in these agricultural areas should be screened for residuals and handled in accordance with Riverside County Environmental Health Division Guidelines.

Due to the project's proximity to agricultural land, pesticide testing will be required.

8.12 Air Quality: An Air Quality Report would be prepared to analyze potential operational and construction impacts from Alternatives 2 and 3. The project is listed in a conforming and cost constrained RTP. The Air Quality Report will include a qualitative analysis of potential impacts on Carbon Monoxide (CO) or particulate matter (PM₁₀/PM_{2.5}), following the 1997 *CO Protocol* by U.C. Davis and the FHWA's *PM_{2.5}/PM₁₀ Qualitative Analysis Guidance* (March 2006). A qualitative analysis of mobile source air toxics (MSAT) would also be included, following FHWA's *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA* (2009). The Air Quality Report would also include discussion of Naturally Occurring Asbestos. Construction-related emissions would be quantified using the Urban Emissions (URBEMIS) model. The project will require completion of Interagency Consultation, which will be satisfied through the Southern California Association of Government's Transportation Conformity Working Group.

An Air Quality Conformity Analysis Report is also required, and would be reviewed by the FHWA. The Air Quality Conformity Analysis Report would

address regional air conformity, and conformity regarding local CO and PM₁₀/PM_{2.5}.

- 8.13 Noise and Vibration: Both Alternative 2 and 3 would be Type I projects, as defined in the Caltrans Technical Noise Supplement, since either would increase the number of through-traffic lanes. A Noise Study Report is required and would follow Caltrans' Traffic Noise Analysis Protocol (CatNAP) and the Caltrans Technical Noise Supplement (TNS). Potentially sensitive receptors include residential homes at the Swan Lake Estates, roughly 150 ft from I-15; residences at the southwest quadrant, roughly 100 ft east of the I-15 on-ramps; and residences in the southeast quadrant, adjacent to Limonite Avenue. Other noise sensitive receptor sites, such as outdoor eating areas, may also be at the commercial areas adjacent to the interchange at the northwest and southeast quadrants.

Discussion of construction generated noise impact will be included in the Noise Study Report. To minimize this impact, it is anticipated that sound control should conform to the provision in Standard Specification "Noise Control" section 14-8.02, and SSP S5-310. Noise Study Report requirements will follow Chapter 12 of the SER.

- 8.14 Energy and Climate Change: Based on the proposed scope of work and the applicable anticipated Environmental Approval, no Energy impact analysis is expected to be required. Potential Climate Change impacts (for CEQA analysis requirements only), including greenhouse gas analysis warranted to address construction and expected operational improvements, will be addressed in the Environmental compliance document prepared to address CEQA requirements.
- 8.15 Biological Environment: The I-15/Limonite Avenue Interchange, including Alternatives 2 and 3, is a Covered Activity under the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP). As a Covered Activity, impacts to covered species resulting from construction are permitted; "take" is allocated, as long as the project is consistent with the MSHCP.

An NES is required for this project and would include an MSHCP Consistency Determination. An MSCHP Consistency Determination for each of the following requirements is necessary:

- Riparian/riverine, vernal pool, and fairy shrimp requirements
- Species survey requirements (as discussed in the paragraph below)
- Urban/wildlife interface guidelines
- Reserve assembly requirements within the Criteria Area

Based on the MSHCP's Conservation Summary Report Generator, Habitat Assessments would be required for burrowing owl [*Athene cunicularia*] and three Narrow Endemic Plant Species (San Diego ambrosia [*Ambrosia pumila*], Brand's phacelia [*Phacelia stellaris*], and San Miguel savory [*Calamintha chandleri*]). If

potential habitat for San Diego ambrosia, Brand's Phacelia, and San Miguel Savory is determined to be located on the property, focused surveys may be required during the appropriate blooming season.

A concrete-lined drainage ditch running parallel to I-15 within the project area is not anticipated to have a hydrologic connection to "waters of the U.S." To verify this, and to determine if there are any other "waters of the U.S." at the project site, the NES will include a jurisdictional delineation. For background information, soil mapping by the Natural Resources Conservation Service (NRCS) indicates that soil map units within the project area are not hydric. The National Wetlands Inventory (NWI) Map does not show wetlands within the project area. There are no blue-line streams present, and the concrete-lined ditch alongside I-15 appears to convey stormwater. The site is above the normal high water mark of the Santa Ana River. Additionally, the site and immediate surrounding areas have been disturbed by agricultural uses.

- 8.16 Cumulative Impacts: The proposed project is not anticipated to have any substantive cumulative impacts to any resources. Contingent upon the results of any related Technical Study indicating otherwise, it is expected that completion of the eight steps summarized in Caltrans' Annotated Outline for preparation of an Initial Study/Environmental Assessment will provide the required analysis for the proposed project, consistent and in accordance with Caltrans' [*Guidance for Preparers of Cumulative Impact Analyses*](#).
- 8.17 Context Sensitive Solutions: It is anticipated that the proposed project will be developed, consistent with the Caltrans Director's Policy on Context Sensitive Solutions. The Department's Highway Design Manual, Federal Highway Administration (FHWA) regulations, FHWA's Flexibility in Highway Design publication, and the American Association of State Highway Transportation Officials' A Policy on Geometric Design of Highways and Streets all share a philosophy that explicitly allows flexibility in applying design standards and approving exceptions to design standards where validated by applying sound engineering judgment. This design philosophy seeks transportation solutions that improve mobility and safety while complementing and enhancing community values and objectives.
- 8.18 Section 4(f) Evaluation: Contingent upon whether the results of any related Technical Study indicates otherwise, it is expected that this proposed project will not impact any resources subject to the provisions of 23 CFR 774. If any Technical Studies do indicate a Section 4(f) resource may be impacted by the proposed project, all applicable Section 4(f) requirements will be satisfied.

9. Summary Statement for PSR or PSR-PDS

Caltrans has statutory obligation to maintain and operate the State Highway System (SHS) as the owner of the SHS, and accordingly, is the California Environmental Quality Act (CEQA) Lead Agency for all improvement projects on the SHS.

Section 6005(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (P.L. 109-59), codified as Section 327 of amended Chapter 3 of Title 23, United States Code (23 U.S.C. 327), establishes a Surface Transportation Project Delivery Pilot Program that allows the Secretary of the United States Department of Transportation (USDOT) to assign, and a State to assume, the USDOT Secretary's responsibilities under the National Environmental Policy Act of 1969 (42 U.S.C. 4321, et seq.), and all or part of the USDOT Secretary's responsibilities for environmental review, consultation, or other action required under any Federal environmental law with respect to one or more highway projects within the State. The Federal Highway Administration (FHWA) and Caltrans entered into a Memorandum of Understanding (MOU) dated June 7, 2007 that assigned FHWA's responsibilities for determining whether certain projects are categorically excluded from the requirement to prepare environmental assessments or environmental impact statements to Caltrans. The June 7, 2007 MOU (renewed on June 7, 2010) also assigns certain other environmental responsibilities for categorical exclusion projects. Effective July 1, 2007, Caltrans has been assigned environmental review and consultation responsibilities under the National Environmental Policy Act (NEPA) pursuant to 23 U.S.C. 327. The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327. On the Effective Date, all responsibilities concerning categorical exclusion determinations not assigned by FHWA and assumed by Caltrans under the June 7, 2007 6004 MOU are assigned by the FHWA and assumed by Caltrans under the 6005 MOU.

Caltrans is the lead agency in conjunction with completion of all NEPA compliance requirements and associated documentation for this project.

Based on the location and scope of work of the proposed project, preparation of an Initial Study (IS) has been determined to be the appropriate environmental documentation for CEQA compliance. The IS will be prepared in accordance with Caltrans' environmental procedures, as well as State and federal environmental regulations. After the public circulation period, all comments will be considered, and the Project Development Team will select a Preferred Alternative and Caltrans will make the final determination of the project's effect on the environment. In accordance with CEQA, if no unmitigable significant adverse impacts are identified, Caltrans expects to approve a Negative Declaration (ND) or Mitigated ND.

Regarding documentation of NEPA compliance, it is anticipated that the proposed project will be eligible to receive a Section 6005 Categorical Exclusion (6005 CE) determination under Section 6005 of 23 U.S.C. 327. The Department's Categorical Exemption/Categorical Exclusion (CE/CE) Determination Form will be utilized to document compliance with NEPA requirements.

The final determination regarding the applicable CEQA and NEPA compliance documentation will be made by Caltrans in conjunction with completion of the required Technical Studies for this proposed project.

Based on the results of this PEAR, among the Technical Studies expected to be prepared for this project are the Historic Property Survey Report, the Natural Environment Study, the Initial Site Assessment, the Noise Study Report, the Air Quality Report, Air Quality Conformity Analysis Report, Paleontological Identification Report, Location Hydraulic Study and Floodplain Encroachment Report.

Whether the project may require permits from resource agencies, construction windows, biological or Native American Monitoring, or compensatory mitigation will be determined during completion of Technical Studies. An Environmental Commitments Record will be required to ensure implementation of all Avoidance, Minimization, and/or Mitigation Measures required to address impacts resulting from the proposed project.

If the scope of work (including utility relocation requirements—if any) or limits for this project change prior to completion of the preliminary engineering (PA&ED phase), or during the final design (PS&E phase), or during the construction phase, performance of an Environmental Re-Validation/Re-Evaluation will be required to confirm if the IS determined to be the appropriate environmental documentation for CEQA compliance, and/or the anticipated Section 6005 CE determination for NEPA compliance documentation remain appropriate. An Environmental Certification will be required at the end of the PS&E phase, and a Certificate of Compliance (CEC) will be required following completion of construction of the project.

10. Disclaimer

This Preliminary Environmental Analysis Report (PEAR) provides information to support programming of the proposed project. It is not an environmental determination or document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in the Project Study Report (Project Development Support). The estimates and conclusions in the PEAR are approximate and are based on cursory analyses of probable effects. A reevaluation of the PEAR will be needed for changes in project scope or alternatives, or in environmental laws, regulations, or guidelines.

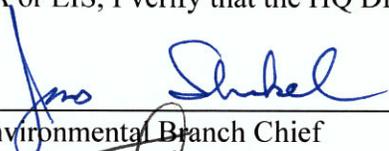
11. List of Preparers

Cultural Resources specialist Amy Dunay, Environmental Planner/Archaeologist	
Biologist Angela Scudiere, Environmental Planner/Biologist	
Community Impacts specialist, Air Quality specialist Tim Chamberlain, Associate Environmental Planner	
Noise and Vibration specialist, Water Quality specialist Carlene Grecco, Environmental Planner	

Paleontology specialist/liaison Cherry Zamora, Associate Environmental Planner	
Hydrology and Floodplain specialist Pamela Dalcin-Walling, P.E.	
Hazardous Waste/Materials specialist Namat Hosseinion, Senior Environmental Planner	
Visual/Aesthetics specialist Zach Liptak, Environmental Assistant	

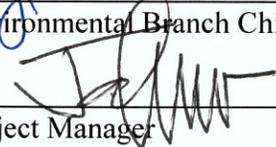
12. Review and Approval

I confirm that environmental cost, scope, and schedule have been satisfactorily completed and that the PEAR meets all Caltrans requirements. Also, if the project is scoped as an EA or EIS, I verify that the HQ DEA Coordinator has concurred in the Class of Action.



 Environmental Branch Chief

Date: 8/27/12



 Project Manager

Date: 8/27/12

REQUIRED ATTACHMENTS:

- Attachment A: PEAR Environmental Studies Checklist**
- Attachment B: Project Layout Figures**
- Attachment C: Schedule (Gantt Chart)**

ATTACHMENT A

PEAR Environmental Studies Checklist

Attachment A: PEAR Environmental Studies Checklist

Rev. 11/08

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Land Use	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	Text in ED NOTE: Content consistent with guidance provided in AO for IS/EA
Growth	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	Text in ED NOTE: Content consistent with guidance provided in AO for IS/EA
Farmlands/Timberlands	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	Text in ED NOTE: Content consistent with guidance provided in AO for IS/EA
Community Impacts	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	"Focused CIA" NOTE: Content consistent with guidance provided in AO for IS/EA
Community Character and Cohesion	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	"Focused CIA" NOTE: Content consistent with guidance provided in AO for IS/EA
Relocations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	To Be Determined during PA&ED prior to circulation of ED
Environmental Justice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	Content consistent with guidance provided in AO for IS/EA Or Content from "Focused CIA"
Utilities/Emergency Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	TBD
Visual/Aesthetics	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	SRE / level of VIA to be determined NOTE: Not anticipated to be complex
Cultural Resources:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	
Archaeological Survey Report	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	
Historic Resources Evaluation Report	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	TBD
Historic Property Survey Report	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	
Historic Resource Compliance Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Section 106 / PRC 5024 & 5024.5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	

Environmental Studies for PA&ED Checklist

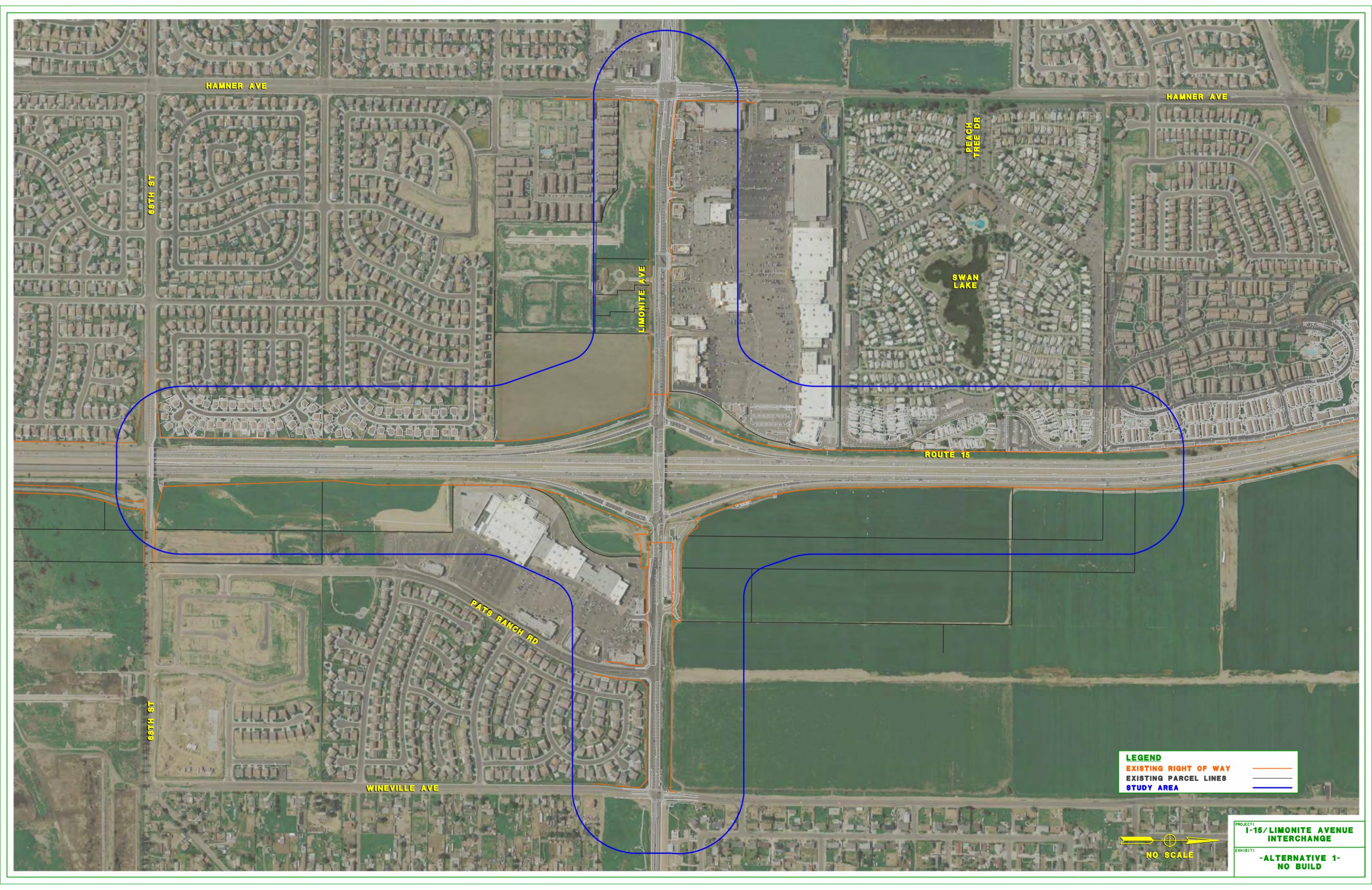
	Not anticipated	Memo to file	Report required	Risk*			Comments
				L	M	H	
Native American Coordination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>			
Finding of Effect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
Data Recovery Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
Memorandum of Agreement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
Other:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
Hydrology and Floodplain	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>			LHS/SFER
Water Quality and Stormwater Runoff	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>			Scoping Questionnaire for Water Quality Issues, others to be determined, contingent upon results.
Geology, Soils, Seismic and Topography	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			Text in ED
Paleontology	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>			PIR, Others TBD
PER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			TBD
PMP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			TBD
Hazardous Waste/Materials:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
ISA (Additional)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>			
PSI	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>			
Other:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
Air Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>			AQR,AQCA
Noise and Vibration	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>			NSR, NADR
Energy and Climate Change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			NOTE: No Discussion of Energy Anticipated. Content on Climate Change consistent with guidance provided in AO for IS/EA
Biological Environment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>			NES
Natural Environment Study	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>			NES
Section 7:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
Formal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
Informal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
No effect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
Section 10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
USFWS Consultation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			MSHCP review
NMFS Consultation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
Species of Concern (CNPS, USFS, BLM, S, F)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>			NES/ED text
Wetlands & Other Waters/Delineation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
404(b)(1) Alternatives Analysis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
Invasive Species	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>			NES/ED Text
Wild & Scenic River Consistency	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
Coastal Management Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
HMMP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
DFG Consistency Determination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			
2081	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>			

Environmental Studies for PA&ED Checklist

	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Other:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Cumulative Impacts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Context Sensitive Solutions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Section 4(f) Evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	TBD
Permits:					
401 Certification Coordination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
404 Permit Coordination, IP, NWP, or LOP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
1602 Agreement Coordination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Local Coastal Development Permit Coordination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
State Coastal Development Permit Coordination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
NPDES Coordination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	Text in ED NOTE: Content consistent with guidance provided in AO for IS/EA
US Coast Guard (Section 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
TRPA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
BCDC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	

ATTACHMENT B

Project Layout Figures



HAMNER AVE

HAMNER AVE

68TH ST

BEACH TREE DR

LIMONITE AVE

SWAN LAKE

ROUTE 15

68TH ST

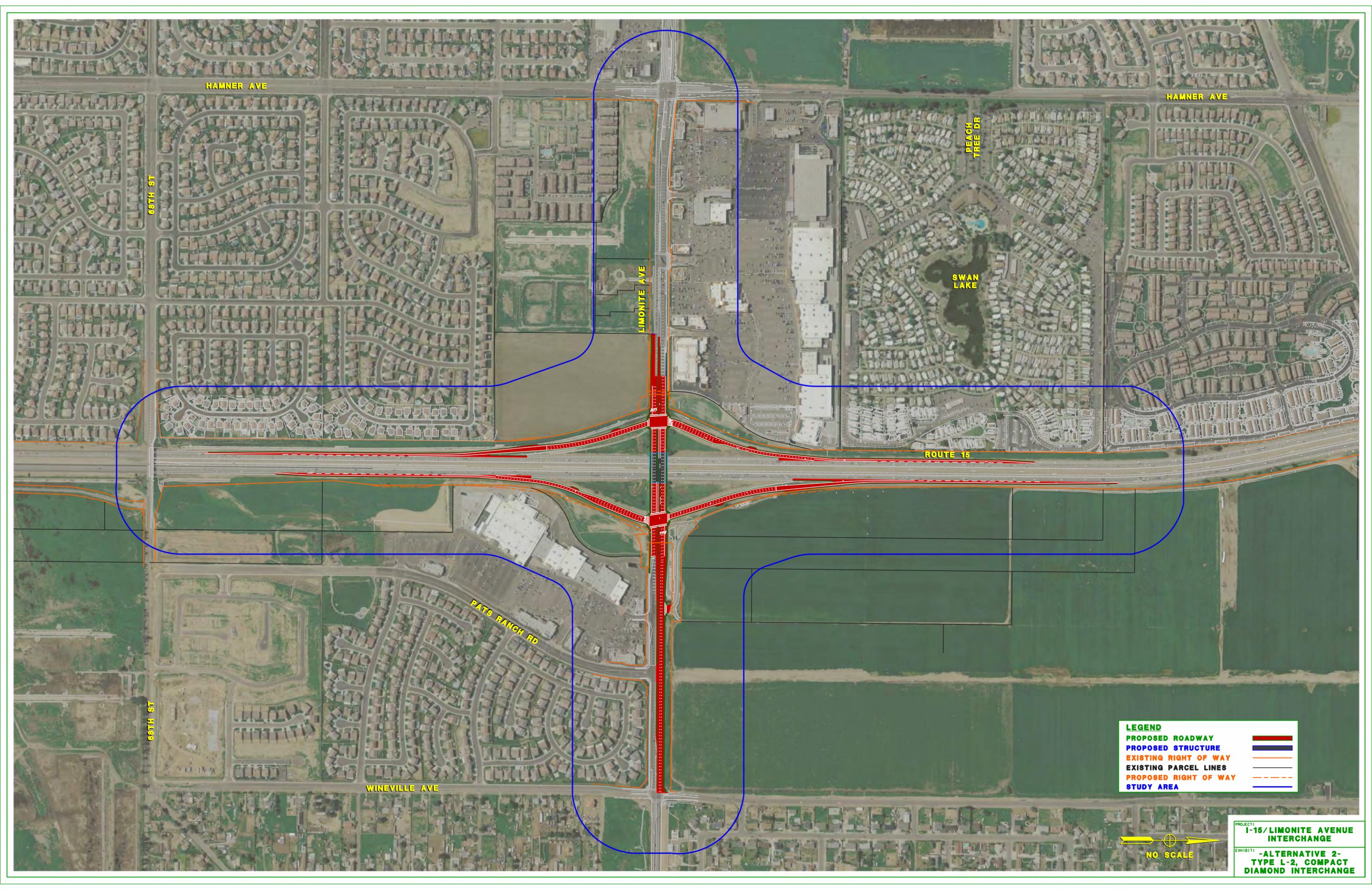
PATS RANCH RD

WINEVILLE AVE

LEGEND
 EXISTING RIGHT OF WAY
 EXISTING PARCEL LINES
 STUDY AREA



PROJECT: I-15/LIMONITE AVENUE INTERCHANGE
 EXHIBIT: ALTERNATIVE 1- NO BUILD



HAMNER AVE

HAMNER AVE

68TH ST

LIMONITE AVE

BEACH TREE DR

SWAN LAKE

ROUTE 15

PATS RANCH RD

68TH ST

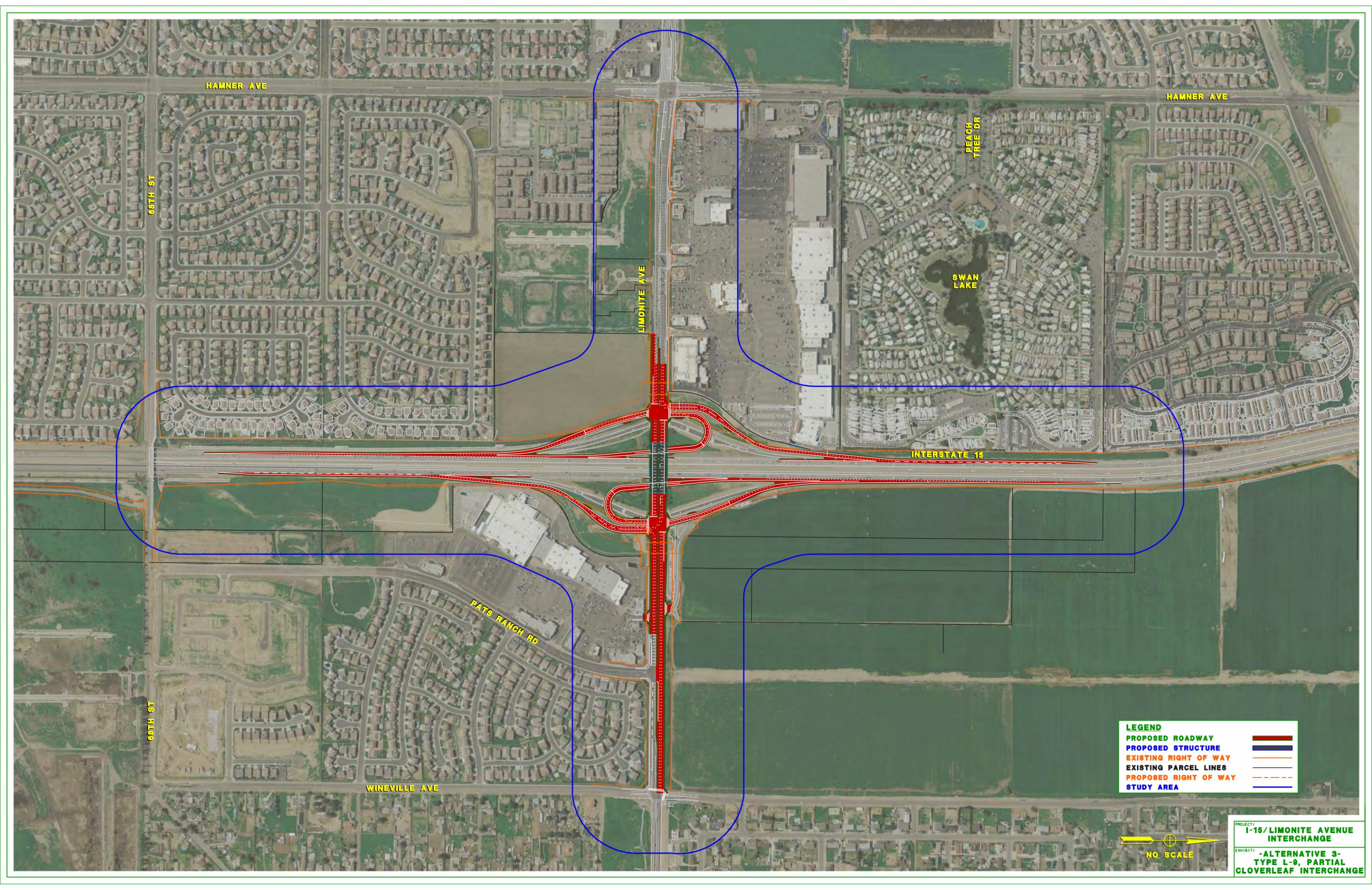
WINEVILLE AVE

LEGEND

PROPOSED ROADWAY	
PROPOSED STRUCTURE	
EXISTING RIGHT OF WAY	
EXISTING PARCEL LINES	
PROPOSED RIGHT OF WAY	
STUDY AREA	

NO SCALE

PROJECT: I-15/LIMONITE AVENUE INTERCHANGE
 EXHIBIT: -ALTERNATIVE 2- TYPE L-2, COMPACT DIAMOND INTERCHANGE



HAMNER AVE

HAMNER AVE

68TH ST

LIMONITE AVE

BEACH TREE DR

SWAN LAKE

INTERSTATE 15

PATS RANCH RD

68TH ST

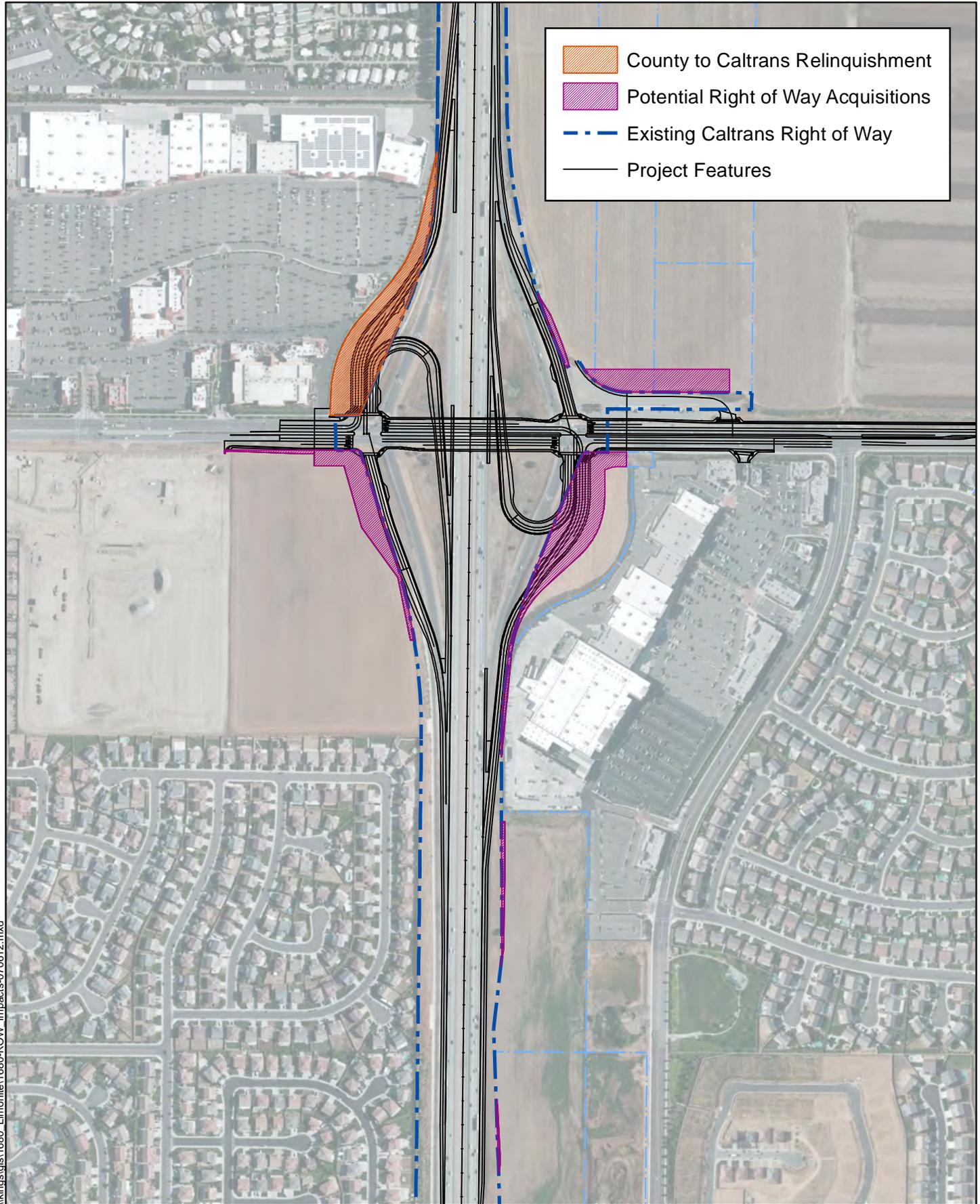
WINEVILLE AVE

LEGEND

PROPOSED ROADWAY	
PROPOSED STRUCTURE	
EXISTING RIGHT OF WAY	
EXISTING PARCEL LINES	
PROPOSED RIGHT OF WAY	
STUDY AREA	



PROJECT: I-15/LIMONITE AVENUE INTERCHANGE
 EXHIBIT: -ALTERNATIVE 3- TYPE L-0, PARTIAL CLOVERLEAF INTERCHANGE



	County to Caltrans Relinquishment
	Potential Right of Way Acquisitions
	Existing Caltrans Right of Way
	Project Features

\\kings\gis\1680_Limonite\1680C-ROW_Impacts-070612.mxd

Source: BING Maps Online; Dokken Engineering 07-06-12; Created By: Z. Liptak

FIGURE 2

Potential Right of Way Acquisitions

I-15/Limonite Avenue Interchange Improvements

EA 0E150K

Riverside County, California



0 250 500 750 1,000
 Feet

ATTACHMENT C

Schedule (Gantt Chart)

I-15/Limonite Avenue Interchange Project Development Schedule

ID	Name	Duration	Start	Finish	2009	2010	2011	2012	2013	2014	2015	2016
					Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
100	Paleontological Identification Report & Evaluation	110 days	Wed 8/22/12	Tue 1/22/13								
101	Prepare PIR/PER	45 days	Wed 8/22/12	Tue 10/23/12								
102	Submit PIR/PER (Draft)	0 days	Tue 10/23/12	Tue 10/23/12								
103	Caltrans/County Review (Draft)	30 days	Wed 10/24/12	Tue 12/4/12								
104	Prepare PIR/PER (Final)	15 days	Wed 12/5/12	Tue 12/25/12								
105	Submit PIR/PER (Final)	0 days	Tue 12/25/12	Tue 12/25/12								
106	Caltrans Review (Final)	20 days	Wed 12/26/12	Tue 1/22/13								
107	PIR/PER Complete	0 days	Tue 1/22/13	Tue 1/22/13								
108	Location Hydraulic Study/SFER	105 days	Wed 8/22/12	Tue 1/15/13								
109	Prepare LHS/SFER	40 days	Wed 8/22/12	Tue 10/16/12								
110	Submit LHS/SFER (Draft)	0 days	Tue 10/16/12	Tue 10/16/12								
111	Caltrans/County Review (Draft)	30 days	Wed 10/17/12	Tue 11/27/12								
112	Prepare LHS/SFER (Final)	15 days	Wed 11/28/12	Tue 12/18/12								
113	Submit LHS/SFER (Final)	0 days	Tue 12/18/12	Tue 12/18/12								
114	Caltrans Review (Final)	20 days	Wed 12/19/12	Tue 1/15/13								
115	LHS/SFER Complete	0 days	Tue 1/15/13	Tue 1/15/13								
116	WQ Scoping Questionnaire	105 days	Wed 8/22/12	Tue 1/15/13								
117	Prepare WQ Scoping Questionnaire	40 days	Wed 8/22/12	Tue 10/16/12								
118	Submit WQ Scoping Questionnaire (Draft)	0 days	Tue 10/16/12	Tue 10/16/12								
119	Caltrans/County Review (Draft)	30 days	Wed 10/17/12	Tue 11/27/12								
120	Prepare WQ Scoping Questionnaire (Final)	15 days	Wed 11/28/12	Tue 12/18/12								
121	Submit WQ Scoping Questionnaire (Final)	0 days	Tue 12/18/12	Tue 12/18/12								
122	Caltrans Review (Final)	20 days	Wed 12/19/12	Tue 1/15/13								
123	WQ Scoping Questionnaire Complete	0 days	Tue 1/15/13	Tue 1/15/13								
124	Geotechnical Studies	105 days	Wed 8/22/12	Tue 1/15/13								
125	Literature Review and Reconnaissance	5 days	Wed 8/22/12	Tue 8/28/12								
126	Field Investigation and Utility Clearance	15 days	Wed 8/29/12	Tue 9/18/12								
127	Laboratory Testing	15 days	Wed 9/19/12	Tue 10/9/12								
128	Geotechnical Design Report	10 days	Wed 10/10/12	Tue 10/23/12								
129	Structures Foundation Report	10 days	Wed 10/10/12	Tue 10/23/12								
130	Pavement Design Report	10 days	Wed 10/10/12	Tue 10/23/12								
131	Submit Geotechnical Reports (draft)	0 days	Tue 10/23/12	Tue 10/23/12								
132	Caltrans/County Review	20 days	Wed 10/24/12	Tue 11/20/12								
133	Address comments	15 days	Wed 11/21/12	Tue 12/11/12								
134	Submit Geotechnical Reports (final)	0 days	Tue 12/11/12	Tue 12/11/12								
135	Caltrans/County Review	20 days	Wed 12/12/12	Tue 1/8/13								
136	Finalize Geotechnical Reports	5 days	Wed 1/9/13	Tue 1/15/13								
137	Geotechnical Reports Complete	0 days	Tue 1/15/13	Tue 1/15/13								
138	IS/MND	193 days	Wed 11/14/12	Fri 8/9/13								
139	Prepare Admin Draft IS/MND	50 days	Wed 11/14/12	Tue 1/22/13								

ATTACHMENT F

Transportation Planning Scoping Information Sheet

Transportation Planning Scoping Information Sheet

PROJECT INFORMATION

District	County	Route	Post Miles	Project ID No/ Expenditure Authorization No.
08	Riv	15	PM 47.6/48.9	EA 0E150
Project Name and Description : I-15/Limonite Avenue Interchange Project				

Prepared by:

Riverside County	Name: John Marcinek	Functional Unit:	N/A
------------------	------------------------	---------------------	-----

Project Development Team (PDT) Information

Title	Name	Phone Number
Project Manager	John Marcinek/Riverside County	(951) 955-3727
Project Engineer/Consultant	Pamela Dalcin-Walling/Dokken Engineering	(916) 858-0642
Transportation Planning PDT Representative	Susan Vombaur	(951) 955-1429

Transportation Planning Stakeholder Information

Title	Name	Phone Number
Regional Planner	Russell Williams	(951) 955-2016
System Planner	Russell Williams	(951) 955-2016
Local Development-Intergovernmental Review (LD-IGR) Planner	Russell Williams	(951) 955-2016
Community Planner	Marcia Frances Rose	(951) 955-1505
Goods Movement Planner	Marcia Frances Rose	(951) 955-1505
Transit Planner	Marcia Frances Rose	(951) 955-1505
Bicycle and Pedestrian Coordinator	Marcia Frances Rose	(951) 955-1505
Park and Ride Coordinator	Marcia Frances Rose	(951) 955-1505
Native American Liaison	Marcia Frances Rose	(951) 955-1505
Other Coordinators:	N/A	

Project Purpose and Need –

Need: The project is needed to alleviate traffic congestion associated with existing planned area development. Based on the most recent update of the Riverside County General Plan, the Cities of Eastvale and Jurupa Valley will add numerous residences and businesses in the coming years, resulting in substantial traffic and requiring a number of transportation and circulation improvements, including improvements to the I-15/Limonite Avenue interchange. Operation of the I-15/Limonite Avenue interchange ramps is currently approaching a deficient condition and will continue to degrade as development occurs in the area unless improvements are made to the transportation system.

Purpose: The purpose of the project is to modify the existing I-15/Limonite Avenue interchange within the project limits (between Hamner Avenue and Wineville Avenue in the east-west direction and 0.60 miles north and south of Limonite Avenue) to provide long-term operational and circulation improvements in order to accommodate future traffic resulting from area development through the design year (2035).

1. Project Funding:

a	List all known and potential funding sources and percent splits: (ie. State Transportation Improvement Program (STIP)/State Highway Operations and Protection Program (SHOPP)/Transportation Enhancement (TE)/Environmental Enhancement and Mitigation (EEM)/Safe Routes to School (SR2S)/etc.). Funding for PA&ED and subsequent phases of the project is anticipated from TUMF funds and Road and Bridge Benefit District funds. In addition, State and Federal funds in the State Transportation Improvement Program may also be available for use in subsequent phases of this project.
b	Is this a measure project? Yes /No . If yes, name and describe the measure. No

2. Regional Planning:

a	Name of and contact information for Metropolitan Planning Organization (MPO) or Regional Transportation Planning Agency (RTPA). Riverside County Transportation Commission; Eliza Echevarria, (951) 787-7141
b	Name of and contact information for local jurisdiction (City or County) See page 1
c	Provide the page number and project description as identified in the Regional Transportation Plan (RTP) and the date of adoption, or provide an explanation if not in RTP. 2008 RTP (pg 56): AT I-15/LIMONITE AVE IC - WIDEN IC 4 TO 6 LNS, RAMPS 1 TO 2 LNS, & WIDEN LIMONITE AVE FROM HAMNER TO WINEVILLE 4 TO 6 LNS (APPROX 1 MI) (EA: 0E150K)
d	Provide nexus between the RTP objectives and the project to establish the basis for the project purpose and need. Traffic operations at the I-15/Limonite Avenue interchange ramps are currently approaching a deficient condition and will degrade below LOS D as development occurs in the area unless improvements are made to the transportation system.
e	Is the project located in an area susceptible to sea-level rise? No
f	Name of Air Quality Management District (AQMD) South Coast Air Quality Management District
g	If the project is located in a federal non-attainment or attainment-maintenance area is the project: <ul style="list-style-type: none"> • Regionally Significant? (per 40 (Code of Federal Regulations (CFR) 93.101) Y <input checked="" type="checkbox"/> /N <input type="checkbox"/> • Exempt from conformity? (per 40 CFR 93.126 and 93.128) Y <input type="checkbox"/> /N <input checked="" type="checkbox"/> • Exempt from regional analysis? (per 40 CFR 93.127) Y <input type="checkbox"/> /N <input checked="" type="checkbox"/> • Not exempt from conformity (must meet all requirements)? Y <input checked="" type="checkbox"/> /N <input type="checkbox"/>

3. Native American Consultation and Coordination:

a	If project is within or near an Indian Reservation or Rancheria? If so, provide the name of Tribe. No
b	Has/have the Tribal Government(s) been consulted? Y <input type="checkbox"/> /N <input checked="" type="checkbox"/> . If no, why not? Not applicable
c	If the project requires Caltrans to use right-of-way on trust or allotted lands, this information needs to be included as soon as possible as a key topic in the consultation with the Tribe(s). Has the Tribe been consulted on this topic? Y <input type="checkbox"/> /N <input checked="" type="checkbox"/> . If no, why not? Not applicable
d	Has the Bureau of Indian Affairs (BIA) been notified? Y <input type="checkbox"/> /N <input checked="" type="checkbox"/> Not applicable
e	Have all applicable Tribal laws, ordinances and regulations [Tribal Employment Rights Ordinances (TERO), etc.] been reviewed for required contract language and coordination? Not applicable
f	If the Tribe has a TERO, is there a related Memorandum of Understanding between the District and the

	Tribe?
	Not applicable
g	Has the area surrounding the project been checked for prehistoric, archeological, cultural, spiritual, or ceremonial sites, or areas of potentially high sensitivity? If such areas exist, has the Tribe, Native American Heritage Commission or other applicable persons or entities been consulted? To be investigated during PA/ED as part of the technical studies for the environmental document.
h	If a Native American monitor is required for this project, will this cost be reflected in cost estimates? Yes
i	In the event of project redesign, will the changes impact a Native American community as described above in d, e, or h? No

4. System Planning:

a	Is the project consistent with the DSMP? Y <input checked="" type="checkbox"/> /N <input type="checkbox"/> . If yes document approval date. If no, explain. The District 8 DSMP was approved in 12/2011
b	Is the project identified in the TSDP? Y <input type="checkbox"/> /N <input checked="" type="checkbox"/> ? If yes, document approval date _____. If no, explain. The District 8 TSDP only identifies mainline improvements.
c	Is the project identified in the TCR/RCR or CSMP? Y <input checked="" type="checkbox"/> /N <input type="checkbox"/> . If yes, document approval date _____. If no, explain. Is the project consistent with the future route concept? Y <input checked="" type="checkbox"/> /N <input type="checkbox"/> . If no, explain. The project is listed in the following state planning documents: Route Concept Fact Sheet District 8: Interstate Route 15 (March 1999) and the California Transportation Plan 2030.
d	Provide the Concept Level of Service (LOS) through project area. E; functionally classified by FHWA as a Rural/Urban Principal Arterial
e	Provide the Concept Facility – include the number of lanes. Does the Concept Facility include High Occupancy Vehicle lanes? Y <input checked="" type="checkbox"/> /N <input type="checkbox"/> . 8-lane, mixed flow plus 2 HOV
f	Provide the Ultimate Transportation Corridor (UTC) – include the number of lanes. Does the UTC include High Occupancy Vehicle Lanes? Y <input checked="" type="checkbox"/> /N <input type="checkbox"/> . 8 lane, mixed flow plus 2 HOV
g	Describe the physical characteristics of the corridor through the project area (i.e. flat, rolling or mountainous terrain...). Flat
h	Is the highway in an urban or rural area? Urban <input type="checkbox"/> /Rural <input type="checkbox"/> . Provide Functional Classification. Urban
i	Is facility a freeway, expressway or conventional highway? I-15 is a freeway, Limonite Avenue is an urban arterial
j	Provide Route Designations: (i.e. Interregional Transportation Strategic Plan (ITSP) High Emphasis or Focus Route, Surface Transportation Assistance Act (STAA) Route, Scenic Route...). I-15 part of the Freeway and Expressway System, the National Highway System, the Strategic Highway Corridor Network of National Defense, the Federal Surface Transportation Assistance Act (STAA) National Network for oversized trucks, and is classified as a “High Emphasis” and “Gateway” route in the Interregional Road System (IRRS).
k	Describe the land uses adjacent to project limits (i.e. agricultural, industrial...). Commercial, open space, residential
l	Describe any park and ride facility needs identified in the TCR/CSMP, local plans, and RTP. An existing park and ride facility in the NE quadrant will need to be modified.
m	Describe the Forecasted 10 and 20-year Vehicle Miles Traveled (VMT), Annual Average Daily Traffic (AADT), and Peak Hour truck data in the TCR. Include the source and year of Forecast, and names and types of traffic and travel demand analysis tools used.

	<p>10-year and 20-year VMT = 167 M and 380 M, respectively. 10-year and 20-year AADT = 39,700 and 52,100, respectively. 10-year and 20-year Peak Hr Truck % = 2.3 % for both.</p> <p>The traffic volume forecasts were prepared by using the RivTAM (Riverside County) regional model to develop Year 2035 forecasts. The RivTAM model is based on the Southern California Association of Governments (SCAG) regional model. Peak hour traffic counts were taken to document existing conditions. Interim forecasts were prepared by interpolating between the existing traffic counts and the longer-term forecasts. RivTAM peak periods link volumes were converted to peak hour volumes using factors provided by modeling staff, and then converted to peak hour turning movement volumes using spreadsheet software to proportion volumes based on link volumes. The resulting volumes were then converted to PCE volumes based on the observed exiting truck mix.</p>
n	<p>Has analysis on Daily Vehicle Hours of Delay (DVHD) from the Highway Congestion Monitoring Program (HICOMP) been completed and included? Y <u> </u> /N <u> </u> <input checked="" type="checkbox"/>.</p> <p>No</p>

5. Local Development – Intergovernmental Review (LD-IGR):

List LD-IGR projects that may directly or indirectly impact the proposed Caltrans project or that the proposed Caltrans project may impact. (Attach additional project information if needed.)

LD-IGR Project Information		Project
a	County-Route-Postmile & Distance to Development.	Not applicable
b	Development name, type, and size.	Not applicable
c	Local agency and/or private sponsor, and contact information.	Not applicable
d	California Environmental Quality Act (CEQA) status and Implementation Date.	Not applicable
e	If project includes federal funding, National Environmental Policy Act (NEPA) status.	Not applicable
f	All vehicular and non-vehicular unmitigated impacts and planned mitigation measures including Transportation Demand Management (TDM) and Transportation System Management (TSM) that would affect Caltrans facilities.	Not applicable
g	Approved mitigation measures and implementing party.	Not applicable
h	Value of constructed mitigation and/or amount of funds provided.	Not applicable
i	Encroachment Permit, Transportation Permit, Traffic Management Plan, or California Transportation Commission (CTC) Access approvals needed.	Not applicable
j	Describe relationship to Regional Blueprint, General Plans, or County Congestion Management Plans.	Not applicable
k	Inclusion in a Regional Transportation Plan Sustainable Community Strategy or Alternative Planning Strategy?	Not applicable
l	Regional or local mitigation fee program in place?	Not applicable

6. Community Planning:

INITIAL PID INFORMATION	
a	Has lead agency staff worked with any neighborhood/community groups in the area of the proposed improvements? Y__/N_√_. If yes, summarize the process and its results including any commitments made to the community. If no, why not? Coordination with neighborhood/community groups will be done during the PA&ED process.
b	Are any active/completed/proposed Environmental Justice (EJ) or Community-Based Transportation (CBTP) Planning Grants in the project area? Y__/N_√_. If yes, summarize the project, its location, and whether/how it may interact with the proposed project. No
c	Describe any community participation plans for this PID including how recommendations will be incorporated and/or addressed. Has a context sensitive solutions (CSS) approach been applied? Y_√/N__ During PA/ED, the environmental document will be circulated for public comment. The level of environmental document (IS/MND, CE) does not require a public meeting. Context sensitive solutions (aesthetic themes, bike/ped improvements) will be incorporated into the project.
FINAL PID INFORMATION	
d	How will the proposed transportation improvements impact the local community? Is the project likely to create or exacerbate existing environmental or other issues, including public health and safety, air quality, water quality, noise, environmental justice or social equity? Y__/N___. Describe issues, concerns, and recommendations (from sources including neighborhood/community groups) and what measures will be taken to reduce existing or potential negative effects. This will be determined during PA/ED as part of the environmental process
e	Does this highway serve as a main street? Y__/N_√_. If yes, what main street functions and features need to be protected or preserved? No

7. Freight Planning:

INITIAL PID INFORMATION	
a	Identify all modal and intermodal facilities that may affect or be affected by the project. I-15
FINAL PID INFORMATION	
b	Describe how the design of this project could facilitate or impede Goods Movement and relieve choke points both locally and statewide through grade separations, lane separations, or other measures (e.g., special features to accommodate truck traffic and at-grade railroad crossings). This project will facilitate goods movement in that it will improve traffic operations along I-15 in the vicinity of the Limonite Avenue interchange. No special features are anticipated to be needed for truck traffic as part of this project.
c	Describe how the project integrates and interconnects with other modes (rail, maritime, air, etc.). Do possibilities exist for an intermodal facility or other features to improve long-distance hauling, farm-to-market transportation and/or accessibility between warehouses, storage facilities, and terminals? No other modes of operation beyond truck related freight movement exist within the project area.
d	Is the project located in a high priority goods movement area, included in the Goods Movement Action Plan (GMAP) or on a Global Gateways Development Program (GGDP) route? Y__/N_√_. If yes, describe. No
e	Is the project on a current and/or projected high truck volume route [e.g., Average Annual Daily Truck Traffic (AADTT) of 5 axle trucks is greater than 3000]? Yes_√/N___. If yes, describe how the project addresses this demand. Yes. During design, a traffic index (TI) appropriate to this level of truck traffic will be chosen to design the pavement. In addition, the design geometry of the roadway takes truck traffic into account as will traffic staging during construction.
f	If the project is located near an airport, seaport, or railroad depot, describe how circulation (including

	truck parking) needs are addressed.
	Not applicable
g	Describe any other freight issues.
	None

8. Transit (bus, light rail, commuter rail, intercity rail, high speed rail):

	INITIAL PID INFORMATION
a	List all local transit providers that operate within the corridor. Riverside Transit Agency
b	Have transit agencies been contacted for possible project coordination? Y <input type="checkbox"/> /N <input checked="" type="checkbox"/> . If no, why not? RTA will be contacted during PA/ED for coordination.
c	Describe existing transit services and transit features (bus stops, train crossings, and transit lines) within the corridor. Two RTA bus routes traverse the project area and share one bus stop transfer location along Hamner Avenue north of Limonite Avenue (just outside the project limits).
d	Describe transit facility needs identified in short- and long-range transit plans and RTP. Describe how these future plans affect the corridor. To be determined in coordination with RTA during PA/ED.
	FINAL PID INFORMATION
e	Describe how the proposed project integrates transit and addresses impacts to transit services and transit facilities. No new transit facilities are anticipated. Impacts to transit during construction will be addressed as part of the contractor specifications.
f	Have transit alternatives and improvement features been considered in this project? Y <input type="checkbox"/> /N <input checked="" type="checkbox"/> If yes, describe. If no, why not? To be determined in coordination with RTA during PA/ED.

9. Bicycle:

	INITIAL PID INFORMATION
a	Does the facility provide for bicyclist safety and mobility needs? If no, please explain. Yes
b	Are any improvements for bicyclist safety and mobility proposed for this facility by any local agencies or included in bicycle master plans? If yes, describe (including location, time frame, funding, etc.). Bike lanes are provided along Limonite Avenue, which is not a designated bike route in the County's General Plan.
c	Are there any external bicycle advocacy groups and bicycle advisory committees that should be included in the project stakeholder list? If so, provide contact information. No
	FINAL PID INFORMATION
d	Will bicycle travel deficiencies be corrected? How or why not? Wider bike lanes will be provided. All ramps will be squared up with Limonite Avenue to provide safer bicycle crossing at intersections.
e	How will this project affect local agency plans for bicycle safety and mobility improvements? No impact.
f	If the project is the construction of a new freeway or modification to an existing freeway, will it sever or destroy existing provisions for bicycle travel? If yes, describe how bicycle travel provisions will be included in this project. No.

10. Pedestrian including Americans with Disabilities Act (ADA):

	INITIAL PID INFORMATION
a	Does this facility provide for pedestrian safety and mobility needs? If so, describe pedestrian facilities. Do continuous and well-maintained sidewalks exist? Are pedestrians forced to walk in the roadway at any locations due to lack of adequate pedestrian facilities? Please explain. Yes, 8 foot sidewalks, curb ramps and cross walks will be provided throughout the project.
b	Are pedestrian crossings located at reasonable intervals? Yes, at all major intersections.
c	Are all pedestrian facilities within the corridor ADA accessible and in compliance with Federal and State ADA laws and regulations? Yes
	FINAL PID INFORMATION
d	Will pedestrian travel deficiencies be corrected? How or why not? Wider sidewalks will be provided with updated curb ramps at intersections.
e	How will this project affect local agency plans for pedestrian safety and mobility improvements? No impact.
f	If the project is the construction of a new freeway or modification to an existing freeway, will it sever or destroy existing provisions for pedestrian travel? If yes, describe how pedestrian travel provisions will be included in this project. No.
g	Are there any external pedestrian advocacy groups and advisory committees that should be included in the project stakeholder list? If so, provide contact information. No
h	Have ADA barriers as noted in the District's ADA Transition Plan been identified within the project limits? If not included in the project, provide justification and indicate whether District Design coordinator approval was obtained. No ADA barriers were identified within the project limits per District 8's ADA Transition Plan; all ADA deficiencies within the project limits will be addressed as part of the project.

11. Equestrian:

	INITIAL PID INFORMATION
a	If this corridor accommodates equestrian traffic, describe any project features that are being considered to improve safety for equestrian and vehicular traffic? Accommodations for equestrian traffic are not needed for this project.
	FINAL PID INFORMATION
b	Have features that accommodate equestrian traffic been identified? If so, are they included a part of this project? Describe. If no, why not? Accommodations for equestrian traffic are not needed for this project.

12. Intelligent Transportation Systems (ITS):

	INITIAL PID INFORMATION
a	Have ITS features such as closed-circuit television cameras, signal timing, multi-jurisdictional or multimodal system coordination been considered in the project? Y__/N_√_. If yes, describe. If no, explain. ITS features will be considered during PA/ED and Final Design.
	FINAL PID INFORMATION
b	Have ITS features been identified? If so, are they included a part of this project? Describe. If no, why not? ITS features will be considered during PA/ED and Final Design.

ATTACHMENT G

Conceptual Cost Estimate – Right Of Way Component

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To: January 2012

From: 8 – Riverside – 15
 47.5-49.0 (76.4-78.9)
 EA 0E150
 I-15/Limonite Avenue
 Interchange (Alt 2)

A Field Review was conducted Yes No

Scope of the Right of Way

Provide a general description of the right of way including the location attributes.

Right of Way Required Yes No

Number of Parcels 1-10 11-25 26-50 51-100 >100

Urban Rural

Land Area: Fee 58,507 ft² Easement 0

Displaced Persons/Businesses Yes No

Demolition/Clearance Yes No

Railroad Involvement Yes No

Utility Involvements Yes No 10 Number of Utilities in area

Cost Estimates

Support Costs	<input type="checkbox"/> \$0-\$25,000	<input type="checkbox"/> \$500,001-\$1,000,000
	<input checked="" type="checkbox"/> \$25,001-\$100,000	<input type="checkbox"/> \$1,000,001-\$5,000,000
	<input type="checkbox"/> \$100,001-\$250,000	<input type="checkbox"/> \$5,000,001-\$10,000,000
	<input type="checkbox"/> \$250,001-\$500,000	<input type="checkbox"/> >\$10,000,000
Capital Costs	<input type="checkbox"/> \$0-\$100,000	<input type="checkbox"/> \$5,000,001-\$15,000,000
	<input type="checkbox"/> \$100,001-\$500,000	<input type="checkbox"/> \$15,000,001-\$50,000,000
	<input type="checkbox"/> \$500,001-\$1,000,000	<input type="checkbox"/> \$50,000,001-\$100,000,000
	<input checked="" type="checkbox"/> \$1,000,001-\$5,000,000	<input type="checkbox"/> >\$100,000,000

Schedule

Right of Way will require 18 months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of 2014.

Areas of Concern

Provide a description of areas in close proximity to the project footprint that are likely to result in complex right of way issues if impacted (i.e. junkyards, cemeteries, utility towers, etc.).

No complex right of way issues are anticipated.

Assumptions and Limiting Conditions

Provide a description of assumptions and limiting conditions.

Only permanent right of way takes have been considered. Temporary Construction Easements or Utility Easements will be considered as the project progresses.

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To:

January 2012

From:

8 – Riverside – 15
 47.5-49.0 (76.4-78.9)
 EA 0E150
 I-15/Limonite Avenue
 Interchange (Alt 3)

A Field Review was conducted Yes No

Scope of the Right of Way

Provide a general description of the right of way including the location attributes.

Right of Way Required Yes No
 Number of Parcels 1-10 11-25 26-50 51-100 >100
 Urban Rural
 Land Area: Fee 301,124 ft² Easement 0
 Displaced Persons/Businesses Yes No
 Demolition/Clearance Yes No
 Railroad Involvement Yes No
 Utility Involvements Yes No 10 Number of Utilities in area

Cost Estimates

Support Costs	<input type="checkbox"/> \$0-\$25,000	<input type="checkbox"/> \$500,001-\$1,000,000
	<input checked="" type="checkbox"/> \$25,001-\$100,000	<input type="checkbox"/> \$1,000,001-\$5,000,000
	<input type="checkbox"/> \$100,001-\$250,000	<input type="checkbox"/> \$5,000,001-\$10,000,000
	<input type="checkbox"/> \$250,001-\$500,000	<input type="checkbox"/> >\$10,000,000
Capital Costs	<input type="checkbox"/> \$0-\$100,000	<input checked="" type="checkbox"/> \$5,000,001-\$15,000,000
	<input type="checkbox"/> \$100,001-\$500,000	<input type="checkbox"/> \$15,000,001-\$50,000,000
	<input type="checkbox"/> \$500,001-\$1,000,000	<input type="checkbox"/> \$50,000,001-\$100,000,000
	<input type="checkbox"/> \$1,000,001-\$5,000,000	<input type="checkbox"/> >\$100,000,000

Schedule

Right of Way will require 18 months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of 2014.

Areas of Concern

Provide a description of areas in close proximity to the project footprint that are likely to result in complex right of way issues if impacted (i.e. junkyards, cemeteries, utility towers, etc.).

No complex right of way issues are anticipated.

Assumptions and Limiting Conditions

Provide a description of assumptions and limiting conditions.

Only permanent right of way takes have been considered. Temporary Construction Easements or Utility Easements will be considered as the project progresses.

ATTACHMENT H

Risk Register

Project Risk Register

DIST- EA 08-0E150K		Project Name: I-15/Limonite Avenue Interchange						Project Manager: Rafhi Achy						Date Created:	Last Updated:		
		Co - Rte - PM: RIV-15-47.6-48.9						Telephone: 909-884-1823									
ITEM	ID #	Status	Threat / Opportunity	Category	Date Risk Identified	Risk Discription	Root Causes	Primary Objective	Overall Risk Rating	Cost/Time Impact Value	Risk Owner	Risk Trigger	Strategy	Response Actions w/ Pros & Cons	Adjusted Cost/Time Impact Value	WBS Item	Status Date and Review Comments
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
1	08-0E150K-01	Active	Threat	EXT	01/01/12	Local agency support not attained (City of Eastvale & Jurupa Valley)	Regulatory	TIME	Probability 2=Low (10-19%) Med Impact 4 =Med	Cost/Time Impact Value	County (951) 955-3727 imarcine@rctlma.org	Non-support at initial meetings.	MITIGATE	Coordination, discussion, negotiation	Adjusted Cost/Time Impact Value	165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT Additional WBS	Status Date & Review Comments
2	08-0E150K-02	Active	Threat	EXT	01/01/12	Support of public not attained.	Customer	TIME	Probability 2=Low (10-19%) Med Impact 4 =Med		County 9519553727 imarcine@rctlma.org	Public opposition during environmental document circulation	MITIGATE	Outreach		175 CIRCULATE DRAFT ENVIRONMENTAL DOCUMENT AND PREPARE DRAFT PROJECT ALTERNATIVE IDENTIFICATION	
3	08-0E150K-03	Active	Threat	DESIGN	01/01/12	Approval of design exceptions deferred to PA/ED	Requirement	TIME	Probability 3=Med (20-39%) Med Impact 4 =Med		County 9519553727 imarcine@rctlma.org	Non-approval of design exception fact sheet submittal.	MITIGATE	Modify design		185 PREPARE BASE MAPS AND PLAN SHEETS	
4	08-0E150K-04	Active	Threat	DESIGN	01/01/12	Need for soundwalls unknown	Requirement	COST	Probability 3=Med (20-39%) Low Impact 2 =Low		County 9519553727 imarcine@rctlma.org	Noise studies indicate a need for soundwalls to mitigate increase in noise at sensitive receptors.	MITIGATE	Incorporate soundwalls		185 PREPARE BASE MAPS AND PLAN SHEETS	
5	08-0E150K-05	Active	Threat	DESIGN	01/01/12	Impact to Park & Ride not defined and coordinated	Complexity and interface	COST	Probability 3=Med (20-39%) Med Impact 4 =Med		County 9519553727 imarcine@rctlma.org	Impact is unacceptable to Caltrans	MITIGATE	Minimize impact to existing lot and expand with additional R/W to replace lost spaces		185 PREPARE BASE MAPS AND PLAN SHEETS	