I-15/SR-74 Interchange Improvement Project

CITY OF LAKE ELSINORE
RIVERSIDE COUNTY, CALIFORNIA
08-RIV-15 PM 21.6 to 23.5
08-RIV-74 PM R16.0 to 17.8
PN 0800000124/EA 08-0F3100

Initial Study with Mitigated Negative Declaration/Environmental Assessment with Finding of No Significant Impact

Prepared by the
State of California, Department of Transportation

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated May 27, 2022, and executed by FHWA and Caltrans.

October 2024

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General Information About This Document

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this Initial Study with Mitigated Negative Declaration/ Environmental Assessment for the Project located in Riverside County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The document tells you why the Project is planned, what alternatives have been considered for the Project, how the existing environment could be affected by the Project, the potential impacts of each of the alternatives, and the avoidance, minimization, and/or mitigation measures. The Initial Study/Draft Environmental Assessment circulated to the public for 33 days between November 10, 2023, and December 12, 2023. Comments received during this period are included in Chapter 4. Elsewhere throughout this document, a vertical line in the margin indicates a change made since the draft document circulation. Minor editorial changes and clarifications have not been so indicated. Additional copies of this document and the related technical studies are available for review at the City of Lake Elsinore City Hall located at 130 South Main Street, Lake Elsinore, CA 92530 and at the Lake Elsinore Library located at 600 West Graham, Lake Elsinore, CA 92530. This document may be downloaded at the following website: https://www.lake-elsinore.org/CentralAveInterchange.

Alternative Formats:

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to City of Lake Elsinore, Attn: Remon Habib, City Engineer 130 South Main Street Lake Elsinore, CA 92530; (951) 674-3124, ext. 213 (Voice); or use the California Relay Service 1 (800) 735-2929 (TTY to Voice), 1 (800) 735-2922 (Voice to TTY), 1 (800) 855-3000 (Spanish TTY to Voice and Voice to TTY), 1-800-854-7784 (Spanish and English Speech-to-Speech) or 711.

SCH# 2023110279
08-RIV-15-PM 21.6/23.5
08-RIV-74 PM R16.0/17.8
EA: 08-0F3100
Project No. 0800000124

Interstate 15/State Route 74 Interchange Improvement Project
(I-15 Postmile 21.6 to 23.5, SR-74 Postmile R16.0 to 17.8) in the City of Lake Elsinore, Riverside County, California.

Initial Study with Mitigated Negative Declaration/Environmental Assessment with Finding of No Significant Impact

Submitted Pursuant to: (State) Division 13, California Public Resources Code (Federal) 42 U.S.C. 4332(2)(c)

THE STATE OF CALIFORNIA
Department of Transportation
and
City of Lake Elsinore

October 4, 2024
Date of Approval

for Kurt Heidelberg
Deputy District Director
District 8
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CALIFORNIA DEPARTMENT OF TRANSPORTATION

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

FOR

Interstate 15/State Route 74 Interchange Improvement Project

The California Department of Transportation (Caltrans) has determined that Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) will have no significant impact on the human environment. This FONSI is based on the attached Environmental Assessment (EA) which has been independently evaluated by Caltrans and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed Project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached EA.

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for the proposed Project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated May 27, 2022, and executed by FHWA and Caltrans.

Shawn Oriaz — October 4, 2024

for Kurt Heidelberg — Date
Deputy District Director
District 8 Division of Environmental Planning
California Department of Transportation
NEPA Lead Agency

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SCH: 2023110279

Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The City of Lake Elsinore (City), in cooperation with the California Department of Transportation (Department), plans to improve the Interstate 15 (I-15)/State Route 74 (SR-74) interchange located in the City of Lake Elsinore, California, to reduce traffic congestion, improve operations, and comply with current Department and local agency design standards.

Three alternatives were evaluated as a part of the I-15/SR-74 Interchange Improvement Project (Project): Alternative 1 (No-Build), Alternative 2 (Northbound [NB] Hook Ramps), and Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to Westbound [WB] SR-74).

Alternative 2 (NB Hook Ramps) and Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) will improve traffic operations and reduce congestion at the I-15/SR-74 interchange and local intersections within the Project limits. Specifically, the Project will accommodate current and Horizon Year (2045) traffic volumes on the I-15 and SR-74 corridors resulting from projected growth in the area. The improvements along I-15 are from Post Mile (PM) 21.6 to 23.5 and along SR-74 are from PM 16.0 to 17.8 in the City of Lake Elsinore in Riverside County.

Determination

The Department has prepared an Initial Study for this Project and, following public review, has determined from this study that the Project will not have a significant effect on the environment for the following reasons:

The Project will have no effect on Mineral Resources, Population and Housing, and Recreation.

In addition, the Project will have less than significant effects to Aesthetics, Agriculture and Forest Resources, Air Quality, Cultural Resources, Energy, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise, Public Services, Transportation, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire.

With the following mitigation measures incorporated, the Project will have less than significant effects to Biological Resources, Geology and Soils, and Greenhouse Gas Emissions.

WET-1 During final design (PS&E), the City's Resident Engineer will ensure that compensatory mitigation for Project impacts to wetlands and other waters will be determined and any temporary impacts will be restored to pre-Project contours, or mitigation credits will be purchased from a mitigation bank in the Santa Ana River watershed (i.e., Riverside Corona Resource Conservation District) at a 1:1 ratio. Based on the low function of waters of the U.S., unvegetated streambeds, and riparian habitat within the Biological Study Area (BSA), a compensatory mitigation ratio of 1:1 for permanent loss of waters of the U.S. and California Department of Fish and Wildlife (CDFW) jurisdictional streambed will be used for the Project. A compensatory mitigation ratio of 2:1 for permanent loss of riparian habitat subject to CDFW jurisdiction will be used for the Project.

PAL-1 The City's Resident Engineer will ensure a Paleontological Mitigation Plan is prepared by a qualified Project Paleontologist/Principal Investigator prior to completion of the final design (PS&E) phase of this Project for all Project-related ground disturbance, such as grading, excavation, and other surface and subsurface excavation, in areas of paleontological sensitivity. All elements of the paleontological mitigation plan will follow the format published in the Caltrans SER (Caltrans 2003). The paleontological mitigation plan will detail the measures to be implemented, include a requirement for Worker's Environmental Awareness Program (WEAP) training to address the required interfacing of paleontological and construction personnel, as well as the following elements:

- Required preconstruction paleontological sensitivity training for earthmoving personnel to include documentation of training (i.e., sign-in sheets, hardhat stickers).
- A signed repository agreement.
- Field and laboratory methods, consistent with the repository requirements.
- Require the preparation of a Paleontological Mitigation Report upon completion of ground disturbance activities.

GHG-15 During final design (PS&E), the City's Resident Engineer will ensure the Complete Streets Components identified within the Project features will be implemented as part of the Project design.

Shawn Oriaz

for Kurt Heidelberg
Deputy District Director
District 8
California Department of Transportation
CEQA Lead Agency

October 4, 2024
Date

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1 Proposed Project

1.1 Introduction

1.1.1 NEPA Assignment

California participated in the "Surface Transportation Project Delivery Pilot Program" (Pilot Program) pursuant to 23 United States Code (USC) 327, for more than five years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Obama on July 6, 2012, amended 23 USC 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, California Department of Transportation (Caltrans) entered into a Memorandum of Understanding (MOU) pursuant to 23 USC 327 (National Environmental Policy Act [NEPA] Assignment MOU) with Federal Highway Administration (FHWA). The NEPA Assignment MOU became effective on October 1, 2012, and was renewed on May 27, 2022, for a term of ten years. In summary, Caltrans continues to assume FHWA responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, FHWA assigned and Caltrans assumed all of the United States Department of Transportation (USDOT) Secretary's responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to Caltrans under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

Caltrans, as assigned by FHWA, is the lead agency under NEPA. Furthermore, Caltrans is the lead agency under the California Environmental Quality Act (CEQA).

The City of Lake Elsinore (City), in cooperation with Caltrans, plans to improve the Interstate 15 (I-15)/State Route 74 (SR-74) interchange located in Lake Elsinore, California. The I-15/SR-74 Interchange Improvement Project (Project) is generally located approximately 1.6 miles south of the existing I-15/Nichols Road interchange and 1.3 miles north of the existing I-15/Main Street interchange.

A regional location map is provided on Figure 1-1, while the Project limits are illustrated on Figure 1-2.

The Project is included in Amendment 1 of the Final 2023 Adopted Federal Transportation Improvement Program (FTIP) (Southern California Association of Governments [SCAG] 2021) and the Proposed Final Amendment #1 of the Adopted 2020-2045 Regional Transportation

Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2020) for Riverside County as Project Identification (ID): RIV060109. The Project description provided in the Final Adopted 2023 FTIP and Amendment #1 of the Adopted 2020-2045 RTP/SCS states the following:

> AT I-15/SR-74 (CENTRAL AVE) IC JCT BTWN 1,000 FT W/O COLLIER AVE TO CONARD AVE: REMOVE/REPLACE EXIST NB ON-RAMP WITH NB HOOK ON- AND OFF- RAMPS AT DEXTER AVE NORTH OF CENTRAL AVE, ADD NB LOOP OFF-RAMP AT CENTRAL AVE, ADD AUX LANE SEGMENTS AT ON-/OFF-RAMPS, WIDEN SB ON-/OFF-RAMPS AND SEGMENTS OF CENTRAL AVE AND DEXTER AVE. PM LIMITS FOR SR-74: R15.97 to 17.82 (EA: 0F3100).

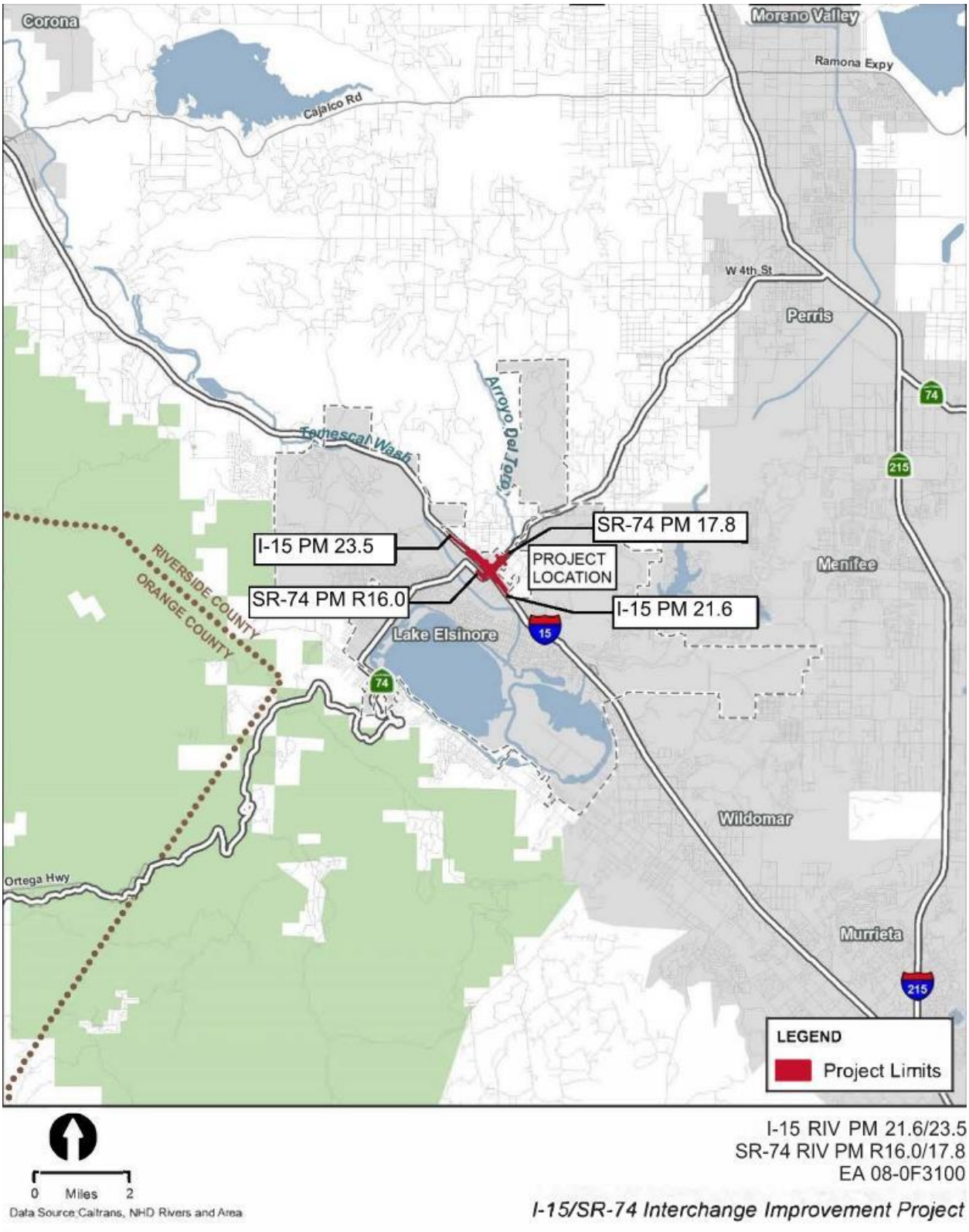

Figure 1-1. Regional Location and Project Vicinity

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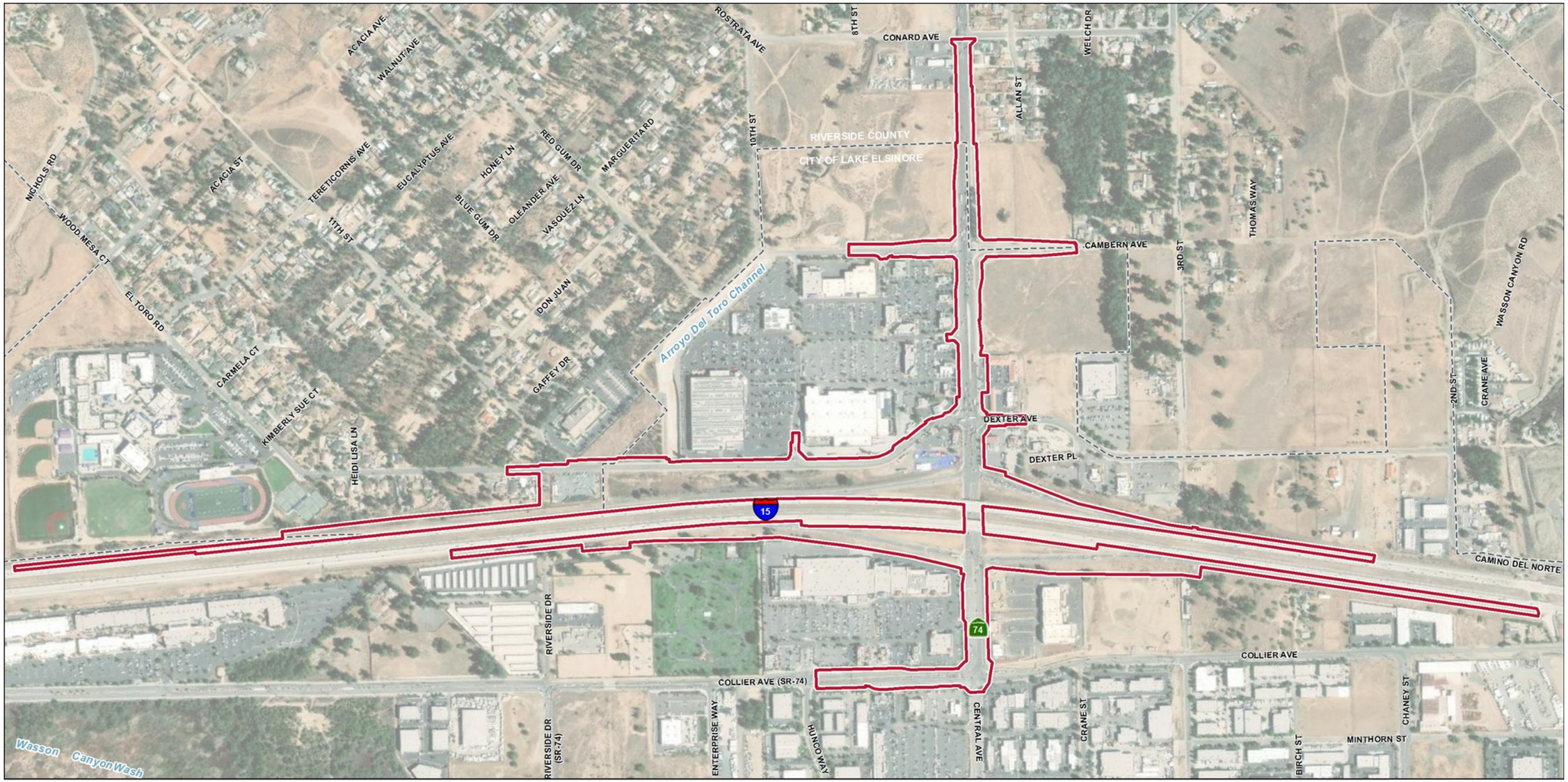

Figure 1-2. Project Limits

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1.2 Purpose and Need

1.2.1 Purpose of the Project

The Project's purpose is to maximize mobility and accessibility in the region by improving traffic operations of the I-15/SR-74 interchange and local intersections within the Project limits. The Project objectives are to:

- Improve traffic operations and address increased travel associated with existing and planned development anticipated in the surrounding area.
- Provide safer access through the interchange by improving the operational efficiency of signalized intersections, queuing, throughput volumes, and limiting cross-traffic movements.
- Improve existing interchange geometry and provide complete streets improvements to improve connectivity and offer additional options for multi-modal connections within the interchange and in the surrounding community.

1.2.2 Need for the Project

The I-15/SR-74 interchange serves as the primary access for residents, visitors, businesses, and industry in the area. The increase in traffic volumes has resulted in inadequate queuing capacity at the interchange and local intersections. The amount of traffic utilizing the I-15/SR-74 interchange is expected to increase greatly by Opening Year (2025) and efficiency of the interchange will continue to degrade without the implementation of improvements. The safety, mobility, and access within the interchange will be improved by encouraging additional multi-modal options through the construction of new pedestrian and bicycle facilities, and the improvements of those existing facilities. Additionally, the I-15/SR-74 interchange requires improvements to enhance its operational efficiency.

Complete street improvements include providing new and/or improved connections in existing gaps of pedestrian and bicycle infrastructure that improve access through the existing interchange, which separates existing communities in the City to the major Business District. These planned Project improvements will help meet the Project need, as well as help the City meet its Climate Action Plan (CAP) greenhouse gas (GHG) reduction goals.

The existing ramp intersection configuration at I-15/SR-74 interchange contains existing nonstandard features, which include the lack of standard corner sight distance, limited intersection spacing, limited pedestrian pathways, and non-standard lane and shoulder widths, which compound the congestion and vehicle delay.

1.2.2.1 Traffic Collisions

Traffic collision data were collected from Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) on January 9, 2024, for a 3-year period from July 1, 2020, through June 30, 2023, for I-15 mainline and ramps and SR-74 segments within the Project limits. Collision data presented in Table 1-1 show the number of fatal, fatal plus injury, and total crash rates on the freeway mainline and ramps within the Project limits in comparison with the average crash rates for similar facilities on I-15 and SR-74. Table 1-2 summarizes the percentage by collision type within the Project limits.

It can be concluded from Table 1-1 and Table 1-2 that rear-end collisions are the most common type of collision at most locations, followed by side-swipe, hit object, and head-on. The primary factors resulting in these types of collisions include speeding, improper turn, and other violations. Many of the collisions reported could be related to traffic congestion and low storage capacity, which is likely to worsen if no improvements are implemented at the interchange.

Table 1-1. Freeway Mainline and Ramps Collision Data for I-15 and SR-74

Location	Post Mile	Actual Crash Rates			State Average Crash Rates		
		Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
I-15 NB from Main Street to Nichols Road	20.661 – 24.041	0.000	0.090	0.280	0.006	0.410	1.230
I-15 SB from Nichols Road to Main Street	20.661 – 24.041	0.000	0.140	0.320	0.006	0.410	1.230
SR-74 Segment from Collier Avenue to Conard Avenue	R16.170 – 17.354	0.000	0.206	**0.588**	0.007	0.220	0.465
SR-74 Collier Avenue/Central Avenue Intersection	R16.170	0.000	0.080	0.130	0.002	0.160	0.330

Table 1-1. Freeway Mainline and Ramps Collision Data for I-15 and SR-74

Location	Post Mile	Actual Crash Rates			State Average Crash Rates		
		Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
SR-74 RTE 15 SB On & Off Ramps	R16.300	0.000	0.050	0.200	0.002	0.160	0.330
SR-74 RTE 15 NB On & Off Ramps	17.302	0.000	0.100	0.220	0.002	0.160	0.330
I-15 NB Off-Ramp to SR-74	22.094	0.000	0.240	0.540	0.006	0.280	0.820
I-15 SB Off-Ramp to SR-74	22.492	0.000	0.100	**0.900**	0.006	0.280	0.820
I-15 NB On-Ramp from SR-74	22.428	0.000	0.000	0.000	0.001	0.150	0.480
I-15 SB On-Ramp from SR-74	22.080	0.000	0.120	0.370	0.001	0.150	0.480

Source: Caltrans District 8 TASAS collision data, retrieved on January 9, 2024.

Notes:

Bold font indicates actual crash rate that is higher than the state average crash rate.

I-15=Interstate 15; NB=northbound; RTE= route; SB=southbound; SR-74=State Route 74

Table 1-2. Freeway Mainline and Ramps Collision Type for I-15 and SR-74

Location	Head-On (%)	Side-Swipe (%)	Rear-End (%)	Broad-Side (%)	Hit Object (%)	Overturn (%)	Auto-Pedestrian (%)	Other (%)
I-15 NB (PM 20.661 to 24.041)	0.0%	13.6%	52.5%	1.7%	20.3%	10.2%	0.0%	1.6
I-15 SB (PM 20.661 to 24.041)	0.0%	36.8%	38.2%	1.5%	19.1%	2.9%	0.0%	2.5
SR-74 Segment (PM R16.170 to 17.354)	20.0%	10.0%	50.0%	20.0%	0.0%	0.0%	0.0%	0.0
SR-74 Collier Avenue/Central Avenue Intersection (PM R16.170)	20.0%	20.0%	60.0%	0.0%	0.0%	0.0%	0.0%	0.0
SR-74 RTE 15 SB On & Off Ramps (PM R16.300)	37.5%	12.5%	12.5%	37.5%	0.0%	0.0%	0.0%	0.0
SR-74 RTE 15 NB On & Off Ramps (PM 17.302)	0.0%	14.3%	71.4%	14.3%	0.0%	0.0%	0.0%	0.0
I-15 NB Off-Ramp to SR-74 (PM 22.094)	0.0%	33.3%	44.4%	11.1%	11.1%	0.0%	0.0%	0.0
I-15 SB Off-Ramp to SR-74 (PM 22.492)	0.0%	22.2%	77.8%	0.0%	0.0%	0.0%	0.0%	12.5
I-15 NB On-Ramp from SR-74 (PM 22.428)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
I-15 SB On-Ramp from SR-74 (PM 22.080)	0.0%	16.7%	16.7%	0.0%	33.3%	33.3%	0.0%	0.0

Source: Caltrans District 8 TASAS collision data, retrieved on January 9, 2024.

Notes:

[a] Total percentages for each location may exceed 100 percent due to rounding to the nearest whole number.

[b] Other collision types include head-on, broadside, overturn, auto-pedestrian, and other collisions.

I-15=Interstate 15; NB=northbound; PM=postmile; RTE= route; SB=southbound; SR-74=State Route 74

1.2.3 Independent Utility and Logical Termini

The Project is bounded by Riverside Drive to the north, Conard Avenue to the east, Wasson Canyon Wash to the south, and Collier Avenue to the west within the City. The Project will improve traffic operations and reduce congestion at the I-15/SR-74 interchange and local intersections within the

Project limits. Therefore, the Project limits serve as logical termini or rational end points for transportation improvements and are sufficient to evaluate the environmental impacts of the improvements. If other planned transportation projects are not constructed, the Project will still address the need to support existing traffic demands of I-15 and SR-74, relieve congestion and provide directional connectivity between I-15 and SR-74, and improve operational efficiency within the interchange. As such, the Project is considered to have independent utility.

1.3 Project Description

The City, in cooperation with Caltrans, plans to improve the I-15/SR-74 interchange in the City of Lake Elsinore, California. The Project is generally located approximately 1.6 miles south of the existing I-15/Nichols Road interchange and 1.3 miles north of the existing I-15/Main Street interchange (Figure 1-1). As shown previously on Figure 1-2, the Project is bounded by Riverside Drive to the north, Conard Avenue to the east, Wasson Canyon Wash to the south, and Collier Avenue to the west.

The Project limits are located within Caltrans and City of Lake Elsinore right of way (ROW). The *City of Lake Elsinore General Plan* has adopted specific plan land uses and existing neighborhoods within the City as District Plans. According to the *City of Lake Elsinore General Plan*, Chapter 2 Community Form adopted on December 13, 2011 (City of Lake Elsinore 2011a), the Project is located primarily within the Business District and small portions extend into the North Central Sphere District. The land uses within the Project limits primarily consist of commercial and industrial land uses, interspersed with low density residential and public institutional uses.

1.4 Project Alternatives

Three alternatives were evaluated as a part of the Project: one no-build alternative and two build alternatives. The Build Alternatives were designed to satisfy the Project purpose and need, while avoiding and/or minimizing environmental impacts.

The three alternatives were as follows:

- Alternative 1 (No-Build).
- Alternative 2 (NB Hook Ramps).
- Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74).

This project contains a number of standardized project measures which are employed on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact

resulting from the Project. These measures are addressed in more detail in the Environmental Consequences sections found in Chapter 2.

1.4.1 Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the I-15/SR-74 interchange will remain in its current condition, and no improvements will be implemented. As local and regional development continues and the traffic demand increases, traffic operations at the I-15/SR-74 interchange would further deteriorate, resulting in increased congestion, vehicle delay, safety concerns, vehicle-operating costs, and vehicle emissions due to slower operating speeds on both I-15 and local roads. Alternative 1 (No-Build Alternative) will not address or alleviate the existing and forecasted operational and capacity issues of the I-15/SR-74 interchange and will not satisfy the Project purpose and need.

1.4.2 Alternative 2 (NB Hook Ramps)

Alternative 2 (NB Hook Ramps) will maintain the existing NB off-ramp at SR-74 (Central Avenue) and replace the existing NB on-ramp with on- and off-NB hook ramps terminating at Dexter Avenue, north of SR-74 (Central Avenue). The Project features under Alternative 2 (NB Hook Ramps) are shown on Figure 1-3. The NB hook ramps will reduce traffic congestion at the I-15/SR-74 interchange by providing a separate off-ramp for I-15 NB traffic heading west on SR-74 (Central Avenue) (Exit B), while the existing NB off-ramp will prohibit left turns and only serve traffic heading east on SR-74 (Exit A). The NB hook off-ramp will provide one left-turn and two right-turn lanes at the intersection. This improvement will provide a more direct connection to residences and destinations located in the northeast quadrant of the I-15/SR-74 interchange, including the Costco/Lowe's shopping center and Temescal Canyon High School. With the implementation of Alternative 2 (NB Hook Ramps) improvements, there will be a reduction in traffic turning left at Dexter Avenue from EB SR-74 (Central Avenue), which will allow for an increase in usable storage capacity between the intersections of Dexter Avenue and the SB on-ramp. Dexter Avenue will be widened between 11th Street and SR-74 (Central Avenue) to provide two SB lanes between the NB hook off-ramp and WB SR-74 (Central Avenue).

The improvements under Alternative 2 (NB Hook Ramps) will occur within existing Caltrans, City, and County ROW. Temporary construction easements (TCEs) will be required to construct the NB on-ramp from Dexter Avenue, improvements at the SR-74 (Central Avenue) and Dexter Avenue intersection, improvements at the SR-74 (Central Avenue) and Cambern Avenue intersection and widening along portions of SR-74 (Central Avenue). Additionally, one full property acquisition located at the northwest quadrant of Dexter Avenue and SR-74 (Central Avenue) will be required under Alternative 2 (NB Hook Ramps). The property acquisition is needed to build a direct connection for right-turn movements

between SB Dexter Avenue and WB SR-74. The TCEs and full property acquisition of the Burger King located at 18611 Dexter Avenue (Assessor Parcel Number [APN] 377-040-022) required under Alternative 2 (NB Hook Ramps) are shown on Figure 1-3. In addition to the intersection improvements described above, new sidewalks will be constructed along the widened roadway segments along SR-74 (Central Avenue) and between Dexter Avenue and the SB on-ramp, on the south side of SR-74 (Central Avenue), where currently no sidewalk exists. Other local improvements under Alternative 2 (NB Hook Ramps) include:

- Restriping Collier Avenue to add a third left-turn lane to EB SR-74 (Central Avenue);
- Widening the SB on- and off-ramps to add one lane and increase storage capacity;
- Modifying the outside shoulder in both directions of the I-15 mainline corridor to add segments of auxiliary lane for ramp exits and entrances;
- Replacing an existing noise barrier located along the NB hook on-ramp;
- Installing drainage culvert extensions and modifications to maintain existing capacity at the Arroyo Del Toro Channel outfall infiltration basin, located between I-15 and Dexter Avenue (north of SR-74 [Central Avenue]);
- Widening of the intersections of SR-74 (Central Avenue) at Dexter Avenue and SR-74 (Central Avenue) at Cambern Avenue to provide additional through and turning lanes; and
- Modifying traffic signals and constructing a new half-signal between Dexter Avenue and Cambern Avenue for left turns from EB SR-74 (Central Avenue) to the Costco/Lowe's shopping center.

The existing I-15/SR-74 interchange bridge OC and retaining walls will be protected in place, and construction will occur within previously disturbed areas, with the exception of the new NB hook ramps, which will be constructed to the north and within a portion of the existing infiltration basin.

Additional freeway signage extending 35 feet below ground surface (bgs) will be required under Alternative 2 (NB Hook Ramps). In addition, retaining walls may require excavation to approximately 5 feet bgs. Staging areas (Figure 1-3) will occur in the areas between the existing ramps and the freeway.

It is anticipated that construction will be staged, with the new NB hook on-ramp, street widening, and related improvements occurring first, followed by the closure and removal of the existing NB on-ramp to construct the new NB hook off-ramp to maintain access to I-15. Project construction is anticipated to last approximately 14 to 18 months.

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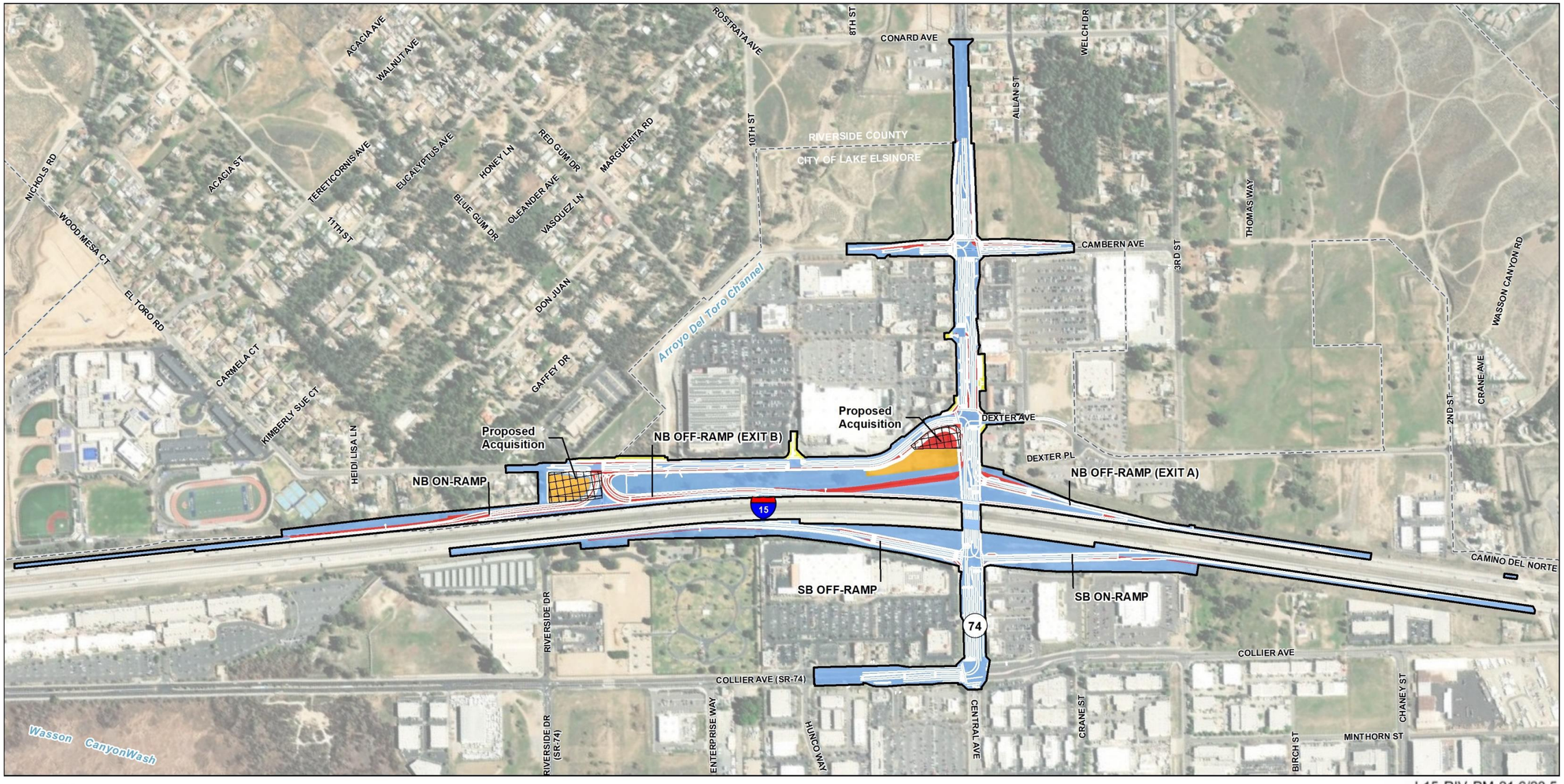

LEGEND

- Project Limits
- Alternative 2
- City/County Boundary

Alternative 2 Disturbance Areas

- Permanent Impact Areas
- Temporary Impact Areas
- Temporary Construction Easement
- Staging Areas

- Proposed Acquisition

0 Feet 700

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100

I-15/SR-74 Interchange Improvement Project

Figure 1-3. Alternative 2 Project Features

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1.4.3 Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

The same improvements under Alternative 2 (NB Hook Ramps) will occur under Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74). The primary difference between the Build Alternatives is that Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) will provide three consecutive NB off-ramps. The existing NB off-ramp (Exit A) will remain, followed by a loop off-ramp (Exit B) diverging from I-15, just past the existing I-15/SR-74 interchange bridge OC, as well as a hook off-ramp (Exit C). The Project features under Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) are shown on Figure 1-4.

The NB loop off-ramp (Exit B) will be constructed in the area where the existing NB on-ramp exists and on adjacent properties within the City's ROW. This improvement will provide a direct connection between NB I-15 and WB SR-74 (Central Avenue) without routing directional traffic along Dexter Avenue. Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) will require the same TCEs identified under Alternative 2 (NB Hook Ramps), as well as an additional TCE for the Burger King located in the northwest quadrant of SR-74 and Dexter Avenue. There are no property acquisitions anticipated under Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74).

Under Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74), the hook off-ramp will provide direct connectivity from NB I-15 to the residences and destinations located in the northeast quadrant of the I-15/SR-74 interchange and will only require one left- and one right-turn lane at the intersection. The additional local improvements described in Alternative 2 (NB Hook Ramps) will be included in Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74).

Construction staging and timeline is anticipated to be the same as Alternative 2 (NB Hook Ramps). Similar to Alternative 2, access to NB I-15 will be maintained throughout Project construction. Most of the construction will take place within previously disturbed areas, with the exception of the new NB loop and hook ramps that will be constructed in existing vacant parcels, as well as within and slightly north of the existing infiltration basin.

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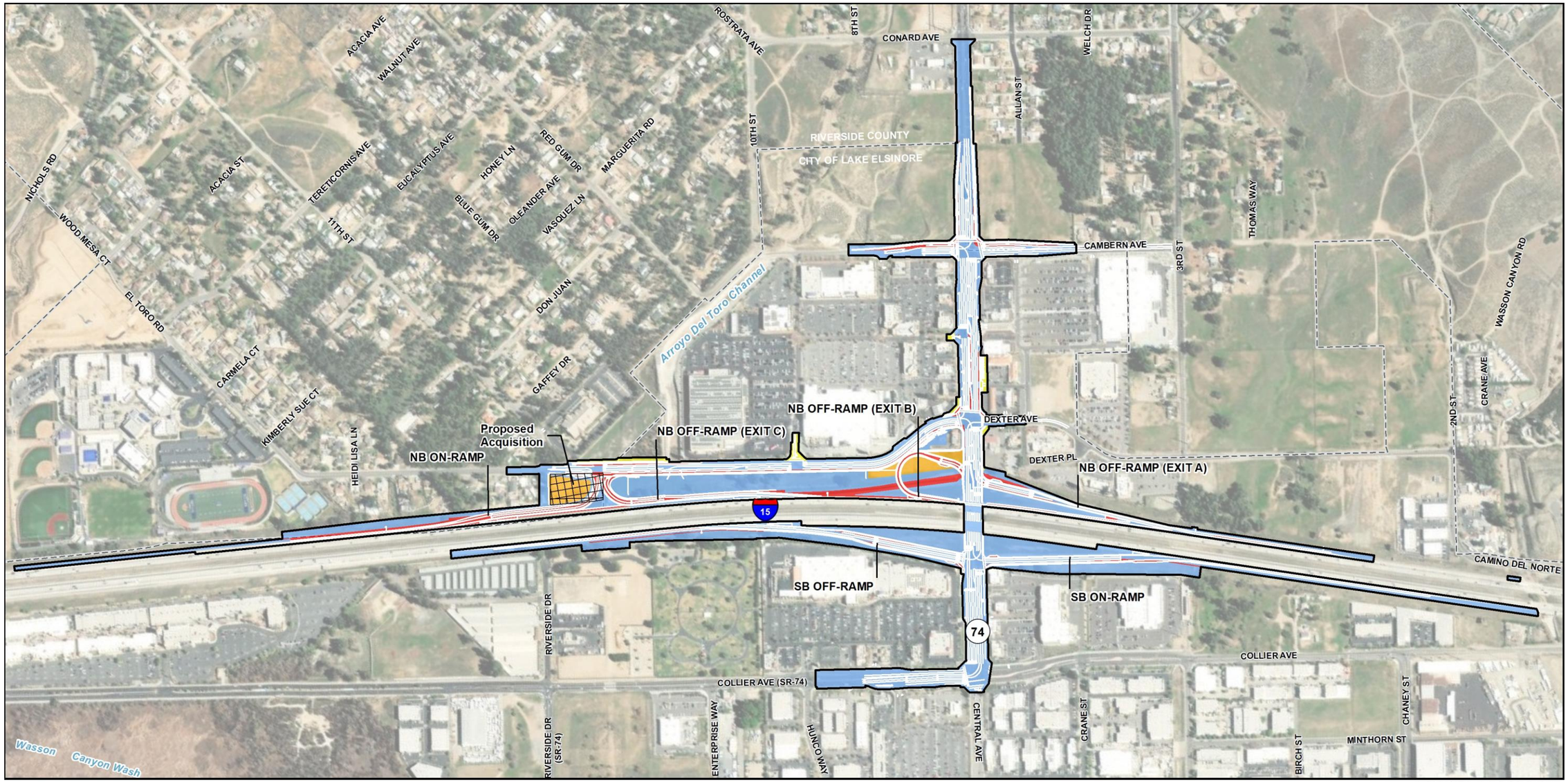

LEGEND

- Project Limits
- Alternative 3
- City/County Boundary

Alternative 3 Disturbance Areas

- Permanent Impact Areas
- Temporary Impact Areas
- Temporary Construction Easement
- Staging Areas

- Proposed Acquisition

0 Feet 700

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 1-4. Alternative 3 (Preferred Alternative) Project Features

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1.4.4 Common Design Features of the Build Alternatives

The following are common design features for Alternative 2 and Alternative 3 (Preferred Alternative):

- Maintain the existing NB off-ramp at SR-74 (Central Avenue) and replace the existing NB on-ramp with on- and off-NB hook ramps terminating at Dexter Avenue, north of SR-74 (Central Avenue).
- Widen Dexter Avenue between 11th Street and SR-74 (Central Avenue) to provide two lanes in each direction between the NB hook off-ramp and WB SR-74 (Central Avenue).
- Restripe Collier Avenue to add a third left-turn lane to eastbound (EB) SR-74 (Central Avenue).
- Widen the SB on- and off-ramps to add one lane and increase storage capacity.
- Modify the outside shoulder in both directions of the I-15 mainline corridor to add segments of auxiliary lane for ramp exits and entrances.
- Replace an existing noise barrier located along the NB hook on-ramp.
- Install drainage culvert extensions and other modifications to maintain existing capacity at the Arroyo Del Toro Channel outfall infiltration basin located between I-15 and Dexter Avenue (north of SR-74 [Central Avenue]).
- Widen the intersections of SR-74 (Central Avenue) at Dexter Avenue and SR-74 (Central Avenue) at Cambern Avenue to provide additional through and turning lanes.
- Modify traffic signals and construct a new half-signal between Dexter Avenue and Cambern Avenue for left turns from EB SR-74 (Central Avenue) to the Costco/Lowe's shopping center.
- Install new traffic signals on Dexter Avenue at the Costco Driveway and at the intersection with the NB Hook Ramps.
- Install new sidewalks along the east side of Dexter Avenue between the Arroyo Del Toro Channel and the Latter Day Saints Church and on the south side of SR-74 (Central Avenue) between the SB on-ramp and Dexter Avenue, where currently no sidewalk exists.
- Construction will occur mostly within existing Caltrans, City, and County ROW and will primarily occur within previously disturbed areas.
- ROW affected parcels and type of acquisition required to implement Project improvements except for the Burger King property located in the northwest quadrant of SR-74 and Dexter Avenue.

- Minor utility relocations.
- Install additional freeway signage near the existing NB off-ramp (Exit A) and the NB hook off-ramp (Exit B).
- The flat infield areas located between the existing ramps and I-15 will serve as staging and material laydown areas during construction.
- Construction staging and timeline of approximately 14 to 18 months.
- The existing I-15/SR-74 interchange bridge overcrossing (OC) and retaining walls will be protected in place.
- Access to NB I-15 will be maintained throughout Project construction.

1.4.5 Unique Features of Build Alternatives

The primary difference or unique features between Alternative 2 and Alternative 3 (Preferred Alternative) are provided below. The same improvements under Alternative 2 will occur under Alternative 3 (Preferred Alternative).

1.4.5.1 Alternative 1 (No-Build)

- The I-15/SR-74 interchange will remain in its current condition, and no improvements will be implemented.
- As local and regional development continues and the traffic demand increases, traffic operations at the I-15/SR-74 interchange will further deteriorate, resulting in increased congestion, vehicle delay, safety concerns, vehicle-operating costs, and vehicle emissions due to slower operating speeds on both I-15 and local roads.
- Will not address or alleviate the existing and forecasted operational and capacity issues of the I-15/SR-74 interchange and will not satisfy the Project purpose and need.

1.4.5.2 Alternative 2 (NB Hook Ramps)

- The NB hook off-ramp requires a dual-lane exit from I-15, and one left-turn and two right-turn lanes at its intersection with Dexter Avenue.
- Requires full acquisition of the Burger King property located in the northwest quadrant of SR-74 and Dexter Avenue.

1.4.5.3 Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

- The NB hook off-ramp requires a single-lane exit from I-15, one left and one right-turn lane at its intersection with Dexter Avenue.
- Provide three consecutive NB off-ramps. The existing NB off-ramp (Exit A) will remain, followed by a loop off-ramp (Exit B) diverging from I-15, just past the existing I-15/SR-74 interchange bridge OC, as well as a hook off-ramp (Exit C). The NB loop off-ramp (Exit B) will be constructed in the area where the existing NB on-ramp exists and on adjacent properties within City ROW. This improvement will provide a direct connection between NB I-15 and WB SR-74 (Central Avenue) without routing directional traffic along Dexter Avenue.
- Requires a TCE and partial acquisition of the Burger King property located in the northwest quadrant of SR-74 and Dexter Avenue.

1.5 Comparison of Alternatives

Table 1-3 provides a comparison of the alternatives, including the potential environmental impacts for each alternative. For detailed information regarding the potential environmental impacts summarized in Table 1-3, please refer to Chapter 2 of this document.

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Table 1-3. Comparison of Alternatives

Potential Environmental Impacts by Alternative			
Environmental Resource Topic	**Alternative 1 (No-Build)**	**Alternative 2 (NB Hook Ramps)**	**Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)**
Existing and Future Land Use	No impact.	Conversion of non-transportation uses to transportation uses. No adverse impacts to land use.	Same as Alternative 2.
Consistency with State, Regional, and Local Plans	Not consistent with Federal, Regional, or Local Plans. State Plan was not applicable.	Consistent with Federal, State, Regional, and Local Plans.	Same as Alternative 2.
Parks and Recreational Facilities	No impact.	No temporary or permanent impacts anticipated.	Same as Alternative 2.
Farmlands	No impact.	A TCE will be required on land identified as farmlands of local importance. Additionally, 1.02 acres of farmland of local importance will be permanently converted to non-farmland uses.	Same as Alternative 2.
Growth	Not consistent with the planned growth for the area as identified within the SCAG 2020-2045 RTP/SCS.	Planned transportation growth will be accommodated. The Project will not result in an increase of population growth or employment.	Same as Alternative 2.

Table 1-3. Comparison of Alternatives

Potential Environmental Impacts by Alternative			
Environmental Resource Topic	**Alternative 1 (No-Build)**	**Alternative 2 (NB Hook Ramps)**	**Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)**
Community Character and Cohesion	No impact.	Temporary impacts may occur during construction. The Project will improve mobility, accommodate future growth for the area, and support continued development of the business district as the employment and retail hub of the City.	Same as Alternative 2.
Relocations and Real Property Acquisition	No impact.	Construction will result in: • 13 TCEs totaling 1.0 acre • Permanent partial acquisition of nine parcels totaling 0.6 acre • Permanent full acquisition of five parcels totaling 2.1 acres	Construction will result in: • 15 TCEs totaling 1.1 acres • Permanent partial acquisition of 11 parcels totaling 0.7 acre • Permanent full acquisition of three parcels totaling 1.3 acres
Environmental Justice (EJ)	No impact.	Construction activities may cause traffic delays, noise, and degradation of air quality for local residents, businesses, and commuters, including EJ populations. However, these impacts will be temporary. The Project will not result in permanent impacts to EJ populations. Therefore, the	Same as Alternative 2.

Table 1-3. Comparison of Alternatives

Potential Environmental Impacts by Alternative			
Environmental Resource Topic	**Alternative 1 (No-Build)**	**Alternative 2 (NB Hook Ramps)**	**Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)**
		Project will not result in disproportionate impacts to EJ populations.	
Section 4(f) Resources	No impact.	No impact.	Same as Alternative 2.
Utilities and Emergency Services	No impact.	Minor utility relocations will be required. No temporary or permanent interruptions to utility services are anticipated.	Same as Alternative 2.
Traffic and Transportation	Under Alternative 1 in the Horizon Year (2045), the following is a summary of the number of I-15 freeway mainline segments and intersection operations that will operate at unsatisfactory LOS E or F conditions during peak periods: **Freeway Operations** • 4 segments in the AM peak period • 9 segments in the PM peak period	Under Alternative 2 in the Horizon Year (2045), the following is a summary of the number of I-15 freeway mainline segments and intersection operations that will operate at unsatisfactory LOS E or F conditions during peak periods: **Freeway Operations** • 1 segment in the AM peak period and 4 segments in the PM peak period **Intersection Operations** • No intersections in the AM peak period and 1 intersection in the PM peak period	Under Alternative 3 (Preferred Alternative) in the Horizon Year (2045), the following is a summary of the number of I-15 freeway mainline segments and intersection operations that will operate at unsatisfactory LOS E or F conditions during peak periods: **Freeway Operations** • 2 segments in the AM peak period and 5 segments in the PM peak period **Intersection Operations** • No intersections in the AM or PM peak periods

Table 1-3. Comparison of Alternatives

Potential Environmental Impacts by Alternative			
Environmental Resource Topic	**Alternative 1 (No-Build)**	**Alternative 2 (NB Hook Ramps)**	**Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)**
	Intersection Operations • 6 intersections in the AM peak period • 10 intersections in the PM peak period		
Visual/Aesthetics	No impact.	Short-term visual impacts may occur during construction. Potential permanent landscaping removal and installation may result in moderately low visual impacts.	Same as Alternative 2.
Cultural Resources	No impact.	Temporary impacts may occur during excavation activities. Any disturbance of non-renewable buried archaeological resources during construction will be considered a permanent impact the resource. While the potential to discover an unknown archaeological resource is moderate, implementation of Caltrans' standard practice for the discovery of cultural resources and human remains will minimize the potential to inadvertently	Same as Alternative 2.

Table 1-3. Comparison of Alternatives

Potential Environmental Impacts by Alternative			
Environmental Resource Topic	**Alternative 1 (No-Build)**	**Alternative 2 (NB Hook Ramps)**	**Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)**
		permanently impact archaeological resources.	
Hydrology and Floodplains	No impact.	During construction, temporary falsework will be required within the Arroyo Del Toro Channel which is located within a 100-year floodplain. The Project will prepare and file a CLOMR with FEMA to document the revised floodplain boundaries, certify no-rise in water surface, and to preserve the beneficial use of the floodplain for flood attenuation.	Same as Alternative 2.
Water Quality and Stormwater Runoff	No impact.	Total DSA will be 35.4 acres and total increase in impervious surface area will be 8 acres. The Project has the potential to result in temporary and permanent impacts to water quality; however, the Project will comply with NPDES permit requirements and prepare a SWPPP during final design (PS&E) to avoid and minimize temporary impacts. Design pollution prevention and treatment BMPs will be implemented to	Similar to Alternative 2 with the exception that the total DSA will be 34.9 acres and the total increase in impervious surface area will be 9 acres. The same permit requirements and BMPs under Alternative 2 will apply to Alternative 3 (Preferred Alternative).

Table 1-3. Comparison of Alternatives

Potential Environmental Impacts by Alternative			
Environmental Resource Topic	**Alternative 1 (No-Build)**	**Alternative 2 (NB Hook Ramps)**	**Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)**
		minimize permanent impacts. The following permits will also be required: 404, 401, and 1602.	
Geology/Soils/Seismic/ Topography	No impact.	The Project is located within a seismically active region and is susceptible to strong seismic ground shaking and settlement of dry soils. The Project is also located within a high liquefaction zone and is susceptible to lateral spreading. A geotechnical report will be prepared.	Same as Alternative 2.
Paleontology	No impact.	Ground disturbance activities have the potential to encounter paleontological resources. A PMP should be prepared by a qualified paleontologist during final design to minimize potential impacts to paleontological resources.	Same as Alternative 2.
Hazardous Waste/Materials	No impact.	The Project has the potential to encounter hazardous materials and waste during construction activities including TWW, PCBs, and PTS. In addition, full acquisition	Same as Alternative 2 with the exception that only a partial acquisition and a TCE will be required of the Burger King property where no impacts will occur to the building

Table 1-3. Comparison of Alternatives

Potential Environmental Impacts by Alternative			
Environmental Resource Topic	**Alternative 1 (No-Build)**	**Alternative 2 (NB Hook Ramps)**	**Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)**
		of the Burger King property will be required. There is a potential for ACM and LBP to be present in the Burger King building structure and soils surrounding the structure and PCBs in the light ballasts. Implementation of site-specific recommended actions, including sampling activities, will result in no permanent adverse impacts.	structure or light ballasts. Therefore, ACM, LPB, and PCBs are not of a concern for this property under Alternative 3 (Preferred Alternative).
Air Quality	Under Alternative 1, the Project will not be constructed, and traffic operations and safety will not be improved. In addition, Alternative 1 will not be consistent with the current approved 2020 2045 RTP/SCS and 2023 FTIP. Therefore, there will be substantial permanent adverse impacts to air quality under Alternative 1.	Construction activities will result in temporary emissions of CO_2e, CO, NO_X, PM_{10}, and $PM_{2.5}$. No permanent impacts will occur to air quality, as it relates to regional and Project air quality conformity, and operational emissions.	Same as Alternative 2.
Noise	No impact.	Temporary noise impacts will occur during construction activities. An increase in operational noise will also occur in the noise	Same as Alternative 2.

Table 1-3. Comparison of Alternatives

Potential Environmental Impacts by Alternative			
Environmental Resource Topic	**Alternative 1 (No-Build)**	**Alternative 2 (NB Hook Ramps)**	**Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)**
		analysis Horizon Year (2050) potentially resulting in permanent impacts from noise. Measures will be implemented to reduce noise impacts during construction. Noise barriers have been considered to abate operational noise impacts, but only Barrier N1202B will be constructed to replace a portion of an existing masonry soundwall located along the NB hook on-ramp.	
Energy	No impact.	The Project will not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction. No permanent adverse impacts are anticipated.	Same as Alternative 2.
Natural Communities	No impact.	The Project will result in: • 0.47 acres of temporary impacts • A permanent loss of 0.11 acre of mulefat thickets Compensatory mitigation will be required for the temporary and permanent loss of mulefat thickets.	The Project will result in: • 0.51 acres of temporary impacts • A permanent loss of 0.07 acre of mulefat thickets Compensatory mitigation will be required for the temporary and permanent loss of mulefat thickets.

Table 1-3. Comparison of Alternatives

Potential Environmental Impacts by Alternative			
Environmental Resource Topic	**Alternative 1 (No-Build)**	**Alternative 2 (NB Hook Ramps)**	**Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)**
Wetlands and Other Waters	No impact.	The Project will temporarily impact up to: • 0.40 acre of non-wetland waters of the U.S. • 0.41 acre of CDFW unvegetated streambed • 0.48 acre of CDFW riparian habitat Additionally, the Project will permanently impact up to: • 0.07 acre of non-wetland waters of the State • 0.07 acre of CDFW unvegetated streambed • 0.09 acre of CDFW riparian habitat Compensatory mitigation will be required for temporary and permanent impacts to jurisdictional resources.	Same as Alternative 2 with the exception that Alternative 3 (Preferred Alternative) will: • Temporarily impact up to 0.52 acre of CDFW riparian habitat • Permanently impact up to 0.06 acre of CDFW riparian habitat. Compensatory mitigation will be required for temporary and permanent impacts to jurisdictional resources.
Plant Species	No impact.	No impact.	Same as Alternative 2.
Animal Species	No impact.	Temporary impacts may occur to BUOW, bat species, coast horned lizard, loggerhead shrike, San Diego black-tailed jackrabbit, California glossy snake, and	Same as Alternative 2 with the exception that Alternative 3 (Preferred Alternative) will result in permanent impacts to 0.44 acres of suitable BUOW habitat; however, no permanent impacts are anticipated due to

Table 1-3. Comparison of Alternatives

Potential Environmental Impacts by Alternative			
Environmental Resource Topic	**Alternative 1 (No-Build)**	**Alternative 2 (NB Hook Ramps)**	**Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)**
		migratory birds during construction activities. The Project will result in permanent impacts to 0.47 acres of suitable BUOW habitat; however, no permanent impacts are anticipated due to absence of this species during Project surveys. The Project will result in permanent impacts to 4.8 acres of Mediterranean California Naturalized Annual and Perennial Grassland which is suitable habitat for the loggerhead shrike and San Diego black-tailed jackrabbit; however, no permanent impacts to the San Diego black-tailed jackrabbit are anticipated.	absence of this species during Project surveys.
Threatened and Endangered Species	No impact.	No impact.	Same as Alternative 2.
Invasive Species	No impact.	EO 13112 and Caltrans SSP 14.6-05 will be implemented to limit the impacts to the introduction and spread of invasive species.	Same as Alternative 2.

Table 1-3. Comparison of Alternatives

Potential Environmental Impacts by Alternative			
Environmental Resource Topic	**Alternative 1 (No-Build)**	**Alternative 2 (NB Hook Ramps)**	**Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)**
		No temporary or permanent adverse effects are anticipated.	
Construction	None.	Up to 18 months.	Same as Alternative 2.

Notes:

ACM=asbestos-containing materials; BUOW=burrowing owl; CDFW=California Department of Fish and Wildlife; CLOMR=Conditional Letter of Map Revision; CO=carbon monoxide; CO_2e=carbon dioxide equivalent; DSA=disturbed soil area; EJ=environmental justice; EO=Executive Order; FEMA=Federal Emergency Management Agency; LBP=lead-based paint; NO_X=nitrogen oxide; PCB=polychlorinated biphenyls; PM_{10}=particles of 10 micrometers or smaller; $PM_{2.5}$=particles of 2.5 micrometers or smaller; PMP=Pavement Management Program; PTS=paint and thermoplastic striping; RTP=Regional Transportation Plan; SCAG=Southern California Association of Governments; SCS=Sustainable Communities Strategy; SSP=Standard Special Provision; SWPPP=Stormwater Pollution Prevention Plan; TBD=to be determined; TCE=temporary construction easement; TWW=treated wood waste; WB=westbound

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1.6 Selection of the Preferred Alternative

After the public circulation period, all comments were considered prior to selecting the Preferred Alternative. The Project Development Team (PDT) selected Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) after careful consideration of all contributing factors. Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) has been selected as the Preferred Alternative because it best satisfies the purpose and need of the Project. The Preferred Alternative has also been documented within the Project Report. The potential environmental effects of the Build Alternatives are approximately the same.

1.7 Alternatives Considered but Eliminated from Further Discussion Prior to the "Draft" Initial Study/Environmental Assessment (IS/EA)

1.7.1 Transportation System Management and Transportation Demand Management Alternatives

Transportation system management (TSM) strategies increase the efficiency of existing facilities; they are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes. Examples of TSM strategies include ramp metering, auxiliary lanes, turning lanes, reversible lanes, and traffic signal coordination. Transportation system management (TSM) also promotes automobile, public, and private transit; ridesharing programs; and bicycle and pedestrian improvements as elements of a unified urban transportation system. Modal alternatives integrate multiple forms of transportation modes, such as pedestrian, bicycle, automobile, rail, and mass transit. A TSM alternative would not meet the Project purpose and need. The Project need is to alleviate congestion within the I-15/SR-74 interchange to enhance its operational efficiency. Therefore, a TSM alternative alone would not meet the Project purpose and need. Although TSM measures alone could not satisfy the purpose and need of the Project, the following TSM measures have been incorporated into the build alternatives for this Project: ramp metering, segments of auxiliary lanes, and signal coordination.

Transportation demand management (TDM) focuses on regional means of reducing the number of vehicle trips and vehicle miles traveled (VMT), as well as increasing vehicle occupancy. It facilitates higher vehicle occupancy or reduces traffic congestion by expanding the traveler's transportation options in terms of travel method, travel time, travel route, travel cost, and the quality and convenience of the travel experience. A typical activity would be providing funds to regional agencies

that are actively promoting ridesharing, maintaining rideshare databases, and providing limited rideshare services to employers and individuals. Transportation Demand Management (TDM) alternative measures alone could not satisfy the Project purpose and need. A TDM alternative would improve mobility by providing alternative modes to increase vehicle occupancy, which are not aligned with the Project need, which is to improve traffic operations and mobility. Therefore, TSM/TDM has been eliminated from further consideration.

1.7.1.1 Reversible Lanes

Assembly Bill 2542 amended California Streets and Highways code to require, effective January 1, 2017, that Caltrans or a regional transportation planning agency demonstrate that reversible lanes were considered when submitting a capacity-increasing project or a major street or highway lane realignment project to the commission for approval.

Reversible lanes are not considered feasible for this Project because the majority of the improvements will occur on a local road with raised medians and would not substantially increase VMT within the existing I-15/SR-74 interchange. Therefore, reversible lanes have been eliminated from further consideration.

1.7.1.2 Project Study Report/Project Development Phase Alternatives

A Project Study Report/Project Development Support (PSR/PDS) document was prepared in 2005 which evaluated a no-build alternative and two build alternatives, which included Partial Cloverleaf interchanges at I-15 and SR-74 with a new bridge OC over I-15 at Riverside Drive.

Based on the initial studies, these build alternatives required substantial ROW takes. In addition, traffic analysis and modeling conducted in support of the build alternatives indicated that these build alternatives would not provide an acceptable level of service (LOS) to accommodate the expected growth and increments in traffic volumes within the I-15/SR-74 interchange. The PSR/PDS traffic analysis also concluded that the new OC at Riverside Drive would not significantly benefit the traffic operations at the I-15/SR-74 interchange. Therefore, these alternatives would not meet the purpose and need for the Project and were eliminated from consideration during the Project Approval & Environmental Document (PA&ED) phase.

1.7.1.3 Other Alternatives Considered and Eliminated from Consideration

When the current PA&ED phase was initiated in 2018, additional build alternatives were developed by the Project design team based on current Project site constraints. The additional build alternatives that were developed but have been eliminated from further consideration are described below.

Diverging Diamond Interchange

A Diverging Diamond Interchange (DDI) was developed for PDT consideration which provided four lanes in each direction on Central Avenue. Additional ROW takes would be required to accommodate street widening and the directional crossover on the east side of I-15, and the widening of intersections along Central Avenue and improvements along Central Avenue on the east side up to Conard Avenue was also evaluated.

As the traffic operations analysis was advanced on this alternative, it was concluded that the DDI would fail to provide an acceptable LOS before the design year unless the undercrossing of I-15 at Central Avenue is widened to accommodate 9 lanes. Since the widening would require the reconstruction of the freeway bridge structures, it would result in significant impacts to I-15 freeway operations. Therefore, the DDI Alternative was dropped from further consideration.

Partial Diamond Interchange

A Partial Diamond Interchange was developed for the PDT to consider and consisted of five different design variations; two with hook ramps that intersect with Dexter Avenue at 3rd Street south of Central Avenue, and three with hook ramps that intersect with Dexter Avenue north of Central Avenue and included a connector road (couplet) between SB Dexter Avenue and WB SR-74.

For the Partial Diamond Interchange, members of the PDT did not approve of the proposed NB hook ramps terminal on Dexter Avenue across from a local road (3rd Street) nor across from a private driveway or that created closely spaced intersections. There was also a disagreement with providing a connector road (couplet) between SB Dexter Avenue and WB SR-74 as this was perceived as a continuation of the NB hook off-ramp along Dexter Avenue. Therefore, all five design variations of the Partial Diamond Interchange were dropped from further consideration.

Value Analysis Alternatives

A mini Value Analysis Study was conducted for four alternatives as described below.

Value Analysis Alternative 1

Alternative 1 of the Value Analysis evaluated the removal of the existing NB off-ramp and would serve Dexter Avenue with a cul-de-sac north of 3rd Street. Alternative 1 would also include building a NB off-ramp and NB loop on-ramp that uses a portion of the existing Dexter Avenue to terminate at the Dexter Avenue/Central Avenue intersection, constructing a new bridge structure for NB loop on-ramp over Central Avenue, realigning NB on-ramp away from the freeway to make room for a portion of the NB loop on-ramp, and widening of local roadways and of the existing SB on-ramp and off-ramp to increase storage capacity.

Value Analysis Alternative 2

The proposed design under Alternative 2 of the Value Analysis would extend Cambern Avenue with new OC structures at Dexter Avenue and I-15, connecting to Riverside Drive on the west side of I-15. Alternative 2 would also include the removal of the existing NB on- and SB off-ramps to create collector-distributor (C-D) roads between the new Cambern Avenue OC and Central Avenue, building the SB off- and NB on-ramps on the north side of the Cambern Avenue OC, and widening of local roadways and of the existing SB on-ramp and NB off-ramp to increase storage capacity.

Value Analysis Alternative 3

Alternative 3 of the Value Analysis evaluated the removal of the existing NB off- and on-ramps and would serve Dexter Avenue with a cul-de-sac south of 3rd Street. Alternative 3 would also include building a NB off-ramp and NB loop on-ramp that uses a portion of the existing Dexter Avenue to terminate at the Dexter Avenue/3rd Street intersection, building a NB loop off-ramp to WB Central Avenue (SR-74) where the existing NB on-ramp is located, constructing a new bridge structure for the NB loop off-ramp over Central Avenue, and widening of local roadways and of the existing SB on- and off-ramps to increase storage capacity.

Value Analysis Alternative 4

Alternative 4 of the Value Analysis is similar to Alternative 3, but it adds a SB hook off-ramp that would turn and continue along Riverside Drive up to its intersection at Collier Avenue. Alternative 4 would also create a C-D road along Riverside Drive and parallel to a portion of the SB hook off-ramp, which would turn in a southerly direction to run parallel to SB I-15 and then join the existing SB off-ramp. The existing SB off-ramp exit is preserved and the ramp merges with the C-D road. New access roads are created for properties east of Collier Avenue on the north and south sides of Riverside Drive, since that segment of Riverside Drive would become part of the new SB hook off-ramp and C-D road.

Value Analysis Alternatives 1 through 4 were considered but eliminated from further consideration due to traffic operations, costs, and impacts; however, the NB loop ramp that was identified from the Value Analysis process was carried forward as part of the Project's Alternative 3 (Preferred Alternative; NB hook ramps with NB loop off-ramp to WB SR-74).

1.8 Permits and Approvals Needed

Table 1-4 shows the permits, licenses, agreements, and certifications that will be required for construction of the Project.

Table 1-4. Required Permits, Reviews, and Approvals

Agency	Permit, Licenses, Agreements, and Certifications	Status
CDFW	California Department of Fish and Game Code, Section 1602 Lake and Streambed Alteration Agreement	The City of Lake Elsinore will submit the application after approval of the Final IS/EA.
Santa Ana RWQCB	Santa Ana RWQCB, Clean Water Act Section 401 Water Quality Certification	The City of Lake Elsinore will submit the application after approval of the Final IS/EA.
USACE	Clean Water Act Section 404 Nationwide Permit	It is anticipated that the Project will be eligible for Section 404 authorization under the current Nationwide Permit 14 for Linear Transportation Projects.
Western Riverside County Regional Conservation Authority, USFWS and CDFW, USACE, and Santa Ana RWQCB	JPR / DBESP Approval	The JPR Application and DBESP Report was submitted to the USFWS and CDFW on November 22, 2021, and concurrence was received on June 14, 2024.
Riverside County Flood Control District	Encroachment Permit	The City of Lake Elsinore will submit the application after approval of the Final IS/EA.
CTC	CTC vote to approve funds	Following the approval of the Final Project Report and the Final IS/EA, the CTC will be required to vote to approve funding for the Project.
FHWA	Air Quality Conformity Approval Letter	The Air Quality Conformity report was submitted to FHWA on July 17, 2024 and conformity was received on August 9, 2024.

Table 1-4. Required Permits, Reviews, and Approvals

Agency	Permit, Licenses, Agreements, and Certifications	Status
SWRCB	Caltrans NPDES Permit, Statewide Storm Water Permit Waste Discharge Requirements for the State of California, Department of Transportation, Order No. 2022-0033-DWQ, NPDES No. CAS000003	Caltrans District 8 and the City of Lake Elsinore will ensure compliance with the SWRCB-issued Caltrans NPDES Permit.
SWRCB	NPDES Construction General Permit, Waste Discharges of Storm Water Runoff Associated with Construction Activities, Order No. WQ 2022-0057-DWQ, NPDES No. CAS000002	Caltrans District 8 and the City of Lake Elsinore will apply jointly by preparing a SWPPP and submitting an NOI and other permit registration documents prior to any Project construction.
Santa Ana RWQCB	General Waste Discharge Requirements for Discharges to Surface Waters That Pose an Insignificant (De minimis) Threat to Water Quality (Order No. R8-2015-0004, NPDES No. CAG998001)	If dewatering is required, Caltrans District 8 and the City of Lake Elsinore will apply jointly and obtain prior to dewatering activities.

Notes:

Caltrans=California Department of Transportation; CDFW=California Department of Fish and Wildlife; CTC=California Transportation Commission; CESA=California Endangered Species Act; DBESP = Determination of Biologically Equivalent or Superior Preservation; EA=Environmental Assessment; FHWA=Federal Highway Administration; IS=Initial Study; JPR = Joint Project Review; No.=number; NOI=Notice of Intent; NPDES=National Pollutant Discharge Elimination System; RWQCB=Regional Water Quality Control Board; SWRCB=State Water Resources Control Board; SWPPP=Stormwater Pollution Prevention Plan; USACE=United States Army Corps of Engineers; USFWS=United States Fish and Wildlife Service

2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Topics Considered But Determined Not To Be Relevant

As a part of the scoping and environmental analysis carried out for the Project, the following environmental issues were considered but no adverse impacts were identified. As a result, there is no further discussion about these issues in this document.

- **Timberlands:** The Project is located approximately 3.5 miles north of the foothills of the Cleveland National Forest. Thus, there is no timberland within the Project limits or area surrounding the Project limits.
- **Coastal Zone:** There will be no effects on coastal resources because the Project is not located within the coastal zone.
- **Wild and Scenic Rivers:** There are no wild and scenic rivers within the Project limits or the area surrounding the Project limits. The Project is located approximately 32 miles west of the Bautista Creek Wild and Scenic River, which is the nearest river designated in the National Wild and Scenic Rivers System.
- **National Marine Fisheries Service Jurisdiction:** This Project is located outside of National Marine Fisheries Service jurisdiction; therefore, a National Marine Fisheries Service species list is not required and no effects on National Marine Fisheries Service species are anticipated.

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2.1 Existing and Future Land Use

The following sections discuss and evaluate potential effects on the quality of the human environment. The analyses are based on information contained in the *Community Impact Assessment* (Caltrans 2021a), *Relocation Impact Memorandum* (Caltrans 2020a), *Visual Impact Assessment* (Caltrans 2020b), *Historic Property Survey Report* (Applied EarthWorks 2021a), *Air Quality Report* (Caltrans 2020d), and *Traffic Operations Analysis Report* (Caltrans 2020e) prepared for the Project.

2.1.1 Affected Environment

This section addresses potential effects on existing and describes potential changes to future land uses located within the Project limits that could result from the implementation of the Project. This section describes the relationship between the Project and existing land uses within the land use study area. As shown on Figure 2.1-1, the land use study area encompasses the Project limits and a 0.5-mile buffer from the Project limits.

The City is divided into 11 districts and 5 sphere districts that define the neighborhoods. The majority of the Project is located within Business District and also partially within the North Central Sphere District (Figure 2.1-1). A description of these land use district plans is provided below.

Business District

As shown on Figure 2.1-1, the Project is located predominantly within the City's Business District. According to the Business District Plan (City of Lake Elsinore 2011b), the district has the highest concentration of industrial and commercial uses in the City and is focused on being the industrial and commercial hub of the City. The district includes approximately 1,323 acres and primarily consists of industrial and commercial uses and serves as the primary employment and shopping center for the City. Existing commercial uses include large commercial centers such as the Outlets at Lake Elsinore, Lake Elsinore Market Place, and Oak Grove Crossing, all of which contain large chain stores (i.e., Home Depot, Lowes, Target, Costco and the 99 Cents Only Store). There are also scattered industrial parks and limited manufacturing sites. Most of the industrial uses are concentrated in the southern areas of the Business District, southwest of I-15 and south of Collier Avenue, which is the district's main northwest/southeast roadway. Commercial uses are easily accessible from the I-15/SR-74 interchange.

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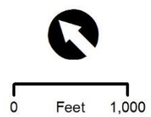

LEGEND

- Project Limits
- Land Use Study Area (0.5 mile buffer)
- City/County Boundary

Land Use Plans and Districts

- Alberhill District
- Business District
- Lake Elsinore Hills District
- North Central Sphere District

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 2.1-1. City of Lake Elsinore Planning Districts

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The district is characterized by low-scale development consisting of a limited amount of public/institutional, commercial, and industrial uses, scattered low-density housing, and vacant/open space areas. Primary developmental constraints within the district include development restrictions associated with Temescal Wash and its associated 100-year floodplain and floodway (City of Lake Elsinore 2011b).

North Central Sphere District

Some portions of the Project are also located within the North Central Sphere District (Figure 2.1-1), which encompasses approximately 4,276 acres (City of Lake Elsinore 2011c). The purpose of the North Central Sphere District is to preserve the existing natural resources, and to ensure that residential development and business professional activities are compatible with surrounding land uses and landscape. This district contains low density housing, open space, and a limited amount of industrial, commercial, and public/institutional uses. Newer commercial development has been constructed within the portion of the district that is directly adjacent to the I-15/SR-74 interchange.

According to the North Central Sphere District Plan (City of Lake Elsinore 2011c), the northern part of the North Central Sphere District is primarily designated as rural open space area with a conservation habitat near the western border. These designated open space areas and Multiple Species Habitat Conservation Plan (MSHCP) conservation areas make up approximately 10 percent of the North Central Sphere District area. Similar to the Business District, the North Central Sphere District has vacant and undeveloped land that is anticipated to support future urban development within the City.

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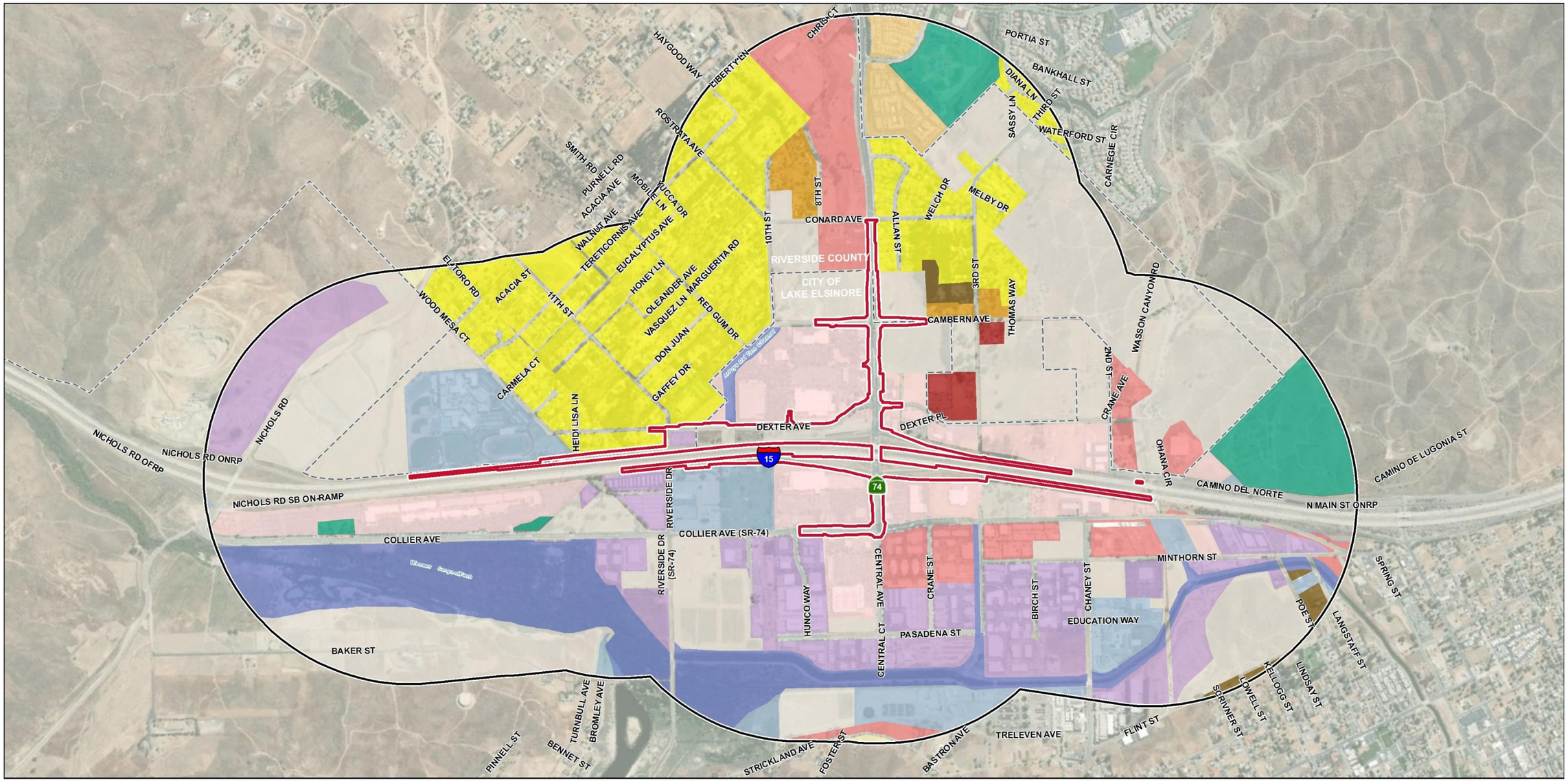

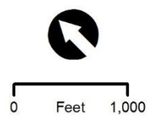

LEGEND

- Project Limits
- Land Use Study Area (0.5 mile buffer)
- City/County Boundary

Existing Land Use

- Hillside Residential
- Low Density Residential
- Low-Medium Residential
- Medium Density Residential
- High Density Residential
- Open Space/Park
- Floodway
- Business Professional
- General Commercial
- Commercial Mixed Use
- Limited Industrial
- Public Institutional
- Vacant/Undeveloped

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 2.1-2. City of Lake Elsinore Existing Land Use

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Based on the aforementioned documents and observation of available aerial mapping, existing land uses within the Project limits are defined in Table 2.1-1 and shown on Figure 2.1-2.

Table 2.1-1. Existing Land Use within the Project Limits

Existing Land Use	Definition
Business Professional	This designation allows office and administrative uses, light industrial, research and development, office-based firms, including office support facilities, restaurants, medical clinics, public and quasi-public uses, and similar and compatible uses.
Floodway	This designation provides for the channel of a river, or watercourse, that is adjacent to land reserved for discharge of a 100-year flood, so that cumulatively, the water service elevation does not increase more than 1 foot.
General Commercial	This designation allows for retail, services, restaurants, professional and administrative offices, hotels and motels, mixed-use projects, public and quasi-public uses, and compatible uses.
Limited Industrial	This designation allows industrial parks, warehouses, manufacturing, research and development, public and quasi-public uses, and similar and compatible uses.
Public Institutional	This designation allows uses owned and maintained by public agencies such as school districts, water districts, utility companies, the County, and the City. Allowed uses include schools, roads, drainage facilities, utility substations, sewage treatment plants, civic facilities and cemeteries, and similar and compatible uses.
Vacant/Undeveloped	This category includes open undeveloped, but developable land within urban areas that are not associated with a particular facility.

Source: City of Lake Elsinore 2011a; SCAG 2017

2.1.1.1 Development Trends

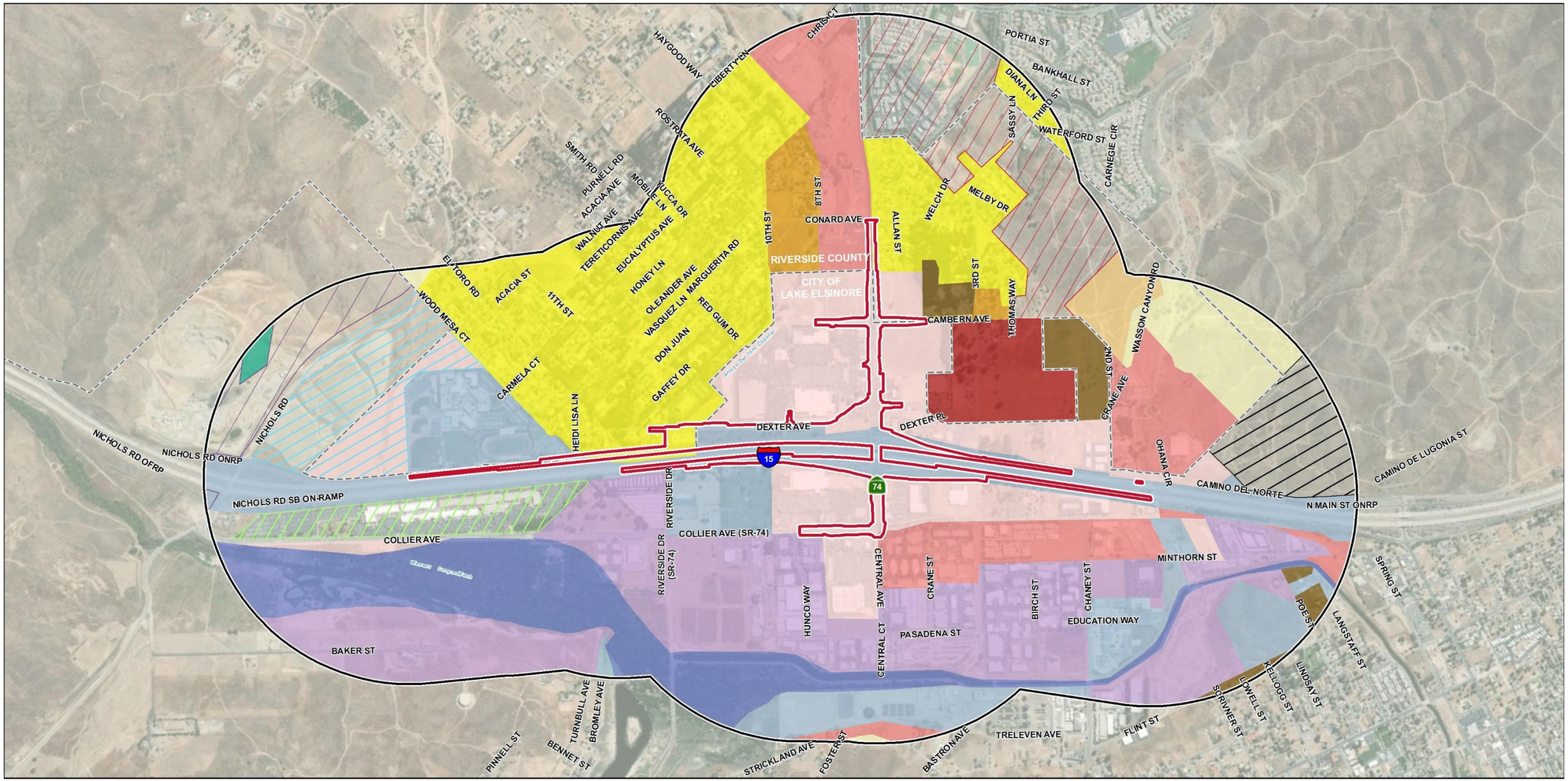
Future Land Uses

The City is one of the fastest growing cities in California and based on data from the American Census Survey (ACS) 2015-2019 5-Year Estimates (U.S. Census Bureau 2020) and the 2020-2045 RTP/SCS (SCAG 2020) projected growth is anticipated to exceed that of the County (see Section 2.5, Growth). The I-15/SR-74 interchange currently serves as the primary access for residents, visitors, businesses, and industry in the area. Therefore, the vacant areas that are scattered within

the land use study area, and adjacent to the I-15/SR-74 interchange, will serve as development opportunity areas to accommodate planned and projected growth for the City. Figure 2.1-3 depicts future land uses proposed by the General Plan (City of Lake Elsinore 2011a), Business District Plan (City of Lake Elsinore 2011b), and North Central Sphere District Plan (City of Lake Elsinore 2011c).

Planned Developments

The Rebuilding California Project Map (Caltrans 2021b), Caltrans' construction map of current projects (Caltrans 2021c), Riverside County Transportation Commission's (RCTC) project list (RCTC 2021), as well as the City's Construction Project List (City of Lake Elsinore 2019a), Fiscal Year 2019-2024 Capital Improvement Budget (City of Lake Elsinore 2019b), Fiscal Year 2020-2025 Capital Improvement Budget (City of Lake Elsinore 2020a), Fiscal Year 2022-2027 Capital Improvement Program Budget (City of Lake Elsinore 2023), and CEQA Documents Available for Public Review (City of Lake Elsinore 2020b) were reviewed to develop a cumulative project list of projects that have been and are being planned. This list of planned projects is summarized in Table 2.1-2 and shown on Figure 2.1-4. The cumulative project list in Section 2.28, Cumulative Impacts provides the locations of projects within the land use study area that have either been constructed, under construction, environmentally approved and considered proposed, or pending approval since 2018.



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LEGEND

- Project Limits
- Land Use Study Area (0.5 mile buffer)
- City/County Boundary

Specific Plans
- Alberhill Ranch
- Lake Elsinore Outlet Center
- Nichols Ranch
- Ramsgate
- Spyglass Ranch

General Plan Land Use
- Hillside Residential
- Low Density Residential
- Low-Medium Residential
- Medium Density Residential
- High Density Residential
- Open Space/Park
- Floodway
- Business Professional
- General Commercial
- Commercial Mixed Use
- Limited Industrial
- Public Institutional

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 2.1-3. City of Lake Elsinore General Plan Land Use

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Table 2.1-2. Planned Projects

Figure 2.1-4 Project No.	Name	Jurisdiction	Descriptions of Projects	Status
1	Central Plaza	City of Lake Elsinore	The project consists of a commercial center totaling approximately 65,803 square feet of development consisting of a main building located on the southern portion of the site and four pad buildings located along Central Avenue. This commercial center will be comprised of approximately 53,469 square feet of retail and 12,334 square feet of restaurant uses. Three of the pad buildings, two with drive-thru windows, will host fast-food restaurant uses.	**Completed**. The project's IS/MND was approved on March 28, 2017. Construction began in August 2018 and was completed in 2021.
2	Tigé Watersport	City of Lake Elsinore	The project is proposing to establish a boat sales, service, and assembly facility that involves the construction of a 25,682 square foot building, and a 9,800 square foot storage building with 66 parking spaces, 44,142 square foot paved area, and 18,469 square foot landscaped area on a lot that is approximately 2.78 acres. The 25,682 square foot building will include office areas along with a service area, manufacturing and assembly area, and show room associated with boat manufacturing and sales. The building will be constructed to a height of 30 feet with two stories. The 9,800 square foot accessory building will be located in the rear and will be used as a temporary boat storage facility to store boats during repair, maintenance, or extended repairs.	**Constructed.** The project's IS/MND was approved on March 27, 2018.
3	Lake Elsinore Honda	City of Lake Elsinore	The project provides a new automobile sales and service facility on an undeveloped parcel at the northeast corner of 3rd Street and Collier Avenue. The building is 53,425 square feet. Two new driveways have been constructed on Collier Avenue.	**Constructed.** The project's IS/MND was approved on August 14, 2018. The project was completed in 2020.

Table 2.1-2. Planned Projects

Figure 2.1-4 Project No.	Name	Jurisdiction	Descriptions of Projects	Status
4	Pennington Industrial Project	City of Lake Elsinore	The project proposes to construct three industrial buildings that are 91,140 square foot in total area with 167 parking spaces. Building 1 will have 32,940 square feet gross floor area, building 2 will have 39,000 square feet gross floor area, and building 3 will have 19,200 square feet gloss floor area. Each building will consist of a planned open warehouse with truck access doors and a planned office area with mezzanine level.	**Proposed.** The project's IS/MND was approved on April 28, 2020.
5	Downtown Curb, Gutter, and Sidewalk Replacement	City of Lake Elsinore	The project involved the design and construction of sidewalks, curb, and gutters and street reconstruction along and near East Pottery Street, East Flint Street, West Franklin Street, East Heald Avenue (from North Chestnut Street to Moroni Avenue), Silver Street (from Sumner to Pottery Street), North Lowell Street and North Kellogg Street (between Lakeshore Drive and Graham Avenue), and North Poe Street and North Langstaff Street (Northeast of West Flint Street).	**Constructed.** The project was completed at the end of 2020.
6	Kassab Travel Center	City of Lake Elsinore	This project proposes to construct a new travel center consisting of an 8,360 square foot convenience store with concurrent sale of alcoholic beverages, three quick serve restaurants, two covered gas dispensing areas totaling 6,092 square feet, a free standing 2,543-square foot fast food restaurant with a drive-through; as well as 59 vehicular parking spaces and three RV parking spaces on an approximately 2.39-net acre site.	**Proposed.** The project's IS/MND was approved on July 14, 2020.

Table 2.1-2. Planned Projects

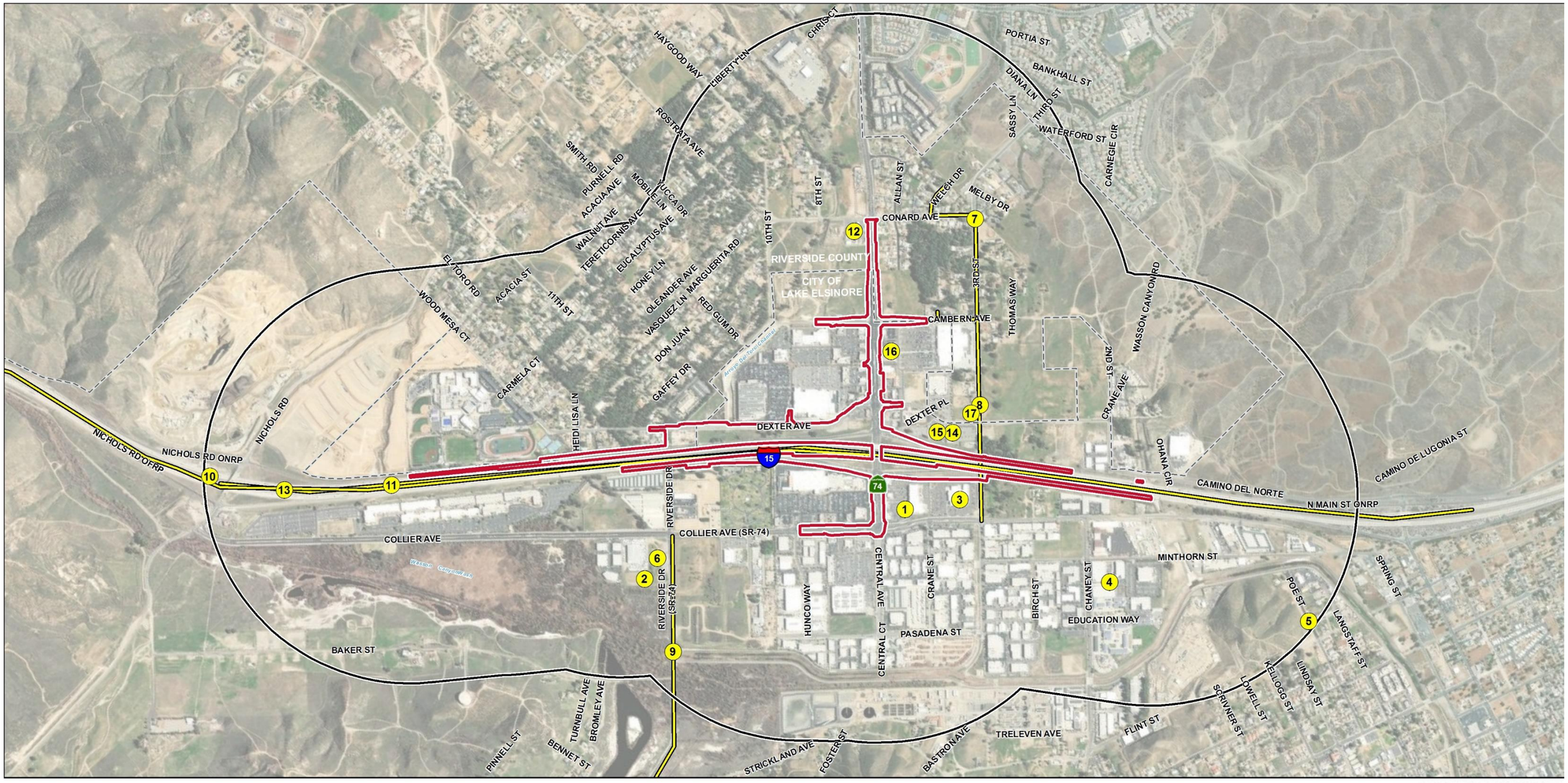
Figure 2.1-4 Project No.	Name	Jurisdiction	Descriptions of Projects	Status
7	3rd Street Drainage Improvements Phase III	City of Lake Elsinore	This project involves the construction of missing storm drain improvements along Third Street, Conard Avenue and Welch Drive starting at Cambern Avenue. Improvements include the construction of new storm drains, catch basins, laterals, and modifications to existing flood control channel downstream.	**Proposed.** The project is currently in the final design phase. The project is anticipated to be complete by 2025.
8	3rd Street Drainage Improvements Phase II	City of Lake Elsinore	This project involves the construction of missing storm drain improvements along Third Street, Conard Avenue and Welch Drive starting at Cambern Avenue. Improvements include the construction of new storm drains, catch basins, laterals, and modifications to existing flood control channel downstream.	**Constructed.** This project was completed in Fall 2018.
9	SR-74 Widening	City of Lake Elsinore	This project will consist of widening SR-74 from two to six lanes (three lanes in each direction), west of I-15 to the Ortega mountains. Other improvements include turn pockets and one traffic signal at the intersection of SR-74 (Riverside Drive) and Grand Avenue.	**Proposed.** The project is anticipated to be complete by 2028.
10	Slab Replacement	Caltrans	The $27.7 million pavement project will replace 54.6 miles of lanes along I-15 from Nichols Road in the City, to north of Temescal Canyon Road in the City of Corona in the County of Riverside.	**Completed.** This project was completed in 2022.
11	Upgrade Facilities to American with Disabilities Act Standards	Caltrans	This project proposes to upgrade facilities to ADA standards in and near Lake Elsinore, Corona, Norco, Jurupa Valley, and Eastvale, at various locations from Bundy Canyon Road to Philadelphia Street (Riverside County line) (PM 16.3/52.270).	**Proposed.** This project is planned for Fiscal Year 2023/2024.

Table 2.1-2. Planned Projects

Figure 2.1-4 Project No.	Name	Jurisdiction	Descriptions of Projects	Status
12	Caltrans Maintenance Facility Extension	Caltrans	This project will construct an extension on the current Caltrans maintenance facility on the corner of Conard Avenue and SR-74. This project also includes ADA upgrades.	**Proposed.** PA&ED was completed in 2022. The Project is currently in the PS&E phase and is anticipated to begin construction in fall 2024.
13	I-15 Express Lanes Project Southern Extension	RCTC	This is a HOV project from PM 22.3 to 36.8. The proposed project would add capacity by extending the I-15 Express Lanes, by an additional 14.5 miles. The proposed new segment would extend from Cajalco Road in Corona, through Temescal Valley, to SR-74 (Central Avenue) in the City of Lake Elsinore. The project proposes adding two tolled express lanes in both directions within the I-15 median to accommodate increasing traffic volumes in Riverside County.	**Proposed.** Construction is anticipated to begin as early as 2025.
14	Golden Corral	City of Lake Elsinore	This restaurant is located along Dexter Avenue, near 3rd Street.	**Completed.** This property has been built.
15	Chick-fil-A	City of Lake Elsinore	This fast-food restaurant is along Dexter Avenue, next to the Golden Corral.	**Completed.** This property has been built.
16	Super Walmart	City of Lake Elsinore	This retail store is located along Central Avenue at Cambern Avenue.	**Completed.** This property has been built.
17	La Quinta Hotel	City of Lake Elsinore	This hotel would be located at the northern corner of 3rd Street and Dexter Avenue. The project would construct a 36,664-square foot, four-story, 64-room hotel on an approximately 1.05-acre site.	**Proposed.** This property is under construction.

Source: City of Lake Elsinore 2023, 2019a, 2019b, 2020a; Caltrans 2021b, 2021d; RCTC 2023

Notes:
ADA=Americans with Disability Act; Caltrans=California Department of Transportation; HOV=high occupancy vehicle; I-15=Interstate 15; IS=Initial Study; MND=Mitigated Negative Declaration; No.=number; PA&ED= Project Approval/Environmental Document; PM=post mile; RV=recreational vehicle; SHOPP=State Highway Operation and Protection Program; SR-74=State Route 74



LEGEND

- Project Limits
- City/County Boundary
- Community Impact Study Area (0.5 mile buffer)

Planned Projects

1 - Central Plaza
2 - Tigé Watersport
3 - Lake Elsinore Honda
4 - Pennington Industrial Project
5 - Downtown Curb, Gutter, and Sidewalk Replacement
6 - Kassab Travel Center
7 - 3rd Street Drainage Improvement Phase III
8 - 3rd Street Drainage Improvements Phase II
9 - SR-74 Widening
10 - Slab Replacement
11 - Upgrade Facilities to American with Disabilities Act Standards
12 - Caltrans Maintenance Facility Extension
13 - I-15 Express Lanes Southern Extension
14 - Golden Corral
15 - Chick-Fil-A
16 - Super Walmart
17 - La Quinta Hotel

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 2.1-4. Planned Projects

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2.1.2 Environmental Consequences

Table 2.1-3 identifies existing land uses that will be impacted as a result of the Project under the Build Alternatives. No impacts will occur under Alternative 1 (No-Build) because the Project will not be constructed and no changes to existing or future land uses will occur.

Table 2.1-3. Existing Land Use Impacts under the Build Alternatives

Land Use Type	Impact (acres)			
	Permanent		Temporary	
	Alternative 2	Alternative 3 (Preferred Alternative)	Alternative 2	Alternative 3 (Preferred Alternative)
Business Professional	0	0	0.13	0.13
Floodway	0.004	0.004	0.027	0.023
General Commercial	0.87	0.20	1.75	2.10
Limited Industrial	1.38	1.38	0	0
Low Density Residential	0	0	0.29	0.29
Public Institutional	0.04	0.03	0.37	0.37
Vacant/Undeveloped	0.65	0.91	4.76	4.51
Total	**2.94**	**2.52**	**7.32**	**7.42**

2.1.2.1 Temporary Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not result in construction of the identified Project improvements. Therefore, there will be no adverse impacts to land use on a temporary basis under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Under Alternative 2, the Project will result in 7.32 acres of temporary impacts to existing land uses, with the greatest temporary impacts to existing general commercial, public institutional, and

vacant/undeveloped land uses within the land use study area. Temporary impacts will include temporary work areas, staging, and TCE.

To implement the roadway and freeway improvements within the Project limits, existing general commercial uses and land that is currently vacant or undeveloped will experience the greatest number of temporary impacts under Alternative 2. Temporary work areas are needed for the improvements along Dexter Avenue and associated driveways. The temporary work area does overlap with property designated for low density residential land uses; however, a church currently exists on the affected property as a permitted use. Properties affected or impacted temporarily by the Project will be returned to original conditions once construction is complete. Therefore, these temporary impacts will not result in substantial adverse impacts to existing land uses.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Under Alternative 3 (Preferred Alternative), the Project will result in slightly greater temporary impacts, equivalent to the conversion of 7.42 acres of existing land uses. The types of existing land uses affected most by the Project will be the same as under Alternative 2.

As discussed in Chapter 1, Project Description, the improvements under Alternative 2 will also occur under Alternative 3, and the Project limits for both Build Alternatives are the same. The primary difference between Build Alternatives is that Alternative 3 will provide three consecutive NB off-ramps.

During construction of the Project under Alternative 3, access to NB I-15 will be maintained. The temporary impacts to land uses associated with the construction of the Project under Alternative 3 will be similar to the temporary impacts identified under Alternative 2, with the exception of the Burger King property, which will require a TCE and temporary work areas within the parking lot. Similar to Alternative 2, areas affected by temporary impacts will be returned to original conditions once construction is complete. Therefore, temporary impacts under Alternative 3 will not result in substantial adverse impacts to existing land uses.

2.1.2.2 Permanent Impacts

Alternative 1 (No-Build)

Alternative 1 will not result in the implementation of the Project. Therefore, there will be no permanent land use impacts as a result of property acquisitions, or changes to land use.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Under Alternative 2, the Project will result in 2.94 acres of permanent impacts to existing land uses, with the greatest permanent impacts to existing general commercial, limited industrial, and vacant/undeveloped land uses within the land use study area. Most of the improvements under Alternative 2 will occur within existing Caltrans, City, and County ROW.

Permanent impacts will result from partial and full acquisitions of properties within the Project limits. Full acquisitions of several properties located west of SR-74 (Central Avenue) and along Dexter Avenue will be required to build a direct connection for right-turn movements between SB Dexter Avenue and WB SR-74 (see Figures 2.7-1 through 2.7-4 and Table 2.7-1 in Section 2.7, Relocations and Real Property Acquisitions, for acquisition details). In addition to the intersection improvements described above, new sidewalks will also be constructed along the widened roadway segments along SR-74 (Central Avenue), and in areas where no sidewalks currently exist, which include the south side of SR-74 (Central Avenue) between Dexter Avenue and the SB on-ramp and the missing sidewalk segment along the east side of Dexter Avenue between the Arroyo Del Toro Channel and the Church of Jesus Christ of Latter-day Saints (LDS).

The permanent impacts to general commercial (0.87 acres) and limited industrial (1.38 acres) land uses under Alternative 2 are a result of the full acquisitions of a Burger King and the R&N Landscape Supply materials yard, and the partial acquisitions of property directly adjacent to the existing roadway to accommodate the improvements along SR-74 (Central Avenue) and Dexter Avenue. Due to the permanent conversion of existing land uses from a non-transportation use to a transportation use, an update to the City's General Plan Land Use Plan will be required. With the implementation of Measure LU-1, which will require that the City's General Plan be amended for consistency during the final design [plans, specifications, and estimates (PS&E)] phase and prior to construction, Alternative 2 will not result in substantial adverse impacts to existing or planned land use patterns and development.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Under Alternative 3 (Preferred Alternative), the Project will result in 2.52 acres of permanent impacts to existing land uses. The types of existing land uses affected most by the Project will be the same as under Alternative 2. As discussed earlier, under temporary impacts for Alternative 3 (Preferred Alternative), both Build Alternatives will have the same improvements and are both located within the same Project limits.

However, the difference in permanent impacts to existing land uses is attributed to impacts to the Burger King property, which is designated for general commercial land uses. Alternative 3 (Preferred Alternative) will only result in a partial acquisition of the outer portion of the Burger King parking lot that is adjacent to the roadway improvements along Dexter Avenue, instead of the full acquisition of the entire property and business required under Alternative 2. The permanent conversion of existing land uses from a non-transportation use to a transportation use under Alternative 3 (Preferred Alternative) will require an update to the City's General Plan during the final design (PS&E) phase and prior to construction, as identified below in Measure LU-1. Therefore, with the implementation of Measure LU-1, Alternative 3 (Preferred Alternative) will not result in substantial adverse impacts to existing or planned land use patterns and development.

2.1.3 Avoidance, Minimization, and/or Mitigation Measures

With implementation of the following measure, no adverse impacts to land uses are anticipated under the Build Alternatives:

LU-1 During the final design (PS&E) phase and prior to construction, the City's Resident Engineer, in coordination with the City's Planning Director, will ensure that the City's General Plan is amended to reflect the land use designations consistent with what has been identified by the Project.

2.2 Consistency with State, Regional, and Local Plans and Programs

2.2.1 Affected Environment

This section addresses the Project's consistency with applicable adopted transportation and land use plans and programs. The land use study area as shown on Figure 2.1-1 of Section 2.1, Existing and Future Land Use, was used to assess land use plan and program regulatory consistency within the selected geographic boundary for the Project.

2.2.1.1 Federal Programs

Final 2023 Federal Transportation Improvement Program

The FTIP is a federally mandated 4-year program of all surface transportation projects that are planned to receive federal funding or are subject to a federally required action. The FTIP is a comprehensive listing of transportation projects proposed over a 6-year period, which include highway improvements for transit, rail, and bus facilities; high-occupancy vehicle (HOV) lanes; high-occupancy toll lanes; signal synchronization; intersection improvements; freeway ramps; non-motorized projects; and bicycle and pedestrian infrastructure. The Project is listed in Amendment 1 of the Final 2023 Adopted FTIP as Project ID # RIV060109 (SCAG 2023), and is described as follows:

> AT I-15/SR-74 (CENTRAL AVE) IC JCT BTWN 1,000 FT W/O COLLIER AVE TO CONARD AVE: REMOVE/REPLACE EXIST NB ON-RAMP WITH NB HOOK ON- AND OFF- RAMPS AT DEXTER AVE NORTH OF CENTRAL AVE, ADD NB LOOP OFF-RAMP AT CENTRAL AVE, ADD AUX LANE SEGMENTS AT ON-/OFF-RAMPS, WIDEN SB ON-/OFF-RAMPS AND SEGMENTS OF CENTRAL AVE AND DEXTER AVE. PM LIMITS FOR SR-74: R15.97 to 17.82 (EA: 0F3100).

2.2.1.2 Regional Plans

Southern California Association of Governments 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy

The SCAG 2020-2045 RTP/SCS (SCAG 2020) identifies and analyzes transportation needs for the region and creates a framework for project priorities. The SCS, which is incorporated into the RTP/SCS per Senate Bill 375, demonstrates how the region would meet its greenhouse gas (GHG) reduction targets. The Project is included in the 2020-2045 RTP/SCS adopted by the SCAG Regional Council on September 3, 2020, and is listed as FTIP Project ID # RIV060109.

2.2.1.3 Local Plans

City of Lake Elsinore General Plan

On December 13, 2011, the Lake Elsinore City Council adopted a new General Plan. The General Plan covers defined geographic areas within the City and its Sphere of Influence along with a planning horizon of 2030. While the City's General Plan does not present a specific plan for individual development, it establishes a framework for future projects and actions based on the General Plan's goals and policies.

The City is divided into 11 districts and 5 sphere districts that define the neighborhoods that make up the City. Of the 11 districts, the Project is located within the Business District and the North Central Sphere District.

Business District

The Business District has the highest concentration of industrial and commercial uses in the City. Therefore, the district focuses on supporting its position as the industrial and commercial hub of the City.

North Central Sphere District

The purpose of the North Central Sphere District is to preserve the existing natural resources, to ensure that residential development and business professional activities are compatible with surrounding land uses and landscape.

2.2.2 Environmental Consequences

Transportation and land use plans within the land use study area were reviewed for goals and policies applicable to the Project. Table 2.2-1 analyzes the consistency of the Project alternatives with these applicable transportation and land use plans.

2.2.2.1 Temporary Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not result in construction of the Project improvements. Therefore, Alternative 1 (No-Build) will be inconsistent with the applicable goals and policies identified in Table 2.2-1, and temporary adverse impacts will occur.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

As summarized in Table 2.2-1, the Project under Alternative 2 is consistent with adopted goals and polices of applicable federal, state, regional, and local plans. Therefore, no temporary adverse impacts will occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

As summarized in Table 2.2-1, the Project under Alternative 3 (Preferred Alternative) is consistent with adopted goals and policies of applicable federal, state, regional, and local plans. Therefore, no temporary adverse impacts will occur under Alternative 3 (Preferred Alternative).

2.2.2.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build) the Project will not be implemented. As a result, the necessary improvements to traffic operations and safety at the I-15/SR-74 interchange will not occur. Therefore, the Project will be inconsistent with various goals and policies from the adopted federal, state, regional, and local plans, identified in Table 2.2-1, that call for continued improvements to the safety and efficiency of transportation infrastructure that serve as critical regional connections for vehicular travel and the goods movement. As such, permanent adverse impacts will occur under Alternative 1 (No-Build).

Alternative 2

As summarized in Table 2.2-1, the Project under Alternative 2 is consistent with adopted goals and polices of applicable federal, state, regional, and local plans. Therefore, no permanent adverse impacts will occur under Alternative 2.

Alternative 3 (Preferred Alternative)

As summarized in Table 2.2-1, the Project under Alternative 3 (Preferred Alternative) is consistent with adopted goals and polices of applicable federal, state, regional, and local plans. Therefore, no permanent adverse impacts will occur under Alternative 3 (Preferred Alternative).

2.2.3 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are identified as there will be no impacts as it relates to the Project's consistency with federal, state, regional, and local plans and programs under the Build Alternatives.

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Table 2.2-1. Consistency with State, Regional, and Local Plans and Programs

Policy/Goal	Alternative 1 (No-Build)	Alternative 2 (NB Hook Ramps)	Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)
FTIP			
Policy Guideline: Each project in the County TIP submitted to SCAG must be consistent with and reflect investment priorities established in the most recently adopted metropolitan transportation plan, in accordance with MAP-21. Each FTIP project must show consistency with the project's design concept, and timely implementation as reflected in the adopted RTP/SCS.	**Inconsistent.** Alternative 1 (No-Build) will not result in any changes to existing conditions and will not implement the project as reflected in the adopted 2020-2045 RTP/SCS. Therefore, Alternative 1 (No-Build) will be inconsistent with this policy.	**Consistent.** The Project is identified in the Amendment 1 of the Final 2023 Adopted FTIP and SCAG's 2020 RTP for Riverside County as Project ID # RIV060109. The Project is consistent with the design concept and timely implementation as reflected in the adopted SCAG 2020-2045 RTP/SCS. Therefore, Alternative 2 will be consistent with this policy guideline.	**Consistent.** The findings under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2.
SCAG 2020-2045 RTP/SCS			
Goal 2: Improve mobility, accessibility, reliability, and travel safety for people and goods.	**Inconsistent.** Because Alternative 1 (No-Build) will not result in any changes to existing conditions, this alternative will not achieve the transportation improvements projected to result under the Build Alternatives and will be inconsistent with this goal.	**Consistent.** Alternative 2 will result in a more efficient transportation system within the Project limits by providing additional ramp storage capacity and improvements to the directional connectivity between I-15 and SR-74 corridors, signalization, and throughput volumes. Therefore, the Project improvements under	**Consistent.** The findings under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2.

Table 2.2-1. Consistency with State, Regional, and Local Plans and Programs

Policy/Goal	Alternative 1 (No-Build)	Alternative 2 (NB Hook Ramps)	Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)
		Alternative 2 will maximize mobility and accessibility for all users within the region, and Alternative 2 will be consistent with this goal.	
Goal 3: Enhance the preservation, security, and resilience of the regional transportation system.	**Inconsistent.** Because Alternative 1 (No-Build) will not result in any changes to existing conditions, this alternative will not achieve the transportation improvements projected to result under the Build Alternatives and will be inconsistent with this goal.	**Consistent.** Alternative 2 will reduce future traffic congestion, improve operations, and comply with current Caltrans and local agency design standards. Therefore, Alternative 2 will provide improvements that will enhance the preservation, safety, and resiliency of this existing transportation system and be consistent with this goal.	**Consistent.** The findings under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2.
Goal 5: Reduce greenhouse gas emissions and improve air quality.	**Inconsistent**. Because Alternative 1 (No-Build) will not result in any changes to existing conditions, this alternative will not achieve the transportation improvements projected to result under the Build	**Consistent.** Alternative 2 will result in a more efficient transportation system within the Project limits by providing additional ramp storage capacity and improvements to the directional connectivity between I-15 and SR-74 corridors, signalization, and throughput volumes. Therefore, the	**Consistent.** The findings under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2.

Table 2.2-1. Consistency with State, Regional, and Local Plans and Programs

Policy/Goal	Alternative 1 (No-Build)	Alternative 2 (NB Hook Ramps)	Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)
	Alternatives and will be inconsistent with this goal.	Project improvements under Alternative 2 will maximize mobility and accessibility for all users within the region, and Alternative 2 will be consistent with this goal.	
City of Lake Elsinore General Plan			
Chapter 2 - Goal 6: Optimize the efficiency and safety of the transportation system within the City of Lake Elsinore.	**Inconsistent.** Based on future projections on traffic demands and growth, traffic operations at the I-15/SR-74 interchange will further deteriorate and result in increased congestion, vehicle delays, safety concerns, vehicle operating costs, and vehicle emissions. Because Alternative 1 (No-Build) will not result in any changes to existing conditions, this alternative will not optimize the efficiency and safety of the transportation system within the City. Therefore, Alternative 1 (No-Build) will be inconsistent with this goal.	**Consistent.** Alternative 2 will optimize the efficiency and safety of the existing transportation network within the land use study area by improving the congested I-15/SR-74 interchange and local intersections within the Project limits. Additionally, the Project under Alternative 2 will construct new sidewalks along the east side of Dexter Avenue between the Arroyo Del Toro Channel and the Church of Jesus Christ of LDS and on the south side of SR-74 (Central Avenue) between the SB on-ramp and Dexter Avenue, where currently no sidewalk exists; as well as	**Consistent.** The findings under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2.

Table 2.2-1. Consistency with State, Regional, and Local Plans and Programs

Policy/Goal	Alternative 1 (No-Build)	Alternative 2 (NB Hook Ramps)	Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)
		consider the provision of signage and pavement markings for bicyclists along SR-74 (Central Avenue). Therefore, Alternative 2 will be consistent with this goal.	
Chapter 3 - Goal 1: Continue to coordinate with the Air Quality Management District and the City's Building Department to reduce the amount of fugitive dust that is emitted into the atmosphere from unpaved areas, parking lots, and construction sites.	**Not Applicable.** Alternative 1 (No-Build) will not result in any changes to the existing conditions. Therefore, this goal and policy will not be applicable.	**Consistent.** The Project under Alternative 2 will adhere to requirements of the SCAQMD and apply minimization measures and BMPs to reduce the amount of fugitive dust that is emitted as a result of Project construction under Alternative 2. Therefore, Alternative 2 will be consistent with this goal.	**Consistent.** The findings under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2.
Chapter 3 - Policy 1.1: Continue to implement requirements identified in the NPDES.	**Not Applicable.** Alternative 1 (No-Build) will not result in any changes to the existing conditions. Therefore, this goal and policy will not be applicable.	**Consistent.** The Project under Alternative 2 will be required to adhere to requirements of the NPDES to reduce construction related impacts related to discharge pollutants. Therefore, Alternative 2 will be consistent with this policy.	**Consistent.** The findings under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2.

Table 2.2-1. Consistency with State, Regional, and Local Plans and Programs

Policy/Goal	Alternative 1 (No-Build)	Alternative 2 (NB Hook Ramps)	Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)
Chapter 4 – Goal 2: Protect sensitive plant and wildlife species residing or occurring within the City.	**Not Applicable.** Alternative 1 (No-Build) will not result in any changes to the existing conditions. Therefore, this goal and policy will not be applicable.	**Consistent**. The Project under Alternative 2 will comply with the Western Riverside County MSHCP. The Western Riverside County MSHCP provides mitigation for Project specific impacts to these species so that the impacts will be reduced. Of the 146 covered species designated under the Western Riverside County MSHCP, the majority of these species have no additional survey/conservation requirements. Direct temporary impacts will be restored upon the Project's completion, and compensatory mitigation will be provided for permanent impacts. Therefore, Alternative 2 will be consistent with this goal.	**Consistent.** The findings under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2.
Chapter 4 – Policy 2.1: Biological resources analyses of proposed	**Not Applicable.** Alternative 1 (No-Build) will not result in any changes to	**Consistent.** The Project will have no effect on any federally listed	**Consistent.** The findings under Alternative 3 (Preferred Alternative)

Table 2.2-1. Consistency with State, Regional, and Local Plans and Programs

Policy/Goal	Alternative 1 (No-Build)	Alternative 2 (NB Hook Ramps)	Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)
projects shall include discussion of potential impacts to any plant or wildlife species that is officially listed as threatened or endangered by USFWS and/or CDFG but not covered by the MSHCP.	the existing conditions. Therefore, this goal and policy will not be applicable.	endangered, threatened, or candidate species. No consultation with USFWS or take permits for listed species are required. In addition, the Project will have no effect on any state listed endangered or threatened species. Therefore, Alternative 2 will be consistent with this policy.	will be the same as under Alternative 2.
Chapter 4 – Goal 6: Preserve, protect, and promote the cultural heritage of the City and surrounding region for the education and enjoyment of all City residents and visitors, as well as for the advancement of historical and archeological knowledge.	**Not Applicable.** Alternative 1 (No-Build) will not result in any changes to the existing conditions. Therefore, this goal and policy will not be applicable.	**Consistent.** Section 106 and Assembly Bill 52 consultation with Native American tribes who have established an interest in the Project will be completed as part of the CEQA and NEPA clearance process. Therefore, Alternative 2 will be consistent with this goal.	**Consistent.** The findings under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2.
Chapter 4 – Policy 6.2: The City shall consult with the appropriate Native American tribes for projects identified under Senate Bill 18 (Traditional Tribal Cultural Places).	**Not Applicable.** Alternative 1 (No-Build) will not result in any changes to the existing conditions. Therefore, this goal and policy will not be applicable.	**Consistent.** Prior to making a decision to adopt or amend a general or specific plan, or to designate open space that includes Native American Cultural Places, the City will consult with the appropriate Native American	**Consistent.** The findings under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2.

Table 2.2-1. Consistency with State, Regional, and Local Plans and Programs

Policy/Goal	Alternative 1 (No-Build)	Alternative 2 (NB Hook Ramps)	Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)
		tribes for the purpose of preserving, or mitigating impacts to, cultural places located on land within the City's jurisdiction that is affected by the plan amendment. Therefore, Alternative 2 will be consistent with this policy.	
Chapter 4 – Policy 6.3: When significant cultural/archeological sites or artifacts are discovered on a site, coordination with professional archeologists, relevant state and, if applicable, federal agencies, and the appropriate Native American tribes regarding preservation of sites or professional retrieval and preservation of artifacts or by other means of protection, prior to development of the site shall be required. Because ceremonial items and items of cultural patrimony reflect traditional religious beliefs and	**Not Applicable.** Alternative 1 (No-Build) will not result in any changes to the existing conditions. Therefore, this policy will not be applicable.	**Consistent.** The Project under Alternative 2 will implement standard measures if previously unidentified cultural materials are unearthed during construction. These measures will require that work be halted in the area of discovery until a qualified archaeologist can assess the nature and significance of the find. Additionally, if human remains are discovered, the Project will adhere to Health and Safety Code Section 7050.5 and PRC Section 5097.98 to ensure that construction activities are ceased in the area of discovery and	**Consistent.** The findings under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2.

Table 2.2-1. Consistency with State, Regional, and Local Plans and Programs

Policy/Goal	Alternative 1 (No-Build)	Alternative 2 (NB Hook Ramps)	Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)
practices, developers shall waive any and all claims to ownership and agree to return all Native American ceremonial items and items of cultural patrimony that may be found on a project site to the appropriate tribe for treatment. It is understood by all parties that unless otherwise required by law, the site of any reburial of Native American human remains or cultural artifacts shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act.		notification to the NAHC will be conducted. Therefore, Alternative 2 will be consistent with this policy.	
North Central Sphere District			
NCS 3.2: Consider the improvements of roadway connections in the North Central Sphere District.	**Inconsistent.** Alternative 1 (No-Build) will not achieve the transportation improvements projected to result under the Build Alternatives that are needed to address major deficiencies related to the I-15/SR-74 interchange	**Consistent.** Although the majority of Project improvements under Alternative 2 are primarily located within the Business District, SR-74 (Central Avenue) and Dexter Avenue are important roadways that provide	**Consistent.** The findings under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2.

Table 2.2-1. Consistency with State, Regional, and Local Plans and Programs

Policy/Goal	Alternative 1 (No-Build)	Alternative 2 (NB Hook Ramps)	Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)
	which serves as the primary access for residents, visitors, businesses, and industry in the land use study area. Specifically, within the portions of the Project limits that are within the North Central Sphere District, improvements to SR-74 (Central Avenue) and Dexter Avenue will not occur. These two roadways provide direct access from the I-15/SR-74 interchange to the North Central Sphere District.	direct access from the I-15/SR-74 interchange to the North Central Sphere District and serve as thoroughfares connecting the Business District and the North Central Sphere District. Therefore, Project improvements under Alternative 2 to the I-15/SR-74 interchange and surrounding roadways will be consistent in improving roadway connection in, to, and from the North Central Sphere District.	

Source: SCAG 2020, 2021; City of Lake Elsinore 2011a, 2011c

Notes:

BMP=best management practice; Caltrans=California Department of Transportation; CDFG=California Department of Fish and Game; CEQA=California Environmental Quality Act; FTIP=Federal Transportation Improvement Program; I-15=Interstate 15; ID=identification; LDS=Latter-day Saints; MAP-21=Moving Ahead for Progress in the 21st Century; MSHCP=Multiple Species Habitat Conservation Plan; NAHC=Native American Heritage Commission; NB=northbound; NEPA=National Environmental Policy Act; NPDES=National Pollutant Discharge Elimination System; PRC=Public Resources Code; RTP=Regional Transportation Plan; SB=southbound; SR-74=State Route 74; SCAG=Southern California Association of Governments; SCAQMD=South Coast Air Quality Management District; SCS=sustainable communities strategy; TIP=Transportation Improvement Program; USFWS=United States Fish and Wildlife Service

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2.3 Parks and Recreational Facilities

2.3.1 Regulatory Setting

The Park Preservation Act (California Public Resources Code [PRC] Sections 5400-5409) prohibits local and state agencies from acquiring any property which is in use as a public park at the time of acquisition unless the acquiring agency pays sufficient compensation or land, or both, to enable the operator of the park to replace the park land and any park facilities on that land.

2.3.2 Affected Environment

This section addresses potential impacts to parks and recreational facilities. For purposes of the following parks and recreational facilities analysis, the parks and recreation study area encompasses the Project limits and a 0.5-mile buffer from the Project limits. There are no existing or planned parks or recreational trails within the Project limits. However, within the parks and recreation study area, there are two existing trails, an existing park, a community trail, and two proposed regional trails as summarized in Table 2.3-1 and shown on Figure 2.3-1.

Table 2.3-1. Public Parks and Recreational Facilities within the Parks and Recreation Study Area

Recreational Resource	Description
Lake Elsinore Lake, River, Levee Regional Trail	The trail head is located at 500 Diamond Drive, Lake Elsinore, California, 92530, and measures approximately 7 miles.
Vehicular Trail	The trail head is located on 2nd Street and Wasson Canyon Road. The trail follows along Wasson Canyon Road and measures approximately 0.43 miles.
Rosetta Canyon Sports Park	This is a 21.6-acre park that includes five ball fields, a football, soccer field, jogging paths, dog play areas, and a community garden.
Community Trail	This is a proposed trail for the City, surrounding SOI areas and nearby regional areas.
Regional Trail #1	This is a proposed regional trail for the City, surrounding SOI areas, and nearby regional areas. This trail traverses along Nichols Road.
Regional Trail #2	This is a proposed regional trail for the City, surrounding SOI areas, and nearby regional areas. The trail intersects with I-15.

Source: City of Lake Elsinore 2011a, n.d.a.; Lake Elsinore Unified School District n.d.
Notes:
I-15=Interstate 15; SOI=sphere of influence

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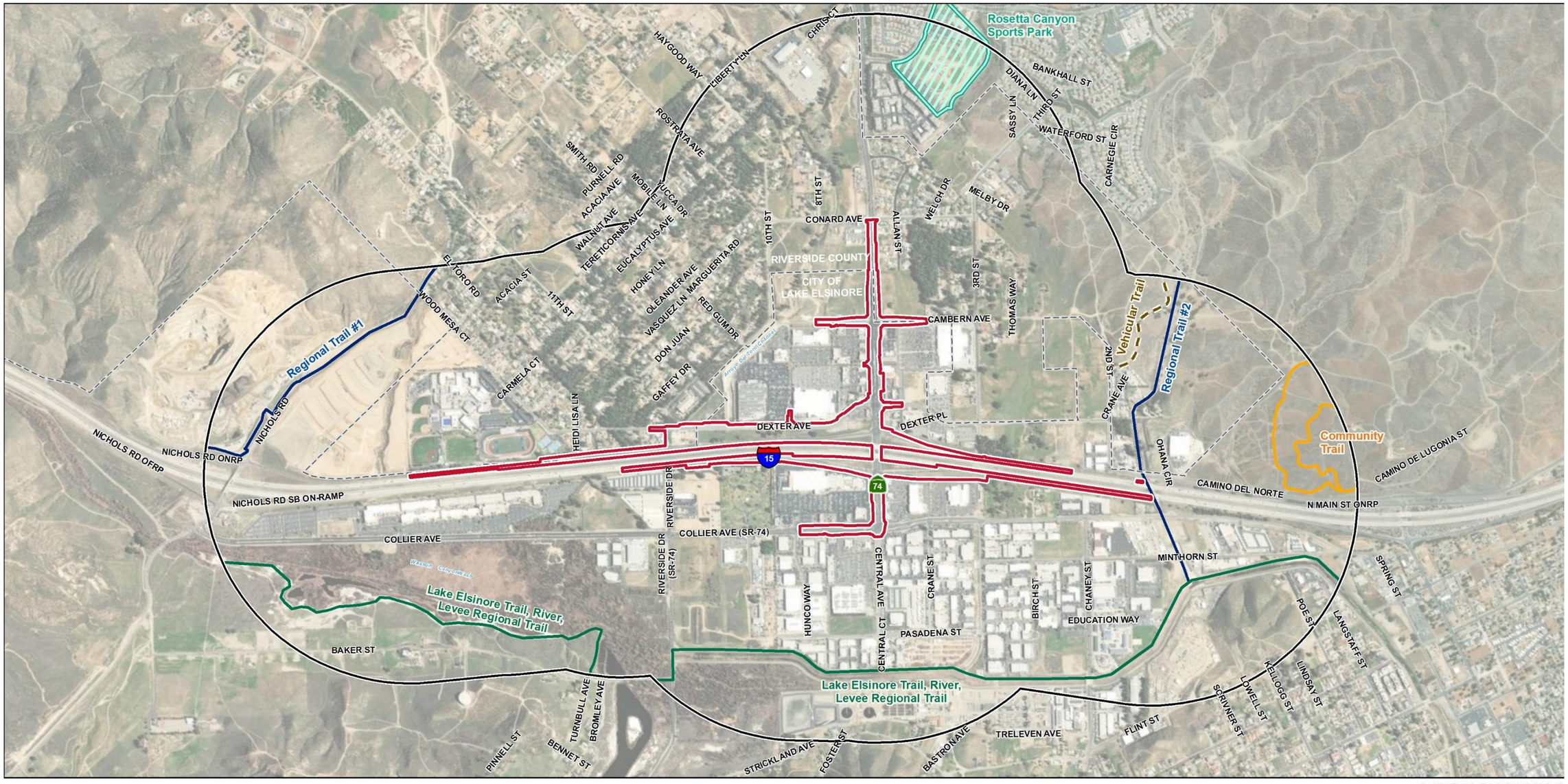

0 Feet 1,000

LEGEND

- Project Limits
- City/County Boundary
- Community Impact Study Area (0.5 mile buffer)

Existing
- Rosetta Canyon Sports Park
- Lake Elsinore Trail, River, Levee Regional Trail
- Vehicular Trail

Proposed
- Community Trail
- Regional Trail

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 2.3-1. Public Parks and Recreational Facilities

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2.3.3 Environmental Consequences

Temporary Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not result in construction of the Project. Therefore, there will be no temporary adverse impacts to parks or recreational facilities under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Based on the review of the City's General Plan (City of Lake Elsinore 2011a), the Riverside County Comprehensive Trails Plan (Riverside County Regional Park and Open Space District 2018), the County's Elsinore Area Plan (County of Riverside 2020), and the City's Fiscal Year 2019-2024 Capital Improvement Plan Budget (City of Lake Elsinore 2019a), the planned trails shown on Figure 2.3-1 have not been noted as projects that would be implemented in the near future. However, if the proposed trails were to be implemented, based on their locations in relation to the Project limits, the construction of the Project under Alternative 2 will not preclude or inhibit the implementation of the proposed trails. Therefore, the Project under Alternative 2 is not anticipated to result in temporary adverse impacts to future planned trails.

Further, as discussed above in Section 2.3.2, there are no existing or planned parks, recreational trails, or public recreational facilities within the Project limits. However, there are two existing trails and a park, a proposed community trail, and two proposed regional trails located within the parks and recreation study area. Temporary indirect impacts could result from traffic delays anticipated within the general area during construction. However, given the distance of these existing resources from the Project limits, no closures or detours of these existing recreational facilities within the parks and recreation study area are anticipated. Therefore, there will be no substantial temporary adverse impacts to these recreational resources within the parks and recreation study area under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

The Project impacts under Alternative 3 will be the same as under Alternative 2. Therefore, no substantial temporary adverse impacts to existing or proposed recreational resources within the parks and recreation study area will occur under Alternative 3 (Preferred Alternative).

2.3.3.1 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be implemented. Therefore, there will be no permanent adverse impacts to parks or recreational facilities under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

As discussed earlier, the planned trails shown on Figure 2.3-1 have not been noted as projects that would be implemented in the near future. However, if the proposed trails were to be implemented, based on their locations in relation to the Project limits, the construction of the Project under Alternative 2 will not preclude or inhibit the implementation of the proposed trails. Therefore, the Project under Alternative 2 is not anticipated to result in permanent adverse impacts to future planned trails.

Further, as discussed above in Section 2.3.2, there are no existing or planned parks, recreational trails, or public recreational facilities within the Project limits. Outside of the Project limits and within the parks and recreation study area, there are two existing trails and a park, a proposed community trail, and two proposed regional trails located within the parks and recreation study area. The Project will not result in impacts to these existing and proposed recreational resources since they are located outside of the Project limits. Therefore, there will be no substantial permanent adverse impacts to these recreational resources within the parks and recreation study area under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Alternative 3 (Preferred Alternative) will result in the same findings as Alternative 2. Therefore, similar to Alternative 2, there will be no substantial permanent adverse impacts to these recreational resources within the parks and recreation study area under Alternative 3 (Preferred Alternative).

2.3.3.2 Section 4(f)

The resources identified in Table 2.3-1 have been evaluated to determine if they are protected Section 4(f) resources. A Section 4(f) study area for parks, recreational facilities, and wildlife/ waterfowl refuges should include public recreational resources located immediately adjacent to the Project limits and nearby Section 4(f) properties for consideration of indirect proximity impacts. Therefore, a 500-foot Section 4(f) resources study area (see Appendix A, Figure 4-1) was used to identify Project adjacent resources.

As further documented in Appendix A, Resources Evaluated Relative to the Requirements of Section 4(f): No-Use Determination, of this IS/EA, the Section 4(f) properties under consideration will not be directly or indirectly impacted in a manner that will adversely impact the features, activities, or attributes that qualify the properties for protection under Section 4(f). There are parks and recreational facilities within the Project vicinity that are protected by Section 4(f) of the Department of Transportation Act of 1966. However, this Project will not "use" those facilities as defined by Section 4(f). Please refer to Appendix A of this IS/EA under the heading, Resources Evaluated Relative to the Requirements of Section 4(f): No-Use Determination, for additional details.

2.3.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are identified as there will be no significant impacts or adverse impacts to park and recreational facilities with implementation of the Project under the Build Alternatives.

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2.4 Farmlands

2.4.1 Regulatory Setting

The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (FPPA, 7 United States Code [USC] 4201-4209; and its regulations, 7 Code of Federal Regulations [CFR] Part 658) require federal agencies, such as the Federal Highway Administration (FHWA), to coordinate with the Natural Resources Conservation Service (NRCS) if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

The California Environmental Quality Act (CEQA) requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to discourage the early conversion of agricultural and open space lands to other uses.

2.4.2 Affected Environment

Data from the California Department of Conservation's Farmland Important Farmland Finder (California Department of Conservation 2016) was used to prepare the Farmland Conversion Impact Rating Form AD-1006 (Caltrans 2021a) and to identify Farmland Mapping and Monitoring Program (FMMP) designations within 0.5 mile of the farmland study area (Project limits). As shown on Figure 2.4-1, the farmland study area includes the following FMMP designations: Urban and Built-Up Land, Grazing Land, Farmland of Local Importance, and Other Land.

Within the farmland study area, the affected FMMP designation are located in three main locations: south of the I-15/SR-74 interchange, adjacent to the NB I-15 off-ramp and SB I-15 on-ramp; along the southern half of the Cambern Avenue and SR-74 (Central Avenue) intersection; and along NB Dexter Avenue, east of the Arroyo del Toro Channel. The majority of the farmland study area is located within Urban and Built-Up Land, and small portions of the farmland study area are within land designated as Other Land and Farmland of Local Importance. These affected areas are defined in Table 2.4-1 and shown on Figure 2.4-2.

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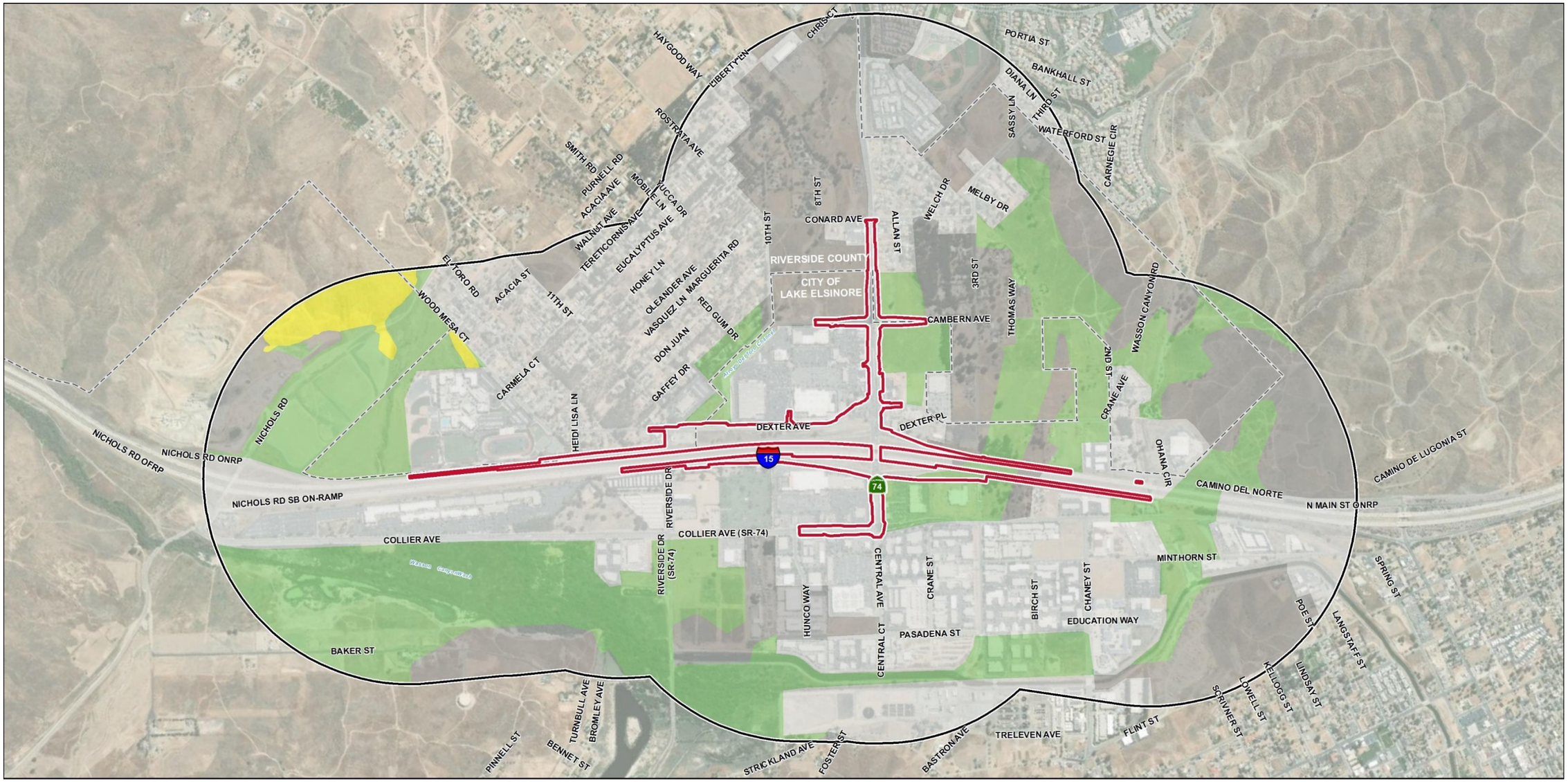

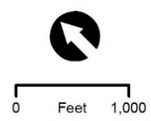

LEGEND

- Project Limits
- City/County Boundary
- Farmland Study Area (0.5 mile buffer)

FMMP Designations within Community Impact Study Area

- D - Urban and Built-up Land
- G - Grazing Land
- L- Farmland of Local Importance
- X - Other Land

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 2.4-1. Farmland Mapping and Monitoring Program Designations within the Farmland Study Area

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Table 2.4-1. Farmland Mapping and Monitoring Program Designations within the Farmland Study Area

Classification	Definition	Acres within Farmland Study Area
Urban and Built-Up Land	Urban and Built-Up Land is used for residential, industrial, commercial, construction, institutional, public administrative process, railroad yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water control structures, and other development purposes. Highways, railroads, and other transportation facilities are mapped as a part of Urban and Built-up Land if they are a part of the surrounding urban areas. Within areas classified as Urban and Built-up Land, vacant and nonagricultural land which is surrounded on all sides by urban development and is less than 40 acres in size will be mapped as Urban and Built-up Land.	50.73
Farmland of Local Importance	Farmland of Local Importance is either currently producing crops, has the capability of production, or is used for the production of confined livestock. Farmland of Local Importance is land other than Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. This land may be important to the local economy due to its productivity or value, and can be used to produce food, feed, fiber, forage, bio-fuels, and oilseed crops that are not identified as having national or statewide importance. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use. Land of importance to the local agricultural economy is determined by each county's board of supervisors and a local advisory committee. Farmlands of local importance may include tracts of land that have been designated for agriculture by local ordinance.	6.58
Other Land	Land not included in any other mapping category and vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres.	4.28

Source: California Department of Conservation 2004

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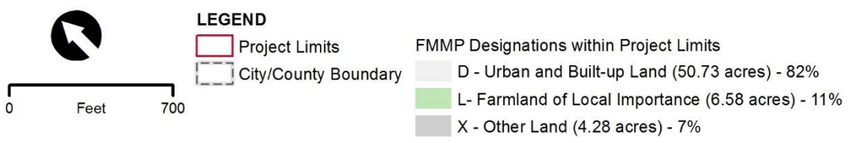

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 2.4-2. Farmland Mapping and Monitoring Program Designations within the Project Limits

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The City's General Plan (City of Lake Elsinore 2011a) does not specifically designate agricultural land uses within the City or sphere of influence (SOI). However, there are three instances where agricultural uses are allowed. This includes hillside residential land uses which allow for small scale farming, low density residential which allows for hobby farming and keeping of animals, and natural communities within the City and SOI that include limited areas of groves, orchards, and field cropland vegetation communities (City of Lake Elsinore 2011a).

There are no Williamson Act contract lands or agricultural preserve areas within the Project limits and farmland study area (California Department of Conservation 2018). The Project limits and farmland study area also do not include any forest land (i.e., land with 10 percent tree coverage, as defined in PRC section 12220(g)) or timberland (i.e., land that is available for growing a crop of trees intended for commercial use, as defined in PRC Section 4526).

2.4.3 Environmental Consequences

NEPA and FPPA, require the lead federal agency (Caltrans) to coordinate with the NRCS to examine the effects of farmland conversion before approving any federal action if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. A request to begin coordination with NRCS was submitted on June 23, 2021, and a Farmland Conversion Impact Rating Form AD-1006 (U.S. Department of Agriculture n.d.) was completed on July 13, 2021, by NRCS to assess the extent to which the affected Farmland of Local Importance is conducive to further agricultural use, and the level of direct impact sustained by the Project under the Build Alternatives. The completed Farmland Conversion Impact Rating Form AD-1006 was approved on July 19, 2021, and is included in Appendix B of the *Community Impact Assessment* (Caltrans 2021a) and in Appendix C of this IS/EA. Table 2.4-2 summarizes the impacts resulting in a conversion of FMMP designations within the Project limits by alternative.

Table 2.4-2. Farmland Conversion by Alternative

Project Alternative	Total Acres in Project Limits (acres)	Converted FMMP Designations (acres)			FMMP Important Farmland Converted (acres)
		Farmland of Local Importance	Urban and Built-up Land	Other Land	
Alternative 1 (No Build)	0	0	0	0	0
Alternative 2 (NB Hook Ramp)	61.59	1.02	9.35	0.73	1.02

Table 2.4-2. Farmland Conversion by Alternative

Project Alternative	Total Acres in Project Limits (acres)	Converted FMMP Designations (acres)			FMMP Important Farmland Converted (acres)
		Farmland of Local Importance	Urban and Built-up Land	Other Land	
Alternative 3 (Preferred Alternative) (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)	61.59	1.02	8.68	0.73	1.02

Source: Caltrans 2021a
Notes:
FMMP=Farmland Mapping and Monitoring Program; NB=northbound; SR-74=State Route 74; WB=westbound

2.4.3.1 Temporary Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not result in construction of the Project improvements. Therefore, there will be no adverse impacts to farmlands and timberlands under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Temporary impacts to the FMMP designation of Farmland of Local Importance will occur on vacant land along Dexter Avenue between the Church of Jesus Christ of LDS and the Arroyo Del Toro Channel. The temporary impacts are a result of a TCE needed along the edge of the impacted properties for construction activities and improvements for Dexter Avenue. However, the need for this TCE under Alternative 2, will not result in temporary adverse impacts to important farmland, according to the FMMP designations.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Temporary impacts to the FMMP designation of Farmland of Local Importance under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2. Therefore, Alternative 3 (Preferred Alternative) will not result in temporary adverse impacts to important farmland, according to the FMMP designations.

2.4.3.2 Permanent Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not result in the implementation of the Project improvements. Therefore, there will be no permanent adverse impacts to farmlands and timberlands under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

The Farmland Conversion Impact Rating Form AD-1006 considers indirect conversions of land, which is land that is not being directly converted but would no longer be capable of sustaining farming activities due to direct conversion that would restrict access to these areas, or other project related changes that would affect the ability to use land for agriculture (U.S. Department of Agriculture n.d.). However, for the areas of Farmland of Local Importance being affected by the Project, most of the direct conversions are along the edge of roadways and properties for roadway improvements. Additionally, the Farmland of Local Importance within the Project limits are already split up by existing infrastructure such as SR-74 (Central Avenue), SB SR-74 on-ramp, and NB SR-74 off-ramp, or surrounded by existing urban uses (e.g., commercial or residential). Therefore, these pocketed areas of Farmland of Local Importance, have already been impacted by existing highway infrastructure or urban development. Although the Project will improve ramps and roadways associated with the I-15/SR-74 interchange, the improvements will not result in the indirect or trigger future conversion of other areas of Farmland of Local Importance.

As shown in Table 2.4-1, the Project contains 6.58 acres of soils classified as Farmland of Local Importance. As shown in Table 2.4-2 and on Figure 2.4-3, the Project under Alternative 2 will convert 1.02 acres of Farmland of Local Importance to non-farmland uses within the Project limits. This conversion will amount to 16 percent of conversion of the total amount of Farmland of Local Importance within the Project limits.

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Figure 2.4-3. Alternative 2 Farmland Mapping and Monitoring Program Impacts within the Project Limits

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Although the Project will not be the deciding factor that will preclude the remaining land for future agricultural uses, it is assumed that the remaining 5.56 acres (84 percent) of the 6.58 acres of Farmland of Local Importance within the Project limits is not and will not be considered farmable due to the urban built nature of the area and the fragmentation of the pocketed areas of Farmland of Local Importance. Therefore, based on the completed Farmland Conversion Impact Rating Form AD-1006, it is anticipated that the conversion of 1.02 acres of important farmland to a non-agricultural use will not result in substantial permanent adverse impacts to the overall protection of important farmland.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

As shown in Table 2.4-2 and on Figure 2.4-4, the Project under Alternative 3 (Preferred Alternative) will result in the same findings and permanent impacts as discussed under Alternative 2. The conversion of 1.02 acres of important farmland to a non-agricultural use will not result in substantial permanent adverse impacts to the overall protection of important farmland.

2.4.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are identified as there will be no substantial adverse impacts related to farmlands with implementation of the Project under the Build Alternatives.

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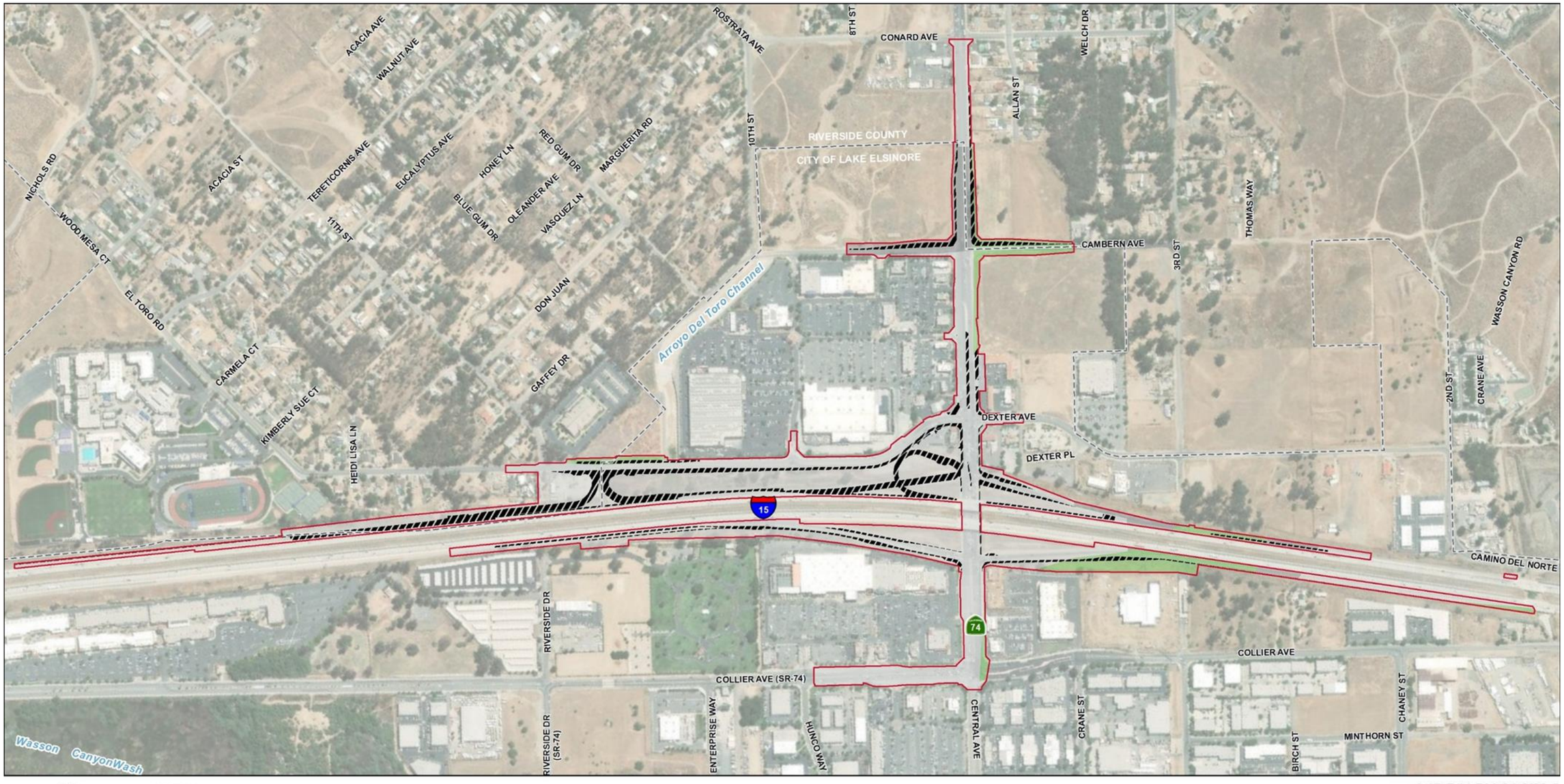

Figure 2.4-4. Alternative 3 (Preferred Alternative) Farmland Mapping and Monitoring Program Impacts within the Project Limits

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2.5 Growth

2.5.1 Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with the National Environmental Policy Act (NEPA) of 1969, require evaluation of the potential environmental effects of all proposed federal activities and programs. This provision includes a requirement to examine indirect effects, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations (40 Code of Federal Regulations [CFR] 1508.8) refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act (CEQA) also requires the analysis of a project's potential to induce growth. The CEQA guidelines (Section 15126.2[d]) require that environmental documents "…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"

2.5.2 Affected Environment

The SCAG region is anticipated to add 3.7 million residents, 1.6 million households, and 1.6 million jobs over the 2020-2045 RTP/SCS planning horizon (SCAG 2020). In Table 2.5-1, 2045 SCAG projections were compared with the data provided in the 2019 local profiles for the City (SCAG 2019a) and County (SCAG 2019b), which have the most recent socio-economic data for population, household, and employment estimates. The two data sets were compared to evaluate the growth forecasts for the City of Lake Elsinore and County. As seen in Table 2.5-1, growth is projected to increase drastically in the City and County.

Table 2.5-1. Projected City and County Average Growth Rate Percentages (2018-2045)

Jurisdiction	2018[a]	2045	Percent Change between 2018 and 2045 (%)
County of Riverside			
Population	2,416,000	3,251,900	34.6
Household	730,000	1,086,200	48.8
Employment	762,100[b]	1,102,600	44.7
City of Lake Elsinore			
Population	63,400	111,600	76.0
Household	17,400	37,800	117.2
Employment	14,700[b]	24,900	69.4

Source: SCAG 2019a, 2019b, 2020

Notes:

[a] Numerical data from the SCAG 2020-2045 SCS/RTP was rounded to the nearest 100. Therefore, numerical data from 2019 local profiles were rounded to the nearest hundred.

[b] The 2019 local profiles only have data for up to the year 2017; however, the differences in the rates when compared with 2018 are not anticipated to be significant.

RTP=Regional Transportation Plan; SCAG=Southern California Association of Governments; SCS=Sustainable Communities Strategy

The growth study area is the same as the land use study area (within 0.5 mile of the Project limit) as shown in Figure 2.1-1, in Section 2.1, Land Use and Planning. The growth study area was used to assess growth impacts within the selected geographic boundary for the Project. The high growth rate projections might be attributed to the large amount of available land area designated by the City and its SOI for development. As described in Section 2.1, Existing and Future Land Use, within the land use study area, or in the case for this section, the growth study area, there are vacant lands

designated for general commercial, business professional, and public institutional uses along I-15. Due to available undeveloped land in the land use, or growth study area, there are opportunities for large-scale new development to occur.

2.5.3 Environmental Consequences

This section discusses whether the Project will result in unforeseen direct, indirect, or secondary growth or will otherwise influence growth. Direct growth-inducing impacts are permanent impacts generally associated with the provision of urban services and the extension of infrastructure to an undeveloped area. The extension of services and facilities to an individual site can reduce development constraints for other nearby areas and can serve to induce further development in the vicinity. Indirect or secondary growth-inducing impacts consist of growth in the area by additional demand for housing, employment, and goods and services associated with population increases caused by, or attached to, new development.

A growth-related impacts analysis was conducted for the Project using the Guidance for Preparers of Growth-Related, Indirect Impact Analyses (Caltrans 2006*)*. The guidance was developed by an interagency work group that included representatives from Caltrans, FHWA, and the United States (U.S.) Environmental Protection Agency (EPA). This guidance document focuses on the influence that transportation projects may have on growth and development. The analysis of growth-related impacts was developed by applying the following steps from the guidance document:

- Identify the potential for growth for each alternative (will the project change the location, rate, type, or amount of growth?).
- Assess the growth-related effects of each alternative to resources of concern (will these resources be affected?).
- Consider additional opportunities to avoid and minimize growth-related impacts.
- Compare the results of the analysis for all alternatives.
- Document the process and findings of the analysis.

2.5.3.1 Temporary Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not result in construction of the Project improvements. Therefore, there will be no temporary adverse impacts related to growth under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramp)

Alternative 2 will create short-term jobs during the construction phase of the Project. While the Project under Alternative 2 will generate additional employment opportunities during construction of the Project, the majority of these jobs are expected to be filled by residents of the City and surrounding communities. Therefore, substantial population growth impacts associated with construction of the Project under Alternative 2 are not anticipated and no temporary adverse impacts to growth will occur.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

The same improvements under Alternative 2 will occur under Alternative 3 (Preferred Alternative). Therefore, similar to the findings for Alternative 2, substantial population growth impacts associated with Project under Alternative 3 (Preferred Alternative) are not anticipated, and no temporary adverse impacts to growth will occur.

2.5.3.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), no modifications to the existing freeway facility will occur. The existing configuration of the I-15/SR-74 interchange and adjacent roadway network will not provide the necessary transportation infrastructure to accommodate existing and projected growth nor meet the goals and objectives of the SCAG 2020-2045 RTP/SCS. As Alternative 1 (No-Build) will not result in construction activities, it will not influence the amount, location, and/or distribution of growth or housing and jobs in the local cities within the land use, or growth, study area. However, existing deficiencies at the I-15/SR-74 interchange will not be addressed and will continue to worsen in the future under Alternative 1 (No-Build), resulting in permanent adverse impacts to projected growth within the land use/growth study area.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

The growth impact analysis follows the first-cut screening guidelines provided in the Caltrans Guidance for Preparers of Growth-Related, Indirect Impacts Analyses (Caltrans 2006). The potential growth-related impacts of the Project under the Build Alternatives using the “first-cut screening” analysis are summarized in Table 2.5-2.

Table 2.5-2. Summary of First-Cut Screening Analysis

Screening Criteria	Project Consideration
How, if at all, does the Project potentially change accessibility?	Under the Build Alternatives, the Project will result in the provision of additional ramp storage capacity and direction connectivity between I-15 and the SR-74 corridors. Although the Project under the Build Alternatives will result in changes to the existing transportation system, the Project under the Build Alternatives will not substantially change accessibility in the area as the area is already serviced by the existing interchange. The extent of the improvements consists of the replacement of existing on- and off-ramps, widening and realignment of roadways, and implementation of other local improvements (i.e., restriping, replacement of existing noise barrier, drainage extensions, and modification of signals). Therefore, the Project under the Build Alternatives will not catalyze or influence unanticipated growth in the area, as the Project under these alternatives will not result in new access to areas that previously had no access.
How, if at all, does the Project type, Project location, and growth pressure potentially influence growth?	The Project is located primarily within the Business District of the City (Figure 2.1-1 in Section 2.1, Land Use). The Business District is considered the City's main hub for employment and shopping (City of Lake Elsinore 2011b). Currently, the Business District contains relatively newer commercial retail centers and plazas, and available lots scattered throughout for future development into commercial uses. The Project limits also encompasses the North Central Sphere District, northeast of the I-15/SR-74 interchange, which is where the existing residential uses and future lots for residential development within the land use study area are located. Based on the projected growth within the City and plans to develop additional commercial and retail uses, the stress and demands on public services and infrastructure are likely to increase. As a result, improvements to the existing I-15/SR-74 interchange, SR-74 (Central Avenue), and along local City streets will be necessary to meet the rate of new construction and accommodate projected growth. The Project under the Build Alternatives will provide more reliable connections within the Project limits, the Business District, and other land uses surrounding the I-15/SR-74 interchange. The Project will improve an existing interchange, which will not trigger the construction of any new residential, commercial, or industrial developments that could influence the rate of population growth or employment. Therefore,

Table 2.5-2. Summary of First-Cut Screening Analysis

Screening Criteria	Project Consideration
	the Project under the Build Alternatives will not adversely affect economic opportunities, employment, or housing availability, which directly affect local and regional development growth.
Is Project-related growth reasonably foreseeable as defined in NEPA (Under NEPA, indirect impacts need only be evaluated if they are reasonably foreseeable as opposed to remote and speculative)?	Growth in the City is expected to occur with or without the Project. Due to the nature of improvements envisioned (e.g., additional ramp storage capacity and efficient signalization, turning movements, and throughput volumes), the Project under the Build Alternatives will not influence the amount, timing, or location of growth in the area. The Project under the Build Alternatives will address the current storage capacity issues at this interchange which have resulted in congestion and operational deficiencies and accommodate for future growth. Additionally, no new construction and operation of residential, commercial, or industrial uses will occur as this is an interchange improvement project on an existing highway facility. Therefore, indirect impacts as it relates to Project-related growth are not considered to be reasonably foreseeable, and no growth-related impacts are anticipated as a result of the Build Alternatives.
If there is Project-related growth, how, if at all, will that affect resources of concern?	There is no lack of existing infrastructure in the land use study area that will serve as an obstacle to growth, and the Project will be improving an existing interchange along an existing highway that will address current operational issues; as well as accommodate future traffic volumes on the I-15 and SR-74 corridors resulting from projected growth in the City that will occur regardless of the Project. The Project under the Build Alternatives will not catalyze or influence the rate of population, housing, or employment growth. Therefore, Project-related growth is not reasonably foreseeable and effects to resources of concern will not occur.

Notes:
I-15=Interstate 15; NEPA=National Environmental Policy Act; SR-74=State Route 74

Alternative 2 (NB Hook Ramp)

The Project under Alternative 2 will not establish new homes, result in permanent employment opportunities, or provide any new access into areas that previously had no access. However, the Project under Alternative 2 will result in transportation facility improvements that will reduce congestion and delays at the interchange and nearest local street intersections by building new I-15 NB ramps that will provide directional connectivity to EB and WB SR-74.

The widening of existing ramps and local roads will increase storage capacity, which when combined with improved traffic signal timing will result in improved traffic operations and accessibility for all types of motorized and non-motorized users. Therefore, operation of Alternative 2 will result in changes in accessibility to the transportation system in this area. This change in accessibility has already been identified in Amendment 1 of the Final 2023 Adopted FTIP and SCAG's 2020-2045 RTP/SCS for Riverside County as Project ID # RIV060109. Thus, operation of the Project will not result in substantial growth in addition to what has already been identified in SCAG's 2020-2045 RTP/SCS.

There is no lack of existing infrastructure in the land use, or growth study area that will serve as an obstacle to growth. Projected population growth will occur in the land use, or growth study area with or without the infrastructure improvements associated with the Project under Alternative 2.

The Project will accommodate future growth and will not be a catalyst for or influence the rate of population growth or employment. In addition, potential indirect growth has already been captured at the local and regional level through the inclusion of the Project in SCAG's 2020-2045 RTP/SCS list of projects. Therefore, the Project will not result in permanent adverse impacts as it relates to the direct and indirect growth-inducing potential of Project implementation under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Similar to Alternative 2, the Project under Alternative 3 (Preferred Alternative) will not establish new homes, result in permanent employment opportunities, or provide any new access into areas that previously had no access, and is not considered a capacity enhancing project. The improvements to accessibility have already been identified in the Amendment 1 of the Final 2023 Adopted FTIP and SCAG's 2020-2045 RTP/SCS for Riverside County as Project ID #: RIV060109.

As summarized in Table 2.5-2, the Project impacts and effects under Alternative 3 (Preferred Alternative) will be the same as Alternative 2. Projected population growth will occur in the land use, or growth study area, with or without the infrastructure improvements associated with the Project under Alternative 3 (Preferred Alternative). The Project will accommodate future growth and will not be a catalyst for or influence the rate of population growth or employment. Therefore, the Project will not result in permanent adverse impacts as it relates to the indirect and direct growth-inducing potential of Project implementation under Alternative 3 (Preferred Alternative).

2.5.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are identified as there will be no significant impacts or adverse growth impacts with implementation of the Project under the Build Alternatives.

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2.6 Community Character and Cohesion

2.6.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). The Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109[h]) directs that final decisions on projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under the California Environmental Quality Act (CEQA), an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this Project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the Project's effects.

2.6.2 Affected Environment

This section was prepared using the *Community Impacts Assessment* (Caltrans 2021a) prepared for the Project and addresses potential impacts to community character and cohesion within the Project limit and community impact study area. As shown in Figure 2.6-1, the community impact study area encompasses the Project limits and a 0.5 buffer from the Project limits which overlaps with Census Tracts 420.07, 427.15, 430.05, and 430.06.

Community character is all of the attributes, including social and economic characteristics, and assets that make a community unique and establish a sense of place for its residents. Community cohesion is the degree to which residents have a sense of belonging to their neighborhood; a level of commitment of the residents to the community; or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time (Caltrans 2011a).

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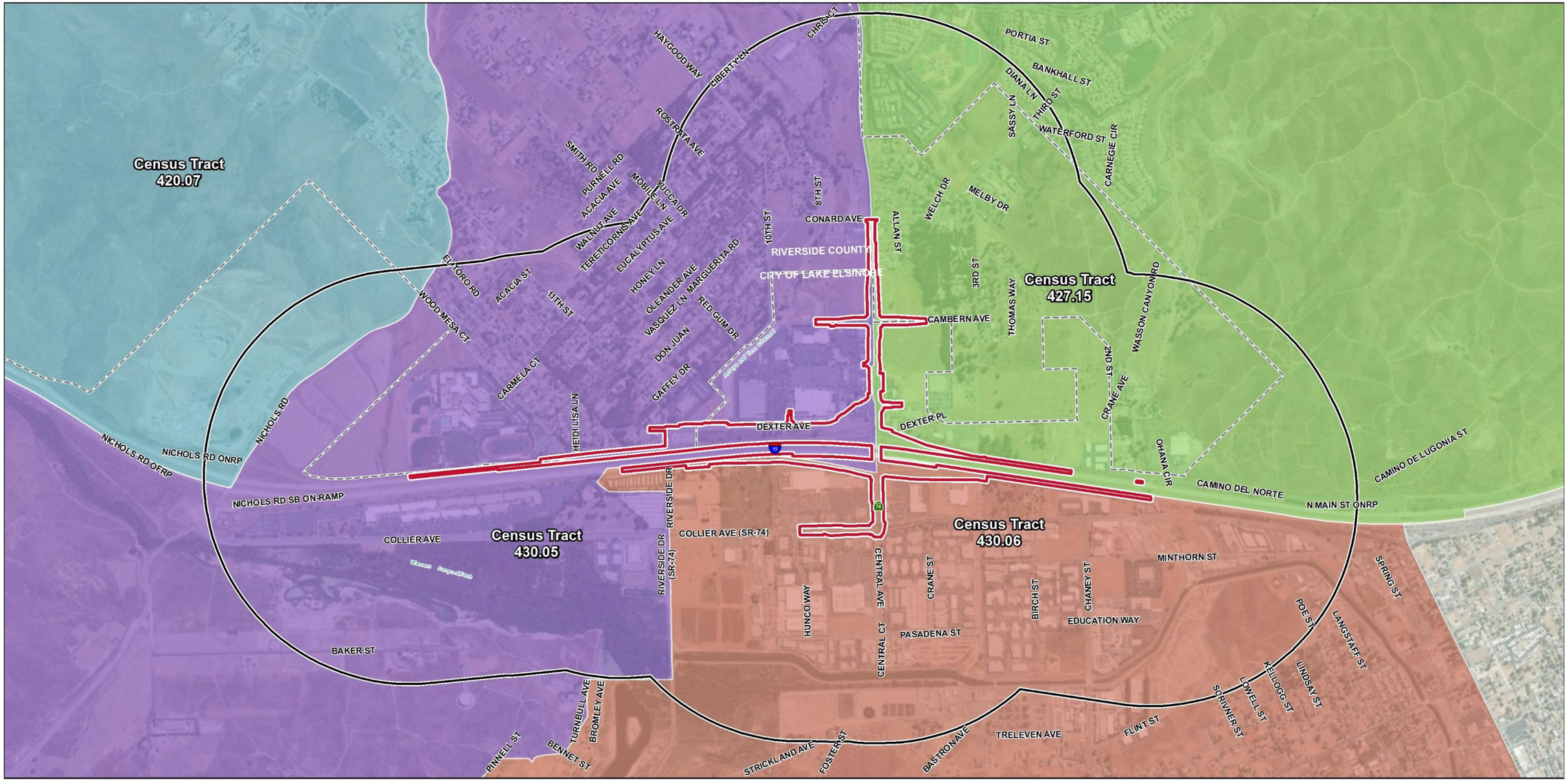

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 2.6-1. Community Impact Study Area Census Tracts

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The demographics of the community impact study area's population, housing characteristics, and economic conditions and trends have been evaluated because they influence the character and cohesion of a community. The longer residents have lived within their community and the more homogenous the population, it can be assumed that the level of cohesion and character would be stronger in these communities than those that have a transient population with largely different social and economic backgrounds (i.e., age, ethnicity, and income).

A community's characteristics can be described by demographic information, including population size, age composition, ethnicity, and household characteristics. This section describes the existing community characteristics of the community impact study area and its associated census tracts which include Census Tracts 420.07, 427.15, 430.05, and 430.06.

Census tracts were used because they are the most complete data set for the level of detail required to analyze the surrounding demographic and socioeconomic character generally associated with the community impact study area. Census tracts are also used to incorporate populations that may not be directly affected by the Project but may be indirectly affected by Project construction and operation. To assess the potential for the Project to adversely or beneficially affect community character and cohesion, demographic characteristics of these census tracts were evaluated utilizing data from the 2015-2019 ACS 5-year Estimates (U.S. Census Bureau 2020).

2.6.2.1 Community Character

Population Characteristics

Population

Regional and local population changes for key geographic areas from 2010 to 2019 are shown in Table 2.6-1. Census Tracts 427.15, 430.05, and 430.06 have exhibited moderate growth over the last 9 years. The most growth occurred within Census tract 430.06, which is likely attributed to this census tract having the greatest concentration of residential uses, while Census Tract 420.07 includes some pocketed areas of development but is dominated by undeveloped hillsides and mountains which present less opportunity for extensive development.

Table 2.6-1. Existing Regional and Local Population Change

Geographic Area	ACS 2010 5-Year Estimate	ACS 2019 5-Year Estimate	Percent Change (2010 to 2019) (%)
County of Riverside	2,109,464	2,411,439	14.3
City of Lake Elsinore	48,644	65,817	35.3
Community Impact Study Area Census Tracts			
Census Tract 420.07	4,491	5,058	12.6
Census Tract 427.15	11,938	14,869	24.6
Census Tract 430.05	5,022	5,960	18.7
Census Tract 430.06	4,028	5,402	34.1
Total	25,479	31,289	22.8[a]

Source: U.S. Census Bureau 2010 (Table B01003), 2020 (Table B01003)
Notes:
[a] Percent change of the total population between 2010 and 2019 within the community impact study area census tracts.
ACS=American Community Survey

As shown in Table 2.5-1 in Section 2.5, Growth, long-term population growth from 2018 to 2045 is expected to increase at the City and County level. The high growth rate projections may be attributed to the amount of available land area designated by the City and its SOI for development.

Income and Poverty

As shown in Table 2.6-2 the median household income for the census tracts within the community impact study area varies from $45,156 to $90,888. Census Tracts 430.05 and 430.06 exhibit lower median household incomes than the City's and County's, while Census Tracts 420.07 and 427.15 exhibit higher median household incomes. When compared to the 2023 U.S. DHHS poverty guidelines of $30,000 for a family of four (U.S. DHHS 2023), none of the census tracts are below this threshold.

Table 2.6-2. Existing Regional and Local Income Characteristics

Geographic Area	Median Household Income (U.S. $)	Percent of Population Below Poverty Level (%)
County of Riverside	67,005	13.7
City of Lake Elsinore	71,476	14.5
Community Impact Study Area Census Tracts		
Census Tract 420.07	89,839	11.4
Census Tract 427.15	90,888	18.6
Census Tract 430.05	56,400	14.0
Census Tract 430.06	45,156	22.1
Summary	70,571[a]	17.2[b]

Source: U.S. Census Bureau 2020 (Tables B19013 and S1701)

Notes:

[a] Average of median household income for community impact study area census tracts

[b] The percentage of the total population within the community impact study area census tracts that is below poverty level.

U.S.=United States

Disabled Populations

As shown in Table 2.6-3, the estimated disabled populations within the census tracts associated with the community impact study are similar to the City and County estimates.

Table 2.6-3. Disabled Populations

Geographic Area	Disabled Population (%)
County of Riverside	11.6
City of Lake Elsinore	9.1
Community Impact Study Area Census Tracts	
Census Tract 420.07	12.6

Table 2.6-3. Disabled Populations

Geographic Area	Disabled Population (%)
Census Tract 427.15	9.9
Census Tract 430.05	10.8
Census Tract 430.06	10.9
Summary	10.7[a]

Source: U.S. Census Bureau 2020 (Table S1810)

Notes:

[a] The percentage of the total population within the community impact study area census tracts that consists of the disabled population.

Limited English-Speaking Households

As identified in Table 2.6-4, Census Tract 430.06 has a significantly higher percentage of limited English-speaking households; which speak Spanish, when compared to the other census tracts, City, and County. Census Tract 430.05 has a higher percentage of limited English-speaking households than Census Tracts 420.07 and 427.15 but is relatively similar to the City and County. However, when averaged, the overall community impact study area census tracts have a relatively low percentage of limited English-speaking households and is most similar to City estimates.

Table 2.6-4. Limited English-Speaking Households

Geographic Area	Total Households	Total Households Speaking Language Other than English (%)	Limited English Speaking Households[a]			
			Spanish Language (%)	Other Indo-European Language (%)	Asian and Pacific Islander Languages (%)	Other Languages (%)
County of Riverside	724,893	8.1	6.8	0.2	1.0	0.1
City of Lake Elsinore	17,664	5.8	4.7	0.1	0.9	0.0

Table 2.6-4. Limited English-Speaking Households

Geographic Area	Total Households	Total Households Speaking Language Other than English (%)	Limited English Speaking Households[a]			
			Spanish Language (%)	Other Indo-European Language (%)	Asian and Pacific Islander Languages (%)	Other Languages (%)
Community Impact Study Area Census Tracts						
Census Tract 420.07	1,612	3.3	2.8	0.0	0.4	0.2
Census Tract 427.15	4,213	1.5	0.0	0.0	1.5	0.0
Census Tract 430.05	1,560	7.3	6.5	0.0	0.0	0.8
Census Tract 430.06	1,365	17.4	17.4	0.0	0.0	0.0
Total	8,750	5.3[b]	4.4[b]	0.0[b]	0.8[b]	0.2[b]

Source: U.S. Census Bureau 2020 (Table S1602)

Notes:

[a] A "limited English speaking household" is one in which no member 14 years old and over (1) speaks only English or (2) speaks a non-English language and speaks English "very well." In other words, all members 14 years old and over have at least some difficulty with English. By definition, English-only households cannot belong to this group. (U.S. Census Bureau 2019)

[b] Percentage of the total population within the community impact study area census tracts that consists of people who speak this language or languages.

Transit-Dependent Population

For the purpose of this analysis, the transit-dependent population was calculated by determining the number of persons in households that are eligible to drive but lack access to a vehicle. This was calculated by taking the number of residents age 16 and over within the geographic areas, subtracting the number of persons living in group quarters (e.g., correctional facilities, nursing homes, mental hospitals, college dormitories, military barracks, group homes, or missions) where driving is not typically required, subtracting the aggregate number of vehicles available, and then dividing the result by the population age 16 and over.

Table 2.6-5 shows the approximate percentage of transit-dependent population for the community impact study area census tracts, City, and County, which ranges from 6.4 to 33.0 percent. Census Tract 430.05 and 430.06 have the highest percentage of transit-dependent population compared to Census Tract 420.07, 427.15, City, and County estimates. The total average of the census tracts for transit-dependent population is 14.8 percent. Most of the population within the community impact study area census tracts is not considered to be dependent on public transportation.

Table 2.6-5. Transit Dependent Population

Geographic Area	Age 16 and Over Population	Group Quarters Population	Aggregate Number of Vehicles Available	Transit-Dependent Population (%)[a]
County of Riverside	1,870,395	36,341	1,521,644	16.7
City of Lake Elsinore	47,182	41	39,257	16.7
Community Impact Study Area Census Tracts				
Census Tract 420.07	4,145	0	3,878	6.4
Census Tract 427.15	10,862	0	9,959	8.3
Census Tract 430.05	4,471	5	3,441	22.9
Census Tract 430.06	3,830	15	2,553	33.0
Total	23,308	20	19,831	14.8

Source: U.S. Census Bureau 2020 (Tables DP03, B26001, and B25046)

Notes:

[a] Transit Dependent Population = (Population Age 16 and Over – Group Quarters Population – Aggregate Number of Vehicles Available)/Age 16 and Over

Community Facilities

According to the Caltrans Standard Environmental Reference (SER) Environmental Handbook Volume 4 (Caltrans 2011a), community facilities contribute to community cohesion in many ways. Community facilities are services and institutions that the local population relies on for their health, welfare, and as a means to interact with other members of the community. Therefore, community facilities are an important aspect of neighborhood identity.

Community facilities include schools, community centers, places of worship, and other similar institutions such as recreational, healthcare facilities, and emergency services. Community facilities

and services such as schools, community centers, places of worship, and other similar institutions within the community impact study area are shown on Figure 2.6-2 and discussed further below.

Please refer to Section 2.3, Parks and Recreational Facilities, for specific discussions on Project impacts to recreational facilities, and Section 2.9, Utilities and Emergency Services, for specific discussions on Project impacts to health facilities and emergency services.

Schools

There are no planned schools located within 0.5 mile of the Project limits. The following existing schools are located within 0.5 mile of the Project limits:

- Temescal Canyon High School (grades 9-12): serves approximately 2,157 students (California Department of Education n.d.)
- Keith McCarthy Academy (grades K-12): student enrollment is not provided

Other Community Facilities

The following places of worship are within 0.5 mile of the Project limits:

- Quest Alliance Church
- The Church of Jesus Christ of LDS

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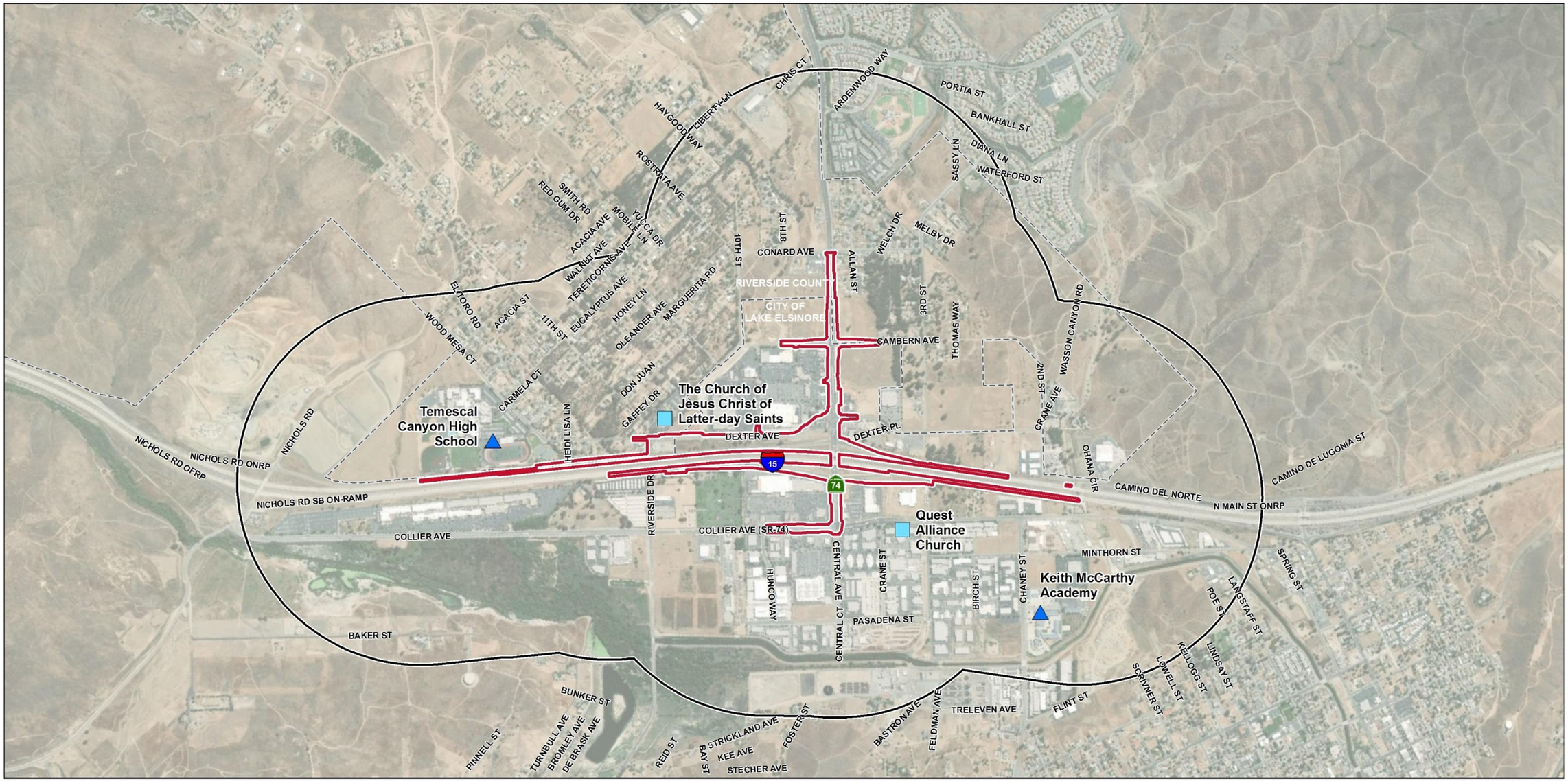

LEGEND

- Project Limits
- City/County Boundary
- Community Impact Study Area (0.5 mile buffer)

Community Facilities

- Church
- Schools

0 Feet 1,500

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 2.6-2. Existing Community Facilities

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2.6.2.2 Community Cohesion

Neighborhoods and Districts

As discussed in the City's General Plan (City of Lake Elsinore 2011a), the planning and sphere districts define the unique neighborhoods within the City. Please refer to Section 2.1, Existing and Future Land Use, for a discussion of the Business District and North Central Sphere District.

Housing

As identified in Table 2.6-6, based on 2015-2019 ACS 5-year Estimates (U.S. Census Bureau 2020), 74.8 percent, 13.8 percent, and 11.3 percent of the community impact study area census tracts consist of single-family units, multi-family units, and mobile homes, respectively. The majority of housing units across all census tracts within the community impact study area census tracts are single-family units. However, Census Tracts 420.07 and 430.05 have a larger percentage of mobile homes and Census Tract 430.06 has a larger percentage of multi-family units compared to other census tracts, City, and County estimates.

Table 2.6-6. Housing Types

Geographic Area	Total Housing Units	Single-Family Units (%)	Multi-Family Units (%)	Mobile Homes (%)	Boat, Recreational Vehicle, Van, etc. (%)
County of Riverside	840,501	73.6	17.5	8.8	0.1
City of Lake Elsinore	18,909	81.9	14.3	3.7	0.1
Community Impact Study Area Census Tracts					
Census Tract 420.07	1,856	74.2	1.3	24.5	0.0
Census Tract 427.15	4,549	81.8	14.3	3.9	0.0
Census Tract 430.05	1,682	64.1	13.7	22.2	0.0
Census Tract 430.06	1,534	66.7	27.7	5.6	0.0
Total	9,621	74.8[a]	13.8[a]	11.3[a]	0.0[a]

Source: U.S. Census Bureau 2020 (Table B25024)

Notes:

[a] Percentage of total housing units within the community impact study area census tracts that consists of this type of housing unit.

According to Table 2.6-7, of the 9,621 housing units within the community impact study area, 8,750 housing units (90.9 percent) were occupied, and the remaining 871 units (9.1 percent) were vacant. The percentage of vacant housing units varies among the census tracts, from 7.3 percent of total vacant housing units in Census Tract 430.05 to 13.1 percent total vacant housing units in Census Tract 420.07. Within Census Tract 420.07, 427.15, and 430.05 the majority of housing units are owner-occupied, while the majority of housing units within Census Tract 430.06 are renter-occupied.

Average household size of Census Tracts 420.07 (3.1 persons), 427.15 (3.5 persons), and 430.05 (3.8 persons) are most similar to the average household size of the City (3.7 persons) and County (3.3 persons). Census Tract 430.06 (4.0 persons) has the highest average household size, greater than both the City and County.

Table 2.6-7. Existing Occupancy Characteristics

Geographic Area	Total Housing Units				Type of Occupancy		Average Household Size
	Occupied		Vacant		Owner (%)	Renter (%)	
	Units	%	Units	%			
County of Riverside	724,893	86.2	115,608	13.8	66.3	33.7	3.3
City of Lake Elsinore	17,664	93.4	1,245	6.6	67.8	32.2	3.7
Community Impact Study Area Census Tracts							
Census Tract 420.07	1,612	86.9	244	13.1	77.1	22.9	3.1
Census Tract 427.15	4,213	92.6	336	7.4	74.9	25.1	3.5
Census Tract 430.05	1,560	92.7	122	7.3	55.4	44.6	3.8
Census Tract 430.06	1,365	89.0	169	11.0	36.4	63.6	4
Total	8,750	90.9[b]	871	9.1[b]	65.8[c]	34.2[c]	3.6[a]

Source: U.S. Census Bureau 2020 (Tables B25002, B25003, and S1101)

Notes:

[a] Average of average household size for community impact study area census tracts

[b] Percentage of total housing units within the community impact study area census tracts that are within this category.

[c] Percentage of people within the community impact study area census tracts who are within this category.

Data collected in Table 2.6-8 indicate that median home values within the community impact study area census tracts vary greatly from $257,500 to $470,900. Census Tracts 430.05 and 430.06 are

significantly less than the other census tracts, City, and County estimates. Census Tract 420.07 has the highest median home value within the community impact study area and is higher than City and County estimates. Median monthly rents within the community impact study area fluctuate between $1,079 and $1,781. Census Tracts 420.07 and 430.05, have similar median rents when compared to the City and County median monthly rents. Meanwhile, Census Tract 430.06 has a lower median rent and Census Tract 427.15 has a higher median monthly rent compared to the other census tracts, City, and County estimates.

Table 2.6-8. Housing Costs Characteristics

Geographic Area	Median Home Value ($)	Median Monthly Rent ($)
County of Riverside	350,100	1,375
City of Lake Elsinore	352,600	1,476
Community Impact Study Area Census Tracts		
Census Tract 420.07	470,900	1,617
Census Tract 427.15	401,200	1,781
Census Tract 430.05	257,500	1,316
Census Tract 430.06	259,500	1,079
Total	347,275[a]	1,448[a]

Source: U.S. Census Bureau 2020 (Table DP04)
Notes:
[a] Average of median home value and median monthly rent for community impact study area census tracts

Table 2.6-9 provides a summary of housing tenure characteristics for the community impacts study area, City and County. Based on the information contained in Table 2.6-9, the majority of the residential population within the community impact study area census tracts have moved into their current residence within the last 20 years. The largest number of residents moved in from 2000-2009 (28.5 percent) and 2010-2014 (27.6 percent). The data demonstrates that over 40 percent of the residential population has a residency tenure of over 20 years having lived in their current residence from 1979 or earlier through 1999.

Table 2.6-9. Housing Tenure Characteristics

Geographic Area	Total Number of Occupied Housing Units	Year Householder Moved Into Unit (%)					
		1979 or Earlier	1980-1989	1990-1999	2000-2009	2010-2014	2015 or later
County of Riverside	724,893	6.7	10.5	27.9	29.5	15.9	9.5
City of Lake Elsinore	17,664	3.0	6.8	24.3	35.6	19.6	10.6
Community Impact Study Area Census Tracts							
Census Tract 420.07	1,612	15.4	10.1	34.3	13.8	14.8	11.6
Census Tract 427.15	4,213	0.8	6.8	30.1	28.7	18.9	14.6
Census Tract 430.05	1,560	7.1	12.8	22.9	34.6	11.6	11.0
Census Tract 430.06	1,365	5.9	8.2	23.1	32.2	19.6	11.1
Total	8,750	5.4[a]	8.7[a]	28.5[a]	27.6[a]	17.0[a]	12.9[a]

Source: U.S. Census Bureau 2020 (Table B25038)

Notes:

[a] Percentage of people within the community impact study area census tracts who moved into their housing units during this specified time frame.

Age

As shown in Table 2.6-10, the median age is 30.6 years of age for the City and 35.6 years of age for the County, respectively. The median ages of Census Tract 427.15, 430.05, and 430.06 are consistent with the City and County estimates; however, Census Tract 420.07 deviates slightly with a median age of 43.7.

Table 2.6-10. Age Distribution Characteristics

Geographic Area	Median Age	19 and Under (%)	20 to 39 (%)	40 to 64 (%)	65 and Over (%)
County of Riverside	35.6	28.4	27.3	30.2	14.2
City of Lake Elsinore	30.6	34.7	30.7	27.4	7.2
Community Impact Study Area Census Tracts					
Census Tract 420.07	43.7	21.5	25.2	37.2	16.0
Census Tract 427.15	33.6	34.2	27.9	29.4	8.4
Census Tract 430.05	32.1	32.5	31.7	28.2	7.6
Census Tract 430.06	29.1	35.8	31.7	23.9	8.7
Total	34.6[a]	32.2[b]	28.9[b]	29.5[b]	9.5[b]

Source: U.S. Census Bureau 2020 (Table S0101)

Notes:

[a] Average of median ages for community impact study area census tracts

[b] Percentage of people within the community impact study area census tracts who are within this age range.

Race and Ethnicity

As seen in Table 2.6-11, the population across all geographic areas is dominated by two groups: Hispanic or Latino and White. Within the community impact study area census tracts, Census Tract 420.07 has a majority White population, while Census Tracts 427.15, 430.05, and 430.06 have a majority Hispanic or Latino population. However, the overall population majority within the community impact study area census tracts is of Hispanic or Latino origin.

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Table 2.6-11. Existing Regional and Local Race/Ethnicity Characteristics

Geographic Area	Hispanic or Latino (of any race) (%)	Not Hispanic or Latino							Total Minority Population (%)
		White (%)	Black or African American (%)	American Indian or Alaskan Native (%)	Asian (%)	Native Hawaiian/ Pacific Islander (%)	Other Race (%)	Two or More Races (%)	
County of Riverside	48.9	35.3	6.1	0.4	6.3	0.3	0.2	2.4	64.7
City of Lake Elsinore	52.7	31.3	6.0	0.3	5.9	0.2	0.8	2.9	68.7
Community Impact Study Area Census Tracts									
Census Tract 420.07	23.0	61.7	7.6	0.7	3.1	0.0	0.9	3.1	38.3
Census Tract 427.15	44.9	38.2	4.8	0.0	8.3	0.1	1.1	2.5	61.8
Census Tract 430.05	64.6	24.8	1.7	0.0	1.3	0.	0.0%	7.6	75.2
Census Tract 430.06	73.9	16.6	5.5	0.0	1.8	0.6	0.4	1.1	83.4
Total[a]	50.1	35.8	4.8	0.1	5.0	0.1	0.7	3.4	64.2

Source: U.S. Census Bureau 2020 (Table B03002)

Notes:

[a] Percentage of people within the community impact study area census tracts who have this/these race/ethnicity characteristics.

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As discussed above, community cohesion is the degree to which residents each have a sense of belonging to their neighborhood, a high level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. Impacts to community cohesion generally depend on whether a project is likely to create a barrier or disrupt connectivity of a community. Either of these can be a result of disruptions in access or residential and business acquisitions. Community cohesion is often subtle and hard to identify; however, some indicators that a community has a high degree of cohesion are:

- ***Long average residency tenures:*** Long-term residents are likely to feel more connected to their community. Approximately 42.6 percent of the residents within the community impact study area census tracts moved in prior to 2010. The community impact study area census tracts exhibit a longer residency tenure than the City (34.1 percent) and slightly lower residency tenure than County (45.1 percent). Therefore, a moderate level of community cohesion is observed within the community impact study area because the average of long-term residents living within the community impact study area census tracts is not significantly greater or less than City and County averages.
- ***Households of two or more people:*** A high percentage of single-person households tend to correlate with a low sense of community cohesion. Communities with a higher average household size tend to be more focused on family rearing, which increases community cohesion. The average household size for each of the affected census tracts within the community impact study area is over 3 persons per household. Because this average household size does not indicate a high level of single-person households, the community cohesion based on this indicator is moderate within the community impact study area census tracts.
- ***Home ownership over rentals:*** A high percentage of home ownership tends to correlate with a high level of community cohesion, whereas a high percentage of rentals tends to imply high mobility within the community. Home ownership within the community impact study area census tracts is 65.8 percent, which is similar to the City (67.8 percent) and the County (66.3 percent). This data indicates that there may be a moderate level of community cohesion within the community impact study area because the average rate of owner-occupied units is not significantly greater or less than City and County averages, and 34.2 percent of the population within the community impact study area census tracts are still renting a significant portion of the occupied housing units.

- ***Ethnic homogeny:*** Clusters of populations with similar ethnic roots add to a sense of community cohesion. The community impact study area census tracts have a higher percentage of Hispanic or Latino (50.1 percent) and White (35.8 percent). The remaining 14.1 percent is composed of non-White/not Hispanic or Latino origin (i.e., Black or African American, American Indian or Alaskan Native, Asian, Native Hawaiian/Pacific Islander, Other Race, and Two or More Races). These rates are comparable to the percentages of the City's Hispanic or Latino (52.7 percent), White (31.3 percent), and non-White/not Hispanic or Latino origin (16.0 percent); and the County's Hispanic or Latino (48.9 percent), White (52.7 percent), and non-White/not Hispanic or Latino origin (15.8 percent). Given that there are two groups that represent a significant majority within the community impact study area census tracts, this may also indicate a moderate level of community cohesion.

In considering these factors, the community impact study area and its associated census tracts show moderate potential for community cohesion. Although the community impact study area exhibits a higher residency tenure than City or County averages, the remaining factors are similar or slightly lower than that of City or County averages.

Based on indicators of community cohesion discussed above, the population characteristics within the community impact study area census tracts do not exhibit a substantial difference than these same characteristics for the City or County. The community impact study area census tracts exhibit the following in comparison to the County and City:

- a residential tenure of over 20 years (42.6 percent) that falls within the averages for the County (45.1 percent) and the City (34.1 percent),
- a similar median age of 34.6 compared to 35.6 (County) and 30.6 (City),
- a similar median household income of $70,571 compared to $67,005 (County) and $71,476 (City)
- a similar level of populations with a disability representing 10.7 percent compared to 11.6 percent (County) and 9.1 percent (City)
- a similar minority population of 64.2 percent compared to 64.7 percent (County) and 68.7 percent (City)
- a lower level of limited English-speaking households of 5.3 percent compared to 8.1 percent (County) and 5.8 percent (City)
- a lower level of transit-dependent population of 14.8 percent compared to 16.7 percent for County and City, respectively,

- a similar rate of owner-occupied units (65.8 percent compared to 66.3 percent in the County and 67.8 percent in the City), and
- a similar average household size of 3.6 persons compared to 3.3 persons (County) and 3.7 persons (City).

Given the information above and the amount of existing public facilities, vacant land, and future commercial development that is planned to occur within the community impact study area (see Section 2.1, Existing and Future Land Use and Section 2.3, Parks and Recreational Facilities), a moderate level of community cohesion has been assessed for the existing conditions within the community impact study area and its associated census tracts.

2.6.3 Environmental Consequences

2.6.3.1 Temporary Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not involve construction of the Project improvements. Therefore, there will be no temporary adverse impacts to community character and cohesion under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramp)

Construction activities associated with Alternative 2 are expected to result in temporary indirect impacts to air quality, noise, and traffic in the community impact study area, due to temporary lane closures and access restrictions during construction. Indirect impacts to air quality will occur as a result of temporary increase in emissions due to traffic congestion and use of construction equipment, and indirect impacts to noise will occur as a result of construction activities.

However, temporary indirect impacts to noise and air quality related to construction activities that may affect residential communities that are within close proximity to the Project limits, will be reduced by complying with City noise regulations and Measures AQ-1 through AQ-8 (see Section 2.18, Air Quality) which require use of dust control procedures, maintenance of equipment, and other standard BMPs and regulations are implemented during construction.

While there will be a temporary increase in traffic congestion and access restrictions within the community impact study area during construction activities, a transportation management plan (TMP) per Measure TR-1 (see Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities) will be prepared and will identify strategies to reduce potential impacts to access and

traffic delays during construction. Although temporary lane closures during construction will be required, vehicular (including school buses and emergency response vehicles), pedestrian, and bicyclist access along the road and to/from private properties will be maintained at all times.

Construction activities will be temporary and will cease after construction is complete, and alternative routes for any existing sidewalks will be provided during construction to maintain connectivity. Therefore, with the implementation of Measures AQ-1 through AQ-8 and Measure TR-1, the Project under Alternative 2 will not result in a temporary adverse impact related to community access or to the quality of life in such a way that will create a barrier or disruption to the community character and cohesion within the community impact study area.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Similar to Alternative 2, temporary construction related impacts to air quality, noise, and traffic circulation and access will occur. However, by complying with City noise regulations and implementing Measures AQ-1 through AQ-8 and Measure TR-1, the Project under Alternative 3 (Preferred Alternative) will not result in temporary adverse impacts related to community access or to the quality of life in such a way that will create a barrier or disruption to the community character and cohesion within the community impact study area.

2.6.3.2 Permanent Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not implement the Project improvements. Therefore, there will be no permanent adverse impacts related to community character and cohesion under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramp)

Under Alternative 2, the Project will create a more efficient and safe transportation system within the community impact study area, which will in turn, benefit the surrounding neighborhoods and communities and support the City's future planned growth. The Project will also contribute to the City's ability to create a stronger sense of community character and cohesion by improving mobility for all users, residents, and businesses that provide employment and services for the surrounding community; accommodating for future growth within the community impact study area; and supporting the continued development of the Business District as the employment and retail hub of the City through the improvements to connectivity and access. Additionally, as identified above in

Section 2.6.2.1, community facilities that contribute to community character and cohesion, will not be adversely affected by the Project.

As discussed in Section 2.5, Growth, the Project will improve an existing freeway interchange and will not result in the construction and operation of residential, commercial, or industrial development. Although the implementation of the Project under Alternative 2 will require the relocation of two businesses (Burger King and R&N Landscape Supply materials yard) and some partial acquisitions (see Section 2.7, Relocation), the majority of Project improvements under Alternative 2 will occur within existing public ROW. These acquisitions will not damage the existing community character or quality of the neighborhoods and communities within the community impact study area because the improvements will be consistent with the existing setting and characteristic of the Business District and consistent with the local and regional goals and policies. Further, these acquisitions will not create a barrier that divides the neighborhood or limits access within the community by impacting special groups, reducing social interaction, or removing or relocating community serving facilities.

Therefore, implementation of the Project under Alternative 2 will not adversely affect population characteristics, economic opportunities, employment, or housing availability, which directly affects local and regional growth and the community's character and cohesion. Based on the information above, the Project under Alternative 2 will not result in permanent adverse impacts to the moderate level of community character and cohesion assessed for the community impact study area, and its associated census tracts.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Impacts under Alternative 3 (Preferred Alternative) will be similar to Alternative 2, except that Alternative 3 (Preferred Alternative) will result in the displacement and relocation of the R&N Landscape Supply maintenance yard, only, and not both the R&N Landscape Supply maintenance yard and Burger King as anticipated under Alternative 2. The Project under Alternative 3 (Preferred Alternative) will also not create a barrier that divides the neighborhood or limits access within the community by impacting special groups, reducing social interaction, or removing or relocating community serving facilities; or negatively influence the population characteristics, economic opportunities, employment, or housing availability within the community impact study area. Therefore, Alternative 3 (Preferred Alternative) will not result in permanent adverse impacts to the moderate level of community character and cohesion assessed for the community impact study area, and its associated census tracts.

2.6.4 Avoidance, Minimization, and/or Mitigation Measures

Refer to Section 2.18, Air Quality, for Measures AQ-1 through AQ-8 and Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, for Measure TR-1. No additional avoidance, minimization, and/or mitigation measures are identified.

2.7 Relocations and Real Property Acquisitions

2.7.1 Regulatory Setting

The Caltrans Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of the RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix D for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, persons with disabilities, religion, age, or sex. Please see Appendix B for a copy of Caltrans' Title VI Policy Statement.

2.7.2 Affected Environment

This section was prepared using the *Relocation Impact Memorandum* (Caltrans 2020a) prepared for the Project. As discussed in Section 2.1, Existing and Future Land Uses, and Section 2.6, Community Character and Cohesion, the Project is primarily within the Business District which contains mostly commercial uses that are predominately big box retailers and chain restaurants with a few smaller local businesses. There are also scattered areas of residential land uses and vacant lots that are located on the outer edges of the Project limits.

In considering the population characteristics, economic conditions, and community facilities within the community impact study area assessed for the Project, the community impact study area (see Figure 2.6-1 in Section 2.6, Community Character and Cohesion) shows moderate potential for community cohesion. Although the community impact study area exhibits a higher residency tenure than City or County averages, based on other indicators of community cohesion (e.g., household size, occupied housing characteristics, and ethnic homogeneity) the average of the population characteristics within the community impact study area do not exhibit a significant difference than City or County averages.

2.7.3 Environmental Consequences

Based on information from the *Relocation Impact Memorandum* (Caltrans 2020a), Table 2.7-1 summarizes the impacts to any residential and non-residential properties, and Figure 2.7-1 through Figure 2.7-4 depict the Project impacts to properties within the Project limits for the Build Alternatives.

2.7.3.1 Temporary Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not result in construction of the Project improvements. Therefore, there will be no temporary adverse impacts to residential or non-residential properties as a result of a displacement and relocation under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramp)

No residential properties or structures will be impacted by the Project. Temporary impacts to properties will occur during the construction phase which will require a TCE or staging areas for the implementation of improvements to adjacent roadways. However, these temporary impacts will not affect the function or use of any of the non-residential properties as listed in Table 2.7-1.

The Project under Alternative 2 will result in temporary impacts as a result of TCEs required on eight parcels located along Dexter Avenue and SR-74 (Central Avenue). These eight parcels requiring TCEs contain retail establishments (i.e., Costco, Lowes, Wendy's, Wells Fargo Bank, Valvoline Instant Oil Change, and Central Plaza), the Church of Jesus Christ of LDS, and a portion of the Arroyo del Toro Channel detention basin located north of SR-74 (Central Avenue) between I-15 and Dexter Avenue. Approximately 15 parking spaces belonging to the Central Plaza that are directly adjacent to improvements long SR-74 (Central Avenue) will be temporarily impacted during construction as a result of TCEs.

However, there is an alternative access point off Dexter Place and Dexter Avenue, which will provide continuous access throughout construction and ample parking within the impacted plaza. The Arroyo Del Toro Channel is maintained and operated by the Riverside County Flood Control and improvements to the detention basin are mostly located within Caltrans ROW.

No temporary impacts to structures and no displacement of businesses, personal property, or disruption to the current function of these properties will occur under Alternative 2, as a result of these TCEs. All areas affected by a TCE will be returned to original conditions once construction is complete. Further, a TMP per Measure TR-1 (see Section 2.10, Traffic and Transportation/ Pedestrian and Bicycle Facilities) will be prepared and will identify strategies to reduce potential impacts to access to and from these businesses during construction. Therefore, the businesses located on these impacted properties will continue to operate and be accessible to patrons during construction, and no substantial temporary adverse impacts will occur under Alternative 2.

Table 2.7-1. List of Affected Properties

APN	Location	Current/Existing Use	Alternative 2 Impacts		Alternative 3 (Preferred Alternative) Impacts	
			Acquisition Type	Size (Acres)	Acquisition Type	Size (Acres)
377-020-009	Cambern Avenue / north of 29180 Cambern Ave	Vacant/ undeveloped	Partial	0.01	Partial	0.01
377-020-027	29180 Cambern Avenue	Vacant/ undeveloped	Partial	0.20	Partial	0.20
377-020-019	18650 Cambern Avenue	Vacant/ undeveloped	Partial	0.16	Partial	0.16
377-020-014	East side of Cambern Avenue, south of Central Avenue	Vacant/ undeveloped	Partial	0.06	Partial	0.06
377-050-036	East side of I-15, south of 11th Street	R&N Landscape Supply materials yard	Full	1.17	Full	1.17
377-050-081			Full	0.09	Full	0.09
377-050-082			Full	0.07	Full	0.07
377-040-020	18220 Dexter Avenue	The Church of Jesus Christ of LDS	TCE	.01	TCE	.01
377-040-009	Dexter Avenue / South of Church of Jesus Christ of LDS	Vacant/ undeveloped	Partial	0.04	Partial	0.04
			TCE	0.08	TCE	0.08
377-040-045	East side of Dexter Avenue, north of Arroyo Del Toro Channel	Vacant/ undeveloped	Partial	0.06	Partial	0.06
			TCE	0.17	TCE	0.17

Table 2.7-1. List of Affected Properties

APN	Location	Current/Existing Use	Alternative 2 Impacts		Alternative 3 (Preferred Alternative) Impacts	
			Acquisition Type	Size (Acres)	Acquisition Type	Size (Acres)
377-040-044	Arroyo Del Toro Channel	Drainage facility	TCE	0.02	TCE	0.02
377-040-043	29315 Central Avenue and 29223 Central Avenue	Costco Wholesale and Costco Gasoline	TCE	0.15	TCE	0.15
377-040-042	29335 Central Avenue	Lowes	TCE	0.09	TCE	0.09
377-040-052	29355 Dexter Avenue	Arco Gas Station	Partial	0.03	Partial	0.03
			TCE	0.07	TCE	0.07
377-040-040	29295 Central Avenue	Valvoline Instant Oil Change	TCE	0.004	TCE	0.004
377-040-051	29275 Central Avenue	Wendy's	TCE	0.03	TCE	0.03
377-040-050	29265 Central Avenue	Wells Fargo bank	TCE	0.02	TCE	0.02
377-030-056	29280 Central Avenue	Central Plaza	TCE	0.17	TCE	0.17
377-030-093	29300 Central Avenue	Circle K/Mobil Gas Station	Partial	0.004	Partial	0.004
			TCE	0.06	TCE	0.06
377-040-022	18611 Dexter Avenue	Burger King Restaurant	Full	0.81	Partial	0.10
					TCE	0.18
377-040-026			Full	0.008	Partial	0.006

Table 2.7-1. List of Affected Properties

APN	Location	Current/Existing Use	Alternative 2 Impacts		Alternative 3 (Preferred Alternative) Impacts	
			Acquisition Type	Size (Acres)	Acquisition Type	Size (Acres)
					TCE	0.002
377-030-073	18451 Dexter Avenue	Chevron Gas Station	Partial	0.06	Partial	0.06
			TCE	0.08	TCE	0.08

Source: Caltrans 2020a; County of Riverside n.d.

Notes:
APN=Assessor's Parcel Number; I-15=Interstate 15; LDS=Latter-day Saints; TCE=temporary construction easement

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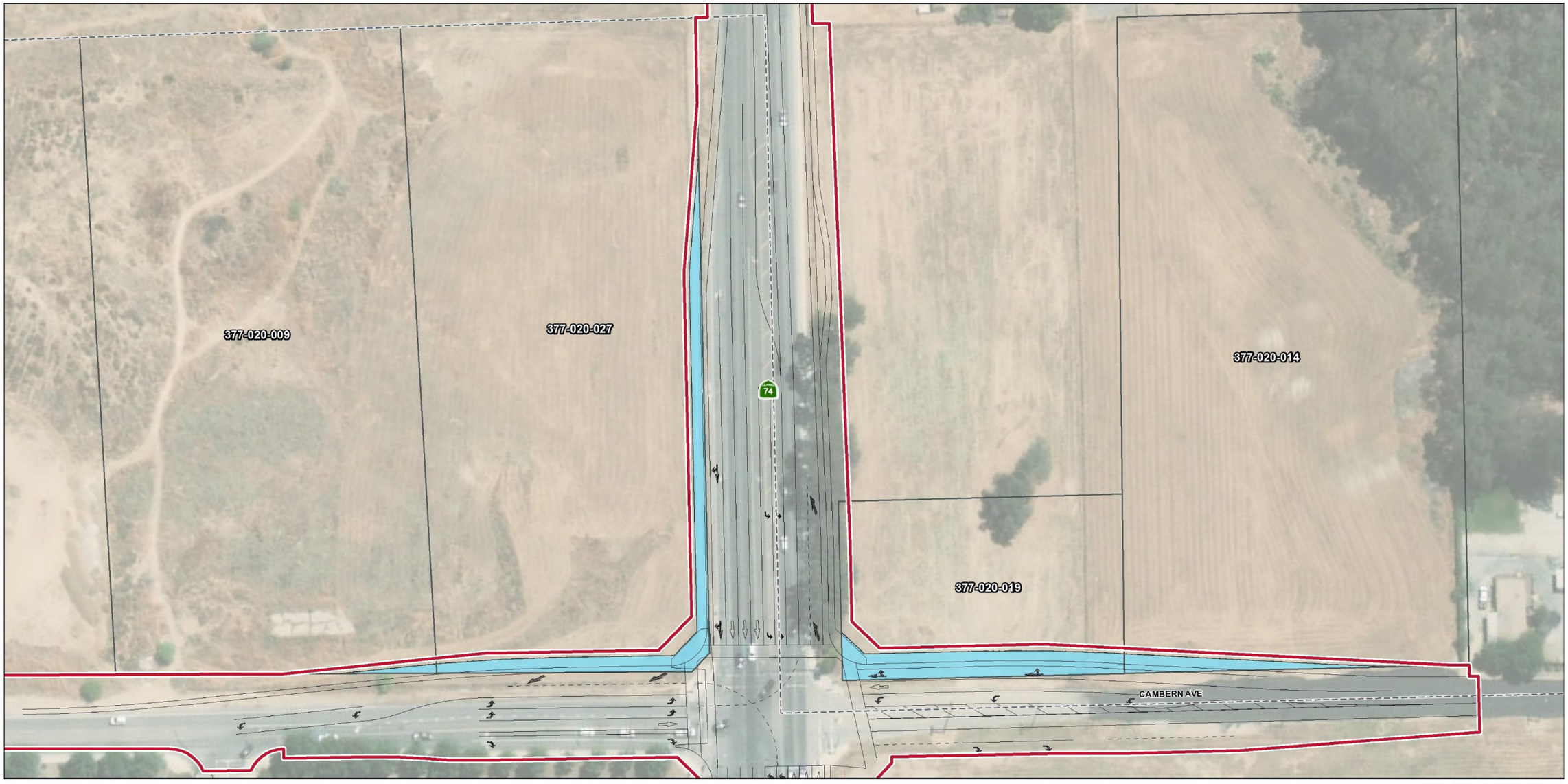

Figure 2.7-1. Build Alternatives – Right of Way Impacts (Sheet 1)

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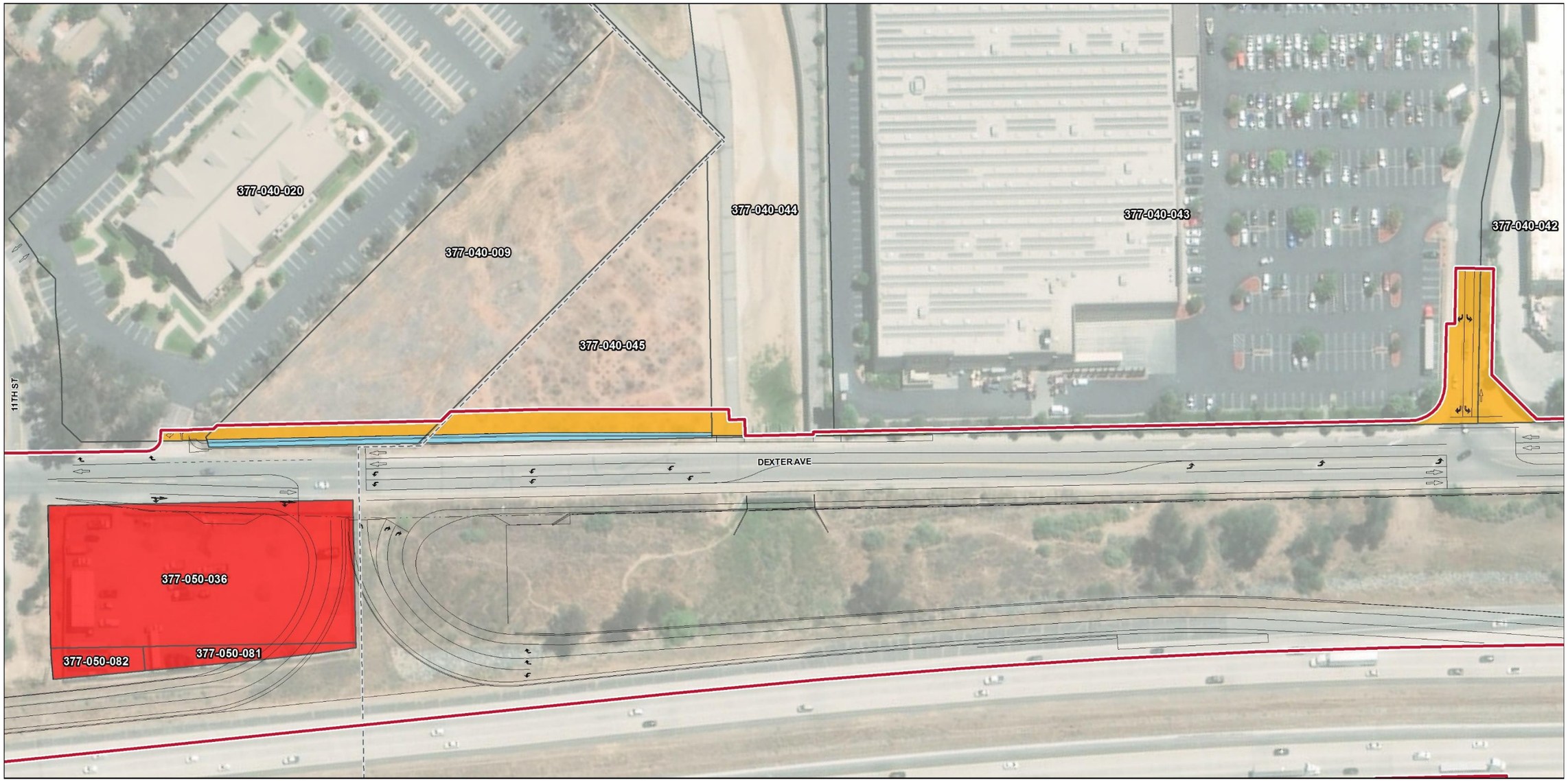

Figure 2.7-2. Build Alternatives – Right of Way Impacts (Sheet 2)

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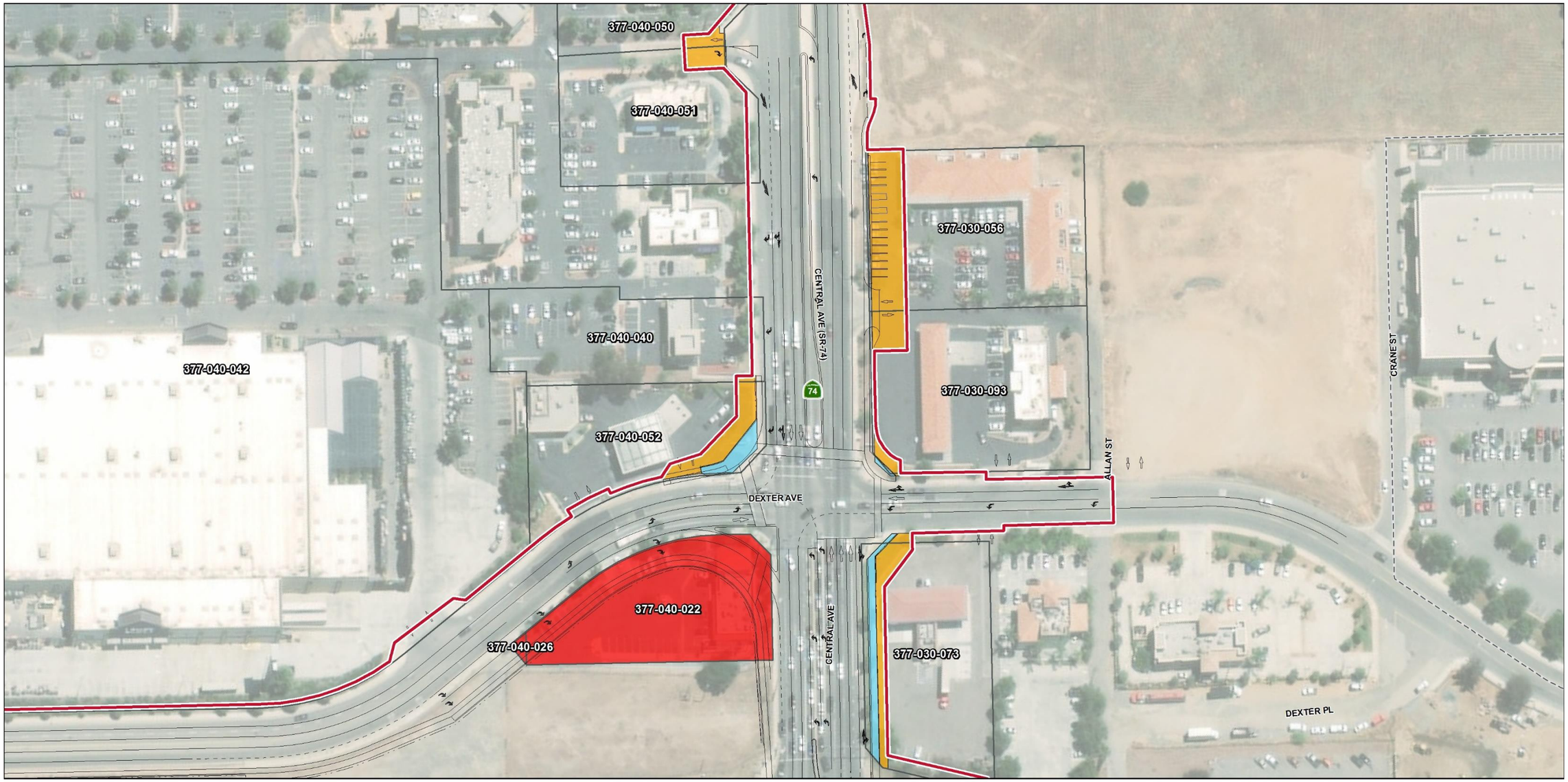

Figure 2.7-3. Alternative 2 – Right of Way Impacts (Sheet 3A)

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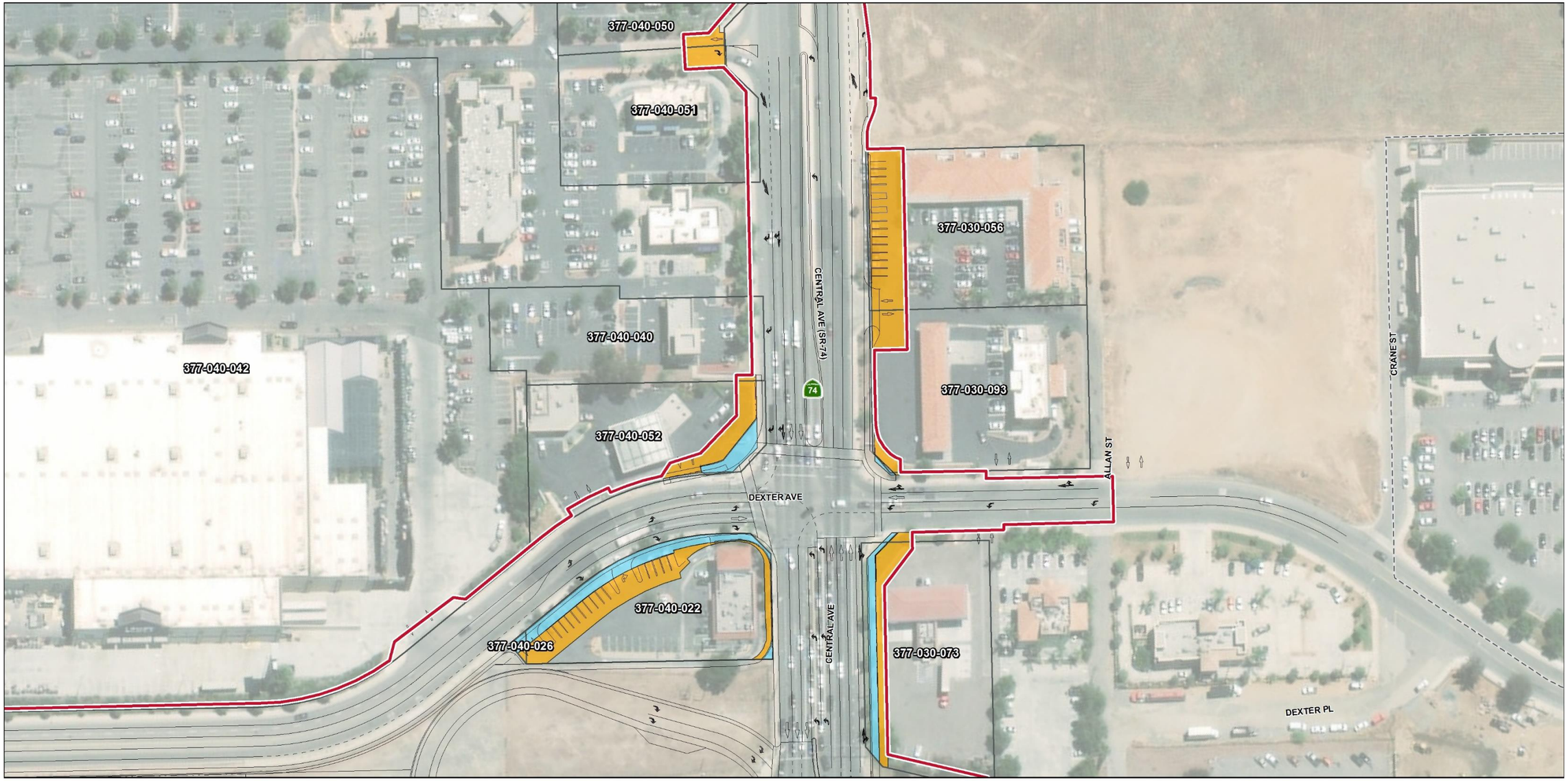

Figure 2.7-4. Alternative 3 (Preferred Alternative) – Right of Way Impacts (Sheet 3B)

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Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

As shown in Table 2.7-1, the location and size of the temporary impacts under Alternative 3 (Preferred Alternative) are almost the same as under Alternative 2. However, unlike Alterative 2, Alternative 3 (Preferred Alternative) will not displace and relocate the Burger King (Figure 2.7-4). Under Alternative 3 (Preferred Alternative), temporary impacts to the Burger King will occur, as a result of a TCE along the outer edge of the property along Dexter and Central Avenues (SR-74). This TCE is needed for the construction of the single right-turn lane on SB Dexter Avenue; rebuild the driveways, parking spaces, landscaped areas; and to construct a retaining wall adjacent to the drive-through. As a result, approximately 15 parking spaces will also be temporarily impacted by TCEs. However, the TCEs will not affect the ability of the Burger King to operate during construction since access to the business will be maintained during construction, the drive-through will not be affected, and the remaining parking spaces that will be available will sufficiently accommodate patrons.

Similar to Alternative 2, under Alternative 3 (Preferred Alternative) no temporary impacts to structures and no displacement of businesses, personal property, or disruption to the current function of these properties will occur as a result of these TCEs. All areas affected by a TCE will be returned to original conditions once construction is complete. A TMP per Measure TR-1 (see Section 2.10, Traffic and Transportation/ Pedestrian and Bicycle Facilities) will also be implemented. Therefore, the businesses located on these impacted properties will continue to operate and be accessible to patrons during construction, and no substantial temporary adverse impacts will occur under Alternative 3 (Preferred Alternative).

2.7.3.2 Permanent Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not result in the implementation of the Project improvements. Therefore, there will be no permanent adverse impacts to residential or non-residential properties as a result of a displacement and relocation under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramp)

As shown on Figure 2.7-2 and summarized in Table 2.7-1, two businesses (R&N Landscape Supply materials yard and a Burger King) will require relocation to accommodate the reconstruction of the on- and off-ramps under Alternative 2. Additionally, partial acquisition of nine parcels will occur as a result of roadway widenings and improvements. Six of the parcels are vacant/undeveloped and the

remaining three parcels contain an Arco Gas Station, Circle K/Mobil Gas Station, and Chevron Gas Station. No structures or parking will be permanently affected, and no displacement of these businesses will occur as a result of implementing the Project under Alternative 2. Therefore, these partial acquisitions will not significantly impact or adversely impact the function of or access to these properties.

According to the *Relocation Impact Memorandum* (Caltrans 2020a), a search for currently available relocation sites was conducted and potential properties have been identified for the R&N Landscape Supply materials yard and a Burger King. Final relocation sites for the Burger King and R&N Landscape Supply maintenance yard will be identified during the final design (PS&E) phase. If there is a lack of available or comparable properties during the final design (PS&E) phase, when property acquisitions will occur, the replacement area may need to be expanded to identify additional replacement properties that will accommodate nonresidential displacees. Additional plans to minimize hardships on potential displacees will be developed further following owner and occupant interviews, which will be conducted during the final design (PS&E) phase of the Project, in accordance with Sections 10.02.05.05 and 10.02.05.07 of the Caltrans ROW Manual (Caltrans 2021d). All property acquisition and relocation under Alternative 2 will be handled in accordance with the Uniform Act Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as identified in Measure REL-1. With the implementation of Measure REL-1, no substantial permanent adverse impacts are anticipated under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

As shown on Figure 2.7-4 and summarized in Table 2.7-1, under Alternative 3 (Preferred Alternative) one business (R&N Landscape Supply materials yard) will require relocation to accommodate the infrastructure improvements. Compared to Alternative 2, only a partial acquisition of the Burger King parcels (Figure 2.7-4) will occur along the outer most perimeter of the parcel that is adjacent to the roadway improvements for the construction of the single right-turn lane on SB Dexter Avenue under Alternative 3 (Preferred Alternative). The partial acquisition and improvements will not require relocation of the Burger King.

All property acquisition and relocation under Alternative 3 will be handled in accordance with the Uniform Act Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as identified in Measure REL-1. With implementation of Measure REL-1, no substantial permanent adverse impacts are anticipated under Alternative 3 (Preferred Alternative).

2.7.4 Avoidance, Minimization, and/or Mitigation Measures

In addition to Measure TR-1 (see Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities), the following minimization measure will be implemented to address impacts associated with relocations as a result of the Build Alternatives:

REL-1 Where acquisition and relocation are unavoidable, the City's Resident Engineer will ensure that the provisions of the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970 (49 CFR Part 24), as amended, and the Caltrans ROW Manual will be followed.

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2.8 Environmental Justice

2.8.1 Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2023, this was $30,000 for a family of four.

EO 14096—"Revitalizing Our Nation's Commitment to Environmental Justice for All" was enacted on April 21, 2023. EO 14096 on environmental justice does not rescind EO 12898 – "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," which has been in effect since February 11, 1994, and is currently implemented through DOT Order 5610.2C. This implementation will continue until further guidance is provided regarding the implementation of the new EO 14096 on environmental justice.

All considerations under Title VI of the Civil Rights Act of 1964, and related statutes, have also been included in this Project. The Department's commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix B of this document.

2.8.2 Affected Environment

In order to determine if an Environmental Justice (EJ) population will be disproportionately adversely impacted by the Project, the existence and location of EJ populations within the affected community (AC) must first be determined. For purposes of EJ analysis, the AC includes all census tracts having any part that lie within the EJ study area (see Figure 2.6-1).

As identified in the Environmental Justice Guidance under NEPA (FHWA 2011) and Caltrans SER Guidance Volume 4: Community Impacts Assessment (Caltrans 2011a), the CEQ definitions for NEPA analysis established the following definitions.

- Minority Individuals are defined as members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black; or Hispanic.

- Minority populations should be identified where either: a) the minority population of the affected area exceeds 50 percent; or b) The minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. [1]

In addition, as identified by USDOT and FHWA Departmental Order 5610.2(a) (FHWA 1997), a "low-income household" is defined as "a person whose household income is at or below the U.S. DHHS Poverty Guidelines."

The EJ analysis was conducted using census tract-level information from the 2015-2019 ACS 5-year Estimates (U.S. Census Bureau 2020). Potential EJ impacts are detected by locating minority populations and low-income populations in and near the Project limits, calculating their percentage in the area relative to a reference population, and determining whether there will be adverse effects.

Based on the definitions above, the following analysis defines EJ areas as census tract populations that meet either of the following criteria:

- A minority population of the affected area exceeds 50 percent; or
- When the median household income for an affected community or census tract is below the 2021 U.S. DHHS Poverty Guideline income of $26,500 (U.S. DHHS 2021).

Table 2.8-1 identifies which census tracts within the AC and EJ study area contain EJ populations. A community of comparison (COC), which is typically a state, county, city, or town is also included as a reference community. The AC needs to be contained within the COC, and for purposes of this analysis the COC is considered to be the City, County, and State of California. Figure 2.8-1 graphically depicts which census tracts have been identified as having populations that meet EJ criteria of minority or low-income.

Minority Environmental Justice Population

In Table 2.8-1, the affected census tracts would need to exceed a minority population of 50 percent to determine whether there is an EJ minority population. Census Tracts 427.15, 430.05, and 430.06 are identified as having EJ minority populations greater than 50 percent.

[1] It should be noted that while these are the official definitions for the NEPA analyses, they may not be appropriate for assessing EJ issues in transportation plans in California where minority individuals are the majority of residents and living expenses in some areas are unusually high.

Table 2.8-1. Environmental Justice Minority and Low-Income Populations in EJ Study Area

Geographic Area within EJ Study Area	Minority Populations			Low-Income Populations		
	Percent Minority [a]	Percent Minority in Affected Community > 50%	Minority EJ Population	Median Household Income ($)	Median Household Income Below U.S. DHHS Poverty Income of $26,500? [b]	Low-Income EJ Population?
COC						
State of California	63.7	N/A	N/A	$75,235	N/A	N/A
County of Riverside	64.7	N/A	N/A	$67,005	N/A	N/A
City of Lake Elsinore	68.7	N/A	N/A	$71,476	N/A	N/A
Affected Community within City of Lake Elsinore						
Census Tract 420.07	38.3	No	No	$89,839	No	No
Census Tract 427.15	61.8	Yes	Yes	$90,888	No	No
Census Tract 430.05	75.2	Yes	Yes	$56,400	No	No
Census Tract 430.06	83.4	Yes	Yes	$45,156	No	No

Source: U.S. Census Bureau 2020 (Tables B03002 and B19013)

Notes:

[a] Minority populations include members of the following population groups: American Indian or Alaskan Native; Asian; Native Hawaiian/Pacific Islander; Black or African American; and Hispanic or Latino.

[b] 2021 U.S. DHHS poverty level for a family of four.

AC=affected community; COC=community of comparison; DHHS=Department of Health and Human Services; EJ=environmental justice; N/A=not applicable; U.S.=United States

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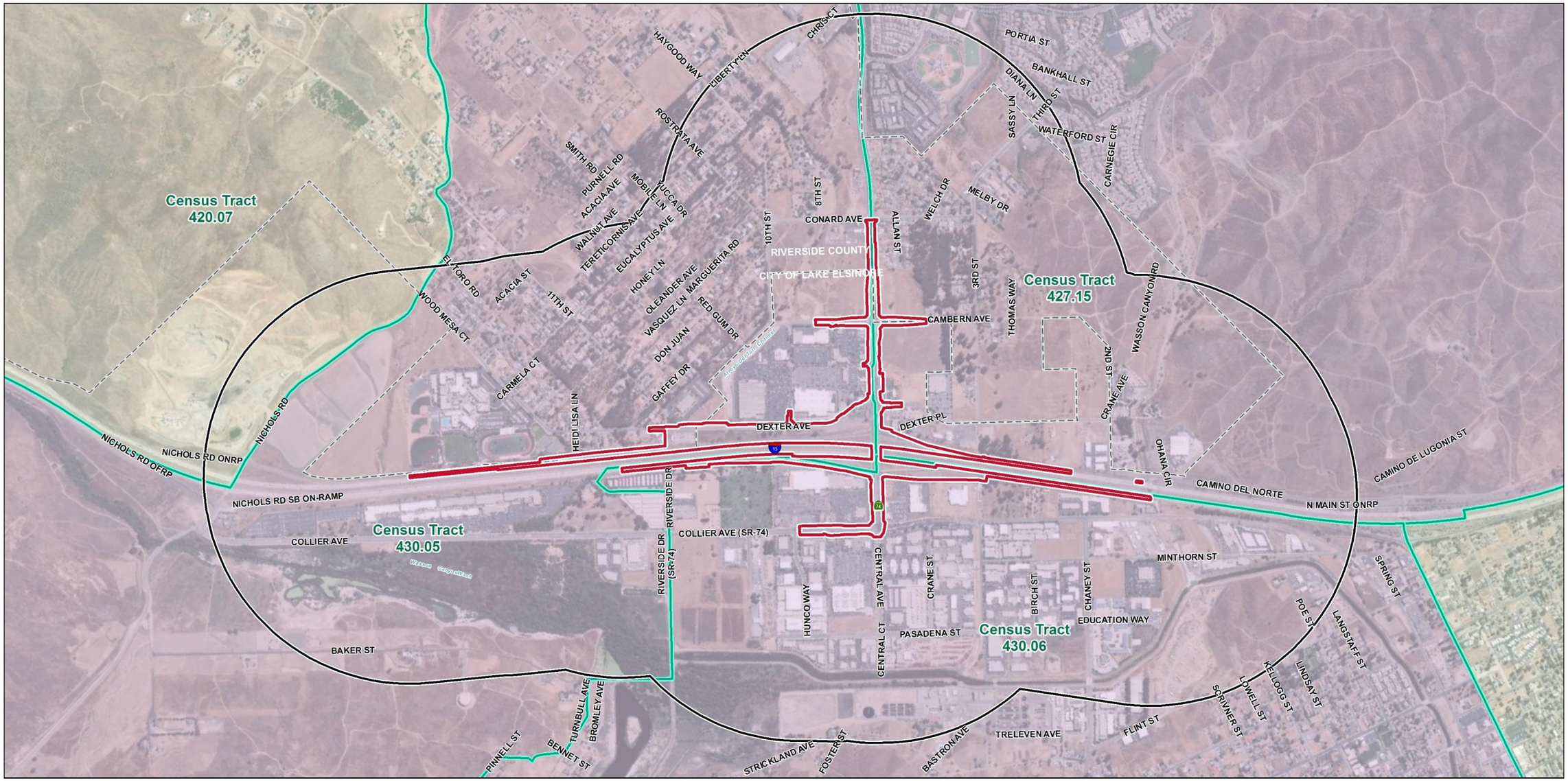

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 2.8-1. Census Tracts with Environmental Justice Populations

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Low-Income Environmental Justice Population

In Table 2.8-1, using the 2021 U.S. DHHS Poverty Guideline income of $26,500 (U.S. DHHS 2021) to adjust for census tract level information from the 2015-2019 ACS 5-year Estimates (U.S. Census Bureau 2020) for a family of four as a threshold, no census tracts were identified as a low income EJ population.

2.8.3 Environmental Consequences

As identified in Table 2.8-1, Census Tracts 427.15, 430.05, and 430.06 are identified as having EJ minority populations greater than 50 percent, and none of the census tracts have been identified as having low-income EJ populations based on the 2021 U.S. DHHS Poverty Guideline income of $26,500 (U.S. DHHS 2021) for a family of four.

The census tracts affected by the Build Alternatives are relatively large, and the Project will affect only a small part of these census tracts. The Project under the Build Alternatives is an improvement of the existing I-15/SR-74 interchange and will address the deficiencies of the existing transportation system. The Build Alternatives will benefit residents within the EJ study area, including minority populations, by improving mobility and circulation throughout the EJ study area. Based on the discussions below, the Project will not result in a disproportionately high and adverse impact to residents or EJ populations within the EJ study area.

2.8.3.1 Temporary Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not result in construction of the Project improvements. Therefore, there will be no temporary adverse impacts to EJ populations under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramp)

Traffic and Circulation

There are no existing residential properties within the Project limits; however, within the AC and EJ study area, existing residential properties are primarily clustered northeast of Dexter Avenue and the Arroyo Del Toro Channel, and northeast of SR-74 (Central Avenue) and Cambern Avenue with some scattered residential properties located south of 3rd Street along Cambern Avenue and Dexter Avenue. These two areas that contain existing residential properties are within Census Tracts 427.15 and 430.05, both of which contain EJ minority populations. During construction, EJ populations that live adjacent to the Project limits and within the AC and EJ study area may

experience temporary impacts to local circulation and connectivity due to detours and temporary lane closures to accommodate phased staging of the Project construction under Alternative 2.

Construction activities may cause traffic delays for local residents, businesses, and commuters within the EJ study area under Alternative 2. Temporary lane closures during construction will be required; however, connectivity for vehicles (including buses and emergency response vehicles), pedestrians, and bicyclists within the EJ study area will be maintained throughout the construction phase. Temporary impacts to traffic and circulation will be reduced through the implementation of a TMP per Measure TR-1 (see Section 2.10, Traffic and Transportation/ Pedestrian and Bicycle Facilities) through the application of strategies to reduce impacts to access during construction. Therefore, the Project under Alternative 2 will not result in substantial temporary adverse impacts to EJ populations, as it relates to traffic and circulation.

Air Quality/Greenhouse Gases

As further discussed in Section 2.18, Air Quality, temporary impacts to air quality may occur during construction as a result of site preparation and roadway construction that will involve clearing, cut-and-fill activities, grading, removing or improving existing roadways, and paving roadway surfaces. During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated and will include carbon monoxide, nitrogen oxide, volatile organic compounds, directly emitted particulate matter broken down into particles of 10 micrometers (microns) or less and particulate matter broken down into particles of 2.5 micrometers (microns) or less, and toxic air contaminants, such as diesel exhaust particulate matter.

As discussed further in Section 3.4, Climate Change, construction will generate 2,265 MT of CO_2e over the 18-month duration of construction. Construction activities are also expected to increase traffic congestion in the area, resulting in increases in emissions from traffic during the delays. These emissions will be temporary and limited to the immediate area surrounding the construction site. Temporary air quality impacts associated with construction activities as a result of vehicle and equipment emissions and earth-disturbing activities will be reduced by the inclusion of Measures GHG-1 through GHG-8 and GHG-17 through 20 (see Chapter 3, CEQA Checklist) and AQ-1 through AQ-8. Therefore, the Project under Alternative 2 will not result in substantial temporary adverse impacts to EJ populations, as it relates to air quality.

Noise

There are typically two types of short-term noise impacts during construction, which include noise from construction crew commutes and the transport of construction equipment and materials to the Project site. A high single-event noise exposure potential at a maximum level of 88 A-weighted decibel (dBA) maximum noise level (L_{max}) from trucks passing at 50 feet will occur. However, the projected construction traffic will be short-term. Therefore, short-term construction-related worker commutes and equipment transport noise impacts will not be adverse.

The second type of short-term noise impact is related to noise generated during roadway construction. The site preparation phase, which includes grading and paving, tends to generate the highest noise levels because the noisiest construction equipment is earth-moving equipment. The worst-case composite noise level at the nearest residence during this phase of construction will be 89 dBA equivalent noise level (L_{eq}) (at a distance of 50 feet from an active construction area). Under Alternative 2, receptors within 50 feet of the Project construction area may be exposed to short-term noise higher than 89 dBA L_{eq} generated by construction activities along the Project alignment. Direct temporary impacts related to noise associated with construction activities from vehicle and equipment operations and earth-disturbing activities will be reduced by compliance with applicable noise-related local, state, and federal regulations. Additionally, the Project will implement Measure N-1 (see Section 2.19, Noise), which requires adherence to Caltrans Standard Specifications Section 14-8.02 (Noise Control), and Measure N-2, which requires that all equipment be fitted with adequate mufflers according to the manufacturers' specifications. Therefore, with the implementation of Measures N-1 and N-2, the Project under Alternative 2 will not result in substantial temporary adverse impacts to EJ populations, as it relates to noise.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Similar to Alternative 2, the construction staging and timeline under Alternative 3 (Preferred Alternative) will be the same, and access to NB I-15 will be maintained throughout Project construction.

The findings and indirect impacts associated with traffic, air quality, and noise during construction activities, will be similar to Alternative 2, and Alternative 3 (Preferred Alternative) will also implement Measure TR-1, Measures AQ-1 through AQ-8, Measures N-1 and N-2, Measures GHG-1 through GHG-8, and Measures GHG-17 through GHG-20. Therefore, with the implementation of these measures, no substantial temporary adverse impacts to EJ populations, related to access and circulation, economic conditions, noise conditions, and air quality/GHG will occur under Alternative 3 (Preferred Alternative).

2.8.3.2 Permanent Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not result in the implementation of the Project. Therefore, there will be no permanent adverse impacts to EJ populations under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramp)

Traffic and Circulation

As previously stated, there are no existing residential properties within the Project limits but there are two main areas within the AC and EJ study area where existing residential properties are located. These two areas that contain existing residential properties are within Census Tracts 427.15 and 430.05, both of which contain EJ minority populations.

Because the Project under the Build Alternatives will maximize mobility and accessibility in the region by improving operational safety and efficiency of the existing I-15 and SR-74 corridors, the Project will not create new access that will trigger growth, development, or alter the transportation network in such a way that will reduce transit services or access to resources. Therefore, the Project under Alternative 2 will not result in permanent adverse impacts to EJ populations as it relates to traffic and circulation.

Air Quality/Greenhouse Gases

As discussed further in Section 3.4, Climate Change of Chapter 3, CEQA Checklist, the primary GHGs produced by the transportation sector are CO_2, CH_4, N_2O, and HFCs. GHG emissions under Alternative 2 will increase by 10,369 MT CO_2e over existing and compared to Alternative 1 (No-Build Alternative) GHG emissions will increase by 384 MT of CO_2e per year in Opening Year (2025) and 476 MT of CO_2e per year in Horizon Year (2045). However, the Project will include project features (PF-1 through PF-5) in Section 3.4.4.4, Project-Level GHG Reduction Strategies, of Chapter 3, CEQA Checklist, that will encourage walking and bicycling by providing facilities for pedestrians and bicyclists.

These project features include signing and striping, pavement markings, signalized pedestrian crossings, street lighting, constructing missing segments of sidewalks, curb ramps, segments of shoulders that can be used as class II bike lanes and shared lanes. As discussed in Section 3.2, Climate Change, the Project aids the City in improving its pedestrian and bicycle infrastructure. The pedestrian and bicycle improvements will help the City meet its Climate Action Plan GHG reduction goals. Additionally, during final design (PS&E), the Project will also implement Measures GHG-9

through GHG-16, also under Section 3.4.4.3, Project-Level GHG Reduction Strategies, to reduce project-level GHG emissions and potential climate change impacts during operation under Alternative 2. Therefore, the Project under Alternative 2 will not result in substantial permanent adverse impacts to EJ populations as it relates to air quality and GHG.

Noise

Sustained local growth and regional development have increased commuter traffic at the I-15/SR-74 interchange, which is the second most congested freeway interchange in the City. This has resulted in severe peak hour traffic congestion and operational deficiencies. Under Alternative 2, the Project will maximize mobility and accessibility in the region by improving operational safety and efficiency through the implementation of the Project components, which include providing additional ramp storage capacity and direction connectivity between I-15 and the SR-74 corridors, improving operational efficiency of signalized intersections, turning movements, and throughput volumes.

The Project under Alternative 2, will therefore improve mobility and access for all users, residents, and businesses within the Project limits and address Existing Year (2018) and Horizon Year (2045) traffic volumes on the I-15 and SR-74 corridors resulting from projected growth in the area. Therefore, the Project under Build Alternative 2 will not result in permanent adverse impacts to EJ populations as it relates to noise.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Under Alternative 3 (Preferred Alternative), the findings and impacts associated with traffic and circulation, air quality, and noise will be similar to Alternative 2. With the incorporation of Project features PF-1 through PF-5, and the implementation of Measures GHG-1 through GHG-8 and GHG-9 through GHG-16, in Section 3.4.4.3, Project-Level GHG Reduction Strategies, the Project under Build Alternative 3 (Preferred Alternative) will not result in substantial permanent adverse impacts to EJ populations as it relates to noise.

2.8.4 Avoidance, Minimization, and/or Mitigation Measures

Refer to Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, for Measure TR-1; Section 2.18, Air Quality, for Measures AQ-1 through AQ-8, Section 2.19, Noise, for Measures N-1 and N-2; and Section 3.4, Climate Change in Chapter 3, CEQA Checklist for Measures GHG-1 through GHG-22. No additional avoidance, minimization, and/or mitigation measures are identified.

Based on the above discussion and analysis, Alternative 1 (No-Build) and the Build Alternatives will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of EO 12898. No further environmental justice analysis is required.

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2.9 Utilities and Emergency Services

2.9.1 Affected Environment

This section addresses potential impacts to utilities and emergency services in the Project limits that could result from Project implementation. For purposes of this analysis, the utilities and emergency services study area is defined as the area within 0.5 mile of the Project limits.

2.9.1.1 Utilities

Water

According to the City's General Plan (City of Lake Elsinore 2011a), the Elsinore Valley Municipal Water District (EVMWD) provides public water service, water supply development and planning, wastewater treatment and disposal, and recycling to the City. EVMWD is a sub agency of the Western Municipal Water District. Potable water supplies to EVMWD are provided from imported water from Metropolitan, local surface water from Canyon Lake, and local groundwater from the Elsinore Basin.

Waste

CR&R Incorporated provides trash disposal services to the City. There are no landfills within the City; therefore, trash is taken to either a landfill within Riverside County or the Materials Recovery Facility. The City typically uses three landfills which include El Sobrante, Badlands, and Lamb Canyon Landfills (City of Lake Elsinore 2011a). The El Sobrante landfill is the closest landfill to the Project limits. It is located within the City of Corona at 10910 Dawson Canyon Road which is approximately 10 miles northwest of the Project limits. Riverside County Waste Management (RCWM) manages the landfills used by the City. As of December 31, 2005, 50 percent of the City's trash was mandated by the State of California to be recycled per the California Integrated Waste Management Act of 1989 (Assembly Bill 939).

Gas and Electricity

Southern California Edison (SCE) provides electricity to the City and natural gas is provided by the Southern California Gas Company (SCGC), which is a regulated subsidiary of Sempra Energy (City of Lake Elsinore 2011a). According to the City's General Plan, SCE and SCGC anticipate that they will be able to accommodate future growth within the City.

Telecommunication

Verizon provides local land line telephone services; however, numerous providers provide long distance series, wireless or cell phone services. Comcast provides cable television and high-speed internet to residents within the City (City of Lake Elsinore 2011a).

Existing Utilities within Project Limits

According to the *Draft Project Report* (Caltrans 2021b), the utilities in Table 2.9-1 are located within or within the immediate vicinity of the Project limits. None of these utilities have been classified as high priority utilities which are utilities that include natural gas pipelines greater than 6 inches in diameter or with operating pressures greater than 60 pounds per square inch gauge (psig); petroleum pipelines; pressurized sanitary sewer pipelines; high-voltage electric supply lines, conductors, or cables that have a potential to ground of greater than or equal to 60 kilovolt (kV); and hazardous materials pipelines that are potentially harmful to workers or the public if damaged.

Within the Project limits, there are no existing overhead utility lines along SR-74 (Central Avenue), Dexter Avenue north of SR-74 (Central Avenue), and portions of Cambern Avenue where the Lowe's/Costco shopping center is located. Overhead lines exist on other segments of Cambern Avenue, along SR-74 (Collier Avenue), Riverside Drive, and Dexter Avenue south of SR-74 (Central Avenue). Overhead lines cross the roadways at some locations including SR-74 (Central Avenue) just east of the NB Ramps, I-15 at Riverside Drive, and I-15 at 2nd Street.

Table 2.9-1. Existing Utilities

Utility Description	Utility Owner
Electric overhead and underground lines	Southern California Edison
2 inch to 4 inch high pressure gas lines	Southern California Gas
8 inch to 15 inch Sewer Lines	Elsinore Valley Municipal Water District
Telecommunication underground lines	Frontier
Telecommunication fiber optic underground lines	Wilcon
Telecommunication fiber optic underground lines	Crown Castle/Sunesys
Telecommunication overhead lines	Charter Communications
4 inch to 20 inch water lines	Elsinore Valley Municipal Water District

Source: Caltrans 2021b

2.9.2 Environmental Consequences

2.9.2.1 Temporary Impacts

Alternative 1 (No-Build)

Emergency Services

Fire Protection

Based on information from the California Fire Hazard Severity Zone (FHSZ) viewer (California Department of Forestry and Fire Protection [CALFIRE] 2020) and as shown on Figure 2.9-1, the Project limits is adjacent to, and includes small areas along NB I-15 that are within a state responsibility area (SRA), or lands classified as very high FHSZ. The southern portion of the Project limits along NB I-15 is within a local responsibility area (LRA) very high FHSZ, and the northern portion of the Project limits along NB I-15 is within an SRA moderate FHSZ.

The City contracts fire services with the County's Fire Department and CALFIRE to provide a full range of fire protection services (fire prevention, suppression, and emergency medical response) (City of Lake Elsinore n.d.b.). Although there are four fire stations that serve the City, there are no fire stations within the utilities and emergency services study area. The closest fire station is the CAL FIRE Lake Elsinore Fire Station No.10, which services the central area of the City (City of Lake Elsinore 2011a) and is located approximately 1.0 mile from the most southern portion of the Project limits. This fire station operates three fire engines (one paramedic engine and two CALFIRE wildland engines), and a squad of mostly volunteer firefighters (City of Lake Elsinore n.d.b). Standard response times are established by Riverside County Fire Department (RCFD) guidelines. The goal for a response time is to arrive at any location within the City in 7 minutes (City of Lake Elsinore 2011d).

Law Enforcement

The City contracts police services with the Riverside County Sheriff's Department to enforce local, state, and federal statutes; public safety; traffic enforcement; and maintain public order (City of Lake Elsinore n.d.b). There is one station located at 333 West Limited Avenue that is approximately 1.0 mile from the most southern portion of the Project limits that serves the City (Figure 2.9-1). Additionally, the closest California Highway Patrol (CHP) office is located approximately 16.2 miles south of the Project limits, along I-15, at 27685 Commerce Center Drive in the City of Temecula.

Medical Facilities

There are no major healthcare facilities located within 0.5 mile of the Project limits. The three closest major hospitals and healthcare facilities are located approximately 8 to 10 miles from the Project limits.

Alternative 1 (No-Build) will not result in construction activities because the Project will not be built. Therefore, there will be no temporary adverse impacts to utilities or emergency response times, demands, or access under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (Hook Ramps)

Utilities

Alternative 2 will require minor utility relocations, which will include the relocation of a wooden power pole that supports overhead SCE lines and an adjacent pad-mounted electrical transformer located in the northeast quadrant of the I-15/SR-74 interchange, between the existing NB on-ramp and the Burger King. Other utility impacts will include the relocation and the adjustment in location of the existing SCE and EVMWD streetlight poles, fire hydrants, water air release and blow-off valves, adjustment of manhole covers, and the relocation of pull boxes. However, with the implementation of Measure UES-1, which will require the replacement or relocation of affected utilities within the Project limits in order to provide continuous service, and Measure UES-2 which will ensure that the location of all underground utilities is identified prior to ground disturbing activities, no substantial temporary adverse impacts to utilities will occur under Alternative 2.

Emergency Services

As shown on Figure 2.9-1, portions of NB I-15 within the Project limits are located within and near an SRA, or lands classified as very high FHSZ. However, the Project under Alternative 2, will not directly expose people or buildings to any new fire hazard areas because it will not involve the construction of any new residential, commercial, or industrial developments. Further, during construction activities, Measure UES-3 will be implemented to minimize the risk of fires during construction activities.

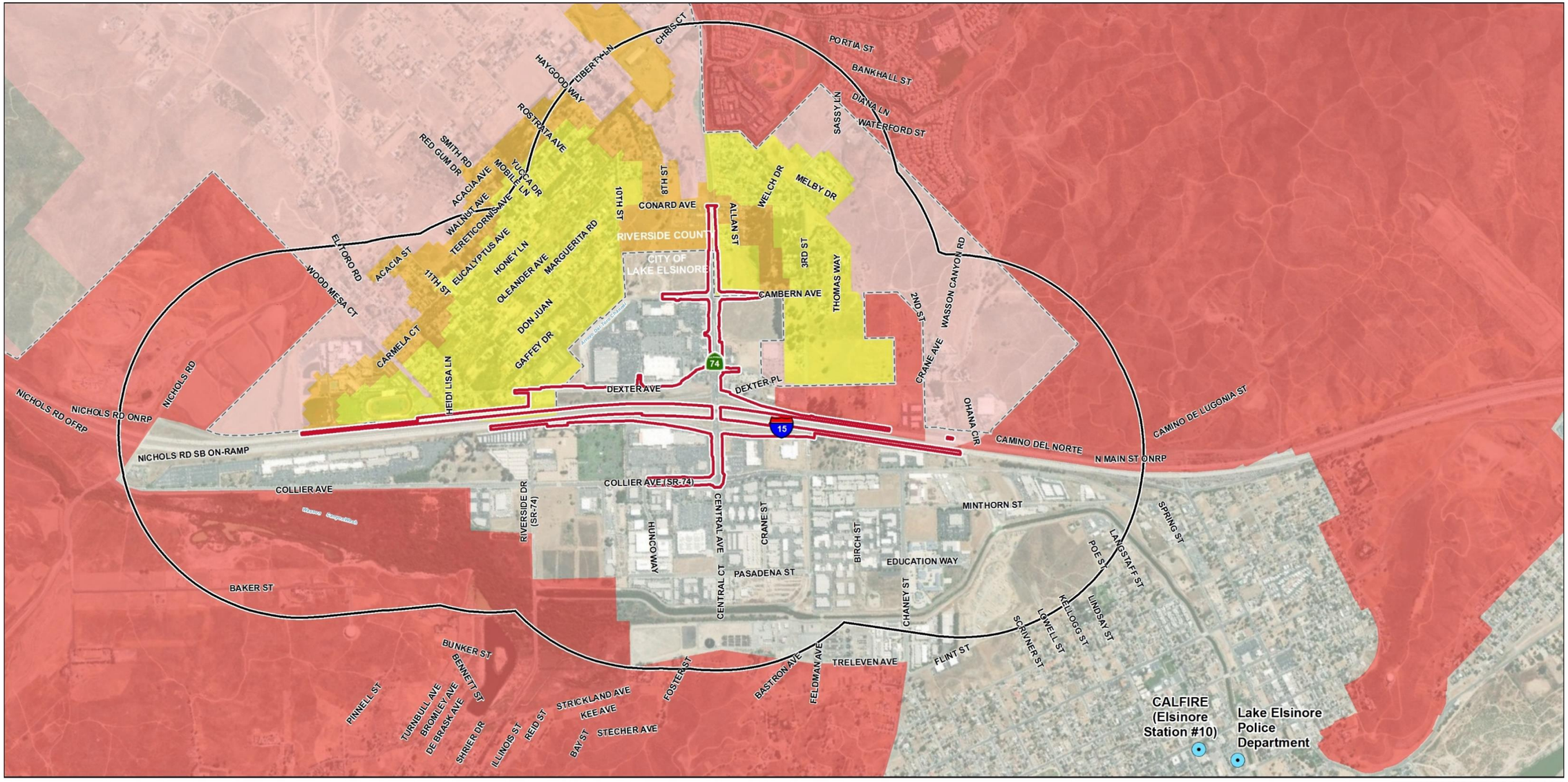

Figure 2.9-1. Fire Hazard Severity Zones and Emergency Services

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As discussed under the No-Build Alternative, there are no fire stations within the utilities and emergency services study area. The closest fire station is the CAL FIRE Lake Elsinore Fire Station No.10. There is one police station located approximately 1.0 mile from the most southern portion of the Project limits that serves the City (Figure 2.9-1). Additionally, the closest CHP office is located approximately 16.2 miles south of the Project limits. There are no major healthcare facilities located within 0.5 mile of the Project limits. The three closest major hospitals and healthcare facilities are located approximately 8 to 10 miles from the Project limits.

Emergency services and facilities may experience temporary and minor disruptions on local circulation and connectivity, related to detours and temporary lane closures to accommodate phased staging of Project during construction. However, a TMP per Measure TR-1 (see Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities) will maintain continuous vehicular access and connectivity throughout construction activities to minimize impacts to traffic, circulation, and access within the utilities and emergency services study area. Therefore, with the implementation of Measures UES-3 and TR-1, no temporary substantial adverse impacts to emergency service response times within the utilities and emergency services study area will occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Similar to Alternative 2, the construction staging and timeline will be the same, and access to NB I-15 will be maintained throughout Project construction.

In addition, construction impacts associated with utilities and emergency services under Alternative 3 (Preferred Alternative) will be similar to the findings under Alternative 2, and the same measures will apply. Therefore, with the implementation of Measures UES-1 through UES-3 and Measure TR-1, no temporary substantial adverse impacts to utilities or emergency service response times within the utilities and emergency services study area will occur under Alternative 3 (Preferred Alternative).

2.9.2.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be constructed, utility relocation will not be required, and utility services will remain unaffected. However, Alternative 1 (No-Build) will be inconsistent with the various goals and policies identified in Table 2.2-1, in Section 2.2, Consistency with State, Regional, and Local Plans and Programs, and will only worsen as local growth and regional development continue to increase. Worsening of congestion at the I-15/SR-74 interchange, and along adjacent local roadways and intersections may lead to increased delays in emergency response times and access within the utilities and emergency services study area and result in substantial permanent adverse impacts under Alternative 1 (No- Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Utilities

As stated above, Alternative 2 will require both SCE and EVMWD utility relocations. Design, construction, and inspection of utilities that will result in the relocation of utilities will be undertaken in accordance with City requirements. The City will coordinate with the affected service provider in each instance to ensure work is conducted in accordance with the appropriate requirements. Additionally, with the implementation of Measures UES-1 and UES-2, no permanent interruptions to utility services as a result of these utility relocations or grading activities in support of these relocations, will occur. Therefore, with the implementation of Measures UES-1 and UES-2, no permanent substantial adverse impacts to utilities within the utilities and emergency services study area will occur under Alternative 2.

Emergency Services

Once the Project is in operation, traffic operations through a reduction in congestion at the I-15/SR-74 interchange and adjacent local roadways and intersections will be improved. The Project will provide additional ramp storage capacity, improvements to intersections (i.e., signalization, turns, and throughput volumes), greater accessibility for all users, as well as enforcement areas at the NB and SB on-ramps near the entrances to I-15 as there are currently no CHP enforcement areas along the I-15 mainline. In addition, the Project will accommodate current and future year (2045) traffic volumes on the I-15 and SR-74 corridors resulting from projected growth in the area. Therefore, overall travel time will be improved and may decrease emergency response times given the improvement to traffic operations and congestion.

Based on the considerations above, Alternative 2 will not result in adverse impacts to emergency service response times within the utilities and emergency services study area.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Alternative 3 (Preferred Alternative) will result in the same findings as Alternative 2. Therefore, with the implementation of UES-1 and UES-2, no substantial permanent adverse impacts to utilities and emergency services will occur within the utilities and emergency services study area under Alternative 3 (Preferred Alternative).

2.9.3 Avoidance, Minimization, and/or Mitigation Measures

Refer to Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, for Measure TR-1. The following measures will be implemented to address temporary impacts and impacts to utilities and emergency services as a result of the Build Alternatives:

UES-1 During construction, the City's Resident Engineer will ensure that all public utility lines, pipes, and cables disturbed or removed to accommodate the Project are replaced or relocated within the Project limits to continue to meet the needs of residents and businesses in the community. In addition, arrangements must be made to avoid disruption of utility services. If interruption in service is unavoidable, notice must be given and proper arrangements will be made with residents and businesses.

UES-2 Prior to grading activities, the City's Resident Engineer will require the designated contractor to notify Underground Service Alert (USA), at least 2 days prior to excavation, by calling 811 to require that all utility owners within the Project disturbance limit identify the locations of underground transmission lines and other utility facilities.

UES-3 To minimize risk of fires during construction activities, the City's Resident Engineer will ensure the City will implement the following minimization measures:

a. Coordinate with CALFIRE and local fire departments to identify and maintain defensible spaces around active construction areas.

b. Coordinate with CALFIRE and local fire departments to identify and maintain firefighting equipment (e.g., extinguishers, shovels, water tankers) in active construction areas.

c. Post emergency services phone numbers (i.e., fire, emergency medical, police) in visible locations in all active construction areas.

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2.10 Traffic and Transportation/Pedestrian and Bicycle Facilities

2.10.1 Regulatory Setting

The Department, as assigned by the Federal Highway Administration (FHWA), directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of Federal-aid highway projects (see 23 Code of Federal Regulations [CFR] 652). It further directs that the special needs of the elderly and the disabled must be considered in all Federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the USDOT regulations (49 CFR 27) implementing Section 504 of the Rehabilitation Act (29 United States Code [USC] 794). The FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including Transportation Enhancement Activities.

2.10.2 Affected Environment

This section was prepared using the *Traffic Operations Analysis Report* (TOAR) (Caltrans 2020e) prepared for the Project. The TOAR analyzed Project impacts to traffic operation under both Opening Year (2025) and Horizon Year (2045) conditions. The traffic study area includes SR-74 (Central Avenue), Dexter Avenue, Collier Avenue, Nichols Road and Main Street, and includes the I-15 mainline, merge/diverge at the ramp connections, and ramp terminal intersections in the City and County.

Traffic Operations

Freeway Analysis

Freeway mainline segments and ramps were evaluated using a Highway Capacity Software (HCS) equivalent tool, which applies methodologies contained in the *Highway Capacity Manual* (HCM) 6th Edition. The level of service (LOS) was calculated for each study facility based on density in number of vehicles per hour per lane. Figure 2.10-1 and Table 2.10-1 describes the LOS thresholds for freeway sections identified in the HCM.

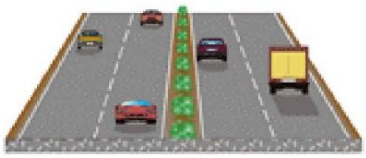
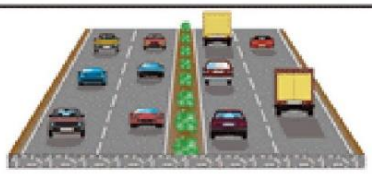
Intersection Operations Analysis

The intersection operations analysis was conducted using methodologies contained in the HCM 6th Edition and SimTraffic traffic simulation models. The HCM 6th Edition methodology for signalized intersections estimates the weighted average control delay for vehicles at the intersection while the methodology for unsignalized intersections estimates the worst-case movement control delay for two-way stop-controlled intersections and the average control delay for all-way stop-controlled intersections. After the quantitative delay estimates are complete, the methodology assigns a qualitative letter grade that represents the operations of the intersection. These grades range from LOS A (minimal delay) to LOS F (congested conditions). LOS E represents at-capacity operations. Descriptions of the LOS letter grades for both signalized and unsignalized intersections are provided in Table 2.10-2.

The *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2002) states, “Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS.” The TOAR prepared for the Project assumed that a LOS D would be the appropriate target LOS for I-15 mainline segments, on- and off-ramps, and ramp terminal intersections and for SR-74 (Central Avenue) intersections.

Figure 2.10-1. Level of Service for Freeways

LEVELS OF SERVICE
for Freeways

Level of Service	Flow Conditions	Density (pc/mi/ln*)	Technical Descriptions
A		≤11	Highest quality of service. Traffic flows freely with little or no restrictions on speed or maneuverability. **No delays**
B		>11-18	Traffic is stable and flows freely. The ability to maneuver in traffic is only slightly restricted. **No delays**
C		>18-26	Few restrictions on speed. Freedom to maneuver is restricted. Drivers must be more careful making lane changes. **Minimal delays**
D		>26-35	Speeds decline slightly and density increases. Freedom to maneuver is noticeably limited. **Minimal delays**
E		>35-45	Vehicles are closely spaced, with little room to maneuver. Driver comfort is poor. **Significant delays**
F		Demand exceeds capacity or Density >45	Very congested traffic with traffic jams, especially in areas where vehicles have to merge. **Considerable delays**

*pc/mi/ln = Passenger car per mile per lane
Source: HCM 6th Edition Exhibit 12-15

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Table 2.10-1. Level of Service for Freeway Mainline and Ramp Junction/Weave

LOS	Description	Density (VPLPM)[a]	
		Mainline (Basic)	Ramp / Weave
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	≤11	< 10
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.	> 11 to 18	> 10 to 20
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	> 18 to 26	> 20 to 28
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	> 26 to 35	> 28 to 35
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.	> 35 to 45	> 35[b]
F	Represents a breakdown in flow.	Demand Exceeds Capacity	Demand Exceeds Capacity

Source: Caltrans 2020e

Notes:

[a] Density is reported in VPLPM.

[b] The maximum density for ramp junctions and weaving sections under LOS E is not defined in the HCM. The maximum density for basic segments of 45 VPLPM was assumed to apply to ramp junctions and weaving sections.

HCM=Highway Capacity Manual; LOS=level of service; VPLPM=vehicles per lane per mile

Table 2.10-2. Level of Service for Signalized and Unsignalized Intersections

LOS	Unsignalized Delay Average Control Delay (seconds/Vehicle)	Signalized Intersections Average Stopped Delay per Vehicle (seconds)	Description
A	<10.0	<10.0	Operations with very low delay occurring with favorable progression and/or short cycle length.
B	>10.0 to 15.0	>10.0 to 20.0	Operations with low delay occurring with good progression and/or short cycle lengths.

Table 2.10-2. Level of Service for Signalized and Unsignalized Intersections

LOS	Unsignalized Delay Average Control Delay (seconds/Vehicle)	Signalized Intersections Average Stopped Delay per Vehicle (seconds)	Description
C	>15.0 to 25.0	>20.0 to 35.0	Operations with average delays resulting from fair progression and or/longer cycle lengths. Individual cycle failures begin to appear.
D	>25.0 to 35.0	>35.0 to 55.0	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.
E	>35.0 to 50.0	>55.0 to 80.0	Operations with high delay values indicating poor progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.
F	>50.0	>80.0	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.

Source: Transportation Research Board 2016
Notes:
LOS=level of service; V/C=volume to capacity

2.10.2.1 Traffic Study Area

The traffic study area covers SR-74 (Central Avenue), Dexter Avenue, Collier Avenue, Nichols Road and Main Street, and includes the I-15 mainline, merge/diverge at the ramp connections, and ramp terminal intersections in the City and County.

The following freeway segments were analyzed as part of this assessment:

Northbound Direction

- I-15 Diverge to Main Street
- I-15 Merge from Main Street
- I-15 Mainline between Main Street and SR-74 (Central Avenue)
- I-15 Diverge to SR-74 (Central Avenue)

Southbound Direction

- I-15 Diverge to Nichols Road
- I-15 Merge from Nichols Road
- I-15 Mainline between Nichols Road and SR-74 (Central Avenue)
- I-15 Diverge to SR-74 (Central Avenue)

Northbound Direction

- I-15 Merge from SR-74 (Central Avenue)
- I-15 Mainline between SR-74 (Central Avenue) and Nichols Road
- I-15 Diverge to Nichols Road
- I-15 Merge from Nichols Road

Southbound Direction

- I-15 Merge from SR-74 (Central Avenue)
- I-15 Mainline between SR-74 (Central Avenue) and Main Street
- I-15 Diverge to Main Street
- I-15 Merge from Main Street

The following intersections were analyzed as part of this assessment:

- Nichols Road at Collier Avenue
- Nichols Road at I-15 SB Ramps
- Nichols Road at I-15 NB Ramps
- Riverside Drive at Collier Avenue (SR-74)
- SR-74 (Central Avenue) at Collier Avenue
- SR-74 (Central Avenue) at I-15 SB Ramps
- SR-74 (Central Avenue) at I-15 NB Ramps
- SR-74 (Central Avenue) at Dexter Avenue
- EB SR-74 (Central Avenue) at Central Plaza Shopping Center Driveway
- WB SR-74 (Central Avenue) at Lowe's Shopping Center Driveway
- SR-74 (Central Avenue) at Cambern Avenue
- Crane Street at Dexter Avenue
- 3rd Street at Dexter Avenue
- Main Street at I-15 SB Ramps
- Main Street at I-15 NB Ramps
- I-15 NB Hook Ramps at Dexter Avenue

The Project's Opening Year is 2025. Therefore, traffic forecasts were developed for the Project for the Horizon Year (2045) scenario only.

2.10.2.2 Existing Year (2018) Traffic Conditions

Intersection volumes were collected on Tuesday, April 10th and Wednesday, April 11th in 2018 during the AM peak period (6:00 AM to 9:00 AM) and the PM peak period (4:00 PM to 6:00 PM) at the study intersections and at NB and SB I-15 mainline segments between SR-74 (Central Avenue)

and Nichols Road. Twenty-four-hour roadway segment vehicle classification counts were also collected at the following three roadway segments:

- SR-74 (Central Avenue) between Dexter Avenue and Cambern Avenue
- SR-74 (Central Avenue) between Collier Avenue and I-15 Ramps
- Dexter Avenue south of 11th Street

The classification counts were conducted consistent with Caltrans guidelines by type and axles. Traffic volume data was collected as average daily traffic (ADT), vehicle classification percentages in one-hour intervals, and peak hour volumes. Additional detail for existing peak hour traffic volumes for I-15 and the study intersections in the traffic study area is provided in the TOAR.

Freeway Operations

Table 2.10-3 shows the Existing Year (2018) AM and PM peak hour density and LOS for the study freeway mainline segments and ramp junctions on NB and SB I-15, respectively. As shown in Table 2.10-3, the SB merge from (SR-74) Central Avenue operates at an unacceptable LOS E during the PM peak hour in the Existing Year (2018) conditions. All other freeway study locations are operating at LOS D or better during both AM and PM peak hours.

Table 2.10-3. Summary of Existing (2018) Interstate 15 Freeway Mainline Level of Service

I-15 Freeway Mainline Segment	AM Peak Hour		PM Peak Hour	
	Density[a]	LOS[b]	Density[a]	LOS[b]
Northbound				
Diverge to Main Street	34	D	30	D
Merge from Main Street	33	D	30	D
Mainline between Main Street and SR-74 (Central Avenue)	25	C	21	C
Diverge to SR-74 (Central Avenue)	32	D	29	D
Merge from SR-74 (Central Avenue)	29	D	25	C
Mainline between SR-74 (Central Avenue) and Nichols Road	21	C	18	B
Diverge to Nichols Road	28	C	24	C
Merge from Nichols Road	23	C	19	B
Southbound				
Diverge to Nichols Road	22.7	C	30	D

Table 2.10-3. Summary of Existing (2018) Interstate 15 Freeway Mainline Level of Service

I-15 Freeway Mainline Segment	AM Peak Hour		PM Peak Hour	
	Density[a]	LOS[b]	Density[a]	LOS[b]
Merge from Nichols Road	26.1	C	34	D
Mainline between Nichols Road and SR-74 (Central Avenue)	16.6	B	25	C
Diverge to SR-74 (Central Avenue)	23.9	C	31	D
Merge from SR-74 (Central Avenue)	30.3	D	**36**	**E**
Mainline between SR-74 (Central Avenue) and Main Street	20.7	C	27	D
Diverge to Main Street	27.6	C	32	D
Merge from Main Street	25.6	C	29	D

Source: Caltrans 2020e

Notes:

[a] Density is reported vehicles per lane mile.

[b] Bold font indicates unacceptable conditions.

I=Interstate; LOS=level of service; SR=State Route

Intersection Operations

Table 2.10-4 shows the Existing Year (2018) AM and PM peak hour delay and LOS for the study intersections. As shown in Table 2.10-4, Nichols Road at Collier Avenue, Nichols Road at I-15 NB Ramps, and Main Street at I-15 NB Ramps operate at an unacceptable LOS F during the AM peak hour under Existing Year (2018) Conditions. Although these ramp terminal intersections are operating at LOS F, the congestion is not due to spillback from the freeway as the freeway analysis shows in Table 2.10-3 that during the AM peak hour all segments are operating at an acceptable LOS. The deficient operations at those intersections are due to relatively high existing volumes. During the PM peak hour, all study intersections operate at an acceptable LOS D or better.

Table 2.10-4. Summary of Existing Year (2018) Intersection Operations Level of Service

Intersection	AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS
Nichols Road at Collier Avenue	**54**	**F**	29	D
Nichols Road at I-15 SB Ramps	18	C	13	B
Nichols Road at I-15 NB Ramps	**85**	**F**	13	B

Table 2.10-4. Summary of Existing Year (2018) Intersection Operations Level of Service

Intersection	AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS
Riverside Drive at Collier Avenue (SR-74)	14	B	40	D
SR-74 (Central Avenue) at Collier Avenue (SR-74)	33	C	26	C
SR-74 (Central Avenue) at I-15 SB Ramps	22	C	30	C
SR-74 (Central Avenue) at I-15 NB Ramps	27	C	29	C
SR-74 (Central Avenue) at Dexter Avenue	27	C	23	C
SR-74 (Central Avenue) at Central Plaza Shopping Center Driveway	3	A	31	D
SR-74 (Central Avenue) at Lowe's Shopping Center Driveway	3	A	7	A
SR-74 (Central Avenue) at Cambern Avenue	20	C	23	C
Crane Street at Dexter Avenue	5	A	7	A
3rd Street at Dexter Avenue	6	A	7	A
Main Street at I-15 SB Ramps	13	B	19	C
Main Street at I-15 NB Ramps	**61**	**F**	20	C

Source: Caltrans 2020e

Notes:

Bold font indicates unacceptable conditions

I=Interstate; LOS=level of service; NB=northbound; SB=southbound; SR=State Route

Queuing Analysis

Table 2.10-5 shows the maximum queue obtained from the simulation model for the key movements at the ramp terminal intersections. The maximum queue is compared to the available storage for each movement to identify any queuing issues.

As shown in Table 2.10-5, under Existing Year (2018) conditions, the NB right-turn at the I-15 NB ramps were found to exceed storage capacity in both the AM and PM peak hours. The SB left-turn and right-turn at the SB off-ramp on SR-74 (Central Avenue) were found to exceed storage capacity during the PM peak hour; however, these queues do not spill back onto the freeway or affect freeway operations. The westbound left accessing the SB ramps exceeds storage capacity during AM and PM peak hours.

Table 2.10-5. Summary of Existing Year (2018) Queuing

Intersection	Movement	Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)
Riverside Drive/Collier Avenue (SR-74)	NBL	1,000	340	1,210
	EBL	1,000+	140	130
	EBR	365	230	285
SR-74 (Central Avenue)/Collier Avenue	SBL	640	335	350
	SBR	340	30	30
	WBL	580	380	145
	WBR	580	135	180
I-15 SB Ramps/SR-74 (Central Avenue)	EBR	600	325	270
	SBL	245	260	480
	SBR	245	210	420
	WBL	200	330	280
I-15 NB Ramps/SR-74 (Central Avenue)	NBL	240	390	390
	NBR	240	390	390
	EBL	195	160	180
SR-74 (Central Avenue)/Dexter Avenue	EBL	240	240	240
	EBR	240	90	140
	WBL	160	180	180
	WBR	250	120	60
SR-74 (Central Avenue)/Central Plaza Shopping Center Driveway	NBR	120	60	130
SR-74 (Central Avenue)/Lowe's Shopping Center Driveway	SBR	180	30	80

Table 2.10-5. Summary of Existing Year (2018) Queuing

Intersection	Movement	Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)
SR-74 (Central Avenue)/Cambern Avenue	EBL	260	120	210
	EBT/EBR	970	160	250
	WBL	380	20	10
	WBR	380	150	90

Source: Caltrans 2020e

Notes:

* Dedicated storage is not provided.

The available storage is a measurement of dedicated pocket length and does not represent the full length of what may be available for queuing on ramps.

Bold font indicates queue meets or exceeds storage capacity.

EB=eastbound; EBL=eastbound left; EBR=eastbound right; EBT=eastbound through; I=Interstate; NB=northbound; NBL=northbound left; NBR=northbound right; SB=southbound; SBL=southbound left; SBR=southbound right; SR=State Route; WB=westbound; WBL=westbound left; WBR=westbound right

System-Wide Performance

While LOS is a typical indicator of transportation facility performance, the system-wide performance metrics have become effective measurements in evaluating transportation system performance. The system-wide performance measures used for this Project include number of vehicles served by the study network, vehicle-hours-delay, and delay per vehicle. Table 2.10-6 and Table 2.10-7 show the Existing Year (2018) AM and PM peak period for Nichols Road and Main Street corridor and SR-74 (Central Avenue) corridor, respectively.

Table 2.10-6. Existing Year (2018) System-Wide Metrics for Nichols Road and Main Street Corridors

Performance Measure	AM Peak Period	PM Peak Period
Number of Vehicles Served	3,021	3,094
Vehicle Hours Delay	22 hours	13 hours
Delay per Vehicle (sec/veh)	26 seconds	15 seconds

Source: Caltrans 2020e

Table 2.10-7. Existing Year (2018) System-Wide Metrics for State Route 74 (Central Avenue) Corridor

Performance Measure	AM Peak Period	PM Peak Period
Number of Vehicles Served	7,659	3,089
Vehicle Hours Delay	159 hours	13 hours
Delay per Vehicle (sec/veh)	72 seconds	15 seconds

Source: Caltrans 2020e

The Existing Year (2018) AM and PM peak period show a higher level of congestion occurring in the AM peak period for the Nichols Road and Main Street corridors and SR-74 (Central Avenue) corridor, as indicated in the total delay experienced (vehicle hours) and average delay per vehicle (seconds per vehicle) when compared to the PM peak period. The SR-74 (Central Avenue) corridor is also more congested than the Nichols Road and Main Street corridors where the total delay experienced (vehicle hours) during the AM peak hour is seven times greater and the average delay per vehicles (seconds per vehicle) is two and a half times greater.

Collision Data

Traffic collision data were collected from Caltrans' TASAS on January 9, 2024, for a 3-year period from July 1, 2020, through June 30, 2023, for I-15 mainline and ramps and SR-74 segments within the Project limits. Collision data presented in Table 2.10-8 shows the number of actual fatal, fatal plus injury, and total crash rates on the freeway mainline and ramps within the Project limits in comparison with the average crash rates for similar facilities on I-15 and SR-74. The crash rate depicts crash rates per million vehicles (MV) for ramps and segments less than 0.5 miles and per million vehicle miles (MVM) for segments greater or equal to 0.5 miles. Table 2.10-9 summarizes the primary collision factor data within the Project limits. Table 2.10-10 shows the percentage by collision type within the Project limits.

Table 2.10-8. Mainline, Intersection, and Ramp Collision Data for Interstate 15 and State Route 74

Location	Post Mile	Actual Crash Rates (MVM/MV)			State Average Crash Rates (MVM/MV)		
		Fatal	Fatal + Injury	Total[1]	Fatal	Fatal + Injury	Total[1]
I-15 NB from Main Street to Nichols Road	20.661 – 24.041	0.000	0.090	0.280	0.006	0.410	1.230

Table 2.10-8. Mainline, Intersection, and Ramp Collision Data for Interstate 15 and State Route 74

Location	Post Mile	Actual Crash Rates (MVM/MV)			State Average Crash Rates (MVM/MV)		
		Fatal	Fatal + Injury	Total[1]	Fatal	Fatal + Injury	Total[1]
I-15 SB from Nichols Road to Main Street	20.661 – 24.041	0.000	0.140	0.320	0.006	0.410	1.230
SR-74 Segment from Collier Avenue to Conard Avenue	R16.170 – 17.354	0.000	0.206	**0.588**	0.007	0.220	0.465
SR-74 Collier Avenue/Central Avenue Intersection	R16.170	0.000	0.080	0.130	0.002	0.160	0.330
SR-74 RTE 15 SB On- & Off-Ramps	R16.300	0.000	0.050	0.200	0.002	0.160	0.330
SR-74 RTE 15 NB On- & Off-Ramps	17.302	0.000	0.100	0.220	0.002	0.160	0.330
I-15 NB Off-Ramp to SR-74	22.094	0.000	0.240	0.540	0.006	0.280	0.820
I-15 SB Off-Ramp to SR-74	22.492	0.000	0.100	**0.900**	0.006	0.280	0.820
I-15 NB On-Ramp from SR-74	22.428	0.000	0.000	0.000	0.001	0.150	0.480
I-15 SB On-Ramp from SR-74	22.080	0.000	0.120	0.370	0.001	0.150	0.480

Source: Caltrans District 8 TASAS collision data, retrieved on January 9, 2024.

Notes:

Bold font indicates actual crash rate that is higher than the state average crash rate.

[1] All reported crashes (including Property Damage Only (PDO) Collisions).

I=Interstate; MV=million vehicles; MVM=million vehicle miles; NB=northbound; RTE=route; SB=southbound; SR=State Route

As shown in Table 2.10-8, the crash rates at two of the 10 analyzed locations are higher than the statewide average for similar facilities.

Table 2.10-9. Primary Collision Factor Data for Interstate 15 and State Route 74

Location	HBD (%)	FTC (%)	FTY (%)	IT (%)	ESS (%)	OV (%)	ID (%)	OTD (%)	UNK (%)	FA (%)	NS (%)
I-15 NB (PM 20.661 to 24.041)	16.9	0.0	0.0	27.1	40.7	10.2	0.0	5.1	0.0	0.0	0.0
I-15 SB (PM 20.661 to 24.041)	11.8	0.0	0.0	38.2	32.4	16.2	0.0	1.5	0.0	0.0	0.0
SR-74 Segment (PM R16.170 to 17.354)	15.0	0.0	25.0	20.0	30.0	5.0	0.0	0.0	0.0	0.0	5.0
SR-74 Collier Avenue/Central Avenue Intersection (PM R16.170)	0.0	0.0	0.0	40.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0
SR-74 / I-15 SB On & Off Ramps (PM R16.300)	37.5	0.0	37.5	12.5	0.0	0.0	0.0	0.0	0.0	0.0	12.5
SR-74 / I-15 NB On & Off Ramps (PM 17.302)	0.0	0.0	28.6	28.6	28.6	14.3	0.0	0.0	0.0	0.0	0.0
I-15 NB Off-Ramp to SR-74 (PM 22.094)	0.0	0.0	0.0	11.1	44.4	22.2	0.0	11.1	11.1	0.0	0.0
I-15 SB Off-Ramp to SR-74 (PM 22.492)	0.0	0.0	0.0	33.3	66.7	0.0	0.0	0.0	0.0	0.0	0.0
I-15 NB On-Ramp from SR-74 (PM 22.428)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I-15 SB On-Ramp from SR-74 (PM 22.080)	16.7	0.0	0.0	50.0	16.7	16.7	0.0	0.0	0.0	0.0	0.0

Source: Caltrans District 8 TASAS collision data, retrieved on January 9, 2024.

Notes:

ESS=Speeding; FA=Fell Asleep; FTC=Following Too Close; FTY=Failure to Yield; HBD=Influence of Alcohol; I=Interstate; ID=Improper Driving; IT=Improper Turn; NB=northbound; NS=Not Stated; OTD=Other Than Driver; OV=Other Violations; PM=postmile; SB=southbound; SR=State Route; UNK=Unknown

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Table 2.10-10. Mainline, Intersection, and Ramp Collision Type Data for Interstate 15 and State Route 74

Location	Head-On (%)	Side-Swipe (%)	Rear End (%)	Broad-Side (%)	Hit Object (%)	Overturn (%)	Auto-Pedestrian (%)	Other (%)
I-15 NB (PM 20.661 to 24.041)	0.0	13.6	52.5	1.7	20.3	10.2	0.0	1.6
I-15 SB (PM 20.661 to 24.041)	0.0	36.8	38.2	1.5	19.1	2.9	0.0	2.5
SR-74 Segment (PM R16.170 to 17.354)	20.0	10.0	50.0	20.0	0.0	0.0	0.0	0.0
SR-74 Collier Avenue/Central Avenue Intersection (PM R16.170)	20.0	20.0	60.0	0.0	0.0	0.0	0.0	0.0
SR-74 RTE 15 SB On- & Off-Ramps (PM R16.300)	37.5	12.5	12.5	37.5	0.0	0.0	0.0	0.0
SR-74 RTE 15 NB On- & Off-Ramps (PM 17.302)	0.0	14.3	71.4	14.3	0.0	0.0	0.0	0.0
I-15 NB Off-Ramp to SR-74 (PM 22.094)	0.0	33.3	44.4	11.1	11.1	0.0	0.0	0.0
I-15 SB Off-Ramp to SR-74 (PM 22.492)	0.0	22.2	77.8	0.0	0.0	0.0	0.0	12.5
I-15 NB On-Ramp from SR-74 (PM 22.428)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I-15 SB On-Ramp from SR-74 (PM 22.080)	0.0	16.7	16.7	0.0	33.3	33.3	0.0	0.0

Source: Caltrans District 8 TASAS collision data, retrieved on January 9, 2024.

Notes:

[a] Total percentages for each location may exceed 100 percent due to rounding to the nearest whole number.

I=Interstate; NB=northbound; PM=postmile; RTE=route; SB=southbound; SR=State Route

It can be concluded from Table 2.10-10 that rear-end collisions are the most common type of collision at most locations, followed by side-swipe, hit object, and head-on. As shown in Table 2.10-9, the primary factors resulting in these types of collisions include speeding, improper turn, and other violations.

Pedestrian and Bicycle Facilities

Pedestrian facilities consisting of sidewalks are located within the Project limits; however, there are missing sidewalks on the south side of SR-74 (Central Avenue) between the SB on-ramp and Dexter Avenue, and along Dexter Avenue between Arroyo del Toro Channel and the Latter-Day Saints Church. According to the existing bikeway plan in the City's General Plan, there are no bikeway facilities located along SR-74 (Central Avenue) between Collier Avenue and Cambern Avenue, but there are Class II bikeways along Riverside Drive, Collier Avenue, and Cambern Avenue. Currently there is no signage or pavement markings designating the bikeway facilities on any of these local roads within the Project limits.

A new commercial development called "Central Plaza" located on the southeast corner of Collier and SR-74 (Central Avenue) recently constructed a segment of Class II bikeway (bike lane) along the south side of SR-74 (Central Avenue), between Collier Avenue and the I-15 SB on-ramp. On other segments of SR-74 (Central Avenue) bicyclists could ride along marked shoulders where available, or with traffic along the outer-most travel lanes as in the current condition.

2.10.3 Environmental Consequences

2.10.3.1 Temporary Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) maintains the existing I-15/SR-74 interchange with no additional ramp improvements or any other improvements that will improve traffic operations and reduce congestion to accommodate current and future traffic volumes travel conditions within the Project limits. Therefore, there will be no construction activities associated with Alternative 1 (No-Build) and no temporary substantial adverse impacts will occur.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Under Alternative 2, no full roadway closures are anticipated during construction; therefore, no detours will be required. Temporary lane closures will be needed to phase the Project construction but vehicular (including school buses and emergency response vehicles), pedestrian, and bicyclist access along the road and to/from private properties will be maintained at all times. Potential construction-related traffic and circulation impacts will be minimized through implementation of a comprehensive TMP. As identified in Measure TR-1, a Project TMP will be prepared to minimize motorist delays when performing work activities.

Project construction is not anticipated to impact existing transit services within the Project limits. All existing bus stops will be protected in place and will remain operational during construction, with the exception of the bus stop on the EB side of SR-74 (Central Avenue), located east of Cambern Avenue, which will require temporary relocation due to street widening. However, service will be re-established upon completion of construction. The TMP (Measure TR-1) will address necessary signage and notifications of temporary interruption in access to this bus stop during construction of the Project. The existing Park-and-Ride lot located on Dexter Avenue on the southeast quadrant of the interchange will be protected in place.

Construction activities such as utility relocation, extending the Arroyo Del Toro Channel outlet structure, road widening, modification and installation of traffic signals, restriping, and construction of the NB hook on-ramp will temporarily affect traffic operations. The TMP (Measure TR-1), which will be prepared during the final design (PS&E) phase, will require minimization of construction-related impacts to traffic by applying a variety of techniques, including public information, motorist information, incident management, construction strategies, demand management, and alternative route strategies.

With the implementation of Measure TR-1, no substantial temporary adverse impacts to traffic and circulation are anticipated to occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Construction activities under Alternative 3 (Preferred Alternative) will be similar as those under Alternative 2. Therefore, temporary impacts to traffic circulation will also be similar. Measure TR-1 will be implemented under Alternative 3 (Preferred Alternative) to minimize potential construction-related traffic and circulation impacts. With the implementation of Measure TR-1, no substantial temporary adverse impacts to traffic and circulation are anticipated to occur under Alternative 3 (Preferred Alternative).

2.10.3.2 Permanent Impacts

Table 2.10-11 shows the Opening Year (2025) AM and PM peak hour density and LOS for the traffic study area freeway mainline segments and ramp junctions on NB and SB I-15 under all alternatives. Table 2.10-12 shows the Opening Year (2025) AM and PM peak hour delay and LOS for the study intersections under all alternatives. Table 2.10-13 shows the Opening Year (2025) maximum queue for all movements at ramp terminal intersections for the AM and PM peak hours under Alternative 1 (No-Build) and Build Alternatives.

Table 2.10-14 and Table 2.10-15 show the Opening Year (2025) AM and PM peak hour number of vehicles served by the study network, vehicle-hours-delay, and delay per vehicle for the Nichols

Road and Main Street corridors and the SR-74 (Central Avenue) corridor, respectively, under all alternatives.

Table 2.10-16 shows the Horizon Year (2045) AM and PM peak hour density and LOS for the study freeway mainline segments and ramp junctions on NB and SB I-15 under Alternative 1 (No-Build) and the Build Alternative, Table 2.10-17 shows the Horizon Year (2045) AM and PM peak hour delay and LOS for the study intersections under all alternatives, and Table 2.10-18 shows the Horizon Year (2045) maximum queue for all movements at ramp terminal intersections for the AM and PM peak hours under all alternatives.

Table 2.10-19 and Table 2.10-20 show the Horizon Year (2045) AM and PM peak hour number of vehicles served by the study network, vehicle-hours-delay, and delay per vehicle for the Nichols Road and Main Street corridors and the SR-74 (Central Avenue) corridor, respectively, under Alternative 1 (No-Build) and Build Alternatives.

Table 2.10-11. Summary of Opening Year (2025) Interstate 15 Freeway Mainline Level of Service

Segment	Alternative 1 (No-Build)				Alternative 2				Alternative 3 (Preferred Alternative)			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]
Northbound												
Diverge to Main Street	35	D	33	D	35	D	33	D	35	D	33	D
Merge from Main Street	34	D	33	D	27	C	26	C	27	C	26	C
Mainline between Main Street and SR-74 (Central Avenue)	26	D	28	C	26	D	25	C	27	D	25	C
Diverge to SR-74 (Central Avenue)	33	D	32	D	25	C	24	C	24	C	24	C
Diverge to Dexter Avenue Loop Ramp[c]	—	—	—	—	—	—	—	—	20	C	18	B
Diverge to Dexter Avenue Hook Ramp[d]	—	—	—	—	17	B	16	B	26	C	25	C
Merge from SR-74 (Central Avenue)	30	D	28	C	25	C	23	C	29	D	27	C
Mainline between SR-74 (Central Avenue) and Nichols Road	22	C	20	C	22	C	20	C	22	C	20	C
Diverge to Nichols Road	29	D	27	C	28	D	27	C	29	D	27	C
Merge from Nichols Road	24	C	21	C	24	C	21	C	24	C	21	C

Table 2.10-11. Summary of Opening Year (2025) Interstate 15 Freeway Mainline Level of Service

Segment	Alternative 1 (No-Build)				Alternative 2				Alternative 3 (Preferred Alternative)			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]
Southbound												
Diverge to Nichols Road	26	C	31	D	26	C	31	D	26	C	31	D
Merge from Nichols Road	30	D	**36**	**E**	23	C	28	C	23	C	28	C
Mainline between Nichols Road and SR-74 (Central Avenue)	19	C	27	D	19	C	27	D	19	C	27	D
Diverge to SR-74 (Central Avenue)	27	C	33	D	11	B	17	B	11	B	17	B
Merge from SR-74 (Central Avenue)[e]	33	D	**-**	**F**	17	B	20	C	17	B	20	C
Mainline between SR-74 (Central Avenue) and Main Street	24	C	29	D	23	C	29	D	23	C	29	D
Diverge to Main Street	30	D	34	D	30	D	34	D	30	D	34	D
Merge from Main Street	28	C	30	D	28	C	30	D	28	C	30	D

Source: Caltrans 2020e

Notes:

[a] Density is reported vehicles per lane mile.

[b] Estimated average grade for the analysis segment. Bold font indicates unacceptable conditions (LOS E or F conditions).

[c] Diverge to Dexter Avenue Loop Ramp only exists under Alternative 3 (Preferred Alternative).

[d] Diverge to Dexter Avenue Hook Ramp only exists under the Build Alternatives.

[e] Merge from SR-74 (Central Avenue) under the Build Alternatives is the hook ramp merge from Dexter Avenue.

I=Interstate; LOS=level of service; SR=State Route

Table 2.10-12. Summary of Opening Year (2025) Intersection Operations Level of Service

Intersection	Alternative 1 (No-Build)				Alternative 2				Alternative 3 (Preferred Alternative)			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Nichols Road at Collier Avenue	15	B	15	B	15	B	15	B	15	B	15	B
Nichols Road at I-15 SB Ramps	11	B	9	A	11	B	9	A	11	B	9	A
Nichols Road at I-15 NB Ramps	13	B	20	C	13	B	20	C	13	B	20	C
Riverside Drive at Collier Avenue (SR-74)	20	B	24	C	16	B	21	C	16	B	20	C
SR-74 (Central Avenue) at Collier Avenue (SR-74)	20	C	37	D	25	C	51	D	27	C	53	D
SR-74 (Central Avenue) at I-15 SB Ramps	23	C	32	C	24	C	34	C	25	C	34	C
SR-74 (Central Avenue) at I-15 NB Ramps	32	C	49	D	9	A	11	B	15	B	16	B
SR-74 (Central Avenue) at Dexter Avenue	46	D	50	D	17	B	17	B	19	B	18	B
SR-74 (Central Avenue) at Central Plaza Shopping Center Driveway	17	C	11	B	3	A	5	A	3	A	4	A
SR-74 (Central Avenue) at Lowe's Shopping Center Driveway	4	A	5	A	5	A	7	A	5	A	7	A
SR-74 (Central Avenue) at Cambern Avenue	18	B	26	C	18	B	21	C	18	B	21	C
Crane Street at Dexter Avenue	**50**	**F**	**87**	**F**	11	B	18	C	10	B	16	C
3rd Street at Dexter Avenue	9	A	**53**	**F**	7	A	8	A	7	A	7	A

Table 2.10-12. Summary of Opening Year (2025) Intersection Operations Level of Service

Intersection	Alternative 1 (No-Build)				Alternative 2				Alternative 3 (Preferred Alternative)			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Main Street at I-15 SB Ramps	9	A	11	B	9	A	11	B	9	A	11	B
Main Street at I-15 NB Ramps	19	B	18	B	19	B	18	B	19	B	18	B
Dexter Avenue at I-15 NB Ramps	-	-	-	-	15	B	9	A	14	B	11	B

Source: Caltrans 2020e

Notes:

Bold font indicates unacceptable conditions

I=Interstate; LOS=level of service; NB=northbound; SB=southbound; SR=State Route

Table 2.10-13. Summary of Opening Year (2025) Queuing

Intersection	Movement	Alternative 1 (No-Build)			Alternative 2			Alternative 3 (Preferred Alternative)		
		Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)	Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)	Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)
Riverside Drive/Collier Avenue (SR-74)	NBL	500	210	300	500	190	310	500	200	340
	EBL	1,000+	420	480	1,000+	170	230	1,000+	170	140
	EBR	365	**450**	380	1,000+	390	470	1,000+	510	400
SR-74 (Central Avenue)/Collier Avenue (SR-74)	SBL	640	340	620	640	580	**890**	640	540	**900**
	SBR	340	40	40	340	40	50	340	40	40
	WBL	580	270	280	580	280	260	580	300	310
	WBR	580	160	190	580	190	200	580	180	200
I-15 SB Ramps/SR-74 (Central Avenue)	EBT/EBR	600	305	340	600	340	360	600	345	360
	SBL	245	220	**280**	760	230	320	760	230	350
	SBR	245	200	**260**	550	220	190	550	220	210
	WBL	200	**520**	**460**	450	290	270	450	280	270
I-15 NB Ramps/ SR-74 (Central Avenue)	NBR	240	**390**	**270**	430	200	240	430	200	230
	SBR	-	-	-	-	-	-	150	**560**	430
SR-74 (Central Avenue)/Dexter Avenue	EBL	240	220	**240**	240	170	180	240	170	170
	EBT/EBR	240	110	**240**	240	150	220	240	110	220
	WBT/WBR	250	90	70	250	180	140	250	190	140
SR-74 (Central Avenue)/Central Plaza Shopping Center Driveway	NBR	120	80	**140**	120	70	**150**	120	70	**160**

Table 2.10-13. Summary of Opening Year (2025) Queuing

Intersection	Movement	Alternative 1 (No-Build)			Alternative 2			Alternative 3 (Preferred Alternative)		
		Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)	Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)	Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)
SR-74 (Central Avenue)/Lowe's Shopping Center Driveway	EBL	-	-	-	230	170	210	230	185	220
	SBR	180	50	90	180	70	110	180	60	100
SR-74 (Central Avenue)/Cambern Avenue	EBL	260	150	**290**	360	120	120	360	110	110
	EBR	970	70	150	970	50	70	970	60	80
	WBL	380	120	50	380	200	200	380	210	180
	WBT/WBR	380	110	250	670	210	220	670	200	190
I-15 NB Ramps/Dexter Avenue	NBL	-	-	-	340	180	180	340	270	200
	EBL	-	-	-	320	130	100	320	110	90
	EBR	-	-	-	320	290	160	320	70	100

Source: Caltrans 2020e

Notes:

[a] Dedicated storage is not provided.

[b] Bold font indicates meets or queue exceeds storage capacity.

EB=eastbound; EBL=eastbound left; EBR=eastbound right; EBT=eastbound through; I=Interstate; NB=northbound; NBL=northbound left; NBR=northbound right; SB=southbound; SBL=southbound left; SBR=southbound right; SR=State Route; WB=westbound; WBL=westbound left; WBR=westbound right; WBT=westbound through

Table 2.10-14. Opening Year (2025) AM and PM Peak Hour System-Wide Performance Measures for Nichols Road and Main Street Corridors

	Alternative 1 (No-Build)		Alternative 2		Alternative 3 (Preferred Alternative)	
Performance Measure	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
Number of Vehicles Served	3,799	4,119	3,799	4,119	3,799	4,119
Vehicle Hours Delay	30	31	30	31	30	31
Delay per Vehicle (sec/veh)	28	26	28	26	28	26

Source: Caltrans 2020e

Table 2.10-15. Opening Year (2025) AM and PM Peak Hour System-Wide Performance Measures for State Route 74 (Central Avenue) Corridor

	Alternative 1 (No-Build)		Alternative 2		Alternative 3 (Preferred Alternative)	
Performance Measure	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
Number of Vehicles Served	9,492	9,816	9,370	9,937	9,398	10,045
Vehicle Hours Delay	225	350	177	240	177	247
Delay per Vehicle (sec/veh)	81	121	65	83	65	84

Source: Caltrans 2020e

Table 2.10-16. Summary of Horizon Year (2045) Interstate 15 Freeway Mainline Level of Service

Segment	Alternative 1 (No-Build)				Alternative 2				Alternative 3 (Preferred Alternative)			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]
Northbound												
Diverge to Main Street	36	E	34	D	36	E	34	D	36	E	34	D
Merge from Main Street	-	F	36	E	30	D	28	D	-	F	36	E
Mainline between Main Street and SR-74 (Central Avenue)	32	D	28	D	32	D	28	D	32	D	28	D
Diverge to SR-74 (Central Avenue)	38	E	36	E	28	C	27	C	27	C	26	C
Diverge to Dexter Avenue Loop Ramp[c]	-	-	-	-	-	-	-	-	23	C	20	C
Diverge to Dexter Avenue Hook Ramp[d]	-	-	-	-	19	C	17	B	28	C	26	C
Merge from SR-74 (Central Avenue)	35	D	30	D	30	D	25	C	34	D	29	D
Mainline between SR-74 (Central Avenue) and Nichols Road	27	D	23	C	27	D	23	C	27	D	23	C
Diverge to Nichols Road	32	D	30	D	32	D	29	D	32	D	29	D
Merge from Nichols Road	33	D	27	C	33	D	27	C	33	D	27	C
Southbound												
Diverge to Nichols Road	29	D	-	F	29	D	-	F	29	D	-	F

Table 2.10-16. Summary of Horizon Year (2045) Interstate 15 Freeway Mainline Level of Service

	Alternative 1 (No-Build)				Alternative 2				Alternative 3 (Preferred Alternative)			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Segment	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]	Density[a]	LOS[b]
Merge from Nichols Road	31	D	-	F	25	C	35	D	25	C	35	D
Mainline between Nichols Road and SR-74 (Central Avenue)	24	C	40	E	24	C	40	E	24	C	40	E
Diverge to SR-74 (Central Avenue)	31	D	39	E	15	B	26	C	15	B	26	C
Merge from SR-74 (Central Avenue)[e]	-	F	-	F	19	C	24	C	19	C	24	C
Mainline between SR-74 (Central Avenue) and Main Street	28	D	39	E	28	D	39	E	28	D	39	E
Diverge to Main Street	33	D	38	E	33	D	38	E	33	D	38	E
Merge from Main Street	30	D	33	D	30	D	33	D	30	D	33	D

Source: Caltrans 2020e

Notes:

[a] Density is reported vehicles per lane mile.

[b] Estimated average grade for the analysis segment. Bold font indicates unacceptable conditions (LOS E or F conditions).

[c] Diverge to Dexter Avenue Loop Ramp only exists under Alternative 3 (Preferred Alternative).

[d] Diverge to Dexter Avenue Hook Ramp only exists under Alternative 2 and Alternative 3 (Preferred Alternative).

[e] Merge from SR-74 (Central Avenue) under Alternative 2 and Alternative 3 (Preferred Alternative) is the hook ramp merge from Dexter Avenue.

I=Interstate; LOS=level of service; SR=State Route

Table 2.10-17. Summary of Horizon Year (2045) Intersection Operations Level of Service

Intersection	Alternative 1 (No-Build)				Alternative 2				Alternative 3 (Preferred Alternative)			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Nichols Road at Collier Avenue	16	B	20	B	16	B	16	B	16	B	16	B
Nichols Road at I-15 SB Ramps	14	B	13	B	14	B	14	B	14	B	14	B
Nichols Road at I-15 NB Ramps	16	B	16	B	16	B	16	B	16	B	16	B
Riverside Drive at Collier Avenue (SR-74)	31	C	193	F	18	B	40	D	19	B	38	D
SR-74 (Central Avenue) at Collier Avenue (SR-74)	81	F	201	F	40	D	34	C	42	D	28	C
SR-74 (Central Avenue) at I-15 SB Ramps	40	D	121	F	28	C	52	D	31	C	40	D
SR-74 (Central Avenue) at I-15 NB Ramps	54	D	75	E	10	A	24	C	19	B	22	C
SR-74 (Central Avenue) at Dexter Avenue	78	E	97	F	33	C	33	C	31	C	26	C
SR-74 (Central Avenue) at Central Plaza Shopping Center Driveway	37	E	61	F	14	B	9	A	11	B	8	A
SR-74 (Central Avenue) at Lowe's Shopping Center Driveway	21	C	96	F	12	B	21	C	11	B	17	B
SR-74 (Central Avenue) at Cambern Avenue	88	F	114	F	31	C	41	D	31	C	38	D
Crane Street at Dexter Avenue	>180	F	163	F	22	C	45	E	34	D	35	D

Table 2.10-17. Summary of Horizon Year (2045) Intersection Operations Level of Service

	Alternative 1 (No-Build)				Alternative 2				Alternative 3 (Preferred Alternative)			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersection	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
3rd Street at Dexter Avenue	>180	F	290	F	19	C	25	C	19	C	22	C
Main Street at I-15 SB Ramps	11	B	15	B	11	B	15	B	11	B	15	B
Main Street at I-15 NB Ramps	18	B	16	B	18	B	16	B	18	B	16	B
Dexter Avenue at I-15 NB Ramps	-	-	-	-	16	B	11	B	22	C	11	B

Source: Caltrans 2020e

Notes:

Bold font indicates unacceptable conditions

I=Interstate; LOS=level of service; NB=northbound; SB=southbound; SR=State Route

Table 2.10-18. Summary of Horizon Year (2045) Queuing

Intersection	Movement	Alternative 1 (No-Build)			Alternative 2			Alternative 3 (Preferred Alternative)		
		Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)	Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)	Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)
Riverside Drive/Collier Avenue (SR-74)	NBL	500	200	1,130	500	210	370	500	210	380
	EBL	1,000+	880	1,030	1,000+	140	170	1,000+	150	160
	EBR	365	500	500	1,000+	560	630	1,000+	580	590
SR-74 (Central Avenue)/Collier Avenue (SR-74)	SBL	640	1,000	1,020	640	710	400	640	750	360
	SBR	340	30	30	340	30	40	340	40	40
	WBL	580	290	160	580	360	250	580	370	260
	WBR	580	160	300	580	300	280	580	260	270
I-15 SB Ramps/ SR-74 (Central Avenue)	EBT/EBR	600	335	380	600	335	350	600	330	350
	SBL	245	440	500	760	250	400	760	230	390
	SBR	245	380	420	550	300	220	550	320	250
	WBL	200	500	520	450	320	420	450	310	420
I-15 NB Ramps/SR-74 (Central Avenue)	NBR	240	390	390	430	250	290	430	270	270
	SBR	-	-	-	-	-	-	150	**620**	**410**
SR-74 (Central Avenue)/Dexter Avenue	EBL	240	240	240	240	240	240	240	220	200
	EBT/EBR	240	190	240	240	220	240	240	200	240
	WBT/WBR	460	120	80	460	260	170	460	260	180
SR-74 (Central Avenue)/Central Plaza Shopping Center Driveway	NBR	120	70	**130**	120	70	110	120	60	100

Table 2.10-18. Summary of Horizon Year (2045) Queuing

Intersection	Movement	Alternative 1 (No-Build)			Alternative 2			Alternative 3 (Preferred Alternative)		
		Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)	Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)	Storage (feet)	AM Peak Hour Max Queue (feet)	PM Peak Hour Max Queue (feet)
SR-74 (Central Avenue)/Lowe's Shopping Center Driveway	EBL	-	-	-	230	175	230	230	185	230
	SBR	180	60	**180**	180	100	120	180	100	110
SR-74 (Central Avenue)/Cambern Avenue	EBL	260	360	360	360	290	360	360	300	360
	EBR	970	300	490	970	60	510	970	70	510
	WBL	380	480	480	380	290	290	380	270	290
	WBT/WBR	380	480	480	670	440	240	670	470	220
I-15 NB Ramps/Dexter Avenue	NBL	-	-	-	340	250	180	340	460	190
	EBL	-	-	-	320	190	70	320	150	80
	EBR	-	-	-	320	230	190	320	80	80

Source: Caltrans 2020e

Notes:

[a] Dedicated storage is not provided.

[b] Bold font indicates meets or queue exceeds storage capacity.

EB=eastbound; EBL=eastbound left; EBR=eastbound right; EBT=eastbound through; I=Interstate; NB=northbound; NBL=northbound left; NBR=northbound right; SB=southbound; SBL=southbound left; SBR=southbound right; SR=State Route; WB=westbound; WBL=westbound left; WBR=westbound right; WBT=westbound through

Table 2.10-19. Horizon Year (2045) AM and PM Peak Hour System-Wide Performance Measures for Nichols Road and Main Street Corridors

	Alternative 1 (No-Build)		Alternative 2		Alternative 3 (Preferred Alternative)	
Performance Measure	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
Number of Vehicles Served	7,207	7,349	7,207	7,349	7,207	7,349
Vehicle Hours Delay	70	131	70	131	70	131
Delay per Vehicle (sec/veh)	34	62	34	62	34	62

Source: Caltrans 2020e

Table 2.10-20. Horizon Year (2045) AM and PM Peak Hour System-Wide Performance Measures for State Route 74 (Central Avenue) Corridor

	Alternative 1 (No-Build)		Alternative 2		Alternative 3 (Preferred Alternative)	
Performance Measure	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
Number of Vehicles Served	10,477	9,220	12,074	13,077	12,119	13,038
Vehicle Hours Delay	712	1,266	341	478	337	434
Delay per Vehicle (sec/veh)	221	422	97	124	95	113

Source: Caltrans 2020e

Alternative 1 (No-Build)

Opening Year (2025) Freeway Operations

As shown in Table 2.10-11, during the AM peak hour all freeway facilities are anticipated to operate acceptably at a LOS D or better under Alternative 1 (No-Build). However, during the PM peak hour, the SB merge from SR-74 (Central Avenue) will degrade from LOS E in Existing Year (2018) conditions to LOS F under Opening Year (2025). In addition, the SB merge from Nichols Road will degrade from LOS D in Existing Year (2018) conditions to LOS E under Opening Year (2025).

Based on information contained in Table 2.10-11, Alternative 1 (No-Build) will result in unsatisfactory LOS on freeway operations during Opening Year (2025). Therefore, Alternative 1 (No-Build) will result in substantial permanent adverse impacts to freeway operations during Opening Year (2025).

Opening Year (2025) Intersection Operations

As shown in Table 2.10-12, Crane Street at Dexter Avenue will degrade from LOS A in Existing Year (2018) Conditions to unacceptable LOS F during the AM and PM peak hour. In addition, 3rd Street at Dexter Avenue will also degrade from LOS A in Existing (2018) Conditions to LOS F during the PM peak hour.

Based on information contained in Table 2.10-12, Alternative 1 (No-Build) will result in unsatisfactory LOS on intersection operations during Opening Year (2025). Therefore, Alternative 1 (No-Build) will result in substantial permanent adverse impacts to intersection operations during Opening Year (2025).

Opening Year (2025) Queuing Analysis

I-15 Off-Ramp Queues

Under Alternative 1 (No-Build), the NB right-turn movement on the I-15 NB off-ramp exceeds storage during the AM and PM peak hour. In addition, the westbound left-turn on to the I-15 SB on-ramp exceeds storage during the AM peak hour. At the I-15 SB ramp, the SB left-turn, SB right-turn, and the westbound left-turn movement also exceed storage during the PM peak hour. Therefore, Alternative 1 (No-Build) will result in substantial permanent adverse impacts to queuing at the I-15 off-ramps during Opening Year (2025).

SR-74 Queues

Queueing throughout SR-74 is anticipated to deteriorate during the AM and PM peak hour without any improvements, as shown in the queueing estimates for Alternative 1 (No-Build). In the AM peak hour, the heaviest traffic moves east to west along SR-74. In the PM peak hour, the heaviest traffic moves west to east along SR-74. Most intersections are anticipated to have multiple movements exceed storage capacity and spill back to adjacent intersections, affecting operations. Therefore, Alternative 1 (No-Build) will result in substantial permanent adverse impacts to queuing at along SR-74 during Opening Year (2025).

Opening Year (2025) System-Wide Performance

Nichols Road and Main Street Corridors

As shown in Table 2.10-14, the vehicle-hours-delay and delay per vehicle are similar during the AM and PM peak hour on the Nichols Road and Main Street corridors in Opening Year (2025) under Alternative 1 (No-Build). Therefore, Alternative 1 (No-Build) will result in substantial permanent adverse impacts to system-wide performance at Nichols Road and Main Street corridors during Opening Year (2025).

SR-74 (Central Avenue) Corridor

Data presented in Table 2.10-15 for the Opening Year (2025) AM and PM peak hour show a higher level of congestion occurring in the PM peak hour on the SR-74 (Central Avenue) corridor under Alternative 1 (No-Build). The increase in average delay per vehicle goes from approximately 81 seconds to 121 seconds during the PM peak hour. The higher levels of congestion are also indicated by the total delay experience during the PM peak hour, which is nearly 56 percent greater than the AM peak hour.

Based on information contained in Table 2.10-15, substantial adverse impacts are anticipated to occur to network performance operations during the Opening Year (2025) scenario under Alternative 1 (No-Build). Therefore, Alternative 1 (No-Build) will result in substantial permanent adverse impacts to system-wide performance at SR-74 (Central Avenue) corridor during Opening Year (2025).

Horizon Year (2045) Freeway Operations

As shown in Table 2.10-16, during the AM peak hour, the following four freeway segments were found to operate unacceptably at LOS E or worse under Alternative 1 (No-Build) in Horizon Year (2045):

- NB diverge to Main Street
- NB merge to Main Street
- NB diverge to SR-74 (Central Avenue)
- SB merge from SR-74 (Central Avenue)

During the PM peak hour, the following nine freeway segments were found to operate unacceptably at LOS E or worse under Alternative 1 (No-Build) in Horizon Year (2045):

- NB merge from Main Street
- NB diverge to SR-74 (Central Avenue)
- SB diverge to Nichols Road
- SB merge from Nichols Road
- SB mainline between Nichols Road and SR-74 (Central Avenue)
- SB diverge to SR-74 (Central Avenue)
- SB merge from SR-74 (Central Avenue)
- SB mainline between SR-74 (Central Avenue) and Main Street
- SB diverge to Main Street

Based on information contained in Table 2.10-17, Alternative 1 (No-Build) will result in unsatisfactory LOS on mainline operations during Horizon Year (2045). Therefore, Alternative 1 (No-Build) will result in substantial permanent adverse impacts to mainline freeway operations during Horizon Year (2045).

Horizon Year (2045) Intersection Operations

During the AM peak hour, the following six study intersections were found to operate unacceptably at LOS E or worse under Alternative 1 (No-Build) in Horizon Year (2045):

- SR-74 (Central Avenue) at Collier Avenue
- SR-74 (Central Avenue) at Dexter Avenue
- SR-74 (Central Avenue) at Central Plaza Shopping Center Driveway
- SR-74 (Central Avenue) at Cambern Avenue
- Crane Street at Dexter Avenue
- 3rd Street at Dexter Avenue

During the PM peak hour, the following 10 study intersections were found to operate unacceptably at LOS E or worse under Alternative 1 (No-Build) in Horizon Year (2045):

- Riverside Drive at Collier Avenue
- SR-74 (Central Avenue) at Collier Avenue
- SR-74 (Central Avenue) at I-15 SB Ramps
- SR-74 (Central Avenue) at I-15 NB Ramps
- SR-74 (Central Avenue) at Dexter Avenue
- EB SR-74 (Central Avenue) at Central Plaza Shopping Center Driveway
- WB SR-74 (Central Avenue) at Lowe's Shopping Center Driveway
- SR-74 (Central Avenue) at Cambern Avenue
- Crane Street at Dexter Avenue
- 3rd Street at Dexter Avenue

Based on information contained in Table 2.10-17, Alternative 1 (No-Build) will result in unsatisfactory LOS on intersection operations during Horizon Year (2045). Therefore, Alternative 1 (No-Build) will result in substantial permanent adverse impacts to intersection operations during Horizon Year (2045).

Horizon Year (2045) Queuing Analysis

I-15 Off-Ramp Queues

Based on information in Table 2.10-19, under Alternative 1 (No-Build), at the I-15 NB off-ramp, the NB right-turn movement exceeds storage during the AM and PM peak hour. In addition, at the I-15 SB ramp, the SB left-turn, SB right-turn, and the westbound left-turn movement also exceed storage during the AM and PM peak hour. Therefore, Alternative 1 (No-Build) will result in substantial permanent adverse impacts to queuing at the I-15 off-ramps during Horizon Year (2045).

SR-74 Queues

Based on the information in Table 2.10-18, queueing throughout SR-74 is anticipated during the AM and PM peak hour without any improvements, as shown in the queueing estimates for Alternative 1 (No-Build). In the AM peak hour, the heaviest traffic moves east to west along SR-74. In the PM peak hour, the heaviest traffic moves west to east along SR-74. Most intersections are anticipated to have multiple movements exceed storage capacity and spill back to adjacent intersections, affecting operations. Therefore, Alternative 1 (No-Build) will result in substantial permanent adverse impacts to queuing at along SR-74 during Horizon Year (2045).

Horizon Year (2045) System-Wide Performance

Nichols Road and Main Street Corridors

As shown in Table 2.10-19, the vehicle-hours-delay and delay per vehicle are similar during the AM and PM peak hour on the Nichols Road and Main Street corridors in Horizon Year (2045) under Alternative 1 (No-Build). Therefore, Alternative 1 (No-Build) will result in substantial permanent adverse impacts to system-wide performance at Nichols Road and Main Street corridors during Horizon Year (2045).

SR-74 (Central Avenue) Corridor

Data presented in Table 2.10-20 for the Horizon Year (2045) AM and PM peak hour show a higher level of congestion occurring in the PM peak hour on the SR-74 (Central Avenue) corridor under Alternative 1 (No-Build). The increase in average delay per vehicle goes from approximately 221 seconds to 422 seconds during the PM peak hour. The higher levels of congestion are also indicated by the total delay experience during the PM peak hour, which is nearly 78 percent greater than the AM peak hour.

Based on information contained in Table 2.10-20, substantial adverse impacts are anticipated to occur to network performance operations during the Opening Year (2045) scenario under Alternative 1 (No-Build). Therefore, Alternative 1 (No-Build) will result in substantial permanent adverse impacts to system-wide performance at SR-74 (Central) corridor during Horizon Year (2045).

Pedestrian and Bicycle Facilities

Alternative 1 (No-Build) maintains the existing I-15/SR-74 interchange with no additional ramp improvements or any other improvements such as pedestrian and bicycle facilities, that will improve traffic operations and reduce congestion to accommodate current and future traffic volumes travel conditions within the Project limits. Therefore, there will be no pedestrian and bicycle facilities improvements associated with Alternative 1 (No-Build) and no substantial adverse impacts will occur.

Vehicle Miles Traveled

Alternative 1 (No-Build) maintains the existing I-15/SR-74 interchange as is and will not change VMT within the traffic study area. Therefore, no adverse impacts will occur related to VMT under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Opening Year (2025) Freeway Operations

As shown in Table 2.10-11, during both the AM and PM peak hour, all freeway mainline segments and ramp junctions on NB and southern I-15 are anticipated to operate acceptably under Alternative 2 at a LOS D or better. Under the PM Peak hour, Alternative 2 is anticipated to improve operations at the SB merge from SR-74 (Central Avenue) and the SB merge from Nichols Road to LOS C under Opening Year (2025). The hook ramp merge from Dexter Avenue will improve operations at the SB merge from SR-74 (Central Avenue). The NB diverge to Dexter Avenue hook ramp is also anticipated to operate acceptably at LOS B during the AM and PM peak hour.

Based on information contained in Table 2.10-11, the Project under Alternative 2 will not result in unsatisfactory LOS on freeway operations during Opening Year (2025). Therefore, Alternative 2 will not result in a substantial adverse impact on freeway operations during Opening Year (2025).

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Similar to Alternative 2, during both the AM and PM peak hour, all freeway mainline segments and ramp junctions on NB and southern I-15 are anticipated to operate acceptably under Alternative 3 (Preferred Alternative) at a LOS D or better. In addition, Alternative 3 (Preferred Alternative) will also result in the same operational improvements at the SB merge from SR-74 (Central Avenue) and the SB merge from Nichols Road to LOS C under Opening Year (2025). The hook ramp merge from Dexter Avenue will improve operations at the SB merge from SR-74 (Central Avenue). The NB diverge to Dexter Avenue loop ramp and hook ramp are also anticipated to operate acceptably at LOS C or better during the AM and PM peak hour.

Based on information contained in Table 2.10-11, Alternative 3 (Preferred Alternative) will not result in unsatisfactory LOS on freeway operations during Opening Year (2025). Therefore, Alternative 3 (Preferred Alternative) will not result in a permanent adverse impact on freeway operations during Opening Year (2025).

Opening Year (2025) Intersection Operations

Alternative 2 (NB Hook Ramps)

As shown in Table 2.10-12, Crane Street at Dexter Avenue improves to operate at an acceptable LOS C or better during the AM and PM peak hour in comparison to Alternative 1 (No-Build). In addition, 3rd Street at Dexter Avenue will operate at LOS A during the PM peak hour.

Based on information contained in Table 2.10-12, Alternative 2 will not result in unsatisfactory LOS on intersection operations during Opening Year (2025). Therefore, Alternative 2 will not result in an adverse impact on intersection operations during Opening Year (2025).

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

As shown in Table 2.10-12, under Alternative 3 (Preferred Alternative), Crane Street at Dexter Avenue and 3rd Street at Dexter Avenue will operate with the same acceptable LOS during the AM and PM peak hour as Alternative 2.

Based on information contained in Table 2.10-12, Alternative 3 (Preferred Alternative) will not result in unsatisfactory LOS on intersection operations during Opening Year (2025). Therefore, Alternative 3 (Preferred Alternative) will not result in an adverse impact on intersection operations during Opening Year (2025).

Opening Year (2025) Queuing Analysis

Alternative 2 (NB Hook Ramps)

I-15 Off-Ramp Queues

Under Alternative 2, queuing will be improved such that no movements will exceed the storage capacity on the I-15 off-ramps during the AM and PM peak hour. The queue reduction is in part due to the movement restrictions at the intersection of the I-15 NB ramps and SR-74 (Central Avenue). Therefore, Alternative 2 will not result in an adverse impact on queuing at I-15 off-ramps during Opening Year (2025).

SR-74 Queues

Under Alternative 2, operations have been improved throughout the corridor and most queues along SR-74 have been reduced to meet storage capacity during the AM and PM peak hour. Coordination through the corridor is prioritized along SR-74 for the heaviest movements and through the most closely spaced intersections at the I-15 interchange.

Maximum queues at the SB left-turn at the intersection of SR-74 (Central Avenue) and Collier Avenue extend past the striped turn lanes but not as far as the adjacent driveway intersection. As this movement is the primary movement along the meandering alignment of SR-74, the through movement storage is assumed to be allocated to this primary movement and therefore the queues have enough storage capacity. At the intersection of SR-74 (Central Avenue) and Cambern Avenue, eastbound queues were observed in the simulation to extend past the dedicated left-turn pocket but remain in the long taper. These queues were not observed to block through traffic. Therefore,

Alternative 2 will not result in an adverse impact on queuing along SR-74 during Opening Year (2025).

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

I-15 Off-Ramp Queues

Similar to Alternative 2, queuing will be improved such that no movements will exceed the storage capacity on the I-15 off-ramps during the AM and PM peak hour under Alternative 3 (Preferred Alternative). The queue reduction is in part due to the movement restrictions at the intersection of the I-15 NB ramps and SR-74 (Central Avenue). Therefore, Alternative 3 (Preferred Alternative) will not result in an adverse impact on queuing at I-15 off-ramps during Opening Year (2025).

SR-74 Queues

Alternative 3 (Preferred Alternative) performs similarly to Alternative 2 during the AM peak hour. The maximum queue at the SB left-turn at the intersection of SR-74 (Central Avenue) and Collier Avenue is 40 feet longer than Alternative 2, but still within the through storage capacity. Queues at the intersection of SR-74 (Central Avenue) and Dexter Avenue were reduced due to the reallocation of traffic to the loop ramp.

During the PM peak hour, queues at the intersection of SR-74 (Central Avenue) and Collier Avenue increased slightly under Alternative 3 (Preferred Alternative). Therefore, Alternative 3 (Preferred Alternative) will not result in an adverse impact on queuing along SR-74 during Opening Year (2025).

Opening Year (2025) System-Wide Performance

Alternative 2 (NB Hook Ramps)

Nichols Road and Main Street Corridors

The lane geometries and forecast traffic volumes are identical for Alternative 1 (No-Build) and Alternative 2 and therefore, the results for the Nichols Road and Main Street corridors are the same for the AM and PM peak hour in Opening Year (2025).

SR-74 (Central Avenue) Corridor

As shown in Table 2.10-15, during the AM and PM peak hour on the SR-74 (Central Avenue) corridor, the system-wide performance results for Alternative 2 show improvement from Alternative 1 (No-Build) in Opening Year (2025). During the AM peak hour, Alternative 2 will have approximately 20 percent less vehicle-hours-delay and 20 percent less delay per vehicle on the SR-74 (Central Avenue) corridor in comparison to Alternative 1 (No-Build).

In the PM peak hour, Alternative 2 will provide service to approximately 1 percent more vehicles and have approximately 30 percent less vehicle-hours-delay and 30 percent less delay per vehicle in comparison to Alternative 1 (No-Build).

Based on information contained in Table 2.10-15, the decrease in vehicle hours delay and decrease in delay per vehicle indicates there will be an improvement during the Opening Year (2025) under Alternative 2. Congestion levels will be reduced under Alternative 2 when compared with Alternative 1 (No Build). Therefore, Alternative 2 will result in a beneficial impact on the network performance for the SR-74 (Central Avenue) corridor. No adverse impacts are anticipated to occur to network performance operations during the Opening Year (2025) scenario under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Nichols Road and Main Street Corridors

The lane geometries and forecast traffic volumes are identical for Alternative 1 (No-Build) and Alternative 3 (Preferred Alternative) and therefore, the results for the Nichols Road and Main Street corridors are the same for the AM and PM peak hour in Opening Year (2025). No adverse impacts are anticipated to occur to network performance operations on Nichols Road and Main Street corridors during the Opening Year (2025) scenario under Alternative 3 (Preferred Alternative).

SR-74 (Central Avenue) Corridor

As shown in Table 2.10-15, during the AM and PM peak hour on the corridor, the system-wide performance results for Alternative 3 (Preferred Alternative) show improvement from Alternative 1 (No-Build) in Opening Year (2025). The system-wide performance results for Alternative 3 (Preferred Alternative) are similar to Alternative 2 during the AM and PM peak hour on the SR-74 (Central Avenue) corridor. Alternative 2 and Alternative 3 (Preferred Alternative) have similar vehicle-hours-delay and delay per vehicle performance measures because of similar signal timing coordination between the build alternatives. Alternative 3 (Preferred Alternative) serves slightly higher vehicles because of the additional capacity provided by the I-15 NB loop off-ramp.

Based on information contained in Table 2.10-15, the decrease in vehicle hours delay and decrease in delay per vehicle indicates there will be an improvement during the Opening Year (2025) under Alternative 3 (Preferred Alternative). Congestion levels will be reduced under Alternative 3 (Preferred Alternative) when compared with Alternative 1 (No-Build). Therefore, Alternative 3 (Preferred Alternative) will result in a beneficial impact on the network performance for the SR-74 (Central Avenue) corridor. No adverse impacts are anticipated to occur to network performance operations along SR-74 (Central Avenue) during the Opening Year (2025) scenario under Alternative 3 (Preferred Alternative).

Horizon Year (2045) Freeway Operations

Alternative 2 (NB Hook Ramps)

As shown in Table 2.10-16, the NB diverge to Main Street will remain the same as Alternative 1 (No-Build) and operate unacceptably at LOS E during the AM peak hour under Alternative 2 in Horizon Year (2045). The other three deficient locations identified under Alternative 1 (No-Build) during the AM peak hour will improve to acceptable LOS C or D under Alternative 2, which are:

- NB merge to Main Street
- NB diverge to SR-74 (Central Avenue)
- SB merge from SR-74 (Central Avenue)

Under Alternative 2, during the PM peak hour, four freeway segments will operate at LOS E or worse that also operate unacceptably under Alternative 1 (No-Build) while five freeway segments are improved to LOS D or better. The five improved freeway segments are:

- NB merge from Main Street
- NB diverge to SR-74 (Central Avenue)
- SB merge from Nichols Road
- SB diverge to SR-74 (Central Avenue)
- SB merge from SR-74 (Central Avenue)

When compared with Alternative 1 (No-Build), which will have 10 freeway mainline segments or ramp junctions operating at LOS E or F, Alternative 2 will improve five of the freeway mainline segments or ramp junctions operating at unacceptable levels to satisfactory LOS of C or D. The Project will improve freeway operations during the AM peak hour and PM peak hour under the Horizon Year (2045) scenario.

Based on information contained in Table 2.10-16, Alternative 2 will not result in any new unsatisfactory LOS during Horizon Year (2045) when compared to Alternative 1 (No-Build). Therefore, Alternative 2 will not result in an adverse impact on freeway operations during Horizon Year (2045).

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

As shown in Table 2.10-16, the NB diverge to Main Street and NB merge from Main Street will remain the same as Alternative 1 (No-Build) and operate unacceptably at LOS E and F, respectively, under Alternative 3 (Preferred Alternative). The other two deficient locations identified under Alternative 1 (No-Build) during the AM peak hour will improve to acceptable LOS C under Alternative 3 (Preferred Alternative), which are:

- NB diverge to SR-74 (Central Avenue)
- SB merge from SR-74 (Central Avenue)

Under Alternative 3 (Preferred Alternative), during the PM peak hour, five freeway segments will operate at LOS E or worse that also operate unacceptably under Alternative 1 (No-Build) while four freeway segments are improved to LOS D or better. The four improved freeway segments are:

- NB diverge to SR-74 (Central Avenue)
- SB diverge to SR-74 (Central Avenue)
- SB merge from Nichols Road
- SB merge from SR-74 (Central Avenue)

When compared with Alternative 1 (No-Build), which will have 10 freeway mainline segments or ramp junctions operating at LOS E or F, Alternative 3 (Preferred Alternative) will improve four of the freeway mainline segments or ramp junctions operating at unacceptable levels to satisfactory LOS of C or D. The Project will improve freeway operations during the AM peak hour and PM peak hour under the Horizon Year (2045) scenario.

Based on information contained in Table 2.10-16, Alternative 3 (Preferred Alternative) will not result in any new unsatisfactory LOS during Horizon Year (2045) when compared to Alternative 1 (No-Build). Therefore, Alternative 3 (Preferred Alternative) will not result in an adverse impact on freeway operations during Horizon Year (2045).

Horizon Year (2045) Intersection Operations

Alternative 2 (NB Hook Ramps)

During the AM peak hour, all study intersections will improve to acceptable operations at LOS D or better under Alternative 2. During the PM peak hour, nine of the ten deficient intersections under Alternative 1 (No-Build) will improve to acceptable LOS D or better under Alternative 2. The Crane Street at Dexter Avenue intersection will also improve from LOS F under Alternative 1 (No-Build) to LOS E during the PM peak hour under Alternative 2.

Based on information contained in Table 2.10-17, Alternative 2 will not result in an adverse impact on intersection operations during Horizon Year (2045).

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Similar to Alternative 2, during the AM peak hour, all study intersections will improve to acceptable operations at LOS D or better under Alternative 3 (Preferred Alternative). During the PM peak hour, all deficient intersections under Alternative 1 (No-Build) will improve to acceptable LOS D or better under Alternative 3 (Preferred Alternative).

Under Alternative 2, vehicles that will like to go westbound on SR-74 (Central Avenue) will have to make a SB right-turn at the Dexter Avenue and SR-74 (Central Avenue) intersection. Under Alternative 3 (Preferred Alternative), vehicles can bypass this intersection by using the NB I-15 loop

off-ramp at SR-74 (Central Avenue) instead. This traffic volume shift creates differences in signal coordination along SR-74 (Central Avenue), allowing for a longer NB phase in Alternative 3 (Preferred Alternative). This reduces the NB queue, allowing for easier access to and from Crane Street to the south.

Based on information contained in Table 2.10-17, Alternative 3 (Preferred Alternative) will not result in an adverse impact on intersection operations during Horizon Year (2045).

Horizon Year (2045) Queuing Analysis

Alternative 2 (NB Hook Ramps)

I-15 Off-Ramp Queues

Under Alternative 2, queuing will be improved such that no movements will exceed the storage capacity on the I-15 off-ramps during the AM and PM peak hour. The queue reduction is in part due to the movement at the I-15 NB off-ramp at SR-74 (Central Avenue) and the signal coordination along SR-74 (Central Avenue). Therefore, Alternative 2 will not result in an adverse impact on queuing at I-15 off-ramps during Horizon Year (2045).

SR-74 Queues

Under Alternative 2, operations have been improved throughout the corridor and most queues along SR-74 have been reduced to meet storage capacity during the AM and PM peak hour. Coordination through the corridor is prioritized along SR-74 for the heaviest movements and through the most closely spaced intersections at the I-15 interchange.

At the intersection of SR-74 (Central Avenue) and Dexter Avenue, the eastbound approach reaches storage capacity throughout phases of the coordination and platoons of vehicles queue past the dedicated storage during the PM peak hour. However, these queues clear out within the same phase and do not block the intersection during other phases within the same cycle. At the intersection of SR-74 (Central Avenue) and Cambern Avenue, eastbound queues during the PM peak hour were observed in the simulation to extend past the dedicated left-turn pocket but remain in the long taper. These queues were not observed to block through traffic. Therefore, Alternative 2 will not result in an adverse impact on queuing along SR-74 (Central Avenue) during Horizon Year (2045).

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

I-15 Off-Ramp Queues

Under Alternative 3 (Preferred Alternative), at the I-15 NB loop off-ramp at SR-74 (Central Avenue), the SB right-turn queue will exceed storage at intervals during the AM and PM peak hour. Although

the queue exceeds designated storage lanes, the queueing is not anticipated to spillback onto the freeway mainline.

At the I-15 NB loop off-ramp at SR-74 (Central Avenue), the SB right-turn queue will exceed storage during the PM peak hour. Although the queue exceeds designated storage lanes where two lanes are provided on the ramp, the queuing is not anticipated to spillback onto the freeway mainline as there is storage capacity on the ramp. At the I-15 SB ramps and SR-74 (Central Avenue) intersection, the westbound left-turn queue exceeds storage by 40 feet at intervals during the PM peak hour. Queuing is not anticipated to affect through traffic operations and reduces the queue in Alternative 1 (No-Build) by 100 feet. Therefore, Alternative 3 (Preferred Alternative) will not result in an adverse impact on queuing at I-15 off-ramps during Horizon Year (2045).

SR-74 Queues

Alternative 3 (Preferred Alternative) performs similarly to Alternative 2 during the AM peak hour. The maximum queue at the SB left-turn at the intersection of SR-74 (Central Avenue) and Collier Avenue is 40 feet longer than Alternative 2, but still within the through storage capacity. Queues at the intersection of SR-74 (Central Avenue) and Dexter Avenue were reduced due to the reallocation of traffic to the loop ramp.

Alternative 3 (Preferred Alternative) also performs similarly to Alternative 2 during the PM peak hour. However, queues at the intersection of SR-74 (Central Avenue) and Dexter Avenue were reduced due to the reallocation of traffic to the loop ramp. Therefore, Alternative 3 (Preferred Alternative) will not result in an adverse impact on queuing along SR-74 (Central) during Horizon Year (2045).

Horizon Year (2045) System-Wide Performance

Alternative 2 (NB Hook Ramps)

Nichols Road and Main Street Corridors

The lane geometries and forecast traffic volumes are identical for Alternative 1 (No-Build) and Alternative 2 and therefore, the results for the Nichols Road and Main Street corridors are the same for the AM and PM peak hour in Horizon Year (2045). No adverse impacts are anticipated to occur to network performance operations at the Nichols Road and Main Street corridors during the Horizon Year (2045) scenario under Alternative 2.

SR-74 (Central Avenue) Corridor

As shown in Table 2.10-20, during the AM and PM peak hour on the SR-74 (Central Avenue) corridor, the system-wide performance results for Alternative 2 show improvement from Alternative 1 (No-Build) in Horizon Year (2045). During the AM peak hour, Alternative 2 will provide service to

approximately 15 percent more vehicles and have approximately 50 percent less vehicle-hours-delay and 55 percent less delay per vehicle on the SR-74 (Central Avenue) corridor in comparison to Alternative 1 (No-Build).

In the PM peak hour, Alternative 2 will provide service to approximately 40 percent more vehicles and have approximately 60 percent less vehicle-hours-delay and 70 percent less delay per vehicle in comparison to Alternative 1 (No-Build).

Based on information contained in Table 2.10-20, the increase in the number of vehicles served, decrease in vehicle hours delay, and decrease in delay per vehicle indicates there will be an improvement during the Horizon Year (2045) under Alternative 2. Congestion levels will be reduced under Alternative 2 when compared with Alternative 1 (No-Build). Therefore, Alternative 2 will result in a beneficial impact on the network performance for the SR-74 (Central Avenue) corridor. No adverse impacts are anticipated to occur to network performance operations along SR-74 (Central Avenue) during the Horizon Year (2045) scenario under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Nichols Road and Main Street Corridors

The lane geometries and forecast traffic volumes are identical for Alternative 1 (No-Build) and Alternative 3 (Preferred Alternative) and therefore, the results for the Nichols Road and Main Street corridors are the same for the AM and PM peak hour in Horizon Year (2045). No adverse impacts are anticipated to occur to network performance operations at the Nichols Road and Main Street corridors during the Horizon Year (2045) scenario under Alternative 3 (Preferred Alternative).

SR-74 (Central Avenue) Corridor

As shown in Table 2.10-20, during the AM and PM peak hour on the SR-74 (Central Avenue) corridor, the system-wide performance results for Alternative 3 (Preferred Alternative) show improvement from Alternative 1 (No-Build) in Horizon Year (2045). The system-wide performance results for Alternative 3 (Preferred Alternative) are similar to Alternative 2 during the AM peak hour on the SR-74 (Central Avenue) corridor. Alternative 2 and Alternative 3 (Preferred Alternative) have a similar benefit of providing service to 15 percent more vehicles than Alternative 1 (No-Build) in the AM peak hour. Both build alternatives also have similar vehicle-hours-delay and delay per vehicle performance measures because of similar signal timing coordination in the AM peak hour.

In the PM peak hour, Alternative 3 (Preferred Alternative) will provide service to approximately 40 percent more vehicles and have approximately 65 percent less vehicle-hours-delay and 75 percent less delay per vehicle in comparison to Alternative 1 (No-Build). In comparison to Alternative 2,

Alternative 3 (Preferred Alternative) will have approximately 45 less vehicle-hours-delay and 10 seconds less delay per vehicle in the PM peak hour.

Based on information contained in Table 2.10-20, the increase in the number of vehicles served, decrease in vehicle hours delay, and decrease in delay per vehicle indicates there will be an improvement during the Horizon Year (2045) under Alternative 3 (Preferred Alternative). Congestion levels will be reduced under Alternative 3 (Preferred Alternative) when compared with Alternative 1 (No-Build). Therefore, Alternative 3 (Preferred Alternative) will result in a beneficial impact on the network performance for the SR-74 (Central Avenue) corridor. No substantial adverse impacts are anticipated to occur to network performance operations during the Horizon Year (2045) scenario under Alternative 3 (Preferred Alternative).

Pedestrian and Bicycle Facilities

Alternative 2 (NB Hook Ramps)

The Project under Alternative 2 will include newly constructed sidewalk and ADA compliant routes through the I-15/SR-74 interchange, from the SB on-ramp to Dexter Avenue. These improvements will connect the Business Districts on the east and west sides of I-15, and from Arroyo Del Toro Channel to 11th Street to the established residential neighborhoods north of 11th Street. The new ADA compliant pathways under Alternative 2 will result in approximately 1,150 linear feet of new walkways and eliminate indirect routes for pedestrian traffic that currently require multiple crossings along SR-74. In addition, Alternative 2 will add a 5- to 6-foot paved shoulder on the west side of Dexter Avenue between 11th Street and SR-74 (Central Avenue).

Further, the Project limits contains limited or no signage or pavement markings designating bikeway facilities on local roadways. Bicyclists are allowed to ride along marked shoulders where available, with traffic along the travel lanes, or next to the sidewalks on the outer-most travel lanes as in the current condition. Therefore, per Measure TR-2, provisions of signage and pavement markings to clearly separate bicyclists from adjacent motor vehicle travel lanes along SR-74 (Central Avenue) will be evaluated during final design (PS&E) in order to ensure that accessibility for pedestrians or bicyclists is maintained and/or enhanced within the Project limits, as needed. With the implementation of Measure TR-2, no substantial adverse impacts will occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Similar to Alternative 2, Alternative 3 (Preferred Alternative) will include 1,150 linear feet of new ADA compliant pathways and the addition of a 5- to 6-foot paved shoulder on the west side of Dexter Avenue between 11th Street and SR-74 (Central Avenue), which could accommodate a new 2,500 ft bike lane. Measure TR-2 will also be implemented to evaluate the provision of signage and

pavement markings to clearly separate bicyclists from adjacent motor vehicle travel lanes along SR-74 (Central Avenue) during final design (PS&E), for the preferred alternative. With the implementation of Measure TR-2, no substantial adverse impacts will occur under Alternative 2.

Vehicle Miles Traveled

Senate Bill 743

Senate Bill 743 was signed into law in 2013 with the intent to better align CEQA practices with statewide sustainability goals related to efficient land use, greater multimodal transportation choices, and GHG and traffic-related air pollution reductions while balancing the needs of congestion management and safety. Senate Bill 743 changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on VMT to analyze transportation impacts. Lead agencies had until July 1, 2020, to comply with the new VMT metric for analyzing transportation impacts, although they could have voluntarily complied earlier (California Code of Regulation [CCR] Section 15064.3 (c)). Caltrans, as the CEQA lead agency, is required to implement Senate Bill 743 for transportation projects. As previously defined in Section 2.10.1, the intent of Senate Bill 743 is to better align CEQA practices with statewide sustainability goals related to efficient land use, greater multimodal transportation choices, GHG and traffic-related air pollution reductions while balancing the needs of congestion management and safety. Under Senate Bill 743, lead agencies have discretion to set their own VMT thresholds. Caltrans has adopted the future No-Build as the baseline for determining VMT impacts.

2.10.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures will be implemented to minimize impacts from Project construction under the Build Alternatives:

TR-1 During the final design (PS&E) phase, the City's Resident Engineer will ensure that a detailed TMP will be developed for implementation prior to and during construction. The TMP will be a specialized program tailored to accommodate major traffic movements during construction and to mitigate construction impacts by applying a variety of traffic management techniques including but not limited to the following:

- Traffic controls
- Transportation demand management
- Public awareness measures (including signing, mailers, brochures, newspaper articles, and internet resources)
- Motorist information strategies

- Incident management
- Construction strategies
- Transportation demand management
- Alternative route strategies
- Continuous access for pedestrians and businesses

TR-2 During the final design (PS&E) phase, the City's Resident Engineer will ensure that provisions of signage and pavement markings for bicyclists along SR-74 (Central Avenue) are evaluated and incorporated, as feasible.

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2.11 Visual and Aesthetics

2.11.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). To further emphasize this point, the Federal Highway Administration (FHWA), in its implementation of NEPA (23 USC 109[h]), directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities" (CA Public Resources Code [PRC] Section 21001[b]).

California Streets and Highways Code Section 92.3 directs Caltrans to use drought resistant landscaping and recycled water when feasible and incorporate native wildflowers and native and climate-appropriate vegetation into the planting design when appropriate.

2.11.2 Affected Environment

This section describes the aesthetic and visual conditions within the Project limits. The section also discusses potential aesthetic impacts that could result from implementation of the Project build alternative. Information in this section is based on the *Visual Impact Assessment* (VIA) (Caltrans 2020b) prepared for the Project in accordance with the guidance outlined in the *Guidelines for the Visual Impact Assessment of Highway Projects* (USDOT 2015).

The degree of visual quality in a view was evaluated using the following FHWA descriptive terms:

- *Vividness* is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements. Vividness is rated on a five-point scale ranging from low (not memorable) to high (strikingly memorable).
- *Intactness* is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions. Intactness is rated on a five-point scale of low (much encroachment or degradation) to high (low encroachment or degradation).

- *Unity* is the extent to which all visual elements combine to form a coherent, harmonious visual pattern. Unity is rated on a five-point scale ranging from low (little or poor integration) to high (superlative integration).

The degree of visual character in a view was evaluated using the following FHWA descriptive terms:

- *Line*: edges or linear definition
- *Form*: visual mass or shape
- *Color*: reflective brightness (light, dark) and hue (red, green)
- *Texture*: surface coarseness
- *Dominance*: components or specific features in a scene that may be dominant because of prominent positioning, size, contrast, or importance of pattern elements.
- *Scale*: the apparent size relationship between landscape components or features and their surroundings.
- *Diversity*: the number of pattern elements, as well as the variety of visual patterns among them and between them.
- *Continuity*: uninterrupted flow of form, line, color, or textural pattern and the maintenance of visual relationships between immediately connected or related landscape components or features.

For projects that do not create substantial visual changes to the existing visual setting, visual impacts are characterized into the following visual impact categories: low, moderately low, moderate, moderately high, and high based on the following descriptions:

- *Low*: Low negative change to existing visual resources and low viewer response to that change. Impact may or may not require mitigation.
- *Moderately Low*: Low negative change to the visual resource with a moderate viewer response or moderate negative change to the resource with a low viewer response. Impact can be mitigated using conventional methods.
- *Moderate*: Moderate negative change to the visual resource with moderate viewer response. Impact can be mitigated within 5 years using conventional practices.
- *Moderately High*: Moderate negative change in the visual resource with high viewer response or high negative change with a moderate viewer response. Extraordinary mitigation

practices may be required. Landscape treatment required will generally take longer than 5 years to mitigate.

- *High*: High level of negative change in character or a high level of viewer response to the change such that extraordinary architectural design and landscape treatments may not mitigate impacts below a high level. An alternative project design may be required to avoid high negative impacts.

The VIA (Caltrans 2020b) identified two viewer groups that could be impacted by the Project: highway neighbors and highway users. Each viewer group has its own particular level of viewer exposure and viewer sensitivity, resulting in distinct and predictable visual concerns for each group, which help to predict its responses to visual changes.

- Highway Neighbors (Views to the Road): Highway neighbors are people who have views to the roadway. For the Project, residents, business operators, and recreational users were considered as part of the highway neighbors' viewer group.
- Highway Users (Views from the Road): Highway users are people who have views from the roadway. They can be subdivided into different viewer groups in two different ways: by mode of travel or by reason for travel. For the Project, commuters were considered as the highway users' viewer group.

2.11.2.1 Visual Environment

Visual Setting

The Project location and setting provides the context for determining the type of changes to the existing visual environment. The Project corridor is defined as the area of land that is visible from, adjacent to, and outside the highway ROW and is determined by topography, vegetation, structures, and viewing distance. The Project is located along I-15 and SR-74 in the City of Lake Elsinore, Riverside County, California.

The Project is located in the Inland Valleys ecological region of Southern California (United States Geologic Survey 2017). The landscape is characterized by defined elevation changes (known as benches) with elevations ranging from approximately 2,000 to 2,400 feet. Landcover within the Project corridor is dominated by semiarid habitats, including rolling oak savannah, grassland, chaparral, and scrub communities. These adjacent vegetation communities continue out past the Project corridor and transition to pine and cedar forest on the slopes of the San Bernardino Mountains over 6 miles to the northeast, and approximately 3.5 miles to the south are the foothills of the Elsinore Mountains, a part of the Santa Ana Mountains within the Cleveland National Forest.

Development within the Project corridor has also resulted in the presence of urban landcover (e.g., ruderal vegetation, homes and businesses).

As previously stated, the Project is located within the City of Lake Elsinore and County of Riverside, which have different designations for various scenic resources. The Project is not located within a designated state scenic highway as identified by the California Scenic Highway Mapping System (Caltrans 2011b), the *City of Lake Elsinore General Plan* (City of Lake Elsinore 2011a), or the *County of Riverside General Plan* (Riverside County 2015).

Although there are no designated state scenic highways located within the Project limits, the County of Riverside has identified I-15 as a County eligible scenic highway from approximately the 91 freeway to the north and the city of Oceanside to the south. The County's General Plan discusses the importance of maintaining visual corridors, viewsheds, vistas, and visual features from designated and eligible scenic highways for the enjoyment of the public traveling along these roadways. Portions of the Project limits outside of the City of Lake Elsinore city limits will comply with the County's General Plan with regard to aesthetic features. The County of Riverside General Plan has not identified any specific scenic visual features within the Project limits.

The City of Lake Elsinore has identified 15 landscape viewshed units within the City. The Project is located within landscape viewshed Unit 13 as defined by the City of Lake Elsinore General Plan (City of Lake Elsinore 2011a). Landscape viewshed Unit 13 is defined as, "Mainly manufacturing land use located along I-15. Relatively flat topography. Includes current location for the existing Lake Elsinore Outlet Mall." However, the General Plan (City of Lake Elsinore 2011a) does not identify vantage points or visual resources within Landscape Unit 13 but does identify sensitive user groups including motorists on I-15 and SR-74.

2.11.2.2 Visual Assessment Units

To help evaluate the visual resources and resource change for the Project corridor, the Project has been divided into visual assessment units (VAU). VAUs are areas with their own visual character and quality and are typically defined by the limits of a particular viewshed. For this Project, six VAUs and associated key viewpoints have been identified and are shown on Figure 2.11-1. To further help analyze changes as a result of Build Alternatives, and because it is not feasible to analyze all the views in which the Project will be seen, key viewpoints within the Project corridor have been identified that will most clearly demonstrate the change in the Project's visual resources.

The two key viewpoints identified for the Project also represent the viewer groups that have the highest potential to be affected by the Project, considering the viewer groups' exposure and sensitivity. The following six VAUs were identified:

- **Visual Assessment Unit 1 (VAU-1): I-15 Freeway Unit:** This VAU encompasses the I-15 corridor throughout the extent of the Project limits. This VAU is primarily located within the Caltrans ROW.
- **Visual Assessment Unit 2 (VAU-2): Residential Unit North of I-15:** VAU-2 consists primarily of the residential land use along Dexter Avenue extending east to eastern edge of Temescal Canyon High School at the intersection of Dexter Avenue and El Toro Road.
- **Visual Assessment Unit 3 (VAU-3): Commercial Unit Northwest of I-15/SR-74:** VAU-3 encompasses the northwestern extent of the I-15/SR-74 interchange primarily consists of businesses and shopping centers. This VAU is generally bounded by Cambern Avenue to the north, the Arroyo Del Toro Channel to the east, SR-74 to the west, and I-15 to the south.
- **Visual Assessment Unit 4 (VAU-4): Commercial/Rural Residential Unit North of I-15:** VAU-4 consists of predominantly undeveloped land with scattered commercial areas. The VAU is roughly bounded by the eastern terminus of the Project limits, and SR-74 to the west.
- **Visual Assessment Unit 5 (VAU-5): Rural Residential Unity SR-74 North:** VAU-5 consists of predominantly undeveloped land with scattered residential units. This VAU is generally located in the area north of Cambern Avenue along SR-74. A small portion of this VIA is found south of Cambern Avenue and east of SR-74.
- **Visual Assessment Unit 6 (VAU-6): Commercial Unit South of I-15:** VAU-6 consists primarily of the commercial properties south of I-15. This VAU encompasses the entire length of the Project limits, stretching from the western terminus to the eastern terminus of the Project along I-15.

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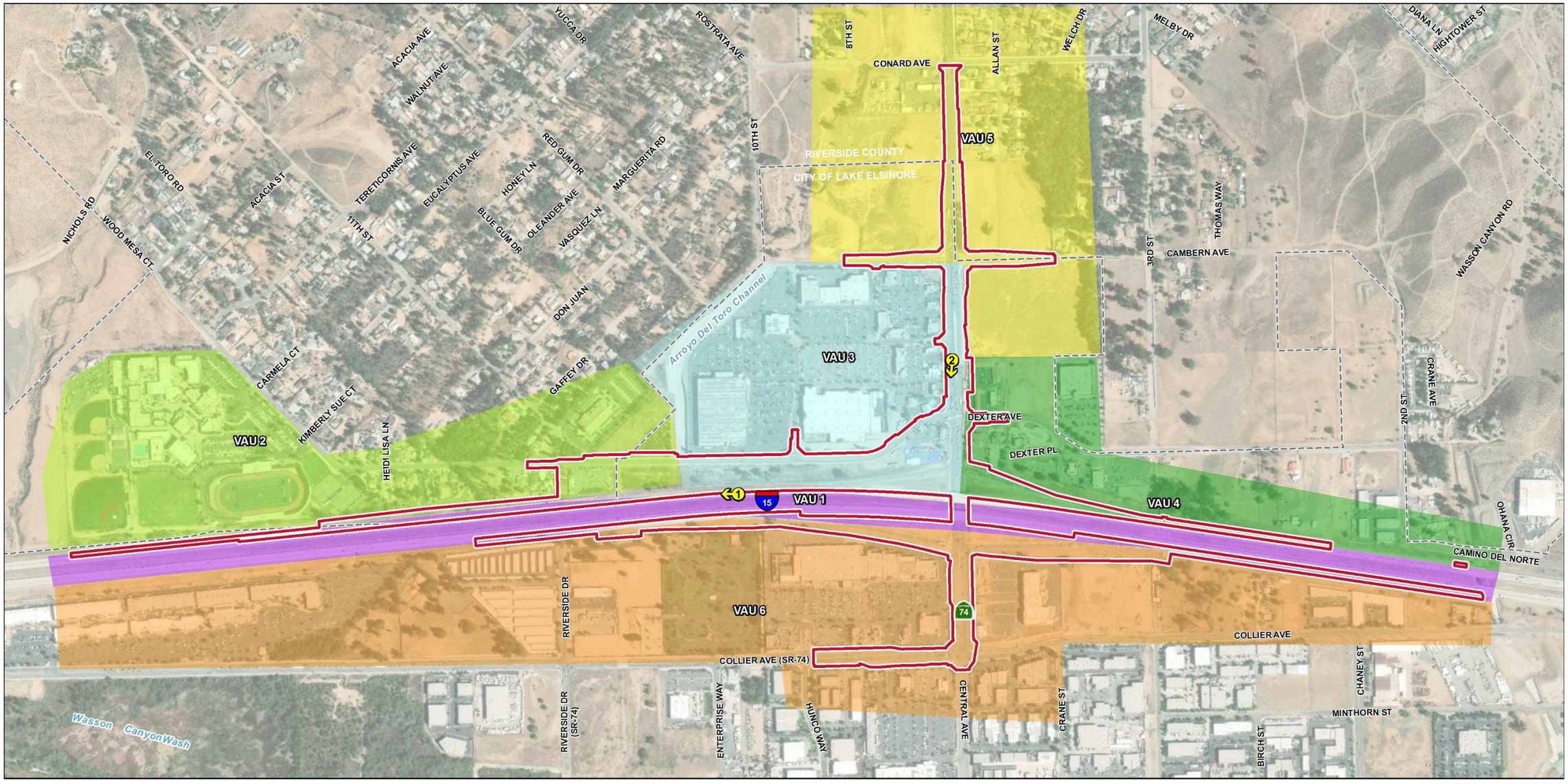

Figure 2.11-1. Visual Assessment Units and Key Viewpoints

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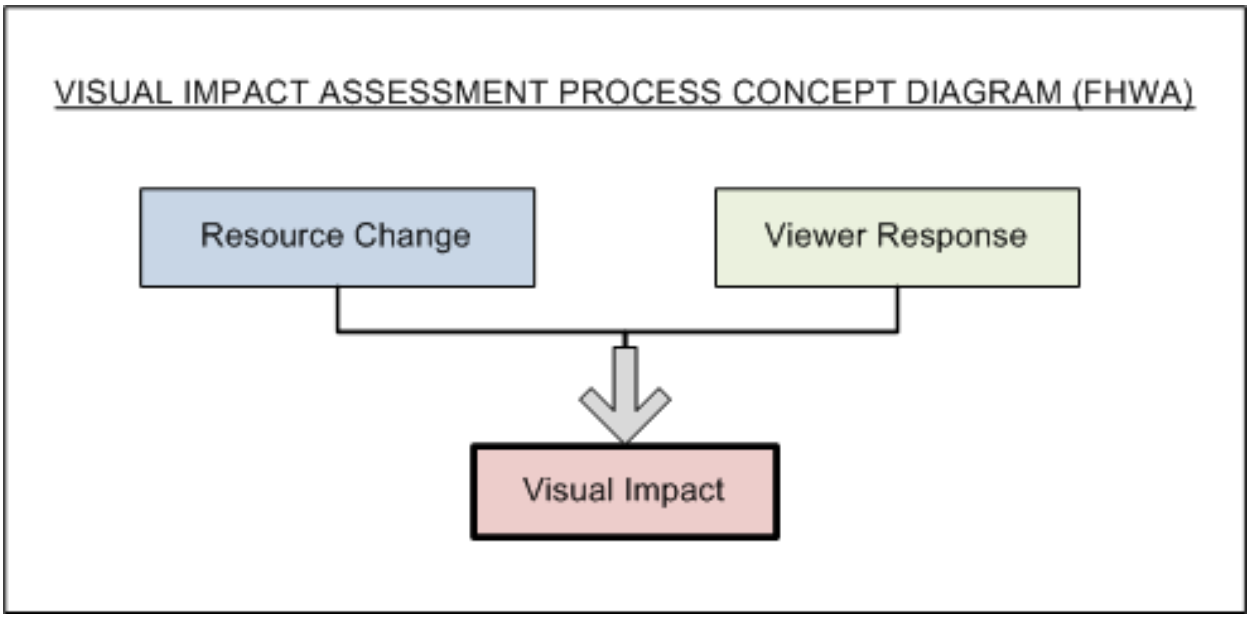
Key Viewpoints

The key viewpoint locations were selected that best represent the visual quality and character of the Project corridor. Two key viewpoint locations were selected to assist in evaluating the changes in conditions and overall visual changes as a result of the Build Alternatives. Key Viewpoint 1 and Key Viewpoint 2 are located within VAU-2. Locations of the key viewpoints are described below and shown on Figure 2.11-1.

Visual Assessment Unit 2

- Key Viewpoint 1, Visual Assessment Unit 2: Residential Unit North of I-15: Key Viewpoint 1 (KV-1) is located on NB I-15, approximately 0.25 mile east of SR-74 OC, with views to the east. KV-1 shows the on- and off-ramp improvements on NB I-15. The location of KV-1 will demonstrate the greatest amount of change from a highway user perspective. Key Viewpoint 1: from I-10 EB approximately 0.25 mile east of Wildwood Canyon Road with views to the east showing the current uphill slope that exists within the Project limits.
- Key Viewpoint 2, Visual Assessment Unit 2: Residential Unit North of I-15: Key Viewpoint 2 (KV-2) is located on SR-74 (Central Avenue), approximately 400 feet north of the intersection of Central Avenue and Dexter Avenue. KV-2 shows the intersection at Dexter Avenue and Central Avenue, the potential impacts to the Burger King commercial property, and the I-15 overpass in the distance. The location of KV-2 will demonstrate the greatest amount of change from a highway neighbor perspective.

Visual impacts are determined by assessing changes to the visual resources and predicting viewer responses to those changes. Visual resource change is the total change in visual character and visual quality. The first step in determining visual resource change is to assess the compatibility of the Project with the existing visual character of the landscape. The second step is to compare the visual quality of the existing resources with the projected visual quality after the Project is constructed. Next, viewer response to the changes is the sum of view exposure and viewer sensitivity to the Project. The resulting level of visual impact is determined by combining the severity of resource change with the degree to which people are likely to oppose the change. These impacts can be beneficial or detrimental. Cumulative impacts and temporary impacts associated with Project construction are also considered. Figure 2.11-2 shows a generalized graphic developed by FHWA of the visual impact assessment process.



Source: Caltrans 2020b

Figure 2.11-2. Visual Impact Assessment Process

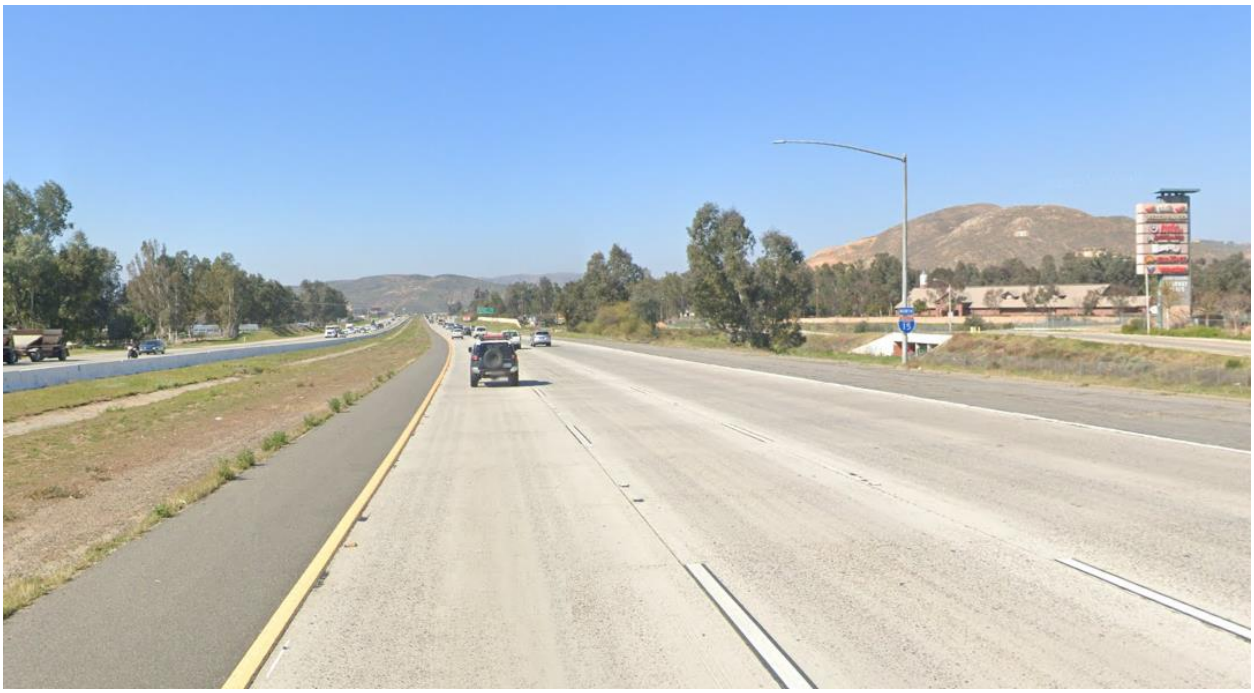
Two key view locations have been identified to represent the visual and aesthetic character of the area within the Project limits, as identified on Figure 2.11-1.

Key Viewpoint 1, Visual Assessment Unit 2: Residential Unit North of Interstate 15

Key Viewpoint 1 is located on NB I-15, approximately 0.25 mile east of SR-74, with views to the east. Figure 2.11-3 shows I-15 NB with Dexter Avenue paralleling the freeway in the right portion of the view, where the NB hook on- and off-ramps to I-15 northwest of the I-15/SR-74 interchange. As shown on Figure 2.11-3, existing visual character within Key Viewpoint 1 is dominated by the linear features created by transportation elements of I-15 and Dexter Avenue. Natural elements exist within the vegetated center median, as well as vegetation flanking both sides of the highway. Rolling hills are present within the background of the view.

The scale of I-15 overwhelms the foreground of the view and causes both users and neighbors to focus attention on the roadway. Surrounding vegetation brings contrast to the view resulting in moderately low unity. The view does not present a vivid or memorable feature allowing the viewer to distinguish this view from other points along I-15 resulting in a low vividness. Intactness of the view is considered moderate due to the predominant transportation nature of the view and relatively minor visual intrusions. Therefore, the visual quality of KV-1 is considered moderately low.

Figure 2.11-3. Key Viewpoint 1 – Existing Condition



Resource Change

Under the Build Alternatives, resource changes will include the construction of NB hook on- and off- ramps from I-15 to Dexter Avenue. Under Alternative 3 (Preferred Alternative), the Project will also construct a NB loop off-ramp from I-15 providing direction access to SR-74 WB. The Build Alternatives will result in additional transportation signage denoting NB hook on- and off-ramps to I-15, as well relocating existing signage. No changes to the through lanes will occur on I-15; however, new striping will occur to the right-most lanes of the highway to mark and accommodate the new on- and off-ramps as a part of the Build Alternatives.

Vividness of the view will remain low as the new travel lanes and additional transportation elements will not create a memorable view along I-15. Signage and the signalized intersection at the Dexter Avenue on- and off-ramp will create new vertical intrusions blocking the natural elements within the existing background of the view. The view will remain consistent with the existing transportation features within the Project corridor; however, these features may obscure existing elements within the existing view. As a result, the unity of the view is anticipated to remain moderately low. Intactness will slightly decrease due to the additional transportation elements and removal of natural elements within one portion of the view. While additional transportation features connecting I-15 and Dexter Avenue will result in a more harmonious flow of transportation features within the middle-ground, scattered vegetation will continue to break up the continuity of the view. These changes are not inconsistent with the views along I-15 within and surround the Project corridor, the

intactness of the view will decrease to moderately low as a result of the Project under the Build Alternatives. The visual quality of the Project under the Build Alternatives will be moderately low, compatible with the existing visual quality of KV-1.

Viewer Response

It is expected that highway users will have a moderate response to the changes. Highway neighbors are anticipated to have a moderately low response. Highway neighbors' exposure to changes under the Build Alternatives at KV-1 will be of longer duration than highway users and many highway neighbors will have closer views of the changes as they occur. However, the primary changes within KV-1 are anticipated to occur along I-15 and a more rural portion of Dexter Avenue, which is not frequented as much as other local streets within the Project limits or Project corridor. Highway users will have a higher response to the Project than highway neighbors because highway users' viewer exposure to the changes will be of shorter duration but have higher exposure. Project improvements under the Build Alternatives will be compatible with the existing views resulting in similar overall viewer sensitivity.

Key Viewpoint 2, Visual Assessment Unit 2: Interstate 10 Freeway Unit East of Wildwood Canyon Road

Key Viewpoint 2, Figure 2.11-4, is located on SR-74 (Central Avenue), approximately 400 feet north of the intersection of Central Avenue and Dexter Avenue. Key Viewpoint 2 focuses attention on SR-74 WB, Dexter Avenue, commercial businesses, and the I-15 overcrossing.

Visual character within KV-2 is dominated by the linear features of SR-74, Dexter Avenue, surrounding commercial businesses, and the I-15 overcrossing. Scattered vegetation is present within the middle-ground of the view with vegetated planters surrounding the commercial buildings and businesses flanking SR-74 and Dexter Avenue. Additionally, vegetation dominates the foothills of the Elsinore Mountains in the background of the view. Similar to KV-1, the transportation elements are prominent within the foreground of the view. The transportation features moving from the foreground to the middle ground of the view provide a moderately low sense of unity to the view. The intactness of the view is considered low due to the view consisting primarily of transportation elements and built environment with scattered vegetation divided by the I-15 overcrossing and sharply transitioning to natural elements within the background. Vividness and the overall visual quality of KV-2 is considered moderately low for the view. Although there are distant views of the San Bernardino Mountains and Elsinore Mountains within the Project corridor, such views can be seen throughout the area from multiple vantage points.

Figure 2.11-4. Key Viewpoint 2 – Existing Condition

Resource Change

Under the Build Alternatives, SR-74 will include an additional through lane with slight modifications to sidewalks and vegetated strips. The SR-74 intersection will be modified to increase the capacity on Dexter Avenue to the north. Under Alternative 2, the Burger King located at the northwest corner of the Dexter Avenue/SR-74 intersection will be removed and acquired to accommodate a double right turn onto SR-74 WB. Under Alternative 3 (Preferred Alternative), the same parcel will be partially acquired; however, the business will remain. Alternative 3 (Preferred Alternative) will require a small area of ROW acquisition to accommodate the single right turn on to SR-74 WB. Alternative 3 (Preferred Alternative) will include one single right-turn lane and construct a smaller intersection than under Alternative 2. No changes will occur to the I-15 overcrossing.

The foreground of the view consists of SR-74 with an additional lane, and paved center median in the immediate foreground. The scale of the road dominates the foreground and extends into the middle ground. The various materials comprising the road and transportation features causes both users and neighbors to focus attention on the roadway. The surrounding vegetation strips provide slight contrast in colors and textures with the scattered vegetation within the fore- and middle ground. Unity throughout the view is low as the roadway and its accompanying features dominate the fore- and middle ground, while the background is comprised of vegetated hillsides. The view does not present a vivid or memorable feature allowing the viewer to distinguish this view from intersections adjacent to I-15. The vividness of the view is low. Under Alternative 2, the Burger King will be fully acquired and will no longer be present within the middle ground, removing one vertical

feature blocking the vegetated hillsides visible in the background. Under Alternative 3 (Preferred Alternative), the view will be consistent with the existing view regarding the Burger King parcel. Intactness of the view is considered low due to the predominant transportation nature of the view in the foreground and the obscured views of distant vegetated areas. The visual quality of the changes to KV-2 is considered low.

Viewer Response

It is expected that highway users will have a low response and highway neighbors will have a moderately low response to the changes. The primary changes within this KV are the modifications to SR-74 and the widening of the Dexter Avenue/SR-74 intersection. Highway neighbors will have the most exposure and sensitivity to the changes and likely have a moderate response to Alternative 2 and Alternative 3 (Preferred Alternative). Neighboring viewers traveling along alternate routes through the Project limits and surrounding area will experience longer exposure and more sensitivity to the changes occurring within the Project limits. Highway users will have low response to the change occurring within KV-2 due to the limited exposure and sensitivity to the area. I-15 crosses over SR-74 within the view of KV-2. Highway users will be able to see a portion of the changes occurring below; however, the difference in elevation, as well as the short duration of the users' ability to view the changes, will result in a low viewer response. Under Alternative 2, the parcel that Burger King currently occupies will be acquired, and the building will be removed. This will remove a relatively small-scale vertical intrusion from the right side of the view towards the distant hillsides. Under Alternative 3 (Preferred Alternative), the Project will require a small portion of ROW from the Burger King parcel. Minor modifications to access will occur under Alternative 3 (Preferred Alternative) and the business will remain open. It is anticipated that highway neighbors will have a higher response to Alternative 2 than Alternative 3 (Preferred Alternative) with regard to the Burger King parcel. Highway users are anticipated to have no change in viewer response to the Burger King parcel as highway users are at a higher elevation than the Burger King and have limited exposure to the change. Widening the intersection at Dexter Avenue and SR-74 will result in the loss of some vegetation within the median strips adjacent to the sidewalks within the middle and foreground. These kind of changes are typical for the area and intersections. As a result, it is anticipated that highway users will have a low response, and neighbors will have a moderately low viewer response to the changes shown in KV-2.

2.11.3 Environmental Consequences

2.11.3.1 Temporary Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not result in any of the construction activities associated with the Build Alternatives. Therefore, there will be no actions that will impact visual quality of the Project corridor in the short term. No temporary adverse impacts to the visual quality will occur.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Temporary visual impacts are anticipated during the construction period under Alternative 2. Temporary impacts will include the presence of construction equipment and materials, construction staging areas, temporary roadside barriers, and construction and detour signage within the area of the Project limits, as well as construction activities, such as truck hauling, excavation activity, and the removal of existing mature landscape.

Project construction is anticipated to take up to 18 months to complete and will disturb a total of approximately 12 acres, about 5 acres of which will be converted to impervious surfaces. Approximately 28 mature trees will be removed during construction under Alternative 2. Tree and vegetation removal on public lands under Alternative 2 will comply with City, County, and Caltrans landscaping and tree removal policies, as identified in Measure VIS-1. The landscape plan, outlined in Measure VIS-2, will minimize impacts as a result of vegetation removal. Additionally, impacts will be minimized through compliance with goals and policies identified within the City's General Plan (City of Lake Elsinore 2011a) and Riverside County General Plan (County of Riverside County 2015), and Caltrans Standard Specifications for construction, as outlined below in Measures VIS-2 and VIS-3.

The Project limits receive light at night from traffic, street lighting, traffic signals, freeway on- and off-ramps, and the surrounding commercial businesses. Existing lighting may be modified as a result of the Project under Alternative 2. Measure VIS-4 will minimize potential impacts related to light and glare. With the implementation of the avoidance and Measures VIS-1 through VIS-4, these temporary impacts will be minimized and the Project under the Alternative 2 will not conflict with any local plans, policies, goals, or Municipal Code regulations and no substantial temporary impacts to visual quality will occur.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Similar temporary visual impacts anticipated during the construction period under Alternative 2, will also occur under Alternative 3 (Preferred Alternative). Therefore, with the implementation of the avoidance and Measures VIS-1 through VIS-4, these temporary impacts will be minimized and the Project under Alternative 3 (Preferred Alternative) will not conflict with any local plans, policies, goals, or Municipal Code regulations, and no substantial temporary impacts to visual quality will occur.

2.11.3.2 Permanent Impacts

Alternative 1 (No-Build)

Under the No-Build Alternative, the Project will not be implemented. Therefore, no substantial permanent impacts to visual quality will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

The Project under Alternative 2 will include the addition of new NB hook on- and off-ramps, the widening of the Dexter Avenue/SR-74 intersection and SR-74/Cambern Avenue intersection, traffic signal modifications, and restriping. No scenic resources, vistas, or highways are visible or within the Project limits or Project corridor. Changes as a result of the Project under Alternative 2 will be consistent with the transportation nature and views for interchanges adjacent to highways and will not alter the existing visual character and quality of the Project limits.

There are no outstanding scenic vistas that will potentially be impacted by the Project under Alternative 2. Distant views of the neighboring hillsides will be preserved throughout the Project limits as no vertical elements will be constructed, with the exception of freeway signage. Vertical intrusions such as freeway signs are typical for the area and will not substantially alter the existing viewsheds within the Project corridor as existing structures and vegetation within the Project limits block most views of the surrounding areas from within the private and not-publicly-accessible community.

The Project under Alternative 2 will also result in the permanent removal of trees and other vegetation in the ROW. Tree and vegetation removal on public lands will comply with City, County, and Caltrans landscaping policies, as provided in Measure VIS-1 through VIS-3. Overall visual impacts will be moderately low. The change to the visual resources and views are minor and consistent with the existing setting.

The Project under Alternative 2 may include additional lighting or replace existing lighting after completion of road modifications throughout the Project limits; however, with the implementation of Measure VIS-4, these permanent impacts will be minimized.

The summary below describes the anticipated changes to the visual environment for each VAU and associated key viewpoint.

Visual Assessment Unit 1: Interstate 15 Freeway Unit

Project resource changes within VAU-1 will consist of restriping of I-15 NB to accommodate the new on- and off-NB hook ramps at Dexter Avenue under Alternative 2. Transportation elements such as signs may be installed within VAU-1 under Alternative 2.

Viewer sensitivity within this VAU is anticipated to be moderately low, as highway users' views will have high exposure to the changes, while highway neighbors will have limited exposure to the improvements within this VAU. Changes will be similar in nature to the existing highway view, with many of the same elements. Although the Project under Alternative 2 will result in vegetation removal, with the implementation of Measure VIS-1 which will require development and implementation of a landscape plan to ensure appropriate replacement landscaping is incorporated into the Project, these permanent impacts will be minimized.

Because the improvements in this VAU are limited and the viewer sensitivity low, the corresponding change to the visual environment is anticipated to be minor. With adherence to Measure VIS-1, visual impacts within VAU-1 will be considered low.

Visual Assessment Unit 2: Residential Unit North of Interstate 15

Resource changes will be similar to those discussed in VAU-1. As discussed within KV-1, resource changes within these areas are considered moderately low overall. Changes will be visible to highway users; however, highway neighbors traveling along Dexter Avenue will be exposed to the changes discussed under KV-1. The most notable changes will consist of the new on- and off-NB hook ramps at Dexter Avenue under Alternative 2. Project improvements under Alternative 2 that will result in new Project elements blocking existing views will be inconsistent with the existing setting. The Project under Alternative 2 may require the removal of some vegetation; however, with the implementation of Measure VIS-1, these permanent impacts visual landscaping changes will be minimized. With adherence to Measure VIS-1, the overall visual impact for VAU-2 will be considered moderately low.

Visual Assessment Unit 3: Commercial Unit Northwest of Interstate 15/State Route 74

VAU-3 focuses attention on SR-74 and the intersection of SR-74 and Dexter Avenue extending north to the intersection of SR-74 and Cambern Avenue. Resource changes within this VAU under Alternative 2, consist of those discussed in KV-2, as well as the widening and restriping of SR-74 and Cambern Avenue. Highway users' views are limited to the changes occurring within this VAU as highway viewers will have limited exposure to the changes due to the distance of the freeway from VAU -3 as well as the difference in elevation. Highway neighbors will have high exposure to the changes within this VAU as well as high sensitivity. Highway neighbors' impacts will be temporary in nature as the negative visual impacts are only anticipated during construction. Resource changes are anticipated to be similar to the existing setting. The overall visual impact will also be considered moderately low for VAU-3.

Visual Assessment Unit 4: Commercial/Rural Residential Unit North of Interstate 15

The views from VAU-4 consist of views to the Project limits from neighboring areas and the SR-74 NB off-ramp from I-15 NB. Resource changes within VAU-4 under Alternative 2 will be limited to slight modifications to the existing SR-74 NB off-ramp and modifications to Dexter Avenue east of the SR-74/Dexter Avenue interchange. Highway users are anticipated to have a low viewer response to the changes in this area as they are limited to views of the resource changes of the SR-74 NB off-ramp. Due to the amount of construction in the area, high neighbors will also experience a low viewer response as views to the Project limits will be limited from on-going construction in the area, as well as existing businesses and buildings. Although the off-ramp is at a higher elevation than the surrounding area within VAU-4, highway neighbors are anticipated to have a low viewer response due to the views being blocked by existing vegetation and buildings. Therefore, visual impact for this VAU is considered low.

Visual Assessment Unit 5: Rural Residential Unity State Route 74 North

Due to the limited residential uses concentrated at the northeast end of the VAU, views from VAU-5 to the Project limits will be limited. Motorists, bicyclists, and pedestrians can be present within the open space along Cambern Avenue and along SR-74 north of Cambern Avenue. Resource changes within this VAU consist of widening SR-74 and Cambern Avenue near the intersection of SR-74 and Cambern Avenue. Resource changes under Alternative 2 will be limited to highway neighbors traveling within the Project limits within VAU-5. Highway users will have distant views to these changes due to the highway being at a higher elevation. However, Highway users' views are limited to the viewer's ability to look around (passenger or non-motorist) or the direction of travel and are anticipated to have a low viewer response to the changes occurring in VAU-5. Changes are

anticipated to be consistent with the existing views within this VAU. Therefore, visual impact for VAU-5 is considered low.

Visual Assessment Unit 6: Commercial Unit South of Interstate 15

VAU-6 is comprised of primarily commercial properties southwest of I-15. Resource changes within this VAU under Alternative 2, are limited to restriping Collier Avenue to add a third left-turn lane on to EB SR-74 and widening of the I-15 SB on- and off-ramps to accommodate an additional lane and increase storage capacity of these ramps. Highway users within this VAU are anticipated to have a moderately low viewer response because of the moderate exposure and low sensitivity to the changes occurring within VAU-6. Highway neighbors may have a slightly higher viewer response to the changes within this VAU due to the slightly higher exposure of changes. However, the resource changes are anticipated to be consistent with the existing setting. Resource changes are not anticipated to result in additional project features that may block existing views within the VAU or the surrounding area, especially views to the Elsinore Mountain foothills. Therefore, visual impacts will be considered low within VAU-6.

Based on the findings summarized, above, with the implementation of Measures VIS-1 through VIS-4, no substantial permanent adverse impacts will occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Long-term impacts for the Project under Alternative 3 (Preferred Alternative), will be the same as under Alternative 2, with the exception of a NB Loop off-ramp and the need for restriping to accommodate the NB Loop under Alternative 3 (Preferred Alternative). Therefore, the findings under Alternative 2, including the summary of findings under VAU-1 through VAU-6, remain the same. As such, with the implementation of Measures VIS-1 through VIS-4, no substantial permanent adverse impacts will occur under Alternative 3 (Preferred Alternative).

2.11.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to reduce the potential impacts related to visual and aesthetics as a result of the Build Alternatives:

VIS-1 **Landscape Plan.** During final design (PS&E), the City's Resident Engineer will ensure that a highway landscape plan be prepared that will identify all opportunities to use areas within the state ROW for full landscaping consistent with the Caltrans Highway Design Manual. This will include planting for graded areas with plant species consistent with adjacent vegetation and enhancement of new Project structures such as ramps and tunnels to the extent feasible. This plan will incorporate all applicable procedures and

requirements detailed in the Caltrans Highway Design Manual Chapter 900 – Landscape Architecture – Roadside (July 2020) and policies of the City of Lake Elsinore's General Plan Municipal Code as applicable.

During final design (PS&E), the Caltrans District 8 Landscape Architect will verify that the design minimizes removal of existing mature trees. If removal of mature trees cannot be avoided, additional landscape improvements will be incorporated into the final design (PS&E) for these areas. Tree replacement ratio will be determined by the District Landscape Architect. During final design (PS&E), the Project team will evaluate the aesthetic enhancements to be incorporated into the hardscape and vegetation to the extent feasible. The Project team will also follow the Project Development Procedure Manual during final design (PS&E). If needed, maintenance agreements will be established during the final design (PS&E) phase.

VIS-2 **City of Lake Elsinore General Plan.** During final design (PS&E), the City's Resident Engineer will verify that design elements are consistent with the vision for the City of Lake Elsinore regarding aesthetic enhancements, scenic corridors, landscaping, streetscapes, materials, and colors. During final design (PS&E), the Project team will evaluate the aesthetic enhancements to be incorporated into the hardscape and vegetation to the extent feasible consistent with the City of Lake Elsinore General Plan. If needed, maintenance agreements will be established during the final design (PS&E) phase.

VIS-3 **County of Riverside General Plan.** During final design (PS&E), the City's Resident Engineer will work with the Riverside County Resident Engineer in order to verify that design elements are consistent with the vision for the County of Riverside regarding aesthetic enhancements, scenic corridors, landscaping, and tree removal and plantings policies. During final design (PS&E), the Project team will evaluate the aesthetic enhancements to be incorporated into the hardscape and vegetation to the extent feasible consistent with the County of Riverside General Plan. If needed, maintenance agreements will be established during the final design (PS&E) phase.

VIS-4 **Lighting Plan.** During final design (PS&E), the City's Resident Engineer will ensure that lighting fixtures be selected to minimize glare on adjacent properties and into the night sky. Lighting will be shielded with non-glare hoods and focused within the Project ROW. The lighting plan will be reviewed and approved by the City of Lake Elsinore Resident Engineer and the Caltrans District 8 Landscape Architect prior to construction to ensure compliance with these criteria.

2.12 Cultural Resources

2.12.1 Regulatory Setting

The term “cultural resources,” as used in this document, refers to the “built environment” (e.g., structures, bridges, railroads, water conveyance systems, etc.), places of traditional or cultural importance, and archaeological sites (both prehistoric and historical), regardless of significance. Under federal and state laws, cultural resources that meet certain criteria of significance are referred to by various terms including “historic properties,” “historic sites,” “historical resources,” and “tribal cultural resources.” Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 Code of Federal Regulations [CFR] 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among the Federal Highway Administration (FHWA), the ACHP, the California State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the ACHP’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA’s responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327).

The California Environmental Quality Act (CEQA) requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as “unique” archaeological resources. California Public Resources Code (PRC) Section 5024.1 established the California Register of Historical Resources (CRHR) and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the CRHR and, therefore, a historical resource. Historical resources are defined in PRC Section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term “tribal cultural resources” to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in PRC Section 21074(a), a tribal cultural resource is a CRHR or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the

definition of a historical resource. Unique archaeological resources are referenced in PRC Section 21083.2.

PRC Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the NRHP listing criteria. It further requires Caltrans to inventory state-owned structures in its ROW. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with SHPO before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the NRHP or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with PRC Section 5024 are outlined in a Memorandum of Understanding (MOU)[1] between Caltrans and SHPO, effective January 1, 2015. For most Federal-aid projects on the State Highway System, compliance with the Section 106 PA will satisfy the requirements of PRC Section 5024.

2.12.2 Affected Environment

This section is based on the *Historic Property Survey Report* (HPSR) (Applied EarthWorks 2021a) and *Archaeological Survey Report* (ASR) (Applied EarthWorks 2021b) prepared for the Project. The HPSR and ASR discuss the development of the area of potential effects (APE), pre-field literature and record searches conducted for the Project, consultation efforts, and a cultural resource survey of the APE.

2.12.2.1 Methods

Area of Potential Effects

The Project APE was established from the Project limits, including all construction areas, TCEs, construction signage, and staging areas, as well as a buffer to include potential indirect effects that may occur as a result of this undertaking. The APE identifies potential direct effects (i.e., those effects that are identified and expected from construction plans) and indirect effects (i.e., those effects that may develop some distance from the construction footprint or that may develop later in time) to cultural resources that may develop as a result of the Project and includes archeological resources and built-environment resources. In total, the APE encompasses an area of approximately 60 acres for direct effects with an overall APE encompassing approximately 110 acres for potential direct and indirect effects.

Regarding the vertical limits of the APE, the maximum depth of disturbance will be 35 feet below ground surface (bgs) for construction of freeway signage. Traffic signal poles or traffic signage poles

[1] The Memorandum of Understanding (MOU) is located on the Standard Environmental Reference (SER) at https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/5024mou-15-a11y.pdf

within the Project ROW are anticipated to range approximately 28 to 34 feet in height. Construction of retaining walls may reach a maximum depth of 5 feet bgs. The reconstruction of existing noise barrier pile foundations is estimated to not exceed 16 feet in depth. The depths for the Arroyo Del Toro Channel detention basin extensions vary, from approximately 6 feet at the existing basin to 10 feet at the southernmost end of the extension.

Records Search

The records search was conducted at the Eastern Information Center (EIC) located at the University of California, Riverside. The EIC facility is a repository of permanent cultural resource records and research reports and is part of the California Historical Resource Information System (CHRIS).

The CHRIS staff conducted a cultural records search and literature review at the EIC on June 13, 2019. The record search covered the APE with a 1-mile-wide buffer. The search indicated that 99 cultural resources studies have been conducted within one mile of the APE since 1953. Of these 99 cultural resources studies, 19 involved portions of the APE, resulting in approximately 50 percent of the APE having been previously surveyed.

A total of 60 previously recorded cultural resources within one mile of the APE were identified from the 19 studies, which included 9 prehistoric archaeological sites, 16 historical archaeological sites, 10 isolated archaeological finds, and 25 built-environment resources. Two of the 60 previously documented resources, historical refuse scatter of post-1945 cans (33-017020/CA-RIV-8861H) and the Old Santa Fe Railroad Grade (33-003832/CA-RIV-3832H), are located within the APE. In addition, one previously documented resource, Elsinore Valley Cemetery and home of Peace Jewish Cemetery (33-015420/CA-RIV-8132H), is documented immediately adjacent to the APE.

Archival maps were also reviewed to assess the historical land use and development. Historical maps consulted included U.S. Geological Survey (USGS) topographic quadrangle maps: Elsinore 1:250,000 (1901), Santa Ana 1:250,000 (1947, 1949, 1956, and 1960), and Elsinore 1:24,000 (1953). The Old Santa Fe Railroad Grade is first depicted on the Elsinore 1901 map. SR-74, I-15 (formerly SR-71), and Collier Avenue are depicted on the maps starting in 1947.

Field Survey

Prior to the field survey, aerial photographs and maps of the area were examined to assess current conditions throughout the APE. The purpose of the survey was to assess the presence or absence of intact cultural materials and verify the character and nature of the APE, including the extent of hardscape and overall degree of previous ground disturbance. This examination indicated that much of the APE is covered with hardscape that includes roadways.

On May 28, 2020, Evan Mills, a qualified archaeologist, conducted an archaeological pedestrian survey of portions of the APE not covered with hardscape. Starting at northwest side of the I-15/SR-74 interchange, the survey methodology involved the archaeologist walking the west side of Central Avenue to the intersection with Cambern Avenue, the east side of Central Avenue, then the west and east sides of Dexter Avenue. Some of the open wash area between Dexter Avenue and I-15 was not surveyed due to thick vegetation. The small sections of Collier and SR-74 (Central Avenue) south of the I-15 are all hardscape and were observed from the interchange. The northeast side of the I-15/SR-74 interchange was also overgrown with vegetation which made it difficult to survey. When possible, survey transects were spaced at intervals of 15 to 20 meters (30 to 65 feet).

During the field survey, the archaeologist attempted to identify the two previously recorded sites, the historical refuse scatter and the Old Santa Fe Railroad Grade.

Native American Consultation

On May 7, 2019, the Native American Heritage Commission (NAHC) was consulted to elicit pertinent cultural resource information available in the Sacred Lands File. NAHC responded May 23, 2019, stating the Sacred Lands File search for the Project was completed, and the results were negative, but the area is generally sensitive for cultural resources. The NAHC provided a list of recommended Native American contacts within the region for follow-up.

After review of the list of Native American contacts provided by NAHC, Caltrans' District 8 Native American Coordinator initiated Section 106 contact with the following individuals through a letter dated July 18, 2019:

- Travis Armstrong, Tribal Historic Preservation Officer, Morongo Band of Mission Indians (MBMI)
- Connie Colocho, Tribal Historic Preservation Officer, Rincon Band of Luiseño Indians (RBLI)
- Joseph Ontiveros, Tribal Historic Preservation Officer, Soboba Band of Luiseño Indians (SBLI)
- Gary DuBois, Tribal Historic Preservation Officer, Pechanga Band of Luiseño Indians (PBLI)
- Robert Smith, Chairperson, Pala Band of Mission Indians (PBMI)

These letters also served as formal notification of the Project as required under CEQA, specifically PRC 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). The letters provided a Project description and location and discussed upcoming cultural resources studies of the Project area.

The first round of follow-up emails was conducted April 2, 2020. A second round of follow-up emails was completed June 5, 2020. A third round of follow-up emails was conducted December 2, 2020, and a final round of follow-up emails was conducted December 16, 2020. A summary of the responses received as a result of this correspondence is provided below.

- RBLI. Ms. Cheryl Madrigal, Tribal Historic Preservation Officer, replied on August 9, 2019, noting that the City of Lake Elsinore is considered a Traditional Cultural Place and Landscape by the RBLI. The tribe has knowledge of several Luiseño Place Names within 0.50-mile radius of the APE and along SR-74. The tribe requested government-to-government consultation. On December 7, 2020, Ms. Madrigal sent a letter via email, noting the Band has reviewed the provided documents and believe that the potential to impact TCRs is moderate. Per field survey, ground-surface visibility was very poor in parts of the APE and RBLI believes the potential exists for subsurface deposits. RBLI recommended archaeological and tribal monitoring for all ground disturbing activities, a monitoring report, and protocols for discovery of cultural material and human remains. RBLI also requested to be notified of any changes in Project plans, in addition to the final monitoring report, when available. On December 16, 2020, a monitoring denial letter from Caltrans was issued to RBLI stating that due to lack of historic properties within or immediately adjacent to the Project, as well as a low probability of encountering intact, buried cultural deposits. On January 4, 2021, Ms. Madrigal sent a letter noting RBLI has been informed that the Project would not be conditioned with tribal monitoring and had no further comments at this time.
- SBLI. Mr. Joseph Ontiveros, Tribal Historic Preservation Officer, replied on August 5, 2019, noting the Project falls within the boundaries of their Tribal Traditional Use Areas. The tribe requested government-to-government consultation and Native American Monitor(s) from the SBLI Cultural Resource Department to be present during any ground-disturbing proceedings including surveys and archaeological testing. Follow-up emails were sent on April 2, 2020, and June 5, 2020, and a copy of the Draft HPSR was sent to Mr. Ontiveros for tribal review and comments. No comments have been received to date.
- PBLI, Mr. Gary DuBois, Tribal Historic Preservation Officer. No response received to date. Follow-up emails were sent on April 2, 2020, and June 5, 2020, and a copy of the Draft HPSR was sent to Mr. DuBois for tribal review and comments. No comments have been received to date.

- PBMI, Mr. Robert Smith, Chairperson. No response received to date after the initial Section 106 initiation letter sent July 18, 2019, and follow-up emails sent on April 2, 2020, and June 5, 2020.
- MBMI, Mr. Travis Armstrong, Tribal Historic Preservation Officer. No response received to date after the initial Section 106 initiation letter sent July 18, 2019, and follow-up emails sent on April 2, 2020, and June 5, 2020.

2.12.2.2 Results

Archaeological Resources

As previously discussed, the records search had identified 60 previously recorded cultural resources within one mile of the APE, but only the historical refuse scatter was documented as a historical archaeological site that is located within the APE. The plotted location of the previously recorded site was revisited during the survey; however, no surface indication was encountered. No newly identified archaeological resources were observed during the pedestrian survey.

The APE was largely obscured by hardscape, including paved roadways, sidewalks, graded and graveled road shoulders, and undeveloped slopes between the interchange on/off-ramps. Ground-surface visibility was very poor in the portions of the APE between Dexter Avenue and I-15 due to overgrown vegetation. The field survey revealed that much of the APE has been disturbed previously by roadway construction, maintenance, and commercial development.

Geological and archaeological data indicate undisturbed sediments within the APE are characterized by alluvial fan and floodplain deposits with moderate sensitivity for buried archaeological resources. In order to determine if the undertaking will impact these undisturbed sediments, the existing extent and degree of ground disturbance within the APE first was considered. Then specific planned Project-related ground disturbance, such as maximum depths by locations and type of construction activities, were examined to assess whether the components will result in any potential impacts to intact and significant buried archaeological deposits.

The overall sensitivity for the APE for buried prehistoric resources is moderate due to various factors. Soils in the APE, as mapped by the U.S. Department of Agriculture (USDA) NRCS, include three soil series: Arbuckle gravelly loam, Garretson very fine sandy loam, and Cortina very gravelly coarse sandy loam. The record search indicates nine previously documented resources within one mile of the APE. The full depth of young Holocene-age sediments within the APE are unknown but all 3 soil series exhibit multiple soil horizons. These horizons indicate that multiple soil deposition events occurred throughout the Holocene which may have buried ancient ground surfaces beneath the depth of soils mapped by the NRCS. The APE is also located within a valley that had both

multiple sources of water and was the natural corridor for pedestrian movement out of the Perris Valley. Close proximity to sources of water, such as Lake Elsinore, contributes to the higher probability that past people occupied and/or frequented the area. Therefore, construction of the Project has a moderate sensitivity to encounter buried archaeological deposits.

No archaeological resources requiring NRHP and/or CRHR eligibility evaluations, pursuant to Section 106 and CEQA, were identified within the limits of the APE.

Built-Environment Resources

The records search had identified 25 built-environment resources within one mile of the APE, but only the Old Santa Fe Railroad Grade was documented as a built-environment resource that is located within the APE. In 1996, a 22-mile-long segment of the Old Santa Fe Railroad Grade was formally evaluated and determined to be ineligible for listing in the NRHP or CRHR due to the loss of historical integrity. No traces of the railroad grade were found within the limits of the APE during the field survey. Another previously documented resource, Elsinore Valley Cemetery and Home of Peace Jewish Cemetery, was confirmed during the survey to be immediately adjacent to, but outside of, the APE.

Historical maps of the APE were also examined to determine the approximate ages of any buildings or structures within the APE. The Old Santa Fe Railroad Grade is depicted on the maps as early as 1901. SR-74 and I-15 (formerly SR-71) as well as Collier Avenue are depicted on all of the maps by the mid-1940s. Although these three roadways were constructed in the mid-1940s, the survey indicates these built-environment resources have been altered substantially to such a degree that they all now appear to be modern construction that is regularly maintained. As such, they possess no demonstrable historic significance in their current condition and are exempt from review under Attachment 4 of the Section 106 Programmatic Agreement: Properties Exempt from Evaluation. Therefore, no properties considered to be historic are within the APE.

Section 4(f) Resources

Section 4(f) of the Department of Transportation Act of 1966 provides protection for historic properties. There are no historic properties present within the APE; therefore, there are no Section 4(f) historic sites affected by the Project.

State Historic Preservation Officer Consultation

Since no cultural resource evaluations are required within the limits of the APE, consultation with the SHPO is not required.

2.12.3 Environmental Consequences

2.12.3.1 Temporary Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not change the existing physical environment; therefore, no temporary effects on cultural resources will occur.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (Northbound Hook Ramps)

There is one recorded archaeological resource and one recorded historical-period property that are located within the APE, the historical refuse scatter and the Old Santa Fe Railroad Grade, respectively. However, remnants or any surface indications of these two resources were not encountered in their recorded locations during the field survey. Pursuant to Section 106 PA Stipulation IX.A and as applicable PRC 5024 MOU Stipulation IX.A.2, a finding of no historic properties affected was determined for the Project because there are no historic properties within the APE.

The Project has a moderate sensitivity to encounter buried archaeological deposits. The maximum depth of disturbance will be 35 feet bgs for the construction of freeway signage. Other Project ground disturbance activities will be approximately 6 to 10 feet bgs for the Arroyo Del Toro channel basin extensions, 5 feet bgs for the excavation of retaining walls, and 16 feet in depth for the reconstruction of existing noise barrier pile foundations. All excavations except the existing noise barrier pile foundations will have a moderate potential to extend into native sediments.

Although the Project is not anticipated to impact archaeological resources or historic properties, construction activities, such as excavating, have the potential to inadvertently uncover unknown archaeological resources. While the potential to discover an unknown archaeological resource is moderate, implementation of Caltrans' standard practice for the discovery of cultural resources, as identified in Measure CR-1, and human remains, as identified in Measure CR-2 will minimize the potential to inadvertently impact archaeological resources.

Implementation of Measure CR-1 and CR-2 will minimize the potential to inadvertently impact archaeological resources during construction. However, no temporary effects will occur during excavation activities, as any disturbance of non-renewable buried archaeological resource during construction is considered a permanent adverse effect to the resource.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

The Project limits and construction activities for Alternative 3 (Preferred Alternative) is similar to that of Alternative 2. Therefore, construction impacts to cultural resources under Alternative 3 (Preferred Alternative) will be similar to Alternative 2. Similar to Alternative 2, the implementation of Measures CR-1 and CR-2 will minimize the potential to inadvertently impact archaeological resources under Alternative 3 (Preferred Alternative) during construction. However, no temporary effects will occur during excavation activities, as any disturbance of non-renewable buried archaeological resource during construction is considered a permanent adverse effect to the resource.

2.12.3.2 Permanent Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not change the existing physical environment; therefore, no permanent effects on cultural resources will occur.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Pursuant to Section 106 PA Stipulation IX.A and as applicable PRC 5024 MOU Stipulation IX.A.2, a finding of no historic properties affected was determined for the Project because there are no historic properties within the APE. Operation of Alternative 2 will have no effect on cultural resources; however, as discussed under temporary impacts, in the event that archaeological resources are identified during construction, a permanent adverse effect on cultural resources will occur as a cultural resource is considered a nonrenewable resource.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Pursuant to Section 106 PA Stipulation IX.A and as applicable PRC 5024 MOU Stipulation IX.A.2, a finding of no historic properties affected was determined for the Project because there are no historic properties within the APE. The Project limits and construction activities for Alternative 3 (Preferred Alternative) is similar to that of Alternative 2. Therefore, the operation of Alternative 3 (Preferred Alternative) will be similar to Alternative 2 and will have no effect on cultural resources; however, as discussed under temporary impacts, in the event that archaeological resources are identified during construction, a permanent adverse effect on cultural resources will occur as a cultural resource is considered a nonrenewable resource.

2.12.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to reduce the likelihood of permanent adverse effects associated with cultural resources during construction under Alternative 2 and Alternative 3 (Preferred Alternative):

CR-1 **Discovery of Cultural Resources.** If cultural materials are discovered during construction, the City's Resident Engineer will ensure that all earth-moving activity within sixty feet (60') around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

CR-2 **Discovery of Human Remains.** During construction, the City's Resident Engineer will ensure that if human remains are discovered, there will be compliance with the California Health and Safety Code (H&SC) Section 7050.5, which states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), who, pursuant to PRC Section 5097.98, will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Gabrielle Duff, Cultural Studies Branch Chief, [(909) 501-5142], so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

2.13 Hydrology and Floodplain

2.13.1 Regulatory Setting

Executive Order (EO) 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration (FHWA) requirements for compliance are outlined in 23 Code of Federal Regulations (CFR) 650 Subpart A.

To comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

The base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

2.13.2 Affected Environment

This section is based on the *Location Hydrologic Study* (Caltrans 2020i), *Water Quality Assessment Report* (Caltrans 2020h), and the *Natural Environment Study (Minimal Impacts)* (NES[MI]) (Caltrans 2020n) prepared for the Project.

2.13.2.1 Local Hydrology

The Project is located in the Santa Ana River Hydrologic Unit (801.0) and the Terra Colta Hydrologic Sub-Area (801.35). The Santa Ana River’s headwaters are from the eastern San Gabriel Mountains and San Bernardino Mountains. Runoff from these mountains and foothills drain through a network of surface streams, collect on the valley floor, flow southwest and ultimately confluence with the Santa Ana River.

The Project discharges to Wasson Canyon Wash and Temescal Wash/Temescal Creek, which are both located in the Santa Ana River Watershed. Temescal Wash/Temescal Creek begins as the outlet from Lake Elsinore near the Seaport Boat Launch on West Lakeshore Drive. From the outlet,

Temescal Wash/Temescal Creek flows northwest generally for about 1.4 miles where it confluences with Wasson Canyon Wash. After the confluence, Temescal Wash/Temescal Creek continues northwest generally for about 21.6 miles until it confluences with Santa Ana River Reach 3 and Prado Dam near the cities of Norco and Corona. The Santa Ana River flows southwest from Riverside County into Orange County, and eventually drains into the Pacific Ocean.

2.13.2.2 Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels 06065C2028 and 06065C2029, revised August 28th, 2008, shows the Project limits as being located within the following flood zones (Figure 2.13-1):

- Zone A depicts areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations or flood depths are shown.
- Zone AO depicts areas subject to inundation by the 1-percent-annual-chance-flood event where average depths are between one and three feet.
- Zone X (or 0.2% Annual Chance Flood Hazard) depicts areas of minimal flood hazard, usually depicted on Flood Insurance Rate Maps as the 500-year flood level.

The Project crosses one major regional drainage system, Arroyo Del Toro Channel, a Zone A floodplain. Temescal Wash/Temescal Creek does not cross the Project, but its floodplain fringe is within the Project limits. The Arroyo Del Toro Channel and Temescal Wash/Temescal Creek have been designated as flood hazard areas associated with 100-year floodplains and are further described in this section.

Arroyo Del Toro Channel

The segment of the Arroyo Del Toro Channel within the Project limits is an engineered concrete rectangular channel that crosses Dexter Avenue through a quintuple 14-feet by 9.5-feet reinforced concrete box (RCB). The RCB outlets into a detention basin between Dexter Avenue and NB I-15. From the detention basin, ten 36-inch and five 48-inch culverts convey the flow under the I-15, to a rectangular concrete channel parallel to SB I-15. From the concrete channel, Arroyo Del Toro outlets into Collier Marsh within Temescal Wash/Temescal Creek. The portion of the Arroyo Del Toro Channel within the Project limits is designated as a Zone A floodplain per FEMA FIRM Panels 06065C2028 and 06065C2029, revised August 28, 2008.

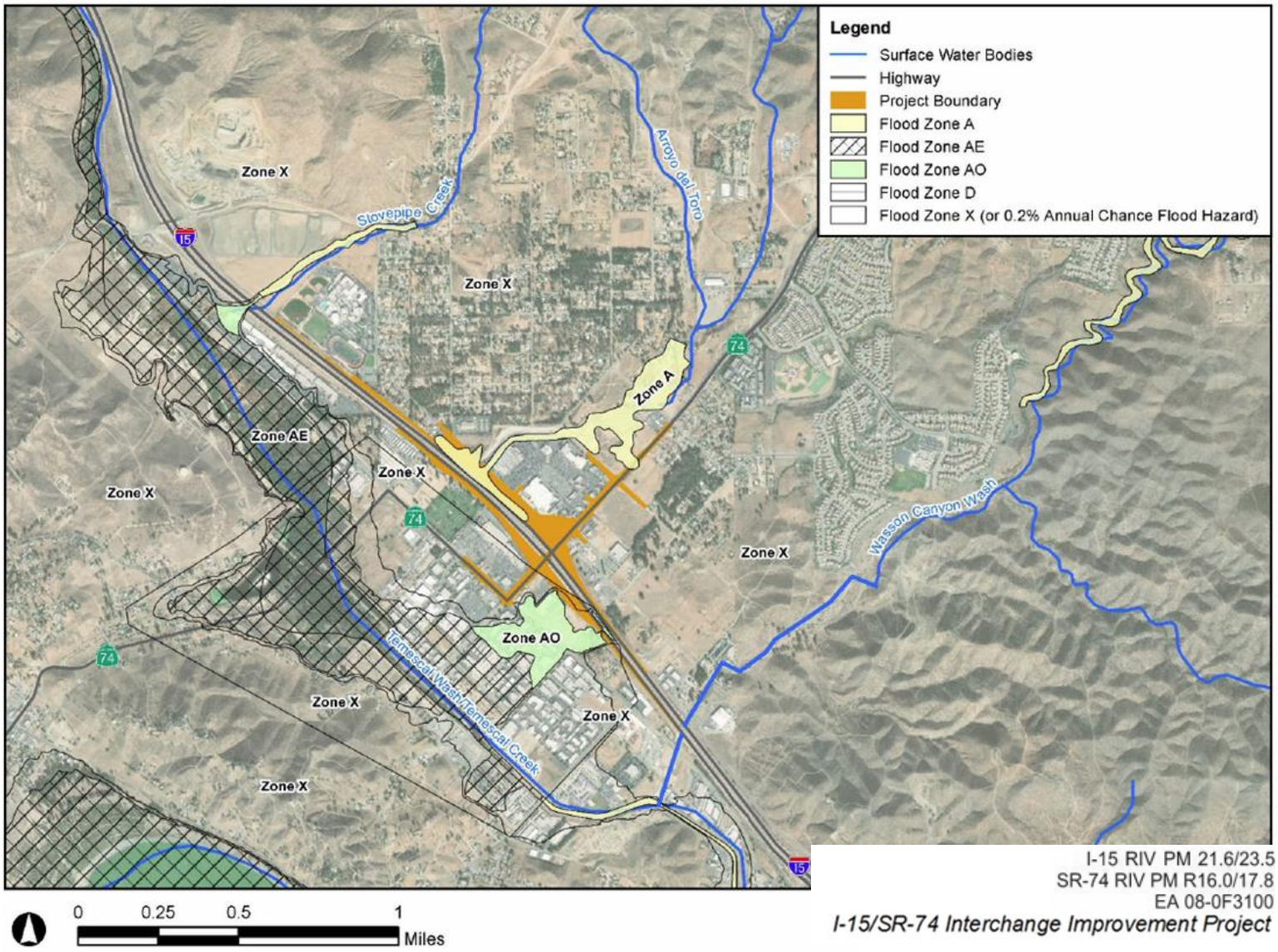


Figure 2.13-1. Federal Emergency Management Agency Flood Zone Map

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Temescal Wash/Temescal Creek

Temescal Wash/Temescal Creek does not cross the Project, but its floodplain fringe is within the Project limits. A small portion of the SB I-15 on-ramp, SB roadway and roadway median are in the Temescal Wash/Temescal Creek floodplain. By way of Arroyo Del Toro Channel and various smaller cross-culverts, the Project indirectly discharges to Temescal Wash/Temescal Creek. Temescal Wash/Temescal Creek begins at the Lake Elsinore Spillway Channel near the Seaport Boat Launch on West Lakeshore Drive. Arroyo Del Toro Channel and the Lake Elsinore Spillway Channel both outlet into Collier Marsh, approximately 2,500 feet west of the north-end of the Project. From Collier Marsh, Temescal Wash/Temescal Creek flows northwest generally for about 23 miles until it confluences with Santa Ana River Reach 3 and Prado Dam near the cities of Norco and Corona. The portion of Temescal Wash/Temescal Creek near the Project is designated as a Zone AO floodplain per FEMA FIRM Panel 06065C2029, revised August 28, 2008.

2.13.2.3 Natural and Beneficial Floodplain Values

Natural and beneficial floodplain values may include, but are not limited to fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, forestry, natural moderation of floods, water quality maintenance, and groundwater recharge. No impacts to fish, open space, natural beauty, scientific study, outdoor recreation, agriculture, forestry, natural moderation of floods, and groundwater recharge are anticipated per the *Location Hydraulic Study* (Caltrans 2020i) due to a lack of such resources within the Project limits.

Water Quality Maintenance

The Regional Water Quality Control Board (RWQCB) *Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin* (California Water Boards 2019) has designated beneficial uses for Wasson Canyon Wash, Temescal Wash/Temescal Creek, Santa Ana River Reach 3, and Prado Basin (listed in Table 2.13-1). No beneficial uses for Arroyo Del Toro are defined in the Basin Plan. A beneficial use is one of the various ways that water can be used for the benefit of people and/or wildlife. Examples include drinking, swimming, industrial and agricultural water supply, and the support of fresh and saline aquatic habitats.

Wasson Canyon Wash and Temescal Wash/Temescal Creek are not listed on the 2016 303(d)/305(b) Integrated List as impaired, nor have total maximum daily loads (TMDL) been established. Temescal Wash/Temescal Creek confluences with Santa Ana River Reach 3, which is listed for Copper and Lead, and TMDLs have been established for Indicator Bacteria and Nitrate. Impaired waterbodies is further discussed in Section 2.14, Water Quality and Storm Water Runoff.

Table 2.13-1. Beneficial Uses for Inland Surface Streams

Water Body Name	Beneficial Uses
Wasson Canyon Wash	None
Temescal Creek Reach 6 – Elsinore Groundwater Subbasin Boundary to Lake Elsinore Outlet	GWR, REC1, REC2, WARM, WILD
Temescal Creek Reach 5 – Mid-section line of Section 17 (downstream end of freeway cut) to Elsinore Ground-water Subbasin Boundary	AGR, GWR, REC1, REC2, WARM, WILD, RARE
Temescal Creek Reach 4 – Lee Lake to Mid-Section Line of Section 17 (downstream end of freeway cut)	AGR, GWR, REC1, REC2, WARM, WILD, RARE
Temescal Creek Reach 3 – Lee Lake	AGR, IND, GWR, REC1, REC2, COMM, WARM, WILD
Temescal Creek Reach 2 – 1,400 ft. upstream of Magnolia Ave. to Lee Lake	AGR, IND, GWR, REC1, REC2, WARM, WILD, RARE
Temescal Creek Reach 1b – Arlington Channel confluence to 1,400 ft. upstream of Magnolia Ave.	REC2, WARM, WILD
Temescal Creek Reach 1a – Lincoln Ave. to Arlington Channel confluence	REC2, WARM, WILD
Santa Ana River Reach 3 – Prado Dam to Mission Blvd. in Riverside	AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN
Prado Basin Management Zone	REC1, REC2, WARM, WILD, RARE

Source: Caltrans 2020h
Notes:
AGR=Agricultural Supply; COMM=Commercial and Sportfishing; GWR=Groundwater Recharge; IND=Industrial Service Supply; RARE=Rare, Threatened or Endangered Species; REC1=Water Contact Recreation; REC2=Non-Contact Water Recreation; SPWN=Spawning, Reproduction and Development; WARM=Warm Freshwater Habitat; WILD=Wildlife Habitat

- **Agricultural Supply (AGR)** waters are used for farming, horticulture or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.
- **Industrial Service Supply (IND)** waters are used for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection and oil well repressurization.
- **Groundwater Recharge (GWR)** waters are used for natural or artificial recharge of groundwater for purposes that may include, but are not limited to, future extraction, maintaining water quality or halting saltwater intrusion into freshwater aquifers.
- **Water Contact Recreation (REC1: Primary Contact Recreation)** waters are used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, and use of natural hot springs.
- **Non-Contact Water Recreation (REC2: Secondary Contact Recreation)** waters are used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing and aesthetic enjoyment in conjunction with the above activities.
- **Commercial and Sportfishing (COMM)** waters are used for commercial or recreational collection of fish or other organisms, including those collected for bait. These uses may include, but are not limited to, uses involving organisms intended for human consumption.
- **Warm Freshwater Habitat (WARM)** waters support warm water ecosystems that may include, but are not limited to, preservation and enhancement of aquatic habitats, vegetation, fish and wildlife, including invertebrates.
- **Wildlife Habitat (WILD)** waters support wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.

- **Rare, Threatened, or Endangered Species (RARE)** waters support the habitats necessary for the survival and successful maintenance of plant or animal species designated under state or federal law as rare, threatened or endangered.
- **Spawning, Reproduction and Development (SPWN)** waters support high quality aquatic habitats necessary for reproduction and early development of fish and wildlife.

The Basin Plan also identifies beneficial uses for groundwater in the Warm Spring Valley, Lee Lake, Temescal, and Bedford Groundwater Management Zones, where the Project is located. The designated beneficial uses for these groundwater management zones are:

- **Municipal and Domestic Supply (MUN)** waters are used for community, military, municipal or individual water supply systems. These uses may include, but are not limited to, drinking water supply.
- **Agricultural Supply (AGR)** waters are used for farming, horticulture or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.
- **Industrial Service Supply (IND)** waters are used for industrial activities that do not depend primarily on water quality. These uses include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection and oil well repressurization.
- **Industrial Process Supply (PROC)** waters are used for natural or artificial recharge of groundwater for purposes that may include, but are not limited to, future extraction, maintaining water quality or halting saltwater intrusion into freshwater aquifers.

2.13.3 Environmental Consequences

EO 11988 requires federal agencies to avoid, to the extent possible, the permanent and temporary adverse impacts associated with the occupancy and modification of floodplains and avoid direct or indirect support of floodplain development wherever there is a practicable alternative.

A “significant encroachment,” as defined in 23 CFR 650.105(q), is a highway encroachment that would result in (1) a significant potential for interruption or termination of a transportation facility that is needed for emergency vehicles or provides a community’s only means of evacuation, (2) a significant risk, or (3) a significant adverse impact on natural and beneficial floodplain values.

The Arroyo Del Toro Channel and Temescal Wash/Temescal Creek have been designated as flood hazard areas associated with 100-year floodplains. The Project will entail extending the drainage culverts of the Arroyo Del Toro Channel located between Dexter Avenue and NB I-15 for both build

alternatives. The hook ramp configuration for both alternatives will require fill in the Arroyo Del Toro Channel floodplain area. In addition, Temescal Wash/Temescal Creek does not cross the Project, but its floodplain fringe is within the Project limits. A small portion of the SB I-15 on-ramp, SB roadway and roadway median are in the Temescal Wash/Temescal Creek floodplain area. Two small areas of 0.04 acre each within the SB I-15 on-ramp improvements are in the Temescal Wash/Temescal Creek floodplain area, but no change to base flood flow volumes and rates will occur, and no impacts to floodplains associated with Temescal Wash/Temescal Creek will occur. Therefore, the following discussion is focused primarily on potential floodplains impacts to the Arroyo Del Toro Channel.

2.13.3.1 Temporary Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), there will be no construction activities within the floodplain. Therefore, no temporary impacts will occur on hydrology or floodplain resources as a result of Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

NATURAL AND BENEFICIAL FLOODPLAIN VALUES

Wildlife

During construction, the Project may have temporary impacts to wildlife species due to suitable habitat within the Arroyo Del Toro Channel floodplain area, which may include, loggerhead shrike, San Diego black-tailed jackrabbit, southern grasshopper mouse, and bat species such as the western mastiff bat, western yellow bat, and pocketed free-tailed bat.

Potential bat habitat consisting of eucalyptus trees are located within the Arroyo Del Toro Channel floodplain area. A daytime bat habitat assessment performed for this Project did not result in the observation of any bats within the Arroyo Del Toro Channel; however, bats can move into the area prior to construction. Impacts to bat habitats and bats may occur during construction due to the exhaust from construction equipment or lighting used during nighttime work. Measures AS-2 through AS-5, discussed in Section 2.24, Animal Species, will require the Project to perform preconstruction bat surveys before removal of any trees and implement nighttime work avoidance or reduction of nighttime lighting and noise around active roost as well as temporary exclusion devices to avoid indirect disturbance of bats during construction. With the implementation of Measures AS-2 through

AS-5, it is anticipated that no substantial temporary impacts to bat species will occur under Alternative 2.

The Arroyo Del Toro Channel floodplain area consists of suitable habitat of Mediterranean California Naturalized Annual and Perennial Grassland for loggerhead shrike and San Diego black-tailed jackrabbit. Alternative 2 will result in temporary impacts to 12.79 acres of Mediterranean California Naturalized Annual and Perennial Grassland. The San Diego black-tailed jackrabbit is covered under the Western Riverside County Multiple Species Habitat Conservation Plan (WRMSHCP). Therefore, Project impacts to this species are covered through participation in the WRMSHCP. Measures NC-2 through NC-5, discussed in Section 2.21, Natural Communities, and WQ-2, discussed in Section 2.14, Water Quality and Storm Water Runoff, will minimize impacts to Mediterranean California Naturalized Annual and Perennial Grassland by implementation of standard best management practices (BMP) to prevent the spread of invasive species and providing temporary sediment control, soil stabilization, and the preservation of existing vegetation, as applicable. In addition, Measure AS-6 requires that any native vegetation removal or tree trimming activities be conducted outside of the nesting bird season. With the implementation of Measures NC-2 through NC-5, WQ-2, and AS-6, it is anticipated that no substantial temporary adverse impacts to loggerhead shrike and San Diego black-tailed jackrabbit will occur under Alternative 2.

Suitable habitat to support southern grasshopper mouse occurs in the Arroyo Del Toro Channel detention basin. Since this area has been modified and consists of compacted soils, habitat quality for this species within the BSA is low. Therefore, no temporary adverse impacts to southern grasshopper mouse will occur under Alternative 2.

The Project could result in construction impacts to BUOWs through the temporary reduction in the quality of foraging habitat during construction. Temporary impacts are expected as a result of noise, vibration, dust, and human encroachment in areas adjacent to suitable BUOW habitat. Measure AS-1 will require a preconstruction survey for BUOW prior to Project clearing, grading, and construction to determine the presence of BUOWs and the need for any avoidance buffers. With the implementation of Measure AS-1, it is anticipated that no substantial temporary adverse impacts to BUOW will occur under Alternative 2.

Plants

During construction, the Project has the potential to impact sensitive vegetation communities, such as California buckwheat scrub and mulefat thickets. The Arroyo Del Toro Channel floodplain area consists of mulefat thickets, of which 0.47 acre will be temporarily impacted by Alternative 2 due to construction activities. Impacts to these vegetation communities may include dust, erosion, and stormwater and roadway runoff as a result of construction activities. Measures NC-1 through NC-5

will help minimize potential temporary adverse impacts to these vegetation communities. Measure NC-1 will entail delineating areas containing California buckwheat scrub and mulefat scrub and installing exclusionary fencing around such areas to prevent accidental encroachment. Measure NC-2 will implement a weed abatement program, and Measure NC-3 will require the use of appropriate firefighting equipment for work conducted during the fire season adjacent to any vegetation. In addition, Measure NC-4 will require all equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities to occur within developed or designated non-sensitive upland habitat areas. Measures IS-1 and IS-2 will require that EO 13112 and Caltrans SSP 11.6.05 are implemented to avoid and/or minimize the spread of invasive species as a result of the Project. Measures NC-5 and WQ-2 will require the Project to prepare a Stormwater Pollution Prevention Plan (SWPPP) prior to all construction activities. The SWPPP will identify BMPs to control pollutants from entering channels to protect water quality and may include sediment control, soil stabilization, and the preservation of existing vegetation. Measure WET-1 will require that habitat restoration and/or compensatory mitigation for temporary impacts to mulefat thickets will be determined during CDFW Section 1602 Permit process and is discussed in more detail in Section 2.22, Wetlands and Other Waters. With the implementation of Measures NC-1 through NC-5, WQ-2, IS-1 and IS-2 and WET-1, it is anticipated that no substantial temporary adverse impacts to sensitive vegetation communities will occur under Alternative 2.

Water Quality Maintenance

The Project will require heavy construction within the Arroyo Del Toro Channel floodplain area that could result in potential short-term impacts to water quality from temporary increases in sediment, oil, grease, and chemical pollutants during construction activities. In addition, construction activities adjacent to Arroyo Del Toro Channel could disturb soil and promote erosion and sediment. The erosion of soils could result in the transport of solid materials in surface runoff into the channel. Therefore, soil disturbance in and adjacent to Arroyo Del Toro Channel could result in increased turbidity and total suspended solids (TSS) during construction. In addition, oil, grease, and chemical pollutants from construction activities and vehicles could also enter Arroyo Del Toro Channel from accidental spills or from stormwater runoff. Compliance with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (Measure WQ-1) and preparation and implementation of a SWPPP (Measure WQ-2) will minimize temporary impacts to water quality, as discussed in Section 2.14, Water Quality and Storm Water Runoff. With the implementation of Measures WQ-1 and WQ-2, it is anticipated that no substantial temporary adverse impacts to water quality will occur.

FLOODPLAIN ENCROACHMENT

According to the FEMA FIRMs, Arroyo Del Toro Channel and Temescal Wash/Temescal Creek are located within 100-year floodplains; however, construction activities are only anticipated to occur within the Arroyo Del Toro Channel. Impacts to Arroyo Del Toro Channel will result from construction access and work within the detention basin between Dexter Avenue and NB I-15 where the channel outflows. Temporary falsework within this portion of the channel will be required to extend the culverts by 16 feet, as well as to build the retaining walls and safety barriers for the widening of Dexter Avenue and for the new NB hook off-ramp. The temporary falsework will be minor structures that will not be expected to substantially affect the floodplains in Arroyo Del Toro and will be removed upon completion of construction. The improvements will not adversely impact the floodplains, and flood conveyance will be maintained (Caltrans 2020i).

A floodplain encroachment permit from the Riverside County Flood Control and Water Conservation District (RCFC&WCD) will be required for access and improvements to the Arroyo Del Toro Channel. In addition, the Project is anticipated to require regulatory permits from the U.S. Army Corps of Engineers (USACE [Section 404]), Santa Ana RWQCB (Section 401), and CDFW (1602 Streambed Alteration Agreement) for improvements to the Arroyo Del Toro Channel. It is anticipated that the Project will be eligible for Section 404 authorization under current Nationwide Permit 14 for linear transportation projects.

Based on the discussion above, with the implementation of Measures WQ-1 and WQ-2 in Section 2.14, Water Quality, Measures NC-1 through NC-5 in Section 2.21, Natural Communities, and Measures AS-1 through AS-6 in Section 2.24, Animal Species, no substantial temporary adverse impacts to hydrology or floodplains will occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

The Project limits and construction activities for Alternative 3 (Preferred Alternative) are similar to those of Alternative 2. Alternative 3 (Preferred Alternative) temporary impacts will be similar to Alternative 2 because the same construction activities and improvements to the Arroyo Del Toro Channel will be used for both alternatives.

Alternative 3 (Preferred Alternative) will result in slight variations in temporary impacts in comparison to Alternative 2, including temporary impacts to 12.49 acres of Mediterranean California Naturalized Annual and Perennial Grassland and 0.51 acre on mulefat thickets. The same measures identified for Alternative 2 to minimize impacts to Mediterranean California Naturalized Annual and Perennial Grassland and mulefat thickets will be applied to Alternative 3 (Preferred Alternative). Therefore, similar to Alternative 2, with the implementation of Measures WQ-1 and WQ-2 in Section 2.14, Water

Quality, Measures NC-1 through NC-5 in Section 2.21, Natural Communities, Measure WET-1 in Section 2.22, Wetlands and Other Waters, Measures AS-1 through AS-6 in Section 2.24, Animal Species, and Measures IS-1 and IS-2 in Section 2.26, Invasive Species no substantial temporary adverse impacts to hydrology or floodplains will occur under Alternative 3 (Preferred Alternative).

2.13.3.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be implemented and therefore, Alternative 1 (No-Build) will not result in permanent impacts related to hydrology or floodplain resources.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

NATURAL AND BENEFICIAL FLOODPLAIN VALUES

Wildlife

Implementation of the Project is not anticipated to result in any permanent impacts to bat species or roosting habitat.

The Arroyo Del Toro Channel floodplain area consists of suitable habitat of Mediterranean California Naturalized Annual and Perennial Grassland for loggerhead shrike and San Diego black-tailed jackrabbit. Alternative 2 will result in permanent impacts to 4.80 acres of Mediterranean California Naturalized Annual and Perennial Grassland. San Diego black-tailed jackrabbit is a WRMSHCP-covered species. Therefore, Project impacts to this species are covered through participation in the WRMSHCP. Permanent indirect impacts of the Project on other special-status wildlife species in areas adjacent to the Project limits, such as the loggerhead shrike and southern grasshopper mouse, could result from the introduction or spread of invasive plant species, fire, human encroachment, and pollutants associated with vehicle use once the Project has been constructed. With the implementation of Measures NC-2 and NC-3, no substantial long-term adverse impacts to other special-status wildlife species will occur under Alternative 2.

The Project will result in permanent impacts to suitable BUOW habitat. In order to comply with the WRMSHCP, California Fish and Game Code, and the Migratory Bird Treaty Act (MBTA), a preconstruction survey for this species will be required prior to the clearing of potential BUOW habitat to avoid potential Project-related impacts, which may be direct (e.g., loss of occupied burrows with nests, eggs, or young) or indirect (e.g., construction noise), as described in Measure AS-1. With the implementation of Measure AS-1, no substantial permanent adverse impacts to BUOW will occur under Alternative 2.

Plants

Alternative 2 will result in permanent impacts to 0.11 acre of mulefat thickets. Per Measure WET-1, compensatory mitigation for permanent impacts to mulefat thickets will be determined during the CDFW Section 1602 Permit process and is discussed in more detail in Section 2.22, Wetlands and Other Waters.

Water Quality Maintenance

The Project, under Alternative 2, will result in a permanent increase in impervious surface area of approximately 8 acres, which is less than 0.00002 percent of the Temescal Wash/Temescal Creek Watershed. During operation, the increase in impervious area will result in slight changes to peak flows and stormwater runoff volumes increasing the potential for erosion, sediment, and pollution in surface waters, which can contribute to a violation of water quality standards. Measure WQ-5 in Section 2.14, Water Quality and Storm Water Runoff, will require the Project to identify permanent treatment BMPs to treat the additional amount of stormwater runoff that will be generated from the increase in new impervious areas. Permanent treatment BMPs may include biofiltration swales and a biofiltration strip to reduce the amount of pollutants from directly entering into surface waters. With the implementation of Measure WQ-5, no substantial permanent adverse impacts to water quality will occur under Alternative 2.

FLOODPLAIN ENCROACHMENT

Alternative 2 will require encroachment within a 100-year floodplain associated with the Arroyo Del Toro Channel. Under Alternative 2, the Project will require the extension of culverts by 16 feet between Dexter Avenue and NB I-15 where the channel outflows. In addition, retaining walls and safety barriers will also be installed along the Arroyo Del Toro Channel culvert headwalls to accommodate the widening of Dexter Avenue and the new NB hook off-ramp. The hook ramp configuration will also require adding fill in the floodplain. The Project will minimize floodplain impacts by excavating within the existing detention basin between Dexter Avenue and NB I-15 where a net fill of zero will be achieved.

No hydraulic studies were performed for the Project. The 16-foot culvert lengthening of Arroyo Del Toro will result in low impact to the hydraulics. Within the Project limits, the on-site storm drains will see a small increase in flow rates due to the addition of paved area; however, it is unlikely that any changes to the freeway hydrology will adversely impact the peak flows in the regional channels. During final design (PS&E), the incremental changes to the local hydrology will be re-evaluated and coordinated with RCFC&WCD to obtain concurrence for the methodology used for the evaluation. A detailed survey of the Arroyo Del Toro Channel and culvert configuration will be performed during the final design (PS&E) phase in order to verify the actual freeboard amount. The freeboard

determination will not alter the floodplain analysis but will be required to be documented with the RCFC&WCD for the encroachment permit process (Measure HYD-1). In addition, during final design (PS&E), a Conditional Letter of Map Revision (CLOMR) will be filed with FEMA to document the revised floodplain boundaries, certify no-rise in water surface, and to preserve the beneficial use of the floodplain for flood attenuation (Measure HYD-2).

In conclusion, the improvements to the Arroyo Del Toro Channel are minor and will have a minimal impact on floodplains. The Project improvements can be classified as low risk (Caltrans 2020i). The Project will not result in longitudinal encroachment of floodplains and does not support incompatible floodplain development. The potential risk to life and property remains unchanged as a result of these improvements. There is no increase in the base flood elevation (BFE) and the Project does not alter the existing flooding source. The Project will result in minimal increases in water surface elevation and will continue to be contained in the channel. The improvements do not adversely impact the floodplains, and flood conveyance will be maintained (Caltrans 2020i). Additionally, it is anticipated that Alternative 2 will not result in any adverse impacts to the natural and beneficial floodplain values or termination of emergency services or emergency routes. Therefore, the Project will not constitute a significant floodplain encroachment as defined in 23 CFR 650.105(q) and is classified as minimal encroachment.

Based on the discussion above, with the implementation of Measures HYD-1 and HYD-2, Measure WQ-5 in Section 2.14, Water Quality, Measures NC-2 and NC-3 in Section 2.21, Natural Communities, and Measure AS-1 in Section 2.24, Animal Species, no substantial permanent adverse impacts to hydrology or floodplains will occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

The Project limits for Alternative 3 (Preferred Alternative) is similar to that of Alternative 2. Alternative 3 (Preferred Alternative) permanent impacts will be similar to Alternative 2 permanent impacts because the same improvements to the Arroyo Del Toro Channel will be required for each alternative.

Alternative 3 (Preferred Alternative) will require slight variations in permanent impacts in comparison to Alternative 2, including permanent impacts to 0.07 acre of mulefat thickets and a permanent increase in impervious surface area of approximately 9 acres, which is less than 0.00002 percent of the Temescal Wash/Temescal Creek Watershed. The same measures identified for Alternative 2 to minimize impacts to mulefat thickets and water quality from the increase in impervious surfaces will be applied to Alternative 3 (Preferred Alternative). Therefore, similar to Alternative 2, with the implementation of Measures HYD-1 and HYD-2, Measure WQ-5 in Section 2.14, Water Quality, Measures NC-2 and NC-3 in Section 2.21, Natural Communities, WET-1 in Section 2.22, Wetlands

and Other Waters, Measure AS-1 in Section 2.24, Animal Species, and Measures IS-1 and IS-2 in Section 2.26, Invasive Species, no substantial permanent adverse impacts to hydrology or floodplains will occur under Alternative 3 (Preferred Alternative).

2.13.4 Avoidance, Minimization, and/or Mitigation Measures

HYD-1 During final design (PS&E), the City's Resident Engineer will ensure the completion of a detailed survey of the Arroyo Del Toro Channel detention basin, culvert configuration, and hydraulics to verify the actual freeboard amount. The freeboard determination will not alter the floodplain analysis but will be required to be documented with the RCFC&WCD for the encroachment permit process. Flood protection freeboard requirements for the crossing shall be based on the Caltrans Highway Design Manual and the RCFC&WCD Hydrology Manual.

HYD-2 During final design (PS&E), the City's Resident Engineer will ensure that a CLOMR is filed with FEMA to document the revised floodplain boundaries, certify no-rise in water surface, and to preserve the beneficial use of the floodplain for flood attenuation.

2.14 Water Quality and Stormwater Runoff

2.14.1 Regulatory Setting

2.14.1.1 Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[1] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCBs) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The goal of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

[1] A point source is any discrete conveyance such as a pipe or a man-made ditch.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (U.S. EPA) Section 404 (b)(1) Guidelines (40 Code of Federal Regulations [CFR] Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[2] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

2.14.1.2 State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined, and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards. Details about water quality

[2] The United States (U.S.) Environmental Protection Agency (EPA) defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

standards in a project area are included in the applicable RWQCB Basin Plan. In California, RWQCBs designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

2.14.1.3 State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWQCBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4). An MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water." The SWRCB has identified the Department as an owner/operator of an MS4 under federal regulations. The Department's MS4 permit covers all Department ROW, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

The Department's MS4 Permit, Order No. 2022-0033-DWQ (effective January 1, 2023), has three basic requirements:

1. The Department must comply with the requirements of the Construction General Permit (see below);

2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the maximum extent practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The Project would be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Construction General Permit

Construction General Permit, Order No. 2022-0057-DWQ (adopted September 8, 2022 and effective September 1, 2023), regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans (SWPPPs); to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff potential of hydrogen (pH) and turbidity monitoring, and before construction and after construction aquatic biological

assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective SWPPP. In accordance with the Department's SWMP and Standard Specifications, a Water Pollution Control Program (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project would be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as WDRs under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

2.14.2 Affected Environment

This section is based on the *Water Quality Assessment Report* (Caltrans 2020h) prepared for the Project.

2.14.2.1 Regional and Local Hydrology

The Project discharges to Wasson Canyon Wash and Temescal Wash/Temescal Creek, which are both located in the Santa Ana River Watershed. Temescal Wash/Temescal Creek begins as the outlet from Lake Elsinore near the Seaport Boat Launch on West Lakeshore Drive. From the outlet, Temescal Wash/Temescal Creek flows northwest generally for about 1.4 miles where it confluences with Wasson Canyon Wash. After the confluence, Temescal Wash/Temescal Creek continues northwest generally for about 21.6 miles until it confluences with Santa Ana River Reach 3 and Prado Dam near the cities of Norco and Corona.

The Project is located in the Santa Ana River Hydrologic Unit (801.0) and the Terra Colta Hydrologic Sub-Area (801.35). The Terra Colta Hydrologic Sub-Area is approximately 22 square miles and the Temescal Wash/Temescal Creek Watershed is 516 square miles. The Santa Ana River's headwaters are the eastern San Gabriel Mountains and a majority of the San Bernardino Mountains.

Runoff from these mountains and foothills drain through a network of surface streams, collect on the valley floor, flow southwest and ultimately confluence with the Santa Ana River. The Santa Ana River flows southwest from Riverside County into Orange County towards the Pacific Ocean.

When stormwater falls on the existing road and highway system within the Project limits, it either sheet flows, or is collected by curbs and directed to existing drains and grate inlets for transfer to existing biofiltration strips and regional drainage systems. A portion of the drainage from NB I-15 flows directly to Wasson Canyon Wash, and the rest of the Project flows into the existing City and Caltrans storm drain system and then indirectly into Temescal Wash/Temescal Creek. Figure 2.14-1 shows the location of the Project within the watershed and nearby surface waterbodies. The Project does not discharge directly or indirectly to an area of special biological significance.

Surface Waters

The Santa Ana RWQCB Basin Plan (Basin Plan) (California Water Board 2019) identifies beneficial uses and water quality objectives for surface waterbodies within the Santa Ana Region. The water quality objectives designate allowable limits of water quality constituents or characteristics that allow for the reasonable protection of the surface water's beneficial uses. The beneficial uses for Wasson Canyon Wash, Temescal Creek, Santa Ana River Reach 3, and Prado Basin consist of GWR, REC1, REC2, WARM, WILD, AGR, RARE, IND, COMM, and/or SPWN. Additional information on these beneficial uses is discussed in Section 2.13, Hydrology and Floodplain.

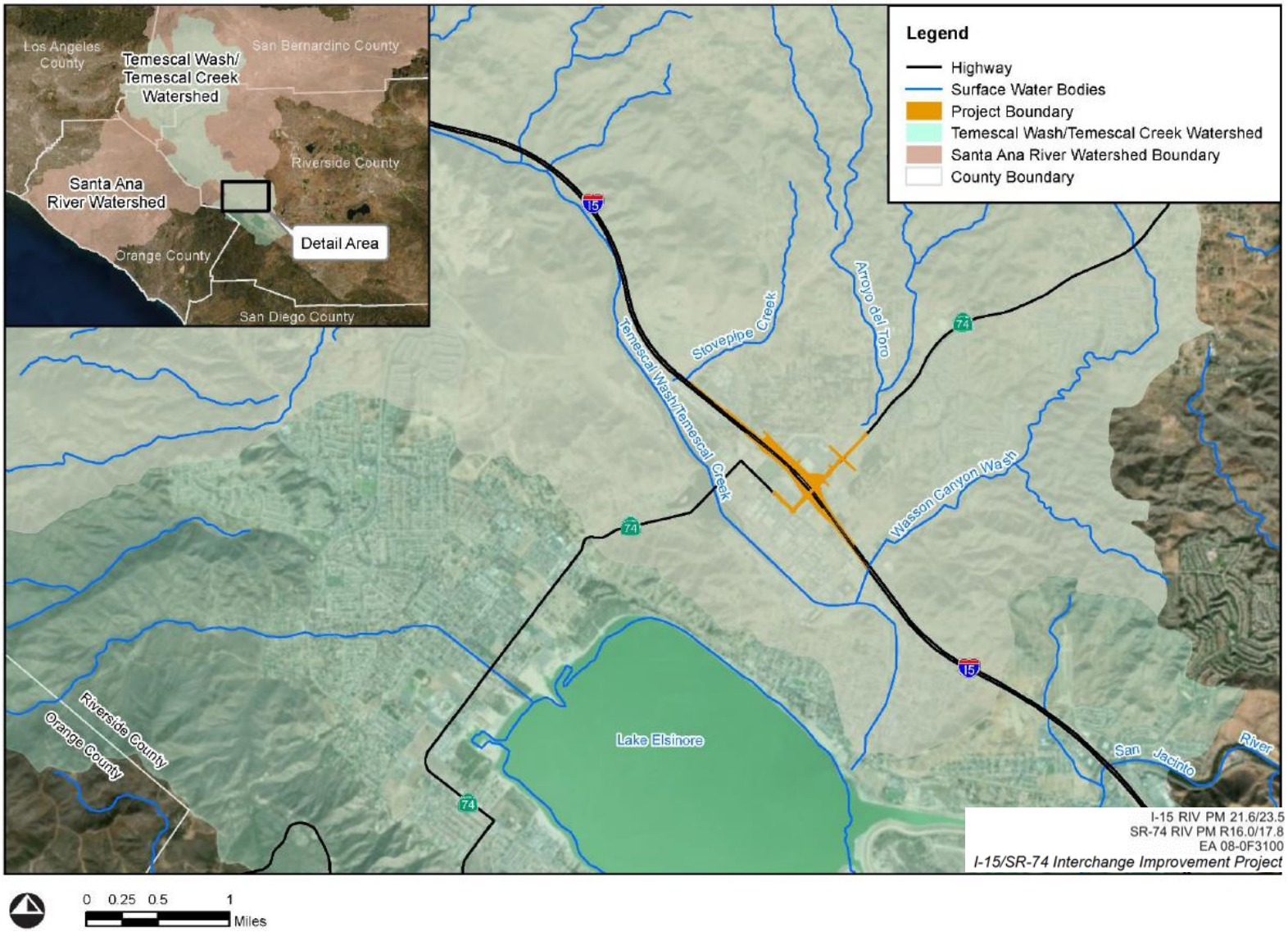

Figure 2.14-1. Project Watershed and Surface Waterbodies Map

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List of Impaired Waters

The U.S. EPA has created a 303(d) Program as a part of the CWA that assists states, territories, and authorized tribes in (1) submitting lists of impaired and threatened waters and (2) developing TMDLs based on the severity of the pollution and sensitivity of the waters. Impairment of waterbodies may be caused by water column exceedances, excessive sediment levels of pollutants, or bioaccumulation of pollutants. Wasson Canyon Wash and Temescal Wash/Temescal Creek are not listed on the 2016 303(d)/305(b) Integrated List as impaired, nor have TMDLs been established. Temescal Wash/Temescal Creek confluences with Santa Ana River Reach 3, which is listed for Copper and Lead, and TMDLs have been established for Indicator Bacteria and Nitrate.
Table 2.14-1 below shows the downstream water bodies that could potentially be impacted by the Project in their order of contact from the Project en route to Prado Dam.

Table 2.14-1. Summary of 303(d) Listed Waterbodies and Impairments

Surface Water Body	303(d) List Constituent	TMDL Constituent
Wasson Canyon Wash	None	None
Temescal Wash/Temescal Creek	None	None
Santa Ana River, Reach 3	Copper, Lead	Indicator Bacteria, Nitrate

Source: Caltrans 2020h

Notes:

TMDL=total maximum daily loads

2.14.2.2 Groundwater

The Basin Plan (California Water Board 2019) identifies beneficial uses for groundwater resources in the Warm Spring Valley, Lee Lake, Temescal, and Bedford Groundwater Management Zones (which are located in the Lake Mathews and Middle Santa Ana River hydrologic areas of the Middle Santa Ana River Basin), which is where the Project is located. The Basin Plan has the following designated beneficial uses for groundwater in the Warm Spring Valley, Lee Lake, Temescal, and Bedford Groundwater Management Zones: MUN, AGR, IND, and PROC. Additional information on these beneficial uses for groundwater resources is discussed in Section 2.13, Hydrology and Floodplain.

2.14.3 Environmental Consequences

2.14.3.1 Temporary Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be constructed. Therefore, no temporary impacts will occur on water quality under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Short-term or temporary construction impacts on water quality have the potential to occur during demolition and roadway construction activities related to the Project. The total DSA for the Project under Alternative 2 is approximately 35.4 acres and will include the following soil disturbance activities during construction: demolition, grubbing, grading, asphalt and concrete removal, upgraded drainage facilities, on-site runoff treatment areas, and paving activities. Construction activities will result in exposed soil, increasing the potential for soil erosion and impacts on water quality. Soil erosion could also occur at an accelerated rate during a storm event. Construction equipment and employee vehicles could also inadvertently track sediment from the Project site onto adjacent roadways that could potentially be conveyed to stormwater drainage systems. Other pollutants that can impact water quality during construction activities include sediment, metals, trash, concrete waste (dry and wet), sanitary waste, and chemicals, including gasoline, oils, grease, solvents, lubricants, and other petroleum products.

Each of these pollutants on its own or in combination with other pollutants can have a detrimental impact on water quality. The Project will implement Measure WQ-1, which requires compliance with the requirements as stated in the Caltrans NPDES Statewide Storm Water Permit, and Measure WQ-2, which will include preparation of a SWPPP and implementation of erosion and sediment control BMPs that will be detailed in the SWPPP during construction. With the implementation of construction BMPs identified in Measures WQ-1 and WQ-2, no substantial permanent adverse water quality impacts will occur under Alternative 2.

Dewatering is anticipated during construction of the Project. In the event that groundwater and any other non-stormwater dewatering activities are necessary, implementation of Measure WQ-3, will require all non-stormwater dewatering activities to comply with the Santa Ana RWQCB, which will include a dewatering permit, waste discharge requirements, and dewatering BMPs.

The Project will require regulatory permits from USACE (Section 404), the Santa Ana RWQCB (Section 401), and CDFW (1602 Streambed Alteration Agreement) for improvements to the Arroyo

Del Toro Channel and other drainage improvements under Alternatives 2. Additional information on these regulatory permits is discussed in Section 2.22, Wetlands and Other Waters.

Physical/Chemical Characteristics of the Aquatic Environment

Potential short-term impacts on the aquatic environment may include temporary increases in sediment, oil, grease, and chemical pollutants during construction activities, which will include work within the Arroyo Del Toro Channel. Chemical pollutants anticipated for use during construction include gasoline, oils, grease, solvents, lubricants, and other petroleum products. Many petroleum products contain a variety of toxic compounds and impurities, which tend to form oily films on the water surface, thereby altering oxygen diffusion rates. Concrete, soap, trash, and sanitary wastes are other common sources of potentially harmful materials on construction sites. Wash water can easily introduce pollutants to surface waters or seep into groundwater. Also, construction chemicals may be accidentally spilled into nearby storm drains or watercourses. The impact of toxic construction-related materials on water quality will vary, depending on the quantity spilled.

Avoidance and minimization measures, such as implementation of erosion and sediment control BMPs during construction, will prevent sediment and suspended solids from entering into surface waters or minimize the amount of sediment and suspended solids. In addition, implementation of non-stormwater management and material management BMPs during construction will prevent chemical pollutants, such as concrete waste, from entering surface waters or minimize the amount of chemical pollutants. These BMPs will involve keeping a clean, orderly construction site. Non-stormwater management BMPs are source-control BMPs that prevent pollution by limiting or reducing potential pollutants at their source or eliminating off-site discharges. Non-stormwater management BMPs also include procedures and practices that have been designed to minimize or eliminate the discharge of pollutants from vehicle and equipment cleaning, fueling, and maintenance operations to stormwater drainage systems or watercourses. Further, waste management BMPs consist of implementing procedural and structural BMPs for handling, storing, and disposing of wastes generated by a construction project to prevent the release of waste materials into stormwater runoff or discharges through proper management of the waste. These BMPs are intended to prevent the release of pollutants during stormwater and non-stormwater discharges. With the implementation of Measures WQ-1 through WQ-3, the potential for construction-related surface water pollution will be reduced and water quality in Wasson Canyon Wash and Temescal Wash/Temescal Creek will not be compromised by erosion, sedimentation, or chemical pollutants during construction.

Based on the discussion above, with the implementation of Measures WQ-1 through WQ-3, no substantial temporary adverse impacts on water quality will occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

The Project limits and construction activities for Alternative 3 (Preferred Alternative) are similar to those of Alternative 2. The total DSA for the Project under Alternative 3 (Preferred Alternative) is approximately 34.9 acres. Although Alternative 3 (Preferred Alternative) has a slightly smaller DSA than Alternative 2 and will not require demolition of the Burger King property (18611 Dexter Avenue), Alternative 3 (Preferred Alternative) will still have the same types of soil disturbance activities and potential water quality impacts during construction as Alternative 2. Therefore, with the implementation of Measures WQ-1 through WQ-3, no substantial temporary adverse impacts on water quality will occur under Alternative 3 (Preferred Alternative).

2.14.3.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be implemented and therefore, Alternative 1 (No-Build) will not result in permanent impacts on water quality.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

The Project, under Alternative 2, will result in a permanent increase in impervious surface area of approximately 8 acres, which is less than 0.00002 percent of the Temescal Wash/Temescal Creek Watershed. The additional increase in impervious surface area will increase the runoff from I-15 and SR-74 within the Project limits. This increase in impervious area will increase peak flows and runoff volumes, increasing the potential for erosion, sediment, and pollution in surface waters. Pollutants in runoff from the new impervious surface areas include sediment, oils and grease, and metals, similar to the contaminants from the existing I-15, SR-74, and City roadways within the Project limits. The introduction of substantial amounts of additional pollutants in stormwater runoff could contribute to a violation of water quality standards. However, the Project will include upgrading existing drainage facilities and incorporating on-site treatment areas to manage the increase in runoff. In addition, the Project, under Alternative 2, will implement Measure WQ-4, and require the inclusion of design pollution prevention BMPs to minimize water quality impacts. Examples of these design pollution prevention BMPs will include preservation of existing vegetation and surface protection systems (permanent soil stabilization).

The Project will potentially generate the following Primary Pollutants of Concern: total suspended solids, nutrients, particulate metals, dissolved metals, and turbidity. Each of these pollutants on its own or in combination with other pollutants can have a detrimental impact on water quality.

However, the Project, under Alternative 2, will implement treatment control BMPs that may include design pollution prevention infiltration areas (DPPIA), infiltration devices, biofiltration strips and swales, detention devices, media filters, multi-chambered treatment train (MCTT), wet basin, and/or pervious pavement as identified in Measure WQ-5.

According to the *Water Quality Assessment Report* (Caltrans 2020h), biofiltration swales and a biofiltration strip will be used as treatment control BMPs for the Project and will be implemented within Caltrans ROW to treat 2.98 acres of paved area under Alternative 2. The biofiltration swales will be located on the NB and SB I-15 off-ramps as well as on the NB I-15 hook off-ramp. It is anticipated that these Project treatment control BMPs will be able to accommodate and treat 100 percent of the additional runoff created by the new impervious area within the Project limits and will be confirmed during the final design (PS&E) phase.

With the implementation of design pollution prevention BMPs and treatment control BMPs, specified in Measures WQ-4 and WQ-5, no substantial adverse permanent impacts on water quality will occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

The Project, under Alternative 3 (Preferred Alternative), will result in a permanent increase in impervious surface area of approximately 9 acres, which is less than 0.00002 percent of the Temescal Wash/Temescal Creek Watershed. Alternative 3 (Preferred Alternative) will result in a slightly greater increase in impervious surface area in comparison to Alternative 2, but it will have the same type of water quality impacts related to the additional increase in impervious surface area. Therefore, with the implementation of Measures WQ-1 through WQ-5, no substantial adverse permanent impacts on water quality will occur under Alternative 3 (Preferred Alternative).

2.14.4 Avoidance, Minimization, and/or Mitigation Measures

With the implementation of Measures WQ-1 through WQ-5 identified below, no substantial adverse temporary or permanent impacts are anticipated to water quality and stormwater runoff.

WQ-1 During construction, the City's Resident Engineer will ensure the Project complies with the provisions of the Caltrans NPDES Statewide Storm Water Permit (Order No. 2022-0033-DWQ, NPDES No. CAS000003) and the NPDES General Permit for Storm Water Discharges of Stormwater Runoff Associated with Construction Activities (Order No. 2022-0057-DWQ, NPDES No. CAS000002), and any subsequent permit in effect at the time of construction.

WQ-2 Prior to construction, the City's Resident Engineer will ensure a SWPPP is prepared and implemented to address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP will identify the sources of pollutants that may affect the quality of stormwater and include the construction site BMPs to control pollutants such as sediment control, catch basin inlet protection, construction materials management, and non-stormwater BMPs. Additional BMP reference material is contained within the Project Planning and Design Guide (Caltrans 2023e) and Construction Manual (Caltrans 2023f). These include, but are not limited to, temporary sediment control, temporary soil stabilization, temporary wind erosion, temporary tracking controls, non-storm water management, waste management, materials handling, and other non-stormwater BMPs.

WQ-3 If dewatering is required during construction, the City's Resident Engineer will ensure the Project's construction site dewatering complies with the General Waste Discharge Requirements for Discharges to Surface Waters That Pose an Insignificant (De minimis) Threat to Water Quality (Order No. R8-2020-0006, NPDES No. CAG998001) and any subsequent updates to the permit at the time of construction. This permit addresses temporary dewatering operations during construction. Dewatering BMPs must be used to control sediment and pollutants, and the discharges must comply with the WDR issued by the Santa Ana RWQCB.

WQ-4 During construction, the City's Resident Engineer will ensure the Project's design pollution prevention BMPs will be implemented, such as preservation of existing vegetation, slope/surface protection systems (benching/terracing, slope rounding, reducing gradients [incorporate 4:1 slopes or flatter]).

WQ-5 During the final design (PS&E) phase, the City's Resident Engineer will ensure Caltrans-approved treatment BMPs will be implemented consistent with the requirements of NPDES Permit and Waste Discharge Requirements for the State of California, Department of Transportation, Order No. 2022-0033-DWQ, NPDES No. CAS000003, and any subsequent permits in effect at the time of construction. Treatment BMPs may include DPPIA, infiltration devices, biofiltration strips and swales, detention devices, open graded friction course, and pervious pavement.

2.15 Geology/Soils/Seismic/Topography

2.15.1 Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the California Environmental Quality Act (CEQA).

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Structures are designed using Caltrans' Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see Caltrans' Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

2.15.2 Affected Environment

This section is based on the *District Preliminary Geotechnical Report* (DPGR) (Caltrans 2020j) that was prepared for the Project, as well as the *City of Lake Elsinore General Plan* (City of Lake Elsinore 2011a), and *Riverside County General Plan* (County of Riverside 2015).

2.15.2.1 Topography

The I-15 freeway runs north to south within the Project limits. The general topography within the Project limits and surrounding area is relatively flat with embankments along the freeway to accommodate the undercrossing and drainage culverts. Elevations within the Project limits range from approximately 1,275 feet to 1,320 feet along the centerline of SR-74 (Central Avenue). Existing slopes within the Project limits range from 2:1 to 4:1 (horizontal:vertical). Drainage within the Project limits generally sheet flow to the southwest into Temescal Creek, which flows to the northwest into the Santa Ana River.

2.15.2.2 Regional Geology

The Project is located within the Elsinore 7.5' quadrangle and is located within a structural trough that has formed along fault segments of the Elsinore Fault Zone. The Elsinore Trough is in the Peninsular Ranges Geomorphic Province and represents a down-dropped block of basement rock overlain by approximately 3,000 feet of Pleistocene- and Holocene-age sediments. The Elsinore Trough is bounded by the various fault traces within the Elsinore Fault Zone.

The Peninsular Ranges extend north to the San Gabriel Mountains and south into Mexico to the tip of Baja California. The Peninsular Ranges Province is characterized by alluvial basins, elevated erosion surfaces, and northwest-trending mountain ranges bounded by northwest-trending faults.

The Project limits consists of young alluvial-fan deposits and young alluvial-channel deposits of the Holocene and late Pleistocene, and a small portion of the Project limits consist of Silverado Formation from the Paleocene age. There is a high potential for paleontological resources within the entire Project limits because of the presence of the fossiliferous Silverado Formation and late Pleistocene deposits and is further discussed in Section 2.16, Paleontology.

2.15.2.3 Soil Conditions

Soils present along I-15 within the Project limits consist primarily of alternate layers of granular materials comprised of relatively fine sands, silty sands, sandy silts, and gravel. Clay beds are approximately 40 to 50 feet bgs. The consistency of fine-grained soils is predominantly stiff, while the layers of sandy soils are loose to “slightly compact” in the upper 30 feet bgs and become dense at the deeper depths. The shallower sandy soils within the Project limits are expected to show a moderate rate of infiltration. The SR-74 (Central Avenue) fill slope embankments consist of medium dense to very dense silty sand fill soils in the upper 20 to 35 feet bgs followed by native silty sand and sandy silts to about 31.5 feet bgs.

Hydrologic soil groups (HSG) were obtained using USDA NRCS online Websoil Survey Mapping Program. HSGs are categorized by soil runoff potential, which range from Group A (low runoff potential and rapid to very rapid subsoil permeability) to Group D (high runoff potential and very slow subsoil permeability). The majority of the Project limits consist of gravelly loam and gravelly loam very fine sandy loam soils, which are designated as HSG B and C, indicating that a majority of the Project limits has a moderate runoff potential.

Soils in the vicinity of I-15 and SR-74 may be non-corrosive as indicated from past soil corrosivity test results in 2006 for the existing I-15/SR-74 interchange bridge OC (Bridge 56-723). According to the Caltrans Corrosion Guidelines Version 3.0 (Caltrans 2018), soils are considered corrosive if the pH is 5.5 or less, if the chloride content is 500 parts per million (ppm) or greater, or if the sulfate content is 1,500 ppm or greater. The 2006 soil corrosivity test results showed pH between 7.0 and 7.5, chloride content between non-detect and 70, and sulfate content between non-detect and 67.

2.15.2.4 Surface Waters

The Project crosses one major regional drainage system, the Arroyo Del Toro Channel. Runoff from the Project site is captured in the storm drain system and discharges to Wasson Canyon Wash and Temescal Wash/Temescal Creek, both of which are not listed on the 2014/2016 303(d) list of

impaired water bodies. The Arroyo Del Toro Channel and Temescal Wash/Temescal Creek have been designated as flood hazard areas associated with 100-year floodplains. Additional information on floodplains and surface waters are discussed in Section 2.13, Hydrology and Floodplain, and Section 2.14, Water Quality and Stormwater Runoff, respectively.

2.15.2.5 Groundwater

According to the DPGR (Caltrans 2020j), groundwater depth within the Project limits is considered to be approximately 20 feet bgs, approximately between elevations of 1,255 and 1,300 feet. This high groundwater is associated with Temescal Creek which is located just west of the Project limits.

2.15.2.6 Geologic Hazards

Seismicity

The Project is located within a seismically active region as a result of being located near the active margin between the North American and Pacific tectonic plates. By definition of the California Geological Survey, an active fault is one which has had surface displacement within the Holocene Epoch (roughly the last 11,700 years). The California Geological Survey has defined a potentially active fault as any fault which has been active during the Quaternary Period (approximately the last 1,600,000 years). These definitions are used in delineating Earthquake Fault Zones as mandated by the Alquist-Priolo Geologic Hazard Zones Act of 1972 and as subsequently revised in 1997 as the Alquist-Priolo Earthquake Fault Zones. The intent of the Act is to require fault investigations on sites located within Special Studies Zones to preclude new construction of certain inhabited structures across the trace of active faults. The Project is not located within an Alquist-Priolo Earthquake Fault Zone. The Project is also not in a Riverside County Fault Zone. The nearest Alquist-Priolo Earthquake Fault Zone is associated with the Elsinore Fault Zone and is located approximately 2.83 miles west of the Project limits (Figure 2.15-1).

The principal source of seismic activity is movement along the northwest-trending regional faults such as the San Andreas, San Jacinto, Newport-Inglewood, and Whittier-Elsinore Fault Zones. Table 2.15-1 summarizes major faults surrounding the Project limits per the Caltrans Fault Database (Caltrans 2017a). The nearest fault to the Project limits is the Elsinore Fault located approximately 1.36 miles southwest of the Project limits (Figure 2.15-2). The information from the Caltrans Fault Database predicts that a maximum magnitude 7.7 earthquake may occur on the Elsinore Fault.

Table 2.15-1. Earthquake Faults

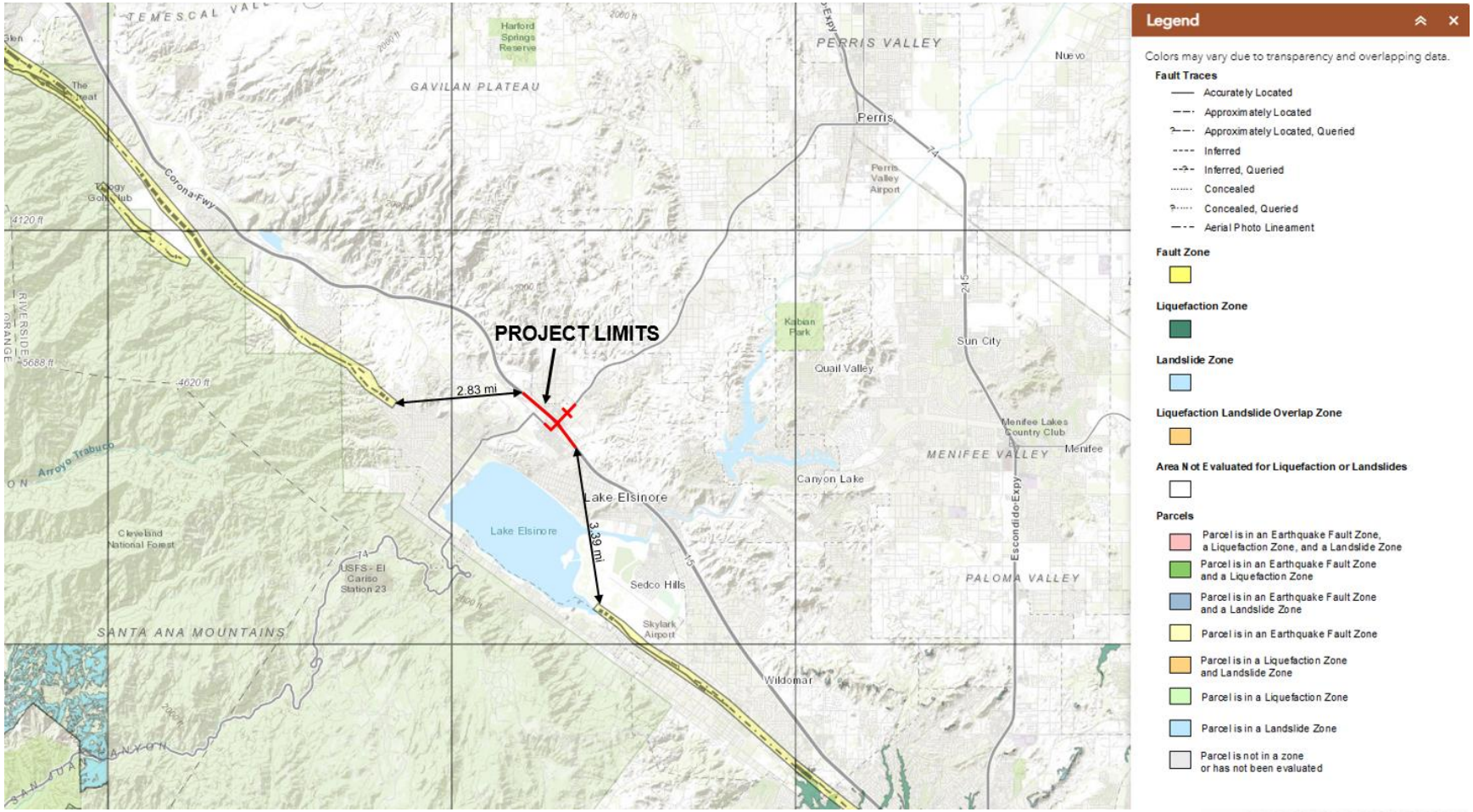
Fault Name	Distance (miles)[a]	Predicted Maximum Magnitude
Elsinore (Glen Ivy) Rev	1.36	7.7
Elsinore (Temecula)	2.99	7.7
San Jacinto (Anza)	18.48	7.7
San Jacinto (San Jacinto Valley)	20.23	7.7
San Jacinto (San Bernardino Valley Section)	21.49	7.7
San Jacinto (San Bernardino)	22.87	7.7
San Jacinto (San Jacinto Valley-Southern Ext)	24.10	7.7
San Andreas (San Bernardino S)	31.24	7.7
San Joaquin Hills	20.56	7.7
San Jacinto (Julian)	30.96	7.7

Source: Caltrans 2017a

Notes:

[a] Reference location is at Route 15-74 Separation (Central Avenue) OC (33.692049°, -117.337571°).

OC=overcrossing



Source: California Department of Conservation 2022

Figure 2.15-1. Seismic Hazard Zones Map

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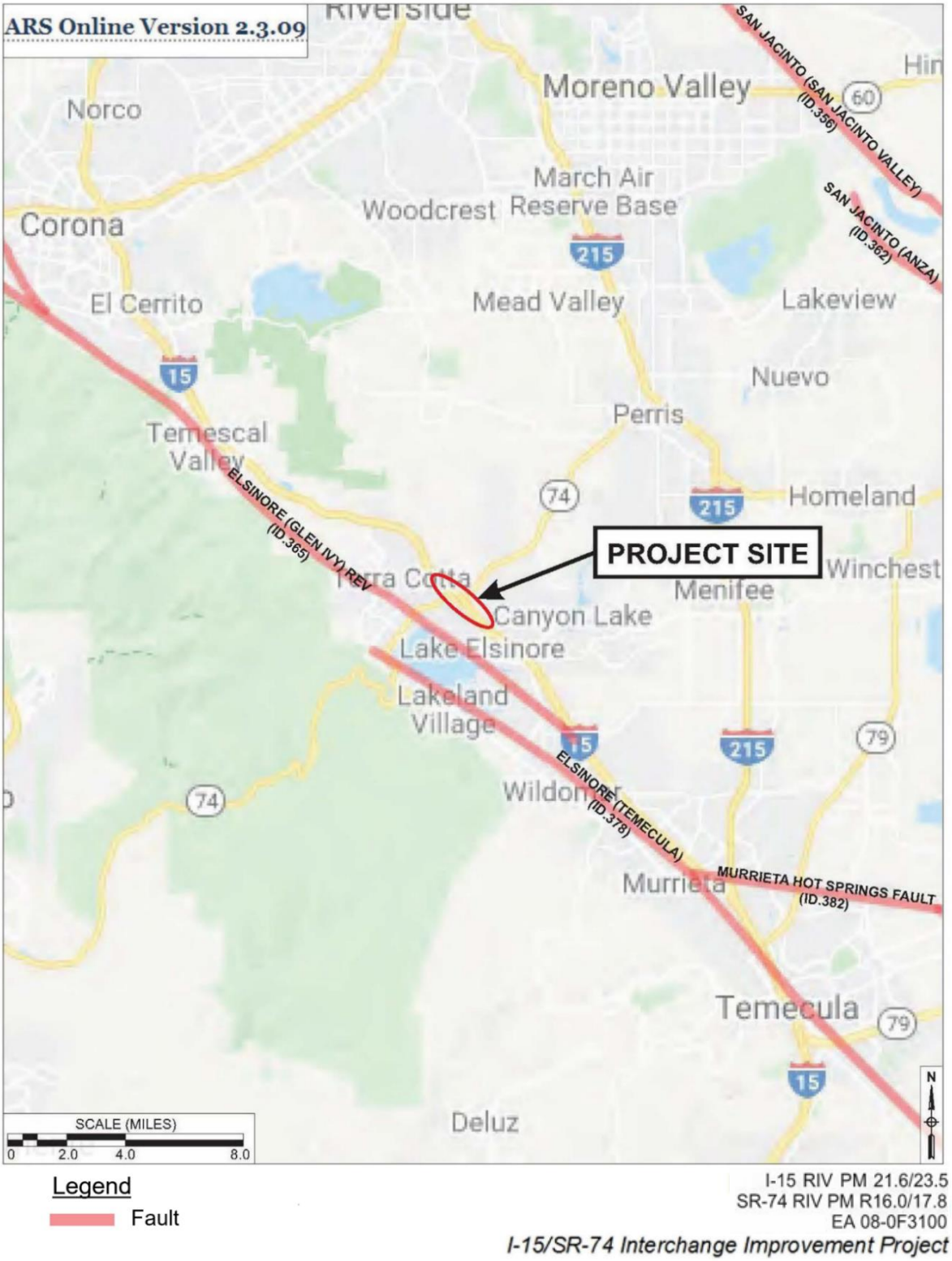


Figure 2.15-2. Fault Activity Map

Liquefaction

Liquefaction is the loss of the strength or cohesion of soil. This can occur on young, loose, unconsolidated sediments, associated with primarily loose (low density), saturated, fine- to medium-grained, cohesionless soils. For liquefaction to occur, the following three conditions must occur simultaneously at a site: (1) shallow groundwater; (2) loose to medium dense cohesionless soils; and (3) sustained ground shaking.

According to the Generalized Liquefaction Map in the Riverside County General Plan Safety Element Chapter (County of Riverside 2015), the area within the Project limits is located in a “Very High” liquefaction susceptibility zone. The higher the liquefaction susceptibility the underlying ground has, the more potential there is for ground failure or loss of strength the area can experience.

Landslides

The topography is relatively flat and according to the Earthquake-Induced Slope Instability Map in the Riverside County General Plan Safety Element Chapter (County of Riverside 2015), the area within the Project limits is not located in any zones of earthquake-induced landslides and rockfalls. Landslides are not considered to be a potential hazard to the Project.

Tsunamis and Seiches

A tsunami, or seismically generated sea wave, is generally created by a large, distant earthquake occurring near a deep ocean trough. A seiche is an earthquake induced wave in a confined body of water, such as a lake or reservoir. There are no confined water bodies located within or adjacent to the Project limits. Lake Elsinore is located approximately 1.4 miles southwest of the Project limits and the Pacific Ocean is located 25 miles southwest of the Project limits.

2.15.2.7 Mineral Resource

The City of Lake Elsinore lies within the Temescal Valley Area, Riverside County, California. Special Report No. 165, prepared in 1991 by the State Department of Conservation, Division of Mines and Geology, identified construction aggregate, clay deposits, and crushed stone with a Mineral Resource Zone-2 designation in the City (City of Lake Elsinore 2011a). Mineral resource areas consisting of construction aggregate (sand and gravel deposits) are located in McVicker Canyon, Rice Canyon, and Temescal Wash. A crushed stone site is located along Railroad Canyon Road within the Cottonwood Hills Specific Plan area, and clay resources are associated with the Alberhill area in the north portion of the City. The Project is not located within or adjacent to any of these mineral resource areas.

2.15.3 Environmental Consequences

2.15.3.1 Temporary Impacts

Alternative 1 (No-Build)

No improvements will occur under Alternative 1 (No-Build); therefore, no temporary impacts related to geology, soils, seismicity, or topography within the Project limits will occur.

Build Alternatives (Alternatives 2 and 3)

Alternative 2 (NB Hook Ramps)

Alternative 2 will alter existing landforms because of grading and construction activities. Construction activities may also temporarily disturb soil within the Project limits, primarily in work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts could include soil compaction and increased potential of soil erosion. The construction contractor will be required to adhere to the requirements of the NPDES General Construction Permit, as identified in Measure WQ-1, in Section 2.14, Water Quality and Stormwater Runoff, which will include implementing erosion and sediment control BMPs specifically identified in the Project SWPPP, as identified in Measures WQ-2 through WQ-5 in Section 2.14, Water Quality and Storm Water Runoff, to prevent sediment from moving off site into receiving waters and impacting water quality.

Construction activities associated with Alternative 2 could be affected by ground motion, liquefaction and lateral spreading, and possibly settlement of dry soils if an earthquake event were to occur during construction. However, implementation of safe construction practices and compliance with Caltrans and California Division of Occupational Safety and Health Administration (Cal-OSHA) requirements will reduce potential exposures of workers and the public to these hazards during construction. With the implementation of Measures WQ-1 through WQ-5, in Section 2.14, Water Quality and Storm Water Runoff, and compliance with standard Caltrans and Cal-OSHA requirements, no substantial temporary impacts related to geology, soils, seismicity, or topography will occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to Westbound SR-74)

The Project limits and construction activities for Alternative 3 (Preferred Alternative) is similar to that of Alternative 2. Alternative 3 (Preferred Alternative) will include the same potential construction-related water quality issues associated with soil compaction and soil erosion as Alternative 2. In addition, similar to Alternative 2, the construction activities associated with Alternative 3 (Preferred Alternative) could be affected by ground motion, liquefaction and lateral

spreading, and possibly settlement of dry soils if an earthquake event were to occur during construction. With the implementation of Measures WQ-1 through WQ-5, in Section 2.14, Water Quality and Storm Water Runoff, and compliance with standard Caltrans and Cal-OSHA requirements, no substantial temporary adverse impacts will occur to geology, soils, seismicity, or topography within the Project limits under Alternative 3 (Preferred Alternative).

2.15.3.2 Permanent Impacts

Alternative 1 (No-Build)

No improvements will occur under Alternative 1 (No-Build). Therefore, no permanent impacts related to geology, soils, seismicity, or topography within the Project limits will occur.

Build Alternatives (Alternatives 2 and 3)

Alternative 2 (NB Hook Ramps)

Seismic Ground Shaking and Ground Surface Fault Ruptures

The Project is located within a seismically active region subject to future seismic ground shaking from earthquakes occurring along regional and local faults. The nearest fault to the Project limits is the Elsinore Fault located approximately 1.36 miles southwest of the Project limits, which may have a magnitude 7.7 earthquake per information from the Caltrans Fault Database. Although strong ground shaking is expected along the Project limits from nearby earthquake sources, the DPGR (Caltrans 2020j) determined the possibility that ground surface fault ruptures is negligible.

The Project, under Alternative 2, will implement Measure GEO-1, which requires the preparation of a geotechnical report, that will include geotechnical exploratory boring activities to confirm soil types and geologic conditions to address any potential impacts related to soils, liquefaction, and seismic activity during final design (PS&E). Recommendations from the geotechnical report will be incorporated into the final Project plans and specifications during the final design (PS&E) phase to ensure the geotechnical stability of the Project. The Project, under Alternative 2, will be designed and constructed based on the recommendations from the geotechnical report and in accordance with applicable federal, state, and local seismic codes and Caltrans HDM and Caltrans SDC for structures. With the implementation of Measure GEO-1 and compliance with seismic codes and design criteria for structures, no substantial permanent adverse impacts related to seismic ground shaking or ground surface fault ruptures are anticipated under Alternative 2.

Liquefaction and Lateral Spreading

The potential for liquefaction to occur within the Project limits is considered to be high since it is located within a “Very High” liquefaction susceptibility zone per the Generalized Liquefaction Map in

the Riverside County General Plan Safety Element Chapter (Riverside County 2015), and due to the high groundwater associated with Temescal Creek which is located just west of the Project limits. The Project, under Alternative 2, is also susceptible to lateral spreading since it is located within a liquefaction zone and due to the proximity of Lake Elsinore. However, with the implementation of Measure GEO-1, the potential for liquefaction and lateral spreading will be further investigated during final design (PS&E) and the Project, under Alternative 2, will be designed and constructed based on the recommendations from the geotechnical report. Therefore, with the implementation of Measure GEO-1 no substantial permanent adverse impacts related to liquefaction and lateral spreading are anticipated under Alternative 2.

Landslides

Landslides are not considered to be a potential hazard to the Project under Alternative 2, since the topography is relatively flat and since the Project limits is not located within any zones of earthquake-induced landslides and rockfalls per the Earthquake-Induced Slope Instability Map in the Riverside County General Plan Safety Element Chapter (County of Riverside 2015). However, the potential for landslides and slope stability of the Project's structures and embankments will be investigated during final design (PS&E) with the implementation of Measure GEO-1 and the Project, under Alternative 2, will be designed and constructed based on the recommendations from the geotechnical report. Therefore, with the implementation of Measure GEO-1 no substantial permanent adverse impacts related to landslides are anticipated under Alternative 2.

Topography, Geology, and Soils

Existing slopes within the Project limits range from 2:1 to 4:1 (horizontal:vertical). The Project, under Alternative 2, will modify existing slopes and create new slopes that are 4:1 or flatter. Retaining walls will be constructed to contain the NB hook off-ramp and portion of the Dexter Avenue widening. The retaining walls may require excavation to approximately 5 feet bgs. The reconstruction of an existing noise barrier (masonry sound wall) affected by the NB Hook on-ramp will require pile foundations with depths of 16 feet bgs. Any potential new sound walls located within the clear recovery zone of the roadways will also need pile foundations at the same depths.

Alternative 2 will not result in substantial permanent changes in the topography or geology within and surrounding the Project limits because improvements are anticipated to be constructed at the same grade, or close to, as the existing transportation facility. The existing topography and geology setting within the Project limits is compatible with the improvements based on preliminary geotechnical information. The Project will be designed and constructed to meet all required federal, state, and local standards and specifications for highway design. No adverse impacts to the existing

topography or geology setting are anticipated. In addition, the Project will be compatible with the existing visual setting of the area, as further discussed in Section 2.11, Visual and Aesthetics.

Further information on soils conditions within the Project limits is provided below.

Compressible/Collapsible Soils

Strong ground motion during an earthquake will reduce the pore space between soil particles, and it is well known that unsaturated granular soils tend to compress during dynamic shaking. The subsurface material within the Project limits generally consists of loose to “slightly compact” granular material in the upper 30 feet bgs underlain by dense granular material to about 40 feet bgs. Due to the type and layer of soils within the Project limits, which consists primarily of gravelly loam and gravelly loam very fine sandy loam soils, settlement of dry soils may be expected if an earthquake event were to occur. Differential settlement of soils could damage Project improvements under Alternative 2, including concrete structures and foundations, as well as pavements. However, with the implementation of Measure GEO-1, the potential for subsurface soils to compress, collapse, or settle will be further investigated and the Project, under Alternative 2, will be designed and constructed based on the recommendations from the geotechnical report. Therefore, with the implementation of Measure GEO-1 no substantial permanent adverse impacts related to compressible or collapsible soils are anticipated under Alternative 2.

Expansive Soils

Expansive soils generally result from specific clay minerals that have the capacity to shrink or swell in response to changes in moisture content. Sandy soils are generally not expansive. Expansive soils are characterized by their ability to undergo substantial volume change (shrink or swell) because of variations in moisture content. Changes in soil moisture content can result from rainfall, irrigation, pipeline leakage, surface drainage, perched groundwater, drought, or other factors. The change in volume of expansive soil may cause excessive cracking and heaving of structures with shallow foundations, concrete slabs, or pavements supported on these materials. The Project limits consist of soils that are primarily gravelly loam, and gravelly loam very fine sandy loam, soils and are generally expected to have an expansivity potential varying from non-expansive to low. However, the Project under Alternative 2, will implement Measure GEO-1 during final design (PS&E) to further evaluate the potential for expansive soils and the Project, under Alternative 2, will be designed and constructed based on the recommendations from the geotechnical report. Therefore, with the implementation of Measure GEO-1 no substantial permanent adverse impacts related to expansive soils are anticipated under Alternative 2.

Corrosive Soils

Soils in the vicinity of I-15 and SR-74 may be non-corrosive as indicated from past soil corrosivity test results in 2006 for the existing I-15/SR-74 interchange bridge OC (Bridge 56-723). A site-specific corrosion study will be performed for the Project under Alternative 2, during final design (PS&E) with the implementation of Measure GEO-1. Recommendation measures from the geotechnical report will be provided if the soils are found to be corrosive to concrete or steel and the Project, under Alternative 2, will be designed and constructed based on the recommendations from the geotechnical report. Therefore, with the implementation of Measure GEO-1 no substantial permanent adverse impacts related to corrosive soils are anticipated under Alternative 2.

Tsunamis and Seiches

Damage from tsunamis is typically confined to coastal areas. The Project is located 25 miles northeast of the Pacific Ocean. Additionally, Lake Elsinore is located approximately 1.4 miles southwest of the Project limits. There are no confined large bodies of water within the vicinity of the Project limits, such as a lake or reservoir. Therefore, no adverse impacts from tsunamis, seiches, or inundation are anticipated to occur under Alternative 2.

Mineral Resources

It is not anticipated that the Project will encounter mineral resources during construction because the only known mineral resources that have been identified are located outside of the Project limits in McVicker Canyon, Rice Canyon, Temescal Wash, and the Cottonwood Hills and Alberhill areas (City of Lake Elsinore 2011a). However, the potential for encountering mineral resources will be further investigated during final design (PS&E) with the implementation of Measure GEO-1, and the Project, under Alternative 2, will be designed and constructed based on the recommendations from the geotechnical report. Therefore, with the implementation of Measure GEO-1 no substantial permanent adverse impacts related to mineral resources are anticipated under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to Westbound SR-74)

The Project limits and improvements for Alternative 3 (Preferred Alternative) is similar to that of Alternative 2 and therefore, Alternative 3 (Preferred Alternative) will have the same potential exposure to geologic, soil-related, seismic, and topographical hazards as Alternative 2, including ground motion, liquefaction and lateral spreading, and possibly settlement of dry soils if an earthquake event were to occur. However, in comparison to Alternative 2, Alternative 3 (Preferred Alternative) will have a slight increase in exposure to these hazards since improvements will include the NB loop off-ramp which will require steep slopes. However, the Project under Alternative 3

(Preferred Alternative), will also implement Measure GEO-1, which requires the preparation of a geotechnical report, that will include geotechnical exploratory boring activities to confirm soil types and geologic conditions to address any potential impacts related to soils, liquefaction, lateral spreading, and seismic activity during final design (PS&E). Therefore, with the implementation of Measure GEO-1 no substantial permanent adverse impacts related to soils, liquefaction, lateral spreading, and seismic activity are anticipated under Alternative 3 (Preferred Alternative).

2.15.4 Avoidance, Minimization, and/or Mitigation Measures

In addition to Measures WQ-1 through WQ-5 from Section 2.14, Water Quality and Storm Water Runoff, the following measure will be implemented to reduce the potential impacts related to geologic, soil-related, seismic, and topographical conditions under Alternative 2 and Alternative 3 (Preferred Alternative):

GEO-1 Prior to completion of final design (PS&E), the City's geotechnical engineer will ensure a final design (PS&E)-level geotechnical report is prepared. Recommendations from the final design (PS&E)-level geotechnical report will be incorporated into the final Project plans and specifications during the final design (PS&E) phase to ensure the geotechnical stability of the Project. This report will document soil-related constraints and hazards, such as slope instability, settlement liquefaction, or related secondary seismic impacts, which may be present. The report will also include:

- Evaluation of seismic-induced (dry) settlement, expansive and potentially corrosive soils and recommendations regarding construction procedures and/or design criteria to reduce the impact of these soils on Project development.
- Identification of potential liquefiable and lateral spreading areas within the Project limits and recommendations for mitigation measures.
- Demonstration that the design of all retaining walls and sound walls are geotechnically suitable for soils within the Project limits.
- Geotechnical recommendations for the specific foundation design and earthwork construction considered for this Project.

2.16 Paleontology

2.16.1 Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects. 23 United States Code (USC) 1.9(a) requires that the use of Federal-aid funds must be in conformity with all federal and state laws, and 23 USC 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 USC 431-433 and state law. Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

2.16.2 Affected Environment

This section is based on the *Paleontological Identification Report and Paleontological Evaluation Report* (Caltrans 2020k) that was prepared for the Project.

The Project area is within the northern portion of the Peninsular Ranges Geomorphic Province, which extends 125 miles south from the Transverse Ranges through the Los Angeles Basin to Baja California. A geomorphic province is a region of unique topography and geology that is distinguished from other regions based on its landforms and tectonic history. The Peninsular Ranges comprise a series of mountain ranges separated by northwest-trending valleys formed from faults branching from the San Andreas Fault. The mountain ranges are bounded to the east by the Colorado Desert and range in width from 30 to 100 miles. The Project area is situated along the Elsinore Fault Zone in the Elsinore Basin with Lake Elsinore approximately a mile to the southwest.

The basement rocks of the Peninsular Range date from the Paleozoic to the present, with most of the assemblage represented by the Mesozoic-age Peninsular Ranges batholith. Early Cenozoic and Quaternary sedimentary rocks form thick deposits that rest unconformably above the basement rocks. The Elsinore Basin is a geologic structure that formed due to Pleistocene extensional forces within the Elsinore Fault Zone, filling the basin with sediments from the surrounding mountain ranges. Lake Elsinore also formed during this time as an ephemeral sag pond in the lowest portion of the basin and is one of the largest permanent lakes in Southern California.

Research and mapping have shown that the area within the Project limits is underlain by various types of sedimentary deposits (Figure 2.16-1). The geologic units mapped within the Project limits are Silverado Formation (Paleocene) (Tsi), young alluvial-fan deposits (Holocene and late Pleistocene) (Qyf), and young axial-channel deposits (Holocene and late Pleistocene) (Qya).

Younger Quaternary deposits cover most of the ground surface of the Project limits, although the Paleocene-age Silverado Formation crops out on the northeast side of the Project limits.

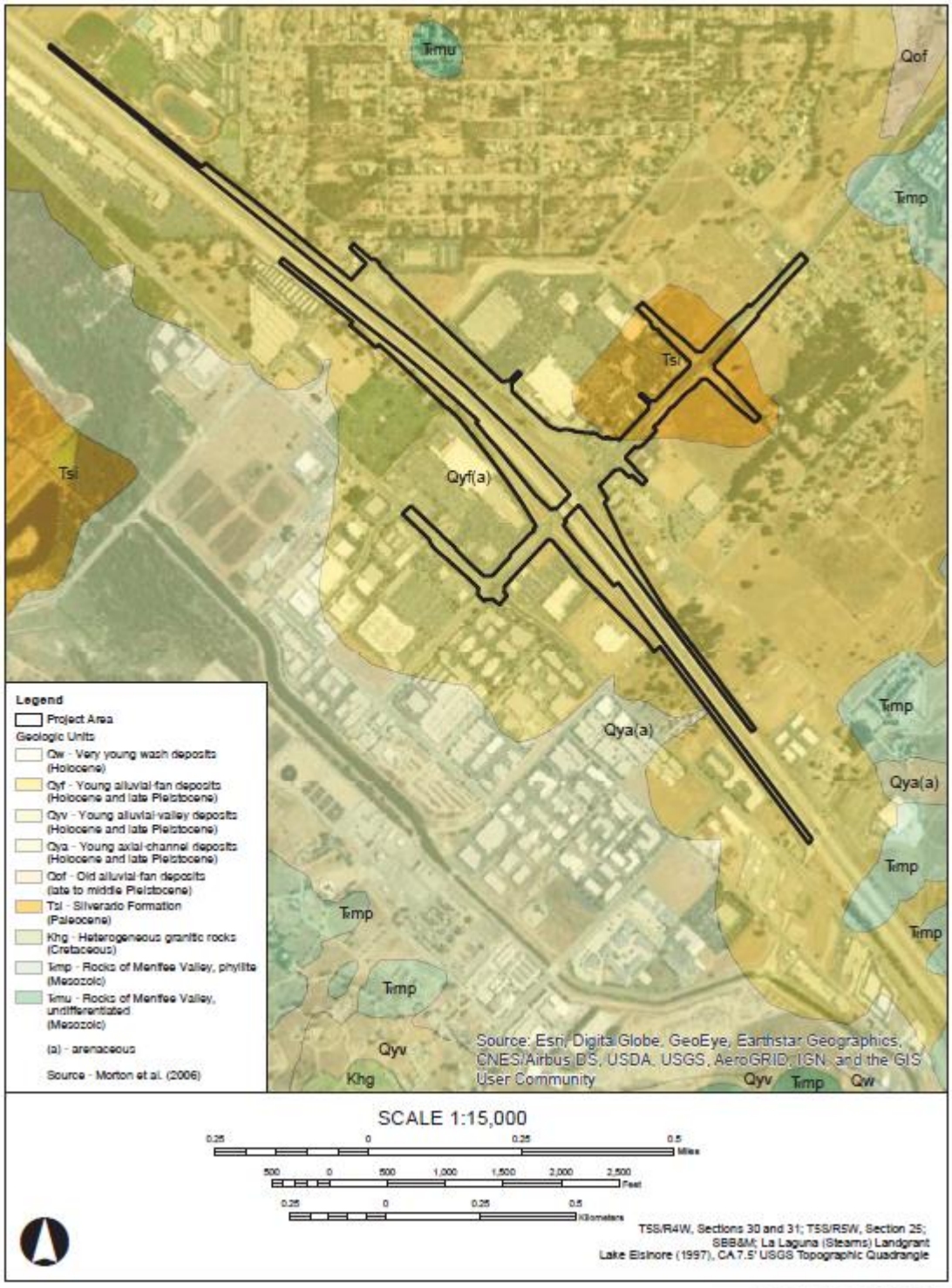
The Silverado Formation (Tsi) is a late Paleocene unit consisting of marine and nonmarine clay, sandstone, and conglomerate. Young alluvial-fan deposits (Qyf) consist of unconsolidated to moderately consolidated silt, sand, pebbly cobbly sand, and boulders with slightly-to-moderately dissected surfaces. In and around the Project limits, most of these sediments are arenaceous, with sand-sized grains conducive to the deposition and preservation of vertebrate fossils. Young axial-channel deposits (Qya) from earlier streams blanket much of the valley floor and are the most widespread sediments in the Project limits. In general, Qya deposits include slightly-to-moderately consolidated silt, sand, and gravel deposits. Like the alluvial-fan deposits, the axial-channel deposits in the region are mostly arenaceous.

Pleistocene- and older Holocene-age deposits may potentially preserve significant fossils, but deposits less than 5,000 years old are unlikely to preserve them, as they are generally too young for the fossilization process to occur.

2.16.2.1 Records Search

A search for paleontological records within the Project limits was completed and included using published geologic maps, paleontological literature, paleontology records maintained by the Natural History Museum of Los Angeles County (NHMLAC) and Western Science Center of Hemet, and records from the Paleobiology Database and University of California Museum of Paleontology database.

The research yielded no fossil localities that have been previously collected from within the Project limits; however, several localities are recorded near the vicinity of the Project limits. Fossils recovered from these nearby localities include turtle (Testudinae indet.), camel (C*amelops hesternus*), and horse (*Equus sp.*) at unknown depths. A variety of fish, amphibian, reptile, bird, and mammal fossils are also recorded near the vicinity of the Project limits at 10-50 feet below ground surface.



I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100

I-15/SR-74 Interchange Improvement Project

Figure 2.16-1. Geology Map

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2.16.3 Environmental Consequences

Paleontological resources are considered to be significant if they provide new data on fossil animals, their distribution, evolution, or other scientifically important information. Caltrans uses a tripartite scale to characterize paleontological sensitivity of an area as no potential, low potential, or high potential for paleontological resources because the actual presence of paleontological resources is not known until a Project is underway.

High Potential: This includes geologic units that are considered to be sensitive for paleontological resources and have a high potential if significant vertebrate, invertebrate, plant, or trace fossils have been recovered anywhere in their extent, even if outside the Project limits; or if the units are sedimentary rocks that are temporally or lithologically suitable for the preservation of significant fossils. Areas with geologic units considered to have high potential require monitoring and mitigation.

Low Potential: This includes geologic units that are considered to have a low potential if they are sedimentary rocks that have not yielded significant fossils in the past but may possess the potential for containing fossil remains; or they yield common and widespread invertebrate fossils that do not provide new and useful data. Areas with these units generally do not require monitoring and mitigation.

No Potential: These are geologic units with no potential for the presence of fossil resources. They include intrusive igneous rocks, most extrusive igneous rocks, and moderately to highly metamorphosed rocks that do not preserve fossils.

The paleontological sensitivity analysis conducted for this Project determined that there is a high potential for paleontological resources within the entire Project limits because of the presence of the fossiliferous Silverado Formation and late Pleistocene deposits from which significant fossils have been recovered 3 to 5 miles from the Project limits.

2.16.3.1 Temporary Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be constructed. Therefore, no temporary impacts will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Any impacts to paleontological resources are permanent and irreparable; therefore, no temporary impacts will occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Any impacts to paleontological resources are permanent and irreparable; therefore, no temporary impacts will occur under Alternative 3 (Preferred Alternative).

2.16.3.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be constructed. Therefore, no permanent impacts will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Much of the ground surface has been disturbed previously for development of the I-15 and SR-74 transportation corridors. The extent of previous disturbance suggests intact and significant fossils are unlikely to be preserved within the top few feet. The uppermost Holocene-age deposits may be too young to preserve fossils, but their sensitivity increases with depth because of the higher sensitivity of underlying, likely fossiliferous, late Pleistocene deposits.

Most ground disturbance will be limited to within presently developed roadways and their disturbed underlying surfaces, as well as surfaces already partially disturbed within Caltrans, City, and County ROW. However, excavations associated with the Arroyo Del Toro Channel detention basin, noise barriers, and freeway signage for Alternative 2 will likely extend into the Silverado Formation and late Pleistocene deposits where there is a greater potential for Project impacts to paleontological resources. The installation of the drainage culvert extensions at the Arroyo Del Toro Channel, located between Dexter Avenue and NB I-15 where the channel outflows, will require an excavation depth that varies from approximately 6 feet at the existing basin to 10 feet at the southernmost end of the extension. Replacement of an existing noise barrier located along the NB hook on-ramp will require an excavation depth of 16 feet bgs. The installation of freeway signage in the area near the existing NB off-ramp (Exit A) and the NB hook off-ramp (Exit B) will require an excavation depth of 35 feet bgs.

Paleontological monitoring and mitigation will be required for the Project. A Paleontological Mitigation Plan will be prepared during final design (PS&E) to mitigate any potential impacts to paleontological resources, as identified in Measure PAL-1. With the implementation of Measure PAL-1, no substantial permanent impacts to paleontological resources will occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

The Project limits and construction activities for Alternative 3 (Preferred Alternative) is similar to that of Alternative 2. Therefore, the Project limits under Alternative 3 (Preferred Alternative) has a high potential for paleontological resources and permanent impacts which will be similar to Alternative 2. Thus, with the implementation of Measure PAL-1, no substantial permanent impacts to paleontological resources will occur under Alternative 3 (Preferred Alternative).

2.16.4 Avoidance, Minimization, and/or Mitigation Measures

The following measure will be implemented to mitigate the likelihood of permanent adverse impacts related to impacts associated with paleontological resources under Alternative 2 and Alternative 3 (Preferred Alternative):

PAL-1 The City's Resident Engineer will ensure a Paleontological Mitigation Plan is prepared by a qualified Project Paleontologist/Principal Investigator prior to completion of the final design (PS&E) phase of this Project for all Project-related ground disturbance, such as grading, excavation, and other surface and subsurface excavation, in areas of paleontological sensitivity. All elements of the paleontological mitigation plan will follow the format published in the Caltrans SER (Caltrans 2003). The paleontological mitigation plan will detail the measures to be implemented, include a requirement for Worker's Environmental Awareness Program (WEAP) training to address the required interfacing of paleontological and construction personnel, as well as the following elements:

- Required preconstruction paleontological sensitivity training for earthmoving personnel to include documentation of training (i.e., sign-in sheets, hardhat stickers)
- A signed repository agreement
- Field and laboratory methods, consistent with the repository requirements
- Require the preparation of a Paleontological Mitigation Report upon completion of ground disturbance activities

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2.17 Hazardous Waste and Materials

2.17.1 Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health, and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, and the Resource Conservation and Recovery Act (RCRA) of 1976. The purpose of CERCLA, often referred to as "Superfund," is to identify and cleanup abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order (EO) 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California

regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

2.17.2 Affected Environment

This section is based on the *Initial Site Assessment* (ISA) (Caltrans 2020l), the *Initial Site Assessment Update Memorandum* (Caltrans 2023d) and *Aerially Deposited Lead Survey* (Caltrans 2021n) that were prepared for the Project. The hazardous waste/materials study area consists of the Project limits and properties within 300 feet of the Project limits to account for adjoining properties. The Project limits include all improvements and TCEs. All Project work will occur within Caltrans, City, and County ROW. The land uses within the Project limits primarily consist of commercial and industrial land uses, interspersed with low density residential and public institutional uses.

The ISA was conducted to identify potential and known contaminant sources or recognized environmental conditions (REC), historical RECs (HREC), and controlled RECs (CREC) in the Project limits. The ISA was prepared in general accordance with the American Society for Testing and Materials (ASTM) International, Inc., Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process E1527-13 (ASTM Standard) and Caltrans' ISA procedures.

The following tasks were conducted as part of the ISA:

- **Environmental Database Review:** An environmental database search was conducted using Environmental Data Resources (EDR) to gather government database records dated February 26, 2020. The search consisted of the Project limits and properties up to approximately 1 mile from the Project limits and had met the government records search requirements of ASTM E1527-13.
- **Historical Land Use Records Review:** Historical aerial photographs and topographic maps were reviewed. A search was conducted for Sanborn® Fire Insurance Maps, but no fire insurance maps covering the Project limits and adjoining properties were found.
- **User-Provided Reports:** A review of the I-15 Corridor Improvement Project (CIP) Aerially Deposited Lead Survey (EA 08-0J0800; Leighton 2010) was conducted.

- **Agency Records Review:** Files maintained by the SWRCB GeoTracker database and the Department of Toxic Substances Control (DTSC) EnviroStor database, and the EDR Area/Corridor Report were reviewed in June 2020.
- **Site Reconnaissance:** On March 17, 2020, a reconnaissance-level assessment of the Project corridor was conducted to document current land uses and observe for any indication of potential contamination issues or releases that may have an impact on the Project. The site reconnaissance consisted of the observation and documentation of existing site conditions. The site visit was limited to observations made from the public ROW and from other publicly accessible areas, when feasible.

2.17.2.1 Sites of Concern

Based on the due diligence efforts completed as part of the ISA, eight hazardous waste/materials sites are associated with the Project limits due to ROW requirements, of which three gas station sites have been identified as a REC. There are 41 hazardous waste/material sites that are located adjacent to the Project limits, but do not pose a concern to the Project because they do not indicate any past or current release incidents that may have migrated to areas within the Project limits. In addition, the Elsinore Gas Co. Gas Plant is located within 0.50-mile to the south-southwest of the Project limits. Although this site is not an adjoining property, it was listed on the ENVIROSTOR and Voluntary Cleanup Program (VCP) databases that indicate release incidents may have occurred on this property. However, current conditions and available information do not indicate a REC to the Project. Additional information pertaining to the eight sites associated with the Project limits and the Elsinore Gas Co. Gas Plant are provided in Table 2.17-1 which includes a description of the potential contamination issues that may have an impact on the Project based on hydrogeologic gradient, field observations, land use, distance from the Project limits, regulatory information from databases, the EDR Area/Corridor Report and agency records, and information from historical land use records.

Table 2.17-1. Sites of Concern

Facility	Distance from Project Limits	Site Conditions	REC	Hazard Rating
Costco Gasoline 29223 Central Avenue, Lake Elsinore, California APN 377-040-043	Within Project limits	This site is a Costco gas station. Eight pump islands, three 55-gallon metal drums (one drum contained motor fuels and the other two drums were empty), a clean air separator AST, and a pad mounted transformer were located onsite. Four USTs were stored onsite per RCDEH UST permits. During routine site inspections in 2014 and 2016 by the RCDEH, minor site violations consisting of labeling of containers, housekeeping, and failure of the leak detection equipment to have an audible and visual alarm were noted.	No	Low
Costco Wholesale 29315 Central Avenue, Lake Elsinore, California APN 377-040-043	Within Project limits	This site is a commercial retail store. One large propane AST was located on the property. No site violations were found during routine site inspections conducted by RCDEH in 2013, 2015, 2017, and 2019.	No	Low
Chevron 18451 Dexter Avenue, Lake Elsinore, California APN 377-030-073	Within Project limits	This site is a Chevron gas station. Six pump islands and a pad mounted transformer were located onsite. Three 12,000-gallon USTs were stored onsite per RCDEH UST permits. This site has been operating as a Chevron gas station since at least 1996. Minor site violations consisting of monitoring and storage were noted in 2014 and 2016 by the RCDEH.	Yes	Low
ARCO 29355 Central Avenue, Lake Elsinore, California	Within Project limits	This site is an ARCO gas station. Six pump islands and a large AST were located onsite. During the operation of the site by ARCO, a case was opened on November 22, 2002, as a result of soil and groundwater contamination that was discovered during fuel system upgrade activities. Soil	Yes	Low

Table 2.17-1. Sites of Concern

Facility	Distance from Project Limits	Site Conditions	REC	Hazard Rating
APN 377-040-052		contamination was non-detect and groundwater contamination was non-detect except for bromodichlorom ethane (0.46J), chloroform (0.49J), and dibromochlorom ethane (0.57J) per sampling activities in 2009. Active remediation was not required to restore or protect groundwater quality based on groundwater monitoring data collected. Historical depth to groundwater at this site was approximately 29.53 to 41.36 feet bgs with a trending flow direction to the south southwest. A case closure was granted on June 1, 2010, by the RCDEH LOP.		
Jun Yeon Kim DDS Central Dentistry and Central Cleaners 29280 Central Avenue STE F and I, Lake Elsinore, California APN 377-030-056	Within Project limits	This site consists of a dentist office (STE F) and a drycleaners (STE I) within a commercial strip mall. No outward signs of hazardous materials were on the property. This site is operated by Jun Yeon Kim DDS Central Dentistry and Central Cleaners. No site violations were noted at these two businesses.	No	Low
Circle K/ExxonMobil 29300 Central Avenue, Lake Elsinore, California APN 377-030-093	Within Project limits	This site is a Circle K/ExxonMobil gas station. Seven pump islands, a clean air separator AST, 5-gallon propane tanks, and a pad mounted transformer were located on site. During the operation of the site by Mobil, a case was opened on November 29, 2001, as a result of soil and groundwater contamination that was discovered during fuel system upgrade activities. Site remediation activities consisted of Dual Phase Vacuum Extraction that was operated from October 13, 2005, to June 12, 2006, and had removed 725	Yes	Low

Table 2.17-1. Sites of Concern

Facility	Distance from Project Limits	Site Conditions	REC	Hazard Rating
		pounds of VOCs and 85 pounds of TPH-g. Groundwater was sampled until January 12, 2010, by which time TPH-g had decreased from 12500 ppb to <100 ppb. Benzene had decreased from 29 ppb to <0.5 ppb and had not been detected above 1 ppb since November 2005. MTBE had decreased from 12000 ppb to 1.3 ppb. TBA had decreased from 135000 ppb to 29 ppb. Historical depth to groundwater ranged from 25.06 to 41.23 feet bgs, with a general flow direction to the southwest. Upon completion of site investigation and remediation activities, a case closure was granted on January 13, 2011, by the RCDEH LOP.		
Valvoline Instant Oil Change 29295 Central Avenue, Lake Elsinore, California APN 377-040-040	Within Project limits	This site is an automotive oil changing service facility. A 55-gallon metal drum was located onsite. During a routine site inspection conducted by RCDEH on July 23, 2015, the following site violations were noted: failure of weekly site inspection of storage areas, labeling of storage containers, signage, and failure to respond properly to a spill/leak per specific processes and requirements. These site violations were corrected by August 27, 2015.	No	Low
Lowe's of Lake Elsinore #1987 29335 Central Avenue, Lake Elsinore, California APN 377-040-042	Within Project limits	This site is a home improvement commercial retail store. Several 5-gallon propane tanks for retail sale were onsite. No site violations were found during routine site inspections conducted by RCDEH in 2015 and 2018.	No	Low

Table 2.17-1. Sites of Concern

Facility	Distance from Project Limits	Site Conditions	REC	Hazard Rating
Elsinore Gas Co. Gas Plant Between Riley Street, Flint Street, Spring Street, and Pottery Street, Lake Elsinore, California APN 374-062-024	Within 0.50 mile / south southeast	This site is currently vacant and for sale. No outward signs of hazardous materials were on the property. This site was approximately 2.8 acres and was used as an MGP in 1920 through 1929. From 1923 to 1953 this facility was used as a storage for natural gas. MGP operation at the site had contaminated the soil with PAHs. A total of 3.394 tons of PAH contaminated soil with benzo(a)pyrene equivalent concentrations above 0.9 mg/kg was excavated and removed. DTSC has determined that all appropriate removal/remedial actions have been completed and that all acceptable engineering practices were implemented and the site requires no operation and maintenance and monitoring efforts.	No	Low

Source: Caltrans 2020l

Notes:

APN=assessor parcel number; AST=aboveground storage tank; bgs=below ground surface; DTSC=Department of Toxic Substances Control; mg/kg=milligrams per kilogram; MGP=manufactured gas plant; MTBE=methyl tert butyl ether; ppb=parts per billion; PAH=polynuclear aromatic hydrocarbons; RCDEH=Riverside County Department of Environmental Health; RCDEH LOP=Riverside County Department of Environmental Health Local Oversight Program; REC=recognized environmental conditions; TBA=tert butanol; TPH-g=total petroleum hydrocarbon gasoline; UST=underground storage tank; VOC=volatile organic compound

2.17.2.2 Other Conditions of Concern

Aerially Deposited Lead

As described in the *Aerially Deposited Lead Survey* (Caltrans 2021n), an ADL survey was previously performed along the mainline of I-15 under EA 08-0J0820, PM 20.3 to PM 40.1, that includes the current and Project limits. In addition, an ADL survey was also performed along the SR-74 on- and off-ramps as part of the Project (EA 08-0F3100, PM 21.6 to PM 23.5). Statistical analysis determined the 95 percent upper confidence limit (UCL) for the population mean for total lead was 11.42 milligrams per kilogram (mg/kg). The 95 percent UCL for soluble lead (STLC WET-CA) was 0.252 milligrams per liter (mg/l). Based on the ADL Survey data and statistical analysis, the tested soil

does not represent significant environmental or health hazards and, according to the soil reuse agreement between the DTSC and Caltrans, the soil can be classified as non-hazardous unregulated soil and can be reused on site without restriction. Per the soil reuse agreement, a Lead Compliance Plan is required for worker safety.

Asbestos-Containing Material

Asbestos is a generic commercial description for a group of naturally occurring mineral substances that is used in buildings and manufacturing because of its fire resistance. Asbestos was commonly used in many building materials prior to 1978 and may have been used up until the early 1980s. Asbestos-containing materials (ACM) includes fireproofing, acoustic ceiling material, transite pipe, roofing materials, thermal insulation, support piers, expansion joint material in bridges, asphalt, concrete, and other building materials. It is of primary concern when it is friable (i.e., material that can be easily crumbled). Asbestos is still used in building materials today, though its use is uncommon due to the associated hazards.

Under Alternative 2, permanent full acquisition of the Burger King property (18611 Dexter Avenue) will be needed to build a direct connection for right turn movements between SB Dexter Avenue and WB SR-74. The Burger King building structure was built in 1999. No other building structures or bridge structures will be disturbed by the Project. Although the Burger King building was recently constructed, the building may still contain ACM.

Lead-Based Paint

Regulatory actions restricted the amount of lead in paints and primers manufactured after January 1, 1978, and limited the uses of paints in areas where consumers will have direct access to painted surfaces in non-industrial facilities. Prior to 1978, lead-based paint (LBP) may have been used in construction or maintenance of building and road structures, including bridges. Other sources of LBP include painted curbs, utility poles, and roadway striping.

Under Alternative 2, permanent full acquisition of the Burger King property (18611 Dexter Avenue) will be needed to build a direct connection for right turn movements between SB Dexter Avenue and WB SR-74. The Burger King building structure was built in 1999. No other building structures or bridge structures will be disturbed by the Project. Although the Burger King building was recently constructed, the building may still contain LBP.

Polychlorinated Biphenyls

Utility pole- and pad-mounted electrical transformers and light ballasts and electrical equipment within industrial building structures may potentially contain polychlorinated biphenyls (PCB). There are utility pole- and pad-mounted transformers located within the Project limits that may contain

PCBs. Soil in unpaved locations surrounding the transformers may also contain PCBs. In addition, under Alternative 2, permanent full acquisition of the Burger King property (18611 Dexter Avenue) will be needed to build a direct connection for right turn movements between SB Dexter Avenue and WB SR-74. Light ballasts within the Burger King building may also contain PCBs.

Treated Wood Waste

Wooden utility poles, road signs, thrie beam barrier, piles, and railroad ties, as well as wood used to support metal beam guardrails, may contain preserving chemicals that protect against insects and fungal decay. These chemicals, which may be hazardous, include creosote and pentachlorophenol, and treatment compounds such as copper azole, alkaline copper quaternary, chromate copper arsenate, and other associated compounds. Wooden utility poles are located within the Project limits and may contain creosote and pentachlorophenol.

Paint and Thermoplastic Striping

Historically, chrome yellow (containing lead chromate) was used as the primary yellow pigment in traffic lane paint and thermoplastic striping (PTS). In California, lead chromate traffic striping was phased out in waterborne traffic paint between 1997 and 2000 and in thermoplastic striping by 2004. The concentrations of lead chromate in the PTS applied to roadways will classify waste PTS as hazardous. Given the recent phase out of lead chromate containing PTS, it is generally assumed that existing yellow PTS associated with roadway markings within a given Caltrans construction project area contains lead and chromium, unless it has been demonstrated that lead or chromium are not present (e.g., analytical data or definitive identification of the PTS source material). Therefore, a potential exists for hazardous thermoplastic striping to be present within the Project limits.

2.17.3 Environmental Consequences

2.17.3.1 Temporary Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be constructed. Therefore, no temporary impact related to hazardous waste or materials will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Sites of Concern

The ISA identifies three gas stations as REC sites due to the proximity of existing underground storage tanks (UST) to the Project limits, they are: Chevron (18451 Dexter Avenue), ARCO (29355 Central Avenue); and Circle K/ExxonMobil (29300 Central Avenue). However, the risk of these three properties of impacting the Project is considered to be low because no open cases involving leaking underground storage tanks (LUST) or spills are associated with the properties. In addition, no deed restrictions, environmental liens or activity use limitations were identified from the EDR database search and the agency records review. Past LUST cases involving soil and groundwater contamination at ARCO and Circle K/Mobile in 2002 and 2001, respectively, have been closed indicating site remediation activities have been completed.

The ISA identifies the Elsinore Gas Co. Gas Plant to be located 0.50-mile south-southeast of the Project limits. The site was previously used as a manufactured gas plant in 1920 through 1929. From 1923 to 1953 this facility was used as a storage for natural gas. The site is now currently vacant and for sale. During site operation activities, soil was contaminated with polynuclear aromatic hydrocarbons. DTSC has determined that all appropriate removal/remedial actions have been completed and that all acceptable engineering practices were implemented and the site requires no operation and maintenance and monitoring efforts. The risk of this site of impacting the Project is considered to be low since no ROW acquisition will be required of this site, no open cases involving LUSTs or spills are associated with this property, and previous soil contamination associated with past operation use of the site has been remediated.

These sites and the other properties listed in Table 2.17-1 were found to have a low potential to adversely affect the Project.

Other Conditions of Concern

Hazardous wastes and materials may be encountered during construction activities for Alternative 2, as described below. Hazardous materials will be properly handled, contained, transported, and disposed of in compliance with applicable regulations and requirements, which may include the RCRA, the Clean Air Act, the CWA, the California DTSC Environmental Health Standards for the Management of Hazardous Waste, the provisions of the Riverside County Department of Environmental Health Hazardous Materials Branch, and USDOT hazardous materials regulations. Measures HAZ-1 through HAZ-10 describe efforts that will be made to avoid or minimize adverse impact with known or suspected hazardous materials and wastes during construction.

Aerially Deposited Lead

Aerially deposited lead (ADL) from the historical use of leaded gasoline, exists along roadways throughout California. There is the likely presence of soils with elevated concentrations of lead as a result of ADL on the state highway system ROW within the limits of the Project alternatives. Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed under the July 1, 2016, ADL Agreement between Caltrans and the California Department of Toxic Substances Control. This ADL Agreement allows such soils to be safely reused within the Project limits as long as all requirements of the ADL Agreement are met.

Soil along the mainline of I-15 within the Project limits and along the SR-74 on- and off-ramps do not represent significant environmental or health hazards and, according to the soil reuse agreement between the DTSC and Caltrans, the soil can be classified as unregulated soil and can be reused on site without restriction, as identified in Measure HAZ-1.

Asbestos-Containing Materials

Under Alternative 2, permanent full acquisition of the Burger King property (18611 Dexter Avenue) will be needed to build a direct connection for right turn movements between SB Dexter Avenue and WB SR-74. As such, ACM sampling of the Burger King building structure and soil surrounding the structure will be required during the final design (PS&E) phase, prior to any demolition or disturbance activities, as identified in Measure HAZ-2.

Lead-Based Paint

Under Alternative 2, permanent full acquisition of the Burger King property (18611 Dexter Avenue) will be needed to build a direct connection for right turn movements between SB Dexter Avenue and WB SR-74. As such, LBP sampling of the Burger King building structure will be required during the final design (PS&E) phase, prior to any demolition or disturbance activities, as identified in Measure HAZ-3.

Polychlorinated Biphenyls

Utility pole- and pad mounted electrical transformers that are located within the Project limits under Alternative 2 and soil in unpaved locations surrounding the transformers that will be disturbed by the Project will need to be sampled for PCBs during the final design (PS&E) phase and prior to construction activities, as identified in Measure HAZ-4. In addition, under Alternative 2, permanent full acquisition of the Burger King property (18611 Dexter Avenue) will be needed to build a direct connection for right turn movements between SB Dexter Avenue and WB SR-74. Light ballasts within the Burger King building will need to be sampled for PCBs during the final design (PS&E) phase and prior to construction activities, also identified in Measure HAZ-4.

Treated Wood Waste

There are wooden utility poles located within the Project limits. Treated wood objects removed from the Project corridor are classified as treated wood waste (TWW). The handling and removal of any TWW will be conducted in accordance with Chapter 34, Title 22 California Code of Regulations Sections 67386.1 through 67386.12, "Alternative Management Standards for Treated Wood Waste." All TWW should be properly disposed at a landfill permitted to accept TWW, as identified in Measure HAZ-5.

Paint and Thermoplastic Striping

Paint used for traffic striping and pavement marking may contain lead chromate. During construction, the City will ensure that sampling, analysis, removal, and disposal of any traffic striping and pavement materials will be completed in accordance with Caltrans and DTSC requirements, as identified in Measure HAZ-6.

Based on the discussion above, with the implementation of Measures HAZ-1 through HAZ-10, no substantial temporary impact associated with hazardous waste or materials will occur under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

The Project limits and construction activities for Alternative 3 (Preferred Alternative) is similar to that of Alternative 2. Alternative 3 (Preferred Alternative) will include the same potential hazardous waste/material sites as Alternative 2. However, Alternative 2 will require full acquisition of the Burger King property (18611 Dexter Avenue) whereas Alternative 3 (Preferred Alternative) will only require partial acquisition and TCE of the same property. Since Alternative 3 (Preferred Alternative) will not result in any impacts to the building structure, potential hazardous waste/materials associated with ACM within building materials, LBP on the building structure, and PCB within light ballasts will not be a concern.

All other potential hazardous waste/material concerns associated with ADL, PCB content in utility and pad-mounted electrical transformers, TWW, and paint and thermoplastic striping identified under Alternative 2, will be applicable under Alternative 3 (Preferred Alternative). All hazardous wastes and materials will be handled, transported, and disposed of in accordance with applicable federal, state, and local regulations and requirements. Therefore, with the implementation of Measures HW-1 through HW-10, Alternative 3 (Preferred Alternative) will not result in substantial adverse impact related to hazardous wastes and materials.

2.17.3.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be implemented. Therefore, no permanent impact related to hazardous waste or materials will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Routine maintenance activities during operation of Alternative 2 will be required to follow applicable regulations with respect to the use, storage, handling, transport, and disposal of potentially hazardous materials. Therefore, the operation of the Project will not result in adverse permanent impact related to hazardous waste or materials under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Routine maintenance activities during operation of Alternative 3 (Preferred Alternative) will be required to follow applicable regulations with respect to the use, storage, handling, transport, and disposal of potentially hazardous materials. Therefore, the operation of the Project will not result in adverse permanent impact related to hazardous waste or materials under Alternative 3 (Preferred Alternative).

2.17.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to help protect worker health and safety, the public, and the environment. These measures will substantially reduce the likelihood of adverse impact associated with hazardous wastes or materials during construction under Alternative 2 and Alternative 3 (Preferred Alternative).

HW-1 **Aerially Deposited Lead.** During construction, the City's Resident Engineer will ensure that soil containing lead must be managed in accordance with the latest Caltrans Standard Specifications for Aerially Deposited Lead and under the July 1, 2016, ADL Agreement between Caltrans and DTSC.

HW-2 **Asbestos-Containing Materials.** Under Alternative 2 (Northbound Hook Ramps), the City's Resident Engineer will ensure that the Burger King building structure (18611 Dexter Avenue) be sampled and analyzed for ACM content during the final design (PS&E) phase and prior to any demolition or disturbance activities. Soils surrounding the building structure that will be disturbed by the Project, shall also be sampled and analyzed for ACM content.

HW-3 **Lead-Based Paint.** Under Alternative 2 (Northbound Hook Ramps), the City's Resident Engineer will ensure that the Burger King building structure (18611 Dexter Avenue) be sampled and analyzed for LBP content during the final design (PS&E) phase and prior to any demolition or disturbance activities.

HW-4 **Polychlorinated Biphenyls.** During the final design (PS&E) phase and prior to construction activities, the City's Resident Engineer will ensure that any affected electrical transformers and soil in unpaved locations surrounding the transformers that will be disturbed by the Project be sampled for PCBs. In addition, under Alternative 2 (NB Hook Ramps), the City will ensure that any light ballasts located within the Burger King building structure (18611 Dexter Avenue) that will be renovated or demolished as part of construction, be sampled and analyzed for PCB content during the final design (PS&E) phase.

HW-5 **Treated Wood Waste.** During construction, the City's Resident Engineer will ensure that treated wood objects are handled as TWW and managed per Chapter 34, Title 22 California Code of Regulations Sections 67386.1 through 67386.12, "Alternative Management Standards for Treated Wood Waste." All TWW shall be properly disposed at a landfill permitted to accept TWW.

HW-6 **Paint and Thermoplastic Striping.** During construction, the City's Resident Engineer will ensure that sampling, analysis, removal, and disposal of any traffic striping and pavement materials will be completed in accordance with Construction Program Procedure Bulletin 99-2, and the latest Caltrans Standard Specifications, and be consistent with the requirements within Caltrans Construction Manual, Chapter 7-107E Removing Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue (2019). Before disposal, the contractor is required to sample the removed material for proper waste classification. Yellow traffic stripe and pavement marking that is characterized as hazardous waste requires disposal to a DTSC-permitted Class I disposal facility.

HW-7 **Construction Health and Safety Plan.** Prior to construction, the City's Resident Engineer will ensure the development of a Health and Safety Plan (HASP) to guide all construction activities. A Certified Industrial Hygienist will review this plan, based on evaluations of construction activities, the potential hazards identified in this report, and any future assessment prepared for the Project. This plan will contain specific procedures for encountering expected and unexpected contaminants. It will prescribe safe work practices, contaminant monitoring, personal protective equipment, emergency

response procedures, and safety training requirements to protect construction workers and third parties. The plan will meet the requirements of 29 CFR 1910 and 1926, and all other applicable Federal, State, and local regulations and requirements. The designated contractor will be responsible for preparing the HASP before the start of construction.

HW-8 **Contaminated Media Management Plan.** Prior to construction, the City's Resident Engineer will ensure the preparation of a Contaminated Media Management Plan (CMMP). This plan will include procedures for contaminant monitoring and identification, temporary storage, handling, treatment, and disposal of waste and materials (including soil), in accordance with applicable Federal, State, and local regulations and requirements. The designated contractor will be responsible for preparing the CMMP before the start of construction.

HW-9 **Construction Contingency Plan.** Prior to construction, the City's Resident Engineer will ensure the preparation of a Construction Contingency Plan (CCP), in accordance with the guidance provided in Chapter 7-107 of the Caltrans Construction Manual for handling and dealing with unknown hazards. This plan will include provisions for responding to events such as the discovery of unidentified USTs, hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes during construction. This plan will address UST decommissioning, field screening, and material testing methods; mitigation and contaminant management requirements; and health and safety requirements for construction workers. If an unexpected release of hazardous substances is found in reportable quantities, the National Response Center must be notified by calling 1-800-424-8802, and cleanup must be coordinated with environmental agencies. The designated contractor will be responsible for preparing the CCP before the start of construction.

HW-10 **Lead Compliance Plan.** Prior to construction, the City's Resident Engineer will ensure that a Lead Compliance Plan (LCP) is developed by a Certified Industrial Hygienist, to protect workers from exposure to lead associated with ADL, LBP, and traffic stripe and pavement makings. The LCP will include procedures for the handling, management, sampling, and disposal of material containing lead. ADL and LBP investigations and traffic striping removal are separate tasks usually conducted by separate contractors, which each require a separate LCP.

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2.18 Air Quality

2.18.1 Regulatory Setting

2.18.1.1 Federal

Federal Clean Air Act

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act (CCAA) is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM) —which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$), Lead (Pb), and sulfur dioxide (SO_2). In addition, state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel “Conformity” requirement under the FCAA also applies.

Conformity

The conformity requirement is based on FCAA Section 176(c), which prohibits the U.S. Department of Transportation (USDOT) and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to State Implementation Plan (SIP) for attaining the NAAQS. “Transportation Conformity” applies to highway and transit projects and takes place on two levels: the regional (or planning and programming) level and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and “maintenance” (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity

requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California), sulfur dioxide (SO_2). California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years (for the RTP) and 4 years (for the FTIP). RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the FCAA and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA) make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept and scope and the "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming RTP and TIP; the project has a design concept and scope[1] that has not changed significantly from those in the RTP and TIP; project analyses have used the latest planning assumptions and EPA-approved emissions models; and in PM areas, the project complies with any control measures in the SIP. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects located in CO and PM nonattainment or maintenance areas to examine localized air quality impacts.

2.18.1.2 Regional

The South Coast Air Quality Management District (SCAQMD) develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. The SCAQMD is directly

[1] "Design concept" means the type of facility that is proposed, such as a freeway or arterial highway. "Design scope" refers to those aspects of the project that would clearly affect capacity and thus any regional emissions analysis, such as the number of lanes and the length of the project.

responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of Air Quality Management Plans (AQMP). The Final 2016 AQMP was adopted by the SCAQMD Board on March 3, 2016, and was adopted by the California ARB on March 23, 2017, for inclusion into the California SIP.

2.18.2 Affected Environment

This section is based on the *Air Quality Report* (Caltrans 2020d) prepared for the Project.

2.18.2.1 Climate

The Project is located in the City of Lake Elsinore region of Riverside County, an area within the South Coast Air Basin (SCAB), which includes Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. Air quality regulation in the SCAB is administered by SCAQMD, a regional agency created for the SCAB. Current and forecasted population for Riverside County is approximately 2.47 million in 2019 and 3.18 million in 2040. The largest industries in Riverside County are retail trade, healthcare and social assistance, and construction.

The annual average temperature varies little throughout the SCAB, ranging from the low to middle 60s (measured in degrees Fahrenheit [°F]). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The Elsinore Climatological Station, maintained by the National Oceanic and Atmospheric Administration (NOAA), is located near the Project site and is representative of meteorological conditions near the Project. The annual average maximum temperature recorded at this station is 80.6°F, and the annual average minimum is 47.2°F. January is typically the coldest month in this area of the SCAB.

The majority of rainfall in the SCAB occurs between November and April. Summer rainfall is minimal and generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern part of the SCAB along the coastal side of the mountains. The climatological station closest to the Project limits that monitors precipitation is the Elsinore Climatological Station. Average rainfall measured at this station varied from a high 2.54 inches in February to 0.26 inch or less between May and September, with an average annual total of 12.01 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

The SCAB experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high, a semi-permanent, subtropical area of high pressure located northeast of Hawaii in the North Pacific Ocean. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is

observed from midafternoon to late afternoon on hot summer days, when the smog appears to clear up suddenly. Winter inversions frequently break by midmorning.

The combination of stagnant wind conditions and low inversions produces the greatest concentration of pollutants. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino counties. In the winter, the greatest pollution problems are from CO and nitrogen oxide (NO_x) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and brighter sunshine combine to cause a reaction between hydrocarbons and NO_x to form photochemical smog.

2.18.3 Monitored Air Quality

The SCAQMD operates several air quality monitoring stations within the SCAB. The closest monitoring station to the Project limits is the Lake Elsinore Station, located at 506 West Flint Street. The location of this monitoring stations is shown on Figure 2.18-1. Table 2.18-1 lists air quality trends identified from data collected at this air quality monitoring station between 2017 and 2021.

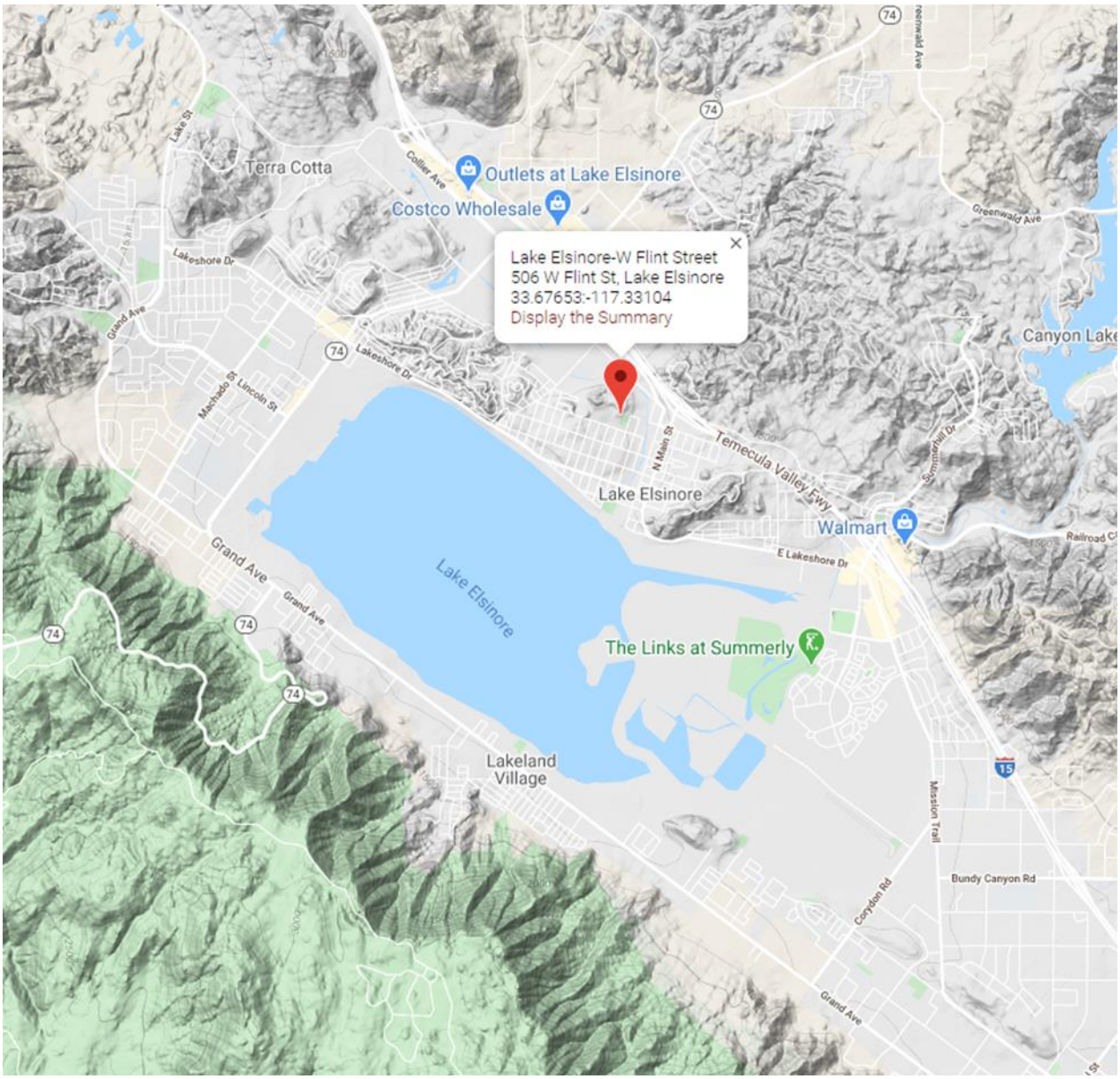

Figure 2.18-1. Map of Air Quality Monitoring Station Located Near the Project

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Table 2.18-1. Local Air Quality Levels

Pollutant	Standard	2017	2018	2019	2020	2021
O_3						
Maximum 1-hour concentration		0.121	0.116	0.108	0.130	0.118
No. days exceeded: State	0.09 ppm	23	16	4	18	18
Maximum 8-hour concentration		0.098	0.095	0.089	0.100	0.098
No. days exceeded: State	0.070 ppm	56	31	31	54	46
Federal	0.070 ppm	54	30	28	54	44
CO						
Maximum 1-hour concentration		1.2	1.1	1.6	0.9	0.9
No. days exceeded: State	20 ppm	0	0	0	0	0
Federal	35 ppm	0	0	0	0	0
Maximum 8-hour concentration		0.8	0.8	0.7	0.7	0.8
No. days exceeded: State	9 ppm	0	0	0	0	0
Federal	9 ppm	0	0	0	0	0
PM_{10}						
Maximum 24-hour concentration		134.1	105.3	93.8	192.4	90.0
No. days exceeded: State	50 µg/m^3	9	9	5	7	4
Federal	150 µg/m^3	0	0	0	1	0
Maximum annual concentration		23.6	23.3	19.7	23.7	22.4
Exceeded: State	20 µg/m^3	Yes	Yes	No	Yes	Yes
$PM_{2.5}$						
Maximum 24-hour concentration		27.2	31.3	17.6	41.6	28.8
No. days exceeded: Federal	35 µg/m^3	0	0	0	0	0

Table 2.18-1. Local Air Quality Levels

Pollutant		Standard	2017	2018	2019	2020	2021
Maximum annual concentration			9.7	11.3	6.4	7.2	6.9
Exceeded:	State	12 µg/m^3	No	No	No	No	No
	Federal	12.0 µg/m^3	No	No	No	No	No
NO_2							
Maximum 1-hour concentration			49.0	41.3	38.0	43.6	43.7
No. days exceeded:	State	180 ppb	0	0	0	0	0
	Federal	100 ppb	0	0	0	0	0
Maximum annual concentration			8.1	8.2	8.5	7.4	7.0
Exceeded:	State	30 ppb	No	No	No	No	No
	Federal	53 ppb	No	No	No	No	No

Source: Caltrans 2020d, CARB 2023, U.S. EPA 2022a, and SCAQMD 2022

Notes:

CO=carbon monoxide; NO_2=nitrogen dioxide; O_3=ozone; PM_{10}=particles of 10 micrometers or smaller; $PM_{2.5}$=particles of 2.5 micrometers or smaller

2.18.3.1 Sensitive Receptors

Sensitive receptors include residential areas, schools, hospitals, other health care facilities, child/day care facilities, parks, and playgrounds. Sensitive land uses within the area of the Project limits include residences and restaurants. Existing land uses within the community impact study area, which includes the Project limits, are shown on Figure 2.18-2.

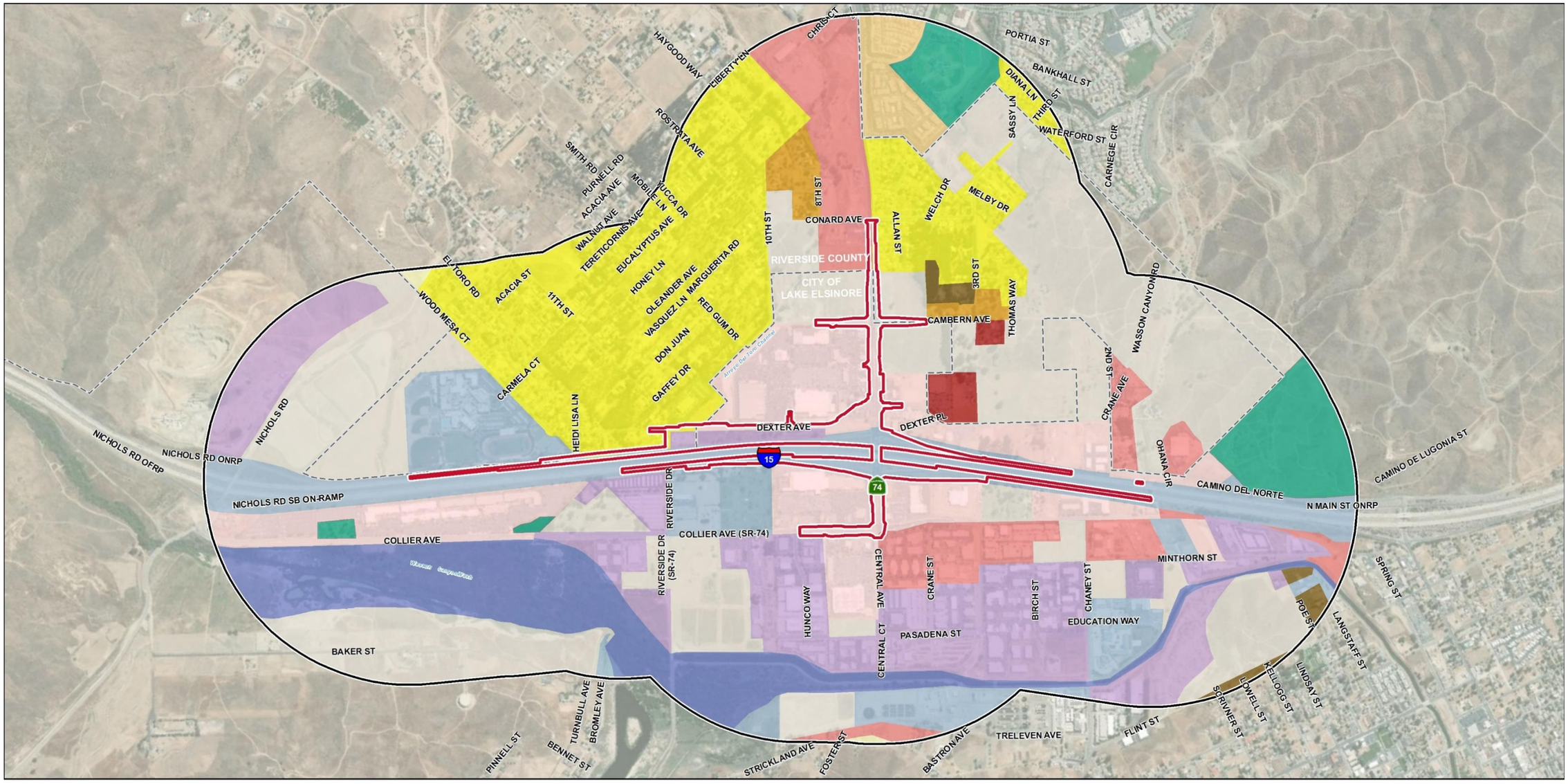

Figure 2.18-2. Existing Land Uses

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2.18.3.2 Criteria Pollutant Attainment/Nonattainment Status

The FCAA requires the U.S. EPA to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved. The U.S. EPA classified the SCAB as attainment/maintenance for CO, PM_{10}, and NO_2 and nonattainment for O_3 and $PM_{2.5}$. The health effects and sources of the criteria pollutants are described in Table 2.18-2. The NAAQS for the criteria pollutants and the associated federal attainment status within the SCAB are summarized in Table 2.18-3.

Under the CCAA, the Riverside County portion of the SCAB is designated as a nonattainment area for O_3, $PM_{2.5}$, and PM_{10}. The California Ambient Air Quality Standards (CAAQS) for the criteria pollutants and the associated state attainment status within the SCAB are summarized in Table 2.18-3.

Table 2.18-2. Air Pollutant Effects and Sources

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
O_3	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and NOx in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.
CO	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Respirable Particulate Matter (PM_{10})	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic and other aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke & vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.

Table 2.18-2. Air Pollutant Effects and Sources

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Fine Particulate Matter ($PM_{2.5}$)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many toxic and other aerosol and solid compounds are part of $PM_{2.5}$	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NOx, SOx, ammonia, and ROG.
NO_2	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the “NOx” group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.
SO_2	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.
Pb	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also, a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.
Sulfates	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.
H_2S	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.

Table 2.18-2. Air Pollutant Effects and Sources

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
VRP	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.
Vinyl Chloride	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes

Notes:

CO=carbon monoxide; H_2S=hydrogen sulfide; NO_2=nitrogen dioxide; NOx=nitrogen oxides; O_3=ozone; Pb=lead; PM_{10}=particles of 10 micrometers or smaller; $PM_{2.5}$=particles of 2.5 micrometers or smaller; ROG=reactive organic gas; SO_2=sulfur dioxide; SOx=sulfur oxides; VOC=volatile organic compound; VRP=Visibility Reducing Particles

Table 2.18-3. State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[a]	Federal Standard[b]	State Project Attainment Status	Federal Project Area Attainment Status
O_3[c]	1 hour	0.09 ppm	—	Nonattainment	—
O_3	8 hours	0.070 ppm	0.070 ppm (4th highest in 3 years)	Nonattainment	Extreme Nonattainment
CO[d]	1 hour	20 ppm	35 ppm	Attainment	Attainment/ Maintenance
CO	8 hours	9.0 ppm	9 ppm	Attainment	Attainment/ Maintenance
CO	8 hours (Lake Tahoe)	6 ppm	—	—	—
PM_{10}[e]	24 hours	50 µg/m^3	150 µg/m^3 (expected number of	Nonattainment	Attainment/ Maintenance

Table 2.18-3. State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[a]	Federal Standard[b]	State Project Attainment Status	Federal Project Area Attainment Status
			days above standard < or equal to 1)		
PM_{10}	Annual	20 µg/m^3	—	Nonattainment	—
$PM_{2.5}$ [f]	24 hours	—	35 µg/m^3 [e]	—	Serious Nonattainment
$PM_{2.5}$	Annual	12 µg/m^3	12.0 µg/m^3	Nonattainment	Serious Nonattainment
NO_2	1 hour	0.18 ppm	0.100 ppm[j]	Attainment	Attainment/ Maintenance
NO_2	Annual	0.030 ppm	0.053 ppm	Attainment	Attainment/ Maintenance
SO_2[h]	1 hour	0.25 ppm	0.075 ppm (99th percentile over 3 years)	Attainment	Attainment/ Unclassified
SO_2	3 hours	—	0.5 ppm[i]	—	Attainment/ Unclassified
SO_2	24 hours	0.04 ppm	0.14 ppm (for certain areas)	Attainment	Attainment/ Unclassified
SO_2	Annual	—	0.030 ppm (for certain areas)	—	Attainment/ Unclassified
Pb[j]	Monthly	1.5 µg/m^3	—	Attainment	—
Pb	Calendar Quarter	—	1.5 µg/m^3 (for certain areas)	—	Nonattainment (Los Angeles County only)

Table 2.18-3. State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[a]	Federal Standard[b]	State Project Attainment Status	Federal Project Area Attainment Status
Pb	Rolling 3-month average	—	0.15 µg/m^3 [k]	—	Nonattainment (Los Angeles County only)
Sulfates	24 hours	25 µg/m^3	—	Attainment	—
H_2S	1 hour	0.03 ppm	—	Attainment	—
VRP[m]	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70 percent	—	Attainment	—
Vinyl Chloride[j]	24 hours	0.01 ppm	—	Attainment	—

Source: Adapted from the CARB Air Quality Standards chart (CARB 2016)

Notes:

[a] California standards for ozone, carbon monoxide (except 8 hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] Federal standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8 hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24 hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

[c] On October 1, 2015, the national 8 hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. Transportation conformity applies in newly designated nonattainment areas for the 2015 national 8 hour ozone primary and secondary standards on and after August 4th, 2019 (see Transportation Conformity Guidance for 2015 Ozone NAAQS Nonattainment Areas).

[d] Transportation conformity requirements for CO no longer apply after June 1, 2018, for the following California Carbon Monoxide Maintenance Areas (see U.S. EPA CO Maintenance Letter).

[e] On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12 µg/m3. The existing national 24 hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24 hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[f] The 65 µg/m3 $PM_{2.5}$ (24 hr) NAAQS was not revoked when the 35 µg/m3 NAAQS was promulgated in 2006. The 15 µg/m3 annual PM2.5 standard was not revoked when the 12 µg/m3 standard was promulgated in 2012. Therefore, for areas designated nonattainment or nonattainment/maintenance for the 1997 and or 2006 PM2.5 NAAQS, conformity requirements still apply until the NAAQS are fully revoked.

[g] Final 1 hour NO2 NAAQS published in the Federal Register on 2/9/2010, effective 3/9/2010. Initial area designation for California (2012) was attainment/unclassifiable throughout. Project level hot spot analysis requirements do not currently exist. Near road monitoring starting in 2013 may cause re designation to nonattainment in some areas after 2016.

[h] On June 2, 2010, a new 1 hour SO2 standard was established and the existing 24 hour and annual primary standards were revoked. To attain the 1 hour national standard, the 3 year average of the annual 99th percentile of the 1 hour daily maximum concentrations at each site must not exceed 75ppb. The 1971 SO2 national standards (24 hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[l] Secondary standard, the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant rather than health. Conformity and environmental analysis address both primary and secondary NAAQS.

[j] The CARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM10 and, in larger proportion, PM2.5. Both the CARB and U.S. EPA have identified lead and various organic compounds that are precursors to ozone and PM2.5 as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.

[k] Lead NAAQS are not considered in Transportation Conformity analysis.

[l] In 1989, the CARB converted both the general statewide 10 mile visibility standard and the Lake Tahoe 30 mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

µg/m3=micrograms per cubic meter; CARB=California Air Resources Board; CO=Carbon Monoxide; CO2=carbon dioxide; EPA=Environmental Protection Agency; H2S=Hydrogen Sulfide; NAAQS=National Ambient Air Quality Standards; NO2=Nitrogen Dioxide; O3=ozone; Pb=Lead; PM10=particles of 10 micrometers or smaller; PM2.5=particles of 2.5 micrometers or smaller; ppm=parts per million; SO2=Sulfur Dioxide; U.S.=United States; VRP=Visibility Reducing Particles

2.18.4 Environmental Consequences

2.18.4.1 Temporary Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be constructed, and traffic operations and safety will not be improved. Alternative 1 (No-Build) will maintain the facility in its current condition and, therefore, will not result in temporary impacts to air quality.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (Northbound Hook Ramps)

Construction Emissions

Site preparation and roadway construction will involve clearing, cut-and-fill activities, grading, removing or improving existing roadways, and paving roadway surfaces. During construction of the Project under Alternative 2, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated and will include CO, NO_x, volatile organic compounds (VOC), directly emitted PM_{10} and $PM_{2.5}$, and toxic air contaminants (TAC), such as diesel particulate matter (DPM). Construction activities are expected to increase traffic congestion in the area, resulting in increases in emissions from traffic during the delays. These emissions will be temporary and limited to the immediate area surrounding the construction site.

Since the construction activities anticipated for both Build Alternatives will be the same, the construction emissions were estimated for the Project under Alternative 2 and Alternative 3 (Preferred Alternative), using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, Version 9.0.1. While the model was developed for Sacramento conditions in terms of fleet emission factors, silt loading, and other modeling assumptions, it is considered adequate for estimating road construction emissions by the SCAQMD in its CEQA guidance. The SCAQMD notes that the Road Construction Emissions Model can be used to assist roadway project proponents with determining the emission impacts of its projects (SCAQMD 2019) and is used for that purpose in this analysis. Construction-related emissions for Alternative 2 and Alternative 3 (Preferred Alternative) are presented in Table 2.18-4.

Table 2.18-4. Construction Emissions for Alternative 2 and Alternative 3 (Preferred Alternative)

Project Phase	PM_{10} (pounds/day)	$PM_{2.5}$ (pounds/day)	CO (pounds/day)	NO_x (pounds/day)	CO_2e (pounds/day)
Grubbing/land clearing	50.6	10.9	12.1	14.3	4,907.6
Grading/excavation	53.2	13.2	65.8	75.9	16,549.1
Drainage/utilities/ sub-grade	52.0	12.2	46.3	49.3	11,405.6
Paving	1.0	0.6	16.1	20.1	8,340.9
Maximum daily	53.2	13.2	65.8	75.9	16,549.1
Project total (tons)	**8.9**	**2.1**	**9.3**	**10.6**	**2,496.9**

Notes:

CO=carbon monoxide; CO2e=carbon dioxide equivalent; NOX=nitrogen oxide; PM10=particles of 10 micrometers or smaller; PM2.5=particles of 2.5 micrometers or smaller

The emissions are based on the best information available at the time of calculations and assume that the schedule for all improvements is anticipated to begin in 2024 and will take 14 to 18 months to complete. It was assumed that all off-road construction equipment will meet Tier 4 emission standards. Default equipment assumptions for the Road Construction Emissions Model were used in developing the emissions estimates, except for the roundtrip distance for grading and excavation Project phase, which the program estimated at 30 miles but was changed to 2 miles since the cut and fill earthwork volumes for the Project are almost the same, and material generated from cut will be moved to locations where fill is needed within the Project area. The emissions listed in Table 2.18-4 represent the peak daily construction emissions that will be generated by Alternative 2.

Implementation of the minimization identified as Measures AQ-1 through AQ-10, some of which may also be required for other purposes such as storm water pollution control, will reduce air quality impacts resulting from construction activities. Please note that although these measures are anticipated to reduce construction-related emissions, these reductions cannot be quantified at this time.

Based on the discussion above, with the implementation of Measures AQ-1 through AQ-10, no substantial temporary impacts to air quality, as it relates to construction emissions, will occur during construction under Alternative 2.

Construction Conformity

Construction activities under Alternative 2 will not last for more than 5 years at one general location, so construction-related emissions do not need to be included in regional and project-level conformity analysis (40 CFR 93.123(c)(5)).

Asbestos

The Project is located in Riverside County, which is not among the counties listed as containing serpentine and ultramafic rock. Therefore, the impact from naturally occurring asbestos (NOA) during Project construction will be minimal to none.

Asbestos was used in many building materials prior to 1978 and may have been used up until the early 1980s. ACM include fireproofing, acoustic ceiling material, transite pipe, roofing materials, thermal insulation, support piers, expansion joint material in bridges, asphalt, concrete, and other building materials. It is of primary concern when it is friable (e.g., material that can be easily crumbled). During demolition, if not properly identified and mitigated, asbestos fibers could become airborne.

The full acquisition of the Burger King property (18611 Dexter Avenue) will occur under Alternative 2 and building structure may contain ACM. The Burger King building structure will be sampled and analyzed for ACM content during the final design (PS&E) phase, prior to any demolition or disturbance activities. Soils surrounding the building structure that will be disturbed by the Project, will also be sampled and analyzed for ACM content during final design (PS&E).

Lead

Regulatory actions restricted the amount of Pb in paints and primers manufactured after January 1, 1978 and limited the uses of paints in areas where consumers will have direct access to painted surfaces in non-industrial facilities. Prior to 1978, LBP may have been used in construction or maintenance of building and road structures, including bridges.

The full acquisition of the Burger King property (18611 Dexter Avenue) will occur under Alternative 2, and the building structure may contain LBP. The Burger King building structure will be sampled and analyzed for LBP during the final design (PS&E) phase, prior to any demolition or disturbance activities.

Previous undisturbed soil areas or unpaved areas within Caltrans ROW along the shoulders of I-15 have the potential to contain ADL. An ADL survey was conducted for the Project along the current

and SR-74 on- and off-ramps. Based on the ADL Survey data and statistical analysis, the soil does not represent significant environmental or health hazards and, according to the soil reuse agreement between the DTSC and Caltrans, the soil can be classified as unregulated soil and can be reused on site without restriction. Per the soil reuse agreement, a Lead Compliance Plan is required for worker safety.

Alternative 3 (Preferred Alternative; Northbound Hook Ramps with Northbound Loop Off-Ramp to Westbound State Route 74)

Alternative 3 (Preferred Alternative) will not require the full acquisition and displacement of the Burger King property. Therefore, no ACM or LBP testing will be required under Alternative 3 (Preferred Alternative).

Since the construction activities under Alternative 3 (Preferred Alternative) will be the same as Alternative 2 and will not last for more than 5 years, the findings for the construction emissions and construction conformity will be the same. With the implementation of Measures AQ-1 through AQ-10, no substantial temporary impacts to air quality, as it relates to construction emissions, will occur during construction of the Project under Alternative 3 (Preferred Alternative).

2.18.4.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be constructed, and traffic operations and safety will not be improved. In addition, under Alternative 1 (No-Build), the Project will not be consistent with the current approved 2020-2045 RTP/SCS and Amendment 1 of the Final 2023 Adopted FTIP. Therefore, there could be substantial permanent adverse impacts to air quality under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (Northbound Hook Ramps)

Regional Air Quality Conformity

If a project is not exempt from conformity requirements and is regionally significant (40 CFR 93.101), it must come from a conforming RTP and Transportation Improvement Program (TIP). The Project, under either Build Alternative is non-exempt and, as the following paragraph shows, it is included in the approved 2020-2045 RTP/SCS, 2020 RTP/SCS Proposed Final Amendment #1 and Amendment 1 of the Final 2023 Adopted FTIP.

The Project under either Build Alternative is listed in the 2020-2045 RTP/SCS, which was found to be conforming by the FHWA/FTA on December 16, 2022. The Project under either Build Alternative is also identified in Amendment 1 of the Final 2023 Adopted FTIP, which was found to be conforming by the FHWA/FTA on December 16, 2022 (Project ID: RIV060109; Description:

> AT I-15/SR-74 (CENTRAL AVE) IC JCT BTWN 1,000 FT W/O COLLIER AVE TO CONARD AVE: REMOVE/REPLACE EXIST NB ON-RAMP WITH NB HOOK ON- AND OFF- RAMPS AT DEXTER AVE NORTH OF CENTRAL AVE, ADD NB LOOP OFF-RAMP AT CENTRAL AVE, ADD AUX LANE SEGMENTS AT ON-/OFF-RAMPS, WIDEN SB ON-/OFF-RAMPS AND SEGMENTS OF CENTRAL AVE AND DEXTER AVE. PM LIMITS FOR SR-74: R15.97 to 17.82 (EA: 0F3100).

The design concept and scope of the Project under either Build Alternative is consistent with the Project description in the 2020-2045 RTP, 2020 RTP/SCS Proposed Final Amendment #1, and Amendment 1 of the Final 2023 Adopted FTIP, and the "open to traffic" assumptions of the SCAG's regional emissions analysis. The 2020-2045 RTP/SCS and Amendment 1 of the Final 2023 Adopted FTIP listings are included in Appendix H. The Project under either Build Alternative will also comply with all SCAQMD requirements.

Project Level Conformity

Because the Project is located within an attainment/maintenance area for CO and PM_{10} and a nonattainment area for federal $PM_{2.5}$ standards, local hot-spot screening analyses for CO, $PM_{2.5}$, and PM_{10} are required for conformity purposes.

Public involvement included advertising the availability of the conformity analysis for 33 days beginning on November 10, 2023, as part of the public review period for the IS/EA, and 15 days beginning on May 18, 2024, as a standalone public notice. No public comments were received. On July 17, 2024, the Request for FHWA Conformity Determination was submitted to the FHWA. The FHWA Conformity Determination for the Project was received on August 9, 2024. The FHWA Conformity Determination letter is included in Appendix L. The results of these hot-spot analyses for either Build Alternative are provided below.

Carbon Monoxide

The California Project-Level Carbon Monoxide Protocol (CO Protocol) was used to analyze CO impacts for the Project. The hot-spot analysis covered the most congested intersections affected by the Project in Opening Year (2025) and Horizon Year (2045).

The ambient air quality impacts of traffic emissions were evaluated qualitatively according to the CO Protocol. Although the Project under either Build Alternative will potentially worsen air quality, it was determined that the CO concentrations at the intersections under study will be lower than those reported for the maximum of the intersections analyzed in the CO attainment plan. Therefore, the

Project under either Build Alternative screens at Level 7 of the flow chart in Figure 3 in the CO Protocol and will not have the potential for causing or worsening violation of the NAAQS for CO.

Particulate Matter

The Project is located within a nonattainment area for federal $PM_{2.5}$ standards and within an attainment/maintenance area for the federal PM_{10} standards. Therefore, per 40 CFR, Part 93, analyses are required for conformity purposes. However, the U.S. EPA does not require hot-spot analyses, qualitative or quantitative, for projects that are not listed in Section 93.123(b)(1) as an air quality concern. The Project under either Build Alternative does not qualify as a project of air quality concern (POAQC) for the following reasons:

i. The Project, under either Build Alternative, is not a new or expanded highway project. The Project, under either Build Alternative, reconstructs the existing I-15/SR-74 interchange without increasing capacity. Table 2.18-5 through Table 2.18-9 summarize the traffic volumes along I-15 and SR-74 in the traffic study area of the Project under both Build Alternatives. As shown, the traffic volumes along I-15 will not change with either Build Alternative. In addition, Alternative 2 will redistribute traffic along SR-74 without increasing the total traffic volumes. Therefore, the Build Alternatives will not result in a significant increase in the number of diesel vehicles.

ii. The LOS conditions in the Project vicinity with and without the Project are shown in Table 2.18-10. The Project Build Alternatives will maintain or improve the peak hour LOS at the local intersections, as compared to the No-Build.

iii. The Project under either Build Alternative, does not include the construction of a new bus or rail terminal.

iv. The Project, under either Build Alternative, does not expand an existing bus or rail terminal.

v. The Project, under either Build Alternative, is not in or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ and PM_{10} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Table 2.18-5. Opening Year (2025) and Horizon Year (2045) No-Build Highway Section Daily Volumes

Freeway/ Roadway	Section		Opening Year (2025) Volumes			Horizon Year (2045) Volumes		
	Start	End	Total ADT	Truck ADT	Truck (%)	Total ADT	Truck ADT	Truck (%)
I-15	Railroad Canyon Road	Main Street	146,600	13,487	9.2	187,600	17,259	9.2
I-15	Main Street	SR-74/Central Avenue	142,500	14,963	10.5	191,400	20,097	10.5
I-15	SR-74/Central Avenue	Nichols Road	128,900	9,668	7.5	177,900	13,343	7.5
I-15	Nichols Road	Lake Street	124,500	9,338	7.5	182,500	13,688	7.5
SR-74	Pasadena Street	Collier Avenue	8,300	747	9.0	14,600	1,314	9.0
SR-74	Collier Avenue	SB I-15 Ramps	34,700	3,123	9.0	45,400	4,086	9.0
SR-74	SB I-15 Ramps	NB I-15 Ramps	40,200	3,618	9.0	58,300	5,247	9.0
SR-74	NB I-15 Ramps	Dexter Avenue	44,100	3,969	9.0	62,800	5,652	9.0
SR-74	Dexter Avenue	Cambern Avenue	39,700	3,573	9.0	54,500	4,905	9.0

Source: Caltrans 2020e

Notes:

ADT=average daily traffic; I-15=Interstate 15; NB=northbound; SB=southbound; SR-74=State Route 74

Table 2.18-6. Opening Year (2025) Alternative 2 Highway Section Daily Volumes

Freeway/ Roadway	Section		Opening Year (2025) Volumes			Increase from No-Build		
	Start	End	Total ADT	Truck ADT	Truck (%)	Total ADT	Truck ADT	Truck (%)
I-15	Railroad Canyon Road	Main Street	146,600	13,487	9.2	0	0	0
I-15	Main Street	SR-74/Central Avenue	142,500	14,963	10.5	0	0	0
I-15	SR-74/Central Avenue	Nichols Road	128,900	9,668	7.5	0	0	0
I-15	Nichols Road	Lake Street	124,500	9,338	7.5	0	0	0
SR-74	Pasadena Street	Collier Avenue	8,300	747	9.0	0	0	0
SR-74	Collier Avenue	SB I-15 Ramps	34,700	3,123	9.0	0	0	0
SR-74	SB I-15 Ramps	NB I-15 Ramps	40,200	3,618	9.0	0	0	0
SR-74	NB I-15 Ramps	Dexter Avenue	45,200	4,068	9.0	1,100	99	2.5
SR-74	Dexter Avenue	Cambern Avenue	38,100	3,429	9.0	-1,600	-144	-4.0

Source: Caltrans 2020e

Notes:

ADT=average daily traffic; I-15=Interstate 15; NB=northbound; SB=southbound; SR-74=State Route 74

Table 2.18-7. Horizon Year (2045) Alternative 2 Highway Section Daily Volumes

Freeway/ Roadway	Section		Horizon Year (2045) Volumes			Increase from No-Build		
	Start	End	Total ADT	Truck ADT	Truck (%)	Total ADT	Truck ADT	Truck (%)
I-15	Railroad Canyon Road	Main Street	187,600	17,259	9.2	0	0	0
I-15	Main Street	SR-74/Central Avenue	191,400	20,097	10.5	0	0	0
I-15	SR-74/Central Avenue	Nichols Road	177,900	13,343	7.5	0	0	0
I-15	Nichols Road	Lake Street	182,500	13,688	7.5	0	0	0
SR-74	Pasadena Street	Collier Avenue	14,600	1,314	9.0	0	0	0
SR-74	Collier Avenue	SB I-15 Ramps	45,400	4,086	9.0	0	0	0
SR-74	SB I-15 Ramps	NB I-15 Ramps	58,300	5,247	9.0	0	0	0
SR-74	NB I-15 Ramps	Dexter Avenue	64,100	5,769	9.0	1,300	117	2.1
SR-74	Dexter Avenue	Cambern Avenue	52,400	4,716	9.0	-2,100	-189	-3.9

Source: Caltrans 2020e

Notes:

ADT=average daily traffic; I-15=Interstate 15; NB=northbound; SB=southbound; SR-74=State Route 74

Table 2.18-8. Opening Year (2025) Alternative 3 (Preferred Alternative) Highway Section Daily Volumes

Freeway/ Roadway	Section		Opening Year (2025) Volumes			Increase from No-Build		
	Start	End	Total ADT	Truck ADT	Truck (%)	Total ADT	Truck ADT	Truck (%)
I-15	Railroad Canyon Road	Main Street	146,600	13,487	9.2	0	0	0
I-15	Main Street	SR-74/Central Avenue	142,500	14,963	10.5	0	0	0
I-15	SR-74/Central Avenue	Nichols Road	128,900	9,668	7.5	0	0	0
I-15	Nichols Road	Lake Street	124,500	9,338	7.5	0	0	0
SR-74	Pasadena Street	Collier Avenue	8,300	747	9.0	0	0	0
SR-74	Collier Avenue	SB I-15 Ramps	34,700	3,123	9.0	0	0	0
SR-74	SB I-15 Ramps	NB I-15 Ramps	40,200	3,618	9.0	0	0	0
SR-74	NB I-15 Ramps	Dexter Avenue	40,200	3,618	9.0	-3,900	-351	-8.8
SR-74	Dexter Avenue	Cambern Avenue	38,100	3,429	9.0	-1,600	-144	-4.0

Source: Caltrans 2020e

Notes:

ADT=average daily traffic; I-15=Interstate 15; NB=northbound; SB=southbound; SR-74=State Route 74

Table 2.18-9. Horizon Year (2045) Alternative 3 (Preferred Alternative) Highway Section Daily Volumes

Freeway/ Roadway	Section		Horizon Year (2045) Volumes			Increase from No-Build		
	Start	End	Total ADT	Truck ADT	Truck (%)	Total ADT	Truck ADT	Truck (%)
I-15	Railroad Canyon Road	Main Street	187,600	17,259	9.2	0	0	0
I-15	Main Street	SR-74/Central Avenue	191,400	20,097	10.5	0	0	0
I-15	SR-74/Central Avenue	Nichols Road	177,900	13,343	7.5	0	0	0
I-15	Nichols Road	Lake Street	182,500	13,688	7.5	0	0	0
SR-74	Pasadena Street	Collier Avenue	14,600	1,314	9.0	0	0	0
SR-74	Collier Avenue	SB I-15 Ramps	45,400	4,086	9.0	0	0	0
SR-74	SB I-15 Ramps	NB I-15 Ramps	58,300	5,247	9.0	0	0	0
SR-74	NB I-15 Ramps	Dexter Avenue	57,700	5,193	9.0	-5,100	-459	-8.1
SR-74	Dexter Avenue	Cambern Avenue	52,400	4,716	9.0	-2,100	-189	-3.9

Source: Caltrans 2020e

Notes:

ADT=average daily traffic; I-15=Interstate 15; NB=northbound; SB=southbound; SR-74=State Route 74

Table 2.18-10. Summary of Intersection Levels of Service

No.	Intersection		ALTERNATIVE 1 (No Build)				ALTERNATIVE 2				ALTERNATIVE 3 (Preferred Alternative)			
			Opening Year 2025		Horizon Year 2045		Opening Year 2025		Horizon Year 2045		Opening Year 2025		Horizon Year 2045	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Nichols Road/ Collier Avenue	LOS	B	B	B	B	B	B	B	B	B	B	B	B
		Delay (seconds)	15	15	16	20	15	15	16	16	15	15	16	16
2	Nichols Road/ I-15 SB Ramps	LOS	B	A	B	B	B	A	B	B	B	A	B	B
		Delay (seconds)	11	9	14	13	11	9	14	14	11	9	14	14
3	Nichols Road/ I-15 NB Ramps	LOS	B	C	B	B	B	C	B	B	B	C	B	B
		Delay (seconds)	13	20	16	16	13	20	16	16	13	20	16	16
4	Riverside Drive/ Collier Ave (SR-74)	LOS	B	C	C	F	B	C	B	D	B	C	B	D
		Delay (seconds)	20	24	31	193	16	21	18	40	16	20	19	38
5	Central Avenue (SR-74)/ Collier Avenue (SR-74)	LOS	C	D	F	F	C	D	D	C	C	D	D	C
		Delay (seconds)	22	37	81	201	25	51	40	34	27	53	42	28

Table 2.18-10. Summary of Intersection Levels of Service

No.	Intersection		ALTERNATIVE 1 (No Build)				ALTERNATIVE 2				ALTERNATIVE 3 (Preferred Alternative)			
			Opening Year 2025		Horizon Year 2045		Opening Year 2025		Horizon Year 2045		Opening Year 2025		Horizon Year 2045	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
6	Central Avenue (SR-74)/ I-15 SB Ramps	LOS	C	C	D	F	C	C	C	D	C	C	C	D
		Delay (seconds)	23	32	40	121	24	34	28	52	25	34	31	40
7	Central Avenue (SR-74)/ I-15 SB Ramps	LOS	C	D	D	E	A	B	A	C	B	B	B	C
		Delay (seconds)	32	49	54	75	9	11	10	24	15	16	19	22
8	Central Avenue (SR-74)/ Dexter Avenue	LOS	D	D	E	B	B	B	C	C	B	B	C	C
		Delay (seconds)	46	50	78	97	17	17	33	33	19	18	31	26
9	Central Avenue (SR-74)/ Shopping Center Driveway	LOS	C	B	E	B	A	A	B	A	A	A	B	A
		Delay (seconds)	17	11	37	61	3	5	14	9	3	4	11	8
10		LOS	A	A	C	B	A	A	B	C	A	A	B	B

Table 2.18-10. Summary of Intersection Levels of Service

No.	Intersection		ALTERNATIVE 1 (No Build)				ALTERNATIVE 2				ALTERNATIVE 3 (Preferred Alternative)			
			Opening Year 2025		Horizon Year 2045		Opening Year 2025		Horizon Year 2045		Opening Year 2025		Horizon Year 2045	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
	Central Avenue (SR-74)/ Lowe's Driveway	Delay (seconds)	4	5	21	96	5	7	12	21	5	7	11	17
11	Central Avenue (SR-74)/ Cambern Avenue	LOS	B	C	F	B	B	C	C	D	B	C	C	D
		Delay (seconds)	18	26	88	114	18	21	31	41	18	21	31	38
12	Crane Street/ Dexter Avenue	LOS	F	F	F	B	B	C	C	E	B	C	D	D
		Delay (seconds)	50	87	>180	163	11	18	22	45	10	16	34	35
13	3rd Street/ Dexter Avenue	LOS	A	F	F	B	A	A	C	C	A	A	C	C
		Delay (seconds)	9	53	>180	290	7	8	19	25	7	7	19	22
14	Main Street/ I-15 SB Ramps	LOS	A	B	B	B	A	B	B	B	A	B	B	B
		Delay (seconds)	9	11	11	15	9	11	11	15	9	11	11	15

Table 2.18-10. Summary of Intersection Levels of Service

No.	Intersection		ALTERNATIVE 1 (No Build)				ALTERNATIVE 2				ALTERNATIVE 3 (Preferred Alternative)			
			Opening Year 2025		Horizon Year 2045		Opening Year 2025		Horizon Year 2045		Opening Year 2025		Horizon Year 2045	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
15	Main Street/ I-15 NB Ramps	LOS	B	B	B	B	B	B	B	B	B	B	B	B
		Delay (seconds)	19	18	18	16	19	18	18	16	19	18	18	16
16	Dexter Avenue/ I-15 NB Ramps	LOS	–	–	–	–	B	A	B	B	B	B	C	B
		Delay (seconds)	–	–	–	–	15	9	16	11	14	11	22	11

Source: Caltrans 2020e

Notes:

I-15=Interstate 15; LOS=level of service; NB=northbound; No.=Number; SB=southbound; SR-74=State Route 74

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The project-level PM hot-spot analysis was presented to SCAG's Transportation Conformity Working Group (TCWG) for discussion and review on August 25, 2020. The PM hot-spot analysis reflects the Project description, limits, and traffic volumes and was listed under the current RTP/FTIP Project ID. The Project was determined not to be a POAQC. Therefore, the Project, under either Build Alternative, meets the Clean Air Act (CAA) requirements and 40 CFR 93.116 without any explicit hot-spot analysis. The Project, under either Build Alternative, will not create a new, or worsen an existing, PM_{10} or $PM_{2.5}$ violation.

Operational Emissions

Operational emissions take into account long-term changes in emissions due to the Project (excluding the construction phase) under either Build Alternative. The operational emissions analysis compares forecasted emissions for existing/baseline, No-Build, and the Build Alternatives.

For roadway improvement projects, regional emissions are a function of regional VMT and travel speeds. As such, the operational emissions analysis takes into account long-term changes in VMT and travel speeds expected to occur under the Build Alternatives when compared to the No Build Alternative (excluding the construction phase).[2]

The operational emissions analysis compares forecasted emissions for existing/baseline, No Build, and Build Alternatives using the VMT estimates discussed above. The regional VMT data for the existing, No Build, and Build Alternatives, along with the EMFAC2017 emission rates, were used to calculate the CO, NO_X, PM_{10}, $PM_{2.5}$, and carbon dioxide equivalent (CO_2e) emissions for the Existing Year (2018), Opening Year (2025), and Horizon Year (2045) conditions. The results of the modeling are summarized in Table 2.18-11.

Table 2.18-11. Summary of Comparative Emissions Analysis

Scenario/Analysis Year	$PM_{2.5}$ (lbs/day)	PM_{10} (lbs/day)	NO_X (lbs/day)	CO (lbs/day)	ROG (lbs/day)
Existing Year (2018) Baseline Condition	2,425.9	483.4	7,144.0	2,841.4	555.0
Opening Year (2025) No Build Condition	2,690.8	505.6	4,337.3	1,326.7	342.9

[2] Roadway capacity increases generally result in roadway network travel speed improvements and some trip redistributions.

Table 2.18-11. Summary of Comparative Emissions Analysis

Scenario/Analysis Year	$PM_{2.5}$ (lbs/day)	PM_{10} (lbs/day)	NO_X (lbs/day)	CO (lbs/day)	ROG (lbs/day)
Opening Year (2025) Alternative 2 Build Condition	2,693.6	506.2	4,341.8	1,328.0	343.2
Opening Year (2025) Alternative 3 (Preferred Alternative) Build Condition	2,690.6	505.6	4,337.0	1,326.6	342.9
Horizon Year (2045) No Build Condition	3,617.1	670.9	3,768.5	1,250.0	241.4
Horizon Year (2045) Alternative 2 Build Condition	3,621.4	671.7	3,772.9	1,251.5	241.7
Horizon Year (2045) Alternative 3 (Preferred Alternative) Build Condition	3,617.0	670.9	3,768.3	1,250.0	241.4

Notes:

CO=carbon monoxide; PM_{10}=particles of 10 micrometers or smaller; $PM_{2.5}$=particles of 2.5 micrometers or smaller; ROG=reactive organic gas

As shown in Table 2.18-11, with the exception of PM_{10} and $PM_{2.5}$, all of the Horizon Year (2045) No-Build and Build condition emissions are lower than the existing baseline condition. When compared to the No-Build conditions, Alternative 2 will result in a minimal increase in emissions.

Nitrogen Dioxide Analysis

Local conditions for pollutants can vary widely based on meteorological conditions and proximity to sources of NO_2. On February 9, 2010, U.S. EPA promulgated new minimum monitoring requirements for the NO_2 monitoring network in support of newly revised 1-hour NO_2 NAAQS and the retained annual NAAQS (SCAQMD 2010). The SCAQMD is in attainment/maintenance for the federal NO_2 standards. As noted in Table 2.18-1, the area near the Project does not exceed state or federal air quality standards for NO_2. In addition, as shown in Table 2.18-11, all of the Future Year (2045) No-Build and Build Condition emissions are lower than the existing baseline. Therefore, the Project will not cause or contribute to an exceedance of the federal standards under Alternative 2.

Mobile Source Air Toxics Analysis

FHWA released updated guidance in October 2016 (FHWA 2016) for determining when and how to address Mobile Source Air Toxic (MSAT) impacts in the NEPA process for transportation projects. FHWA identified three levels of analysis:

- No analysis for exempt projects or projects with no potential for meaningful MSAT effects;
- Qualitative analysis for projects with low potential MSAT effects; and
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

Projects with no impacts generally include those that a) qualify as a categorical exclusion under 23 CFR 771.117, b) qualify as exempt under the FCAA conformity rule under 40 CFR 93.126, and c) are not exempt, but have no meaningful impacts to traffic volumes or vehicle mix.

Projects that have low potential MSAT effects are those that serve to improve highway, transit, or freight operations or movement without adding substantial new capacity or creating a facility that is likely to substantially increase emissions. The large majority of projects fall into this category.

Projects with high potential MSAT effects include those that:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of Diesel Particulate Matter in a single location; or
- Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the average annual daily traffic (AADT) is projected to be in the range of 140,000 to 150,000, or greater, by the design year; and
- Are proposed to be located in proximity to populated areas or, in rural areas, in proximity to concentrations of vulnerable populations (i.e., schools, nursing homes, hospitals).

Table 2.18-5 through Table 2.18-9 summarize the traffic volumes along I-15 and SR-74 in the traffic study area of the Project under either build Alternative. As shown, the Project, under either Build Alternative, will not increase the traffic volumes along I-15, SR-74, or any of the highway ramps. Consequently, based on the FHWA's 2016 MSAT guidance and the California ARB's (CARB) Air Quality and Land Use Handbook, this Project, under either Build Alternative, is considered to have low potential MSAT effects, and a quantitative analysis of MSAT emissions is not required (Federal Highway Administration 2016; CARB 2005).

Based on the discussion above, no permanent impacts will occur on air quality, as it relates to regional and project air quality conformity, and operational emissions under Alternative 2.

Alternative 3 (Preferred Alternative; Northbound Hook Ramps with Northbound Loop Off-Ramp to Westbound State Route 74)

Since the operation of Alternative 3 (Preferred Alternative) will be similar as Alternative 2, the findings will be the same. Therefore, the Project under Alternative 3 (Preferred Alternative), will also be considered not a POAQC and meets the CAA requirements and 40 CFR 93.116 without any explicit hot spot analysis. The Project, under Alternative 3 (Preferred Alternative), will not create a new, or worsen an existing, PM_{10} or $PM_{2.5}$ violation. Further, as shown in Table 2.18-11, with the exception of PM_{10} and $PM_{2.5}$, all of the Horizon Year (2045) No-Build and Build Condition emissions are lower than the existing baseline.

When compared to the No-Build condition, Alternative 3 (Preferred Alternative) will result in a slight reduction in emissions and the Project will not cause or contribute to an exceedance of the federal standards under Alternative 3 (Preferred Alternative).

In addition, the Project under Build Alternative 3 (Preferred Alternative), will not increase the traffic volumes along I-15, SR-74, or any of the highway ramps. Consequently, based on the FHWA's 2016 MSAT guidance and the CARB's Air Quality and Land Use Handbook, this Project, under Build Alternative 3 (Preferred Alternative), is considered to have low potential MSAT effects, and a quantitative analysis of MSAT emissions is not required (Federal Highway Administration 2016; CARB 2005).

Based on the discussion above, and similar to the findings under Alternative 2, no permanent impacts will occur on air quality, as it relates to regional and project air quality conformity, and operational emissions under Alternative 3 (Preferred Alternative).

2.18.5 Avoidance, Minimization, and/or Mitigation Measures

The following minimization measures will be implemented during construction activities.

AQ-1 During construction, the City's Resident Engineer will ensure that any clearing, grading, earthmoving, and excavation operations, fugitive dust emissions be controlled by regular watering or other dust preventive measures using the following procedures, as specified in SCAQMD Rule 403. All material excavated or graded will be sufficiently watered to prevent excessive amounts of dust. Watering will occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day. All material transported on site or off site will be either sufficiently watered or securely covered to

prevent excessive amounts of dust. The areas disturbed by clearing, grading, earthmoving, or excavation operations will be minimized so as to prevent excessive amounts of dust. These control techniques will be indicated in Project specifications. Visible dust beyond the property line emanating from the Project will be prevented to the maximum extent feasible.

AQ-2 During the PS&E phase, the City's Resident Engineer will ensure that project grading plans will show the duration of construction. O_3 precursor emissions from construction equipment vehicles will be controlled by maintaining equipment engines in good condition and in proper tune per manufacturers' specifications.

AQ-3 During construction, the City's Resident Engineer will ensure that all trucks that are used to haul excavated or graded material on site will comply with State Vehicle Code Section 23114, with special attention to Sections 23114(b)(F), (e)(2), and (e)(4), as amended, regarding the prevention of such material spilling onto public streets and roads.

AQ-4 During construction, the City's Resident Engineer will ensure that the contractor will adhere to Caltrans Standard Specifications for Construction (Section 14.9). Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

AQ-5 During construction, the City's Resident Engineer will ensure that water or a dust palliative be applied to the site and equipment as often as necessary to control fugitive dust emissions.

AQ-6 During construction, the City's Resident Engineer will ensure that soil binder be spread on any unpaved roads used for construction purposes, and on all Project construction parking areas.

AQ-7 During construction, the City's Resident Engineer will ensure that trucks be washed as they leave the ROW as necessary to control fugitive dust emissions.

AQ-8 During construction, the City's Resident Engineer will ensure that construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by CCR Title 17, Section 93114.

AQ-9 Prior to construction, the City's Resident Engineer will ensure that a dust control plan be developed documenting sprinkling, temporary paving, speed limits, and timely revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.

AQ-10 During construction, the City's Resident Engineer will ensure that equipment and materials storage sites be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.

2.18.6 Climate Change

Neither the U.S. EPA nor FHWA has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. FHWA emphasizes concepts of resilience and sustainability in highway planning, Project development, design, operations, and maintenance. Because there have been requirements set forth in California legislation and executive orders on climate change, the issue is addressed in the CEQA chapter of this document. The CEQA analysis may be used to inform the NEPA determination for the Project.

2.19 Noise

2.19.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

2.19.1.1 California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The rest of this section will focus on the NEPA/Title 23 Part 772 of the Code of Federal Regulations (23 CFR 772) noise analysis; please see Chapter 3 of this document for further information on noise analysis under CEQA.

2.19.1.2 National Environmental Policy Act and 23 CFR 772

For highway transportation projects with Federal Highway Administration (FHWA) involvement (and the Department, as assigned), the Federal-Aid Highway Act of 1970 and its implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). Table 2.19-1 lists the noise abatement criteria for use in the NEPA/23 CFR 772 analysis.

Table 2.19-1. Noise Abatement Criteria

Activity Category	NAC, Hourly A- Weighted Noise Level, $L_{eq}(h)$	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	67 (Exterior)	Residential.
C[1]	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No NAC—reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No NAC—reporting only	Undeveloped lands that are not permitted.

Notes:

[1] Includes undeveloped lands permitted for this activity category.

$L_{eq}(h)$=hourly equivalent noise level; NAC=noise abatement criteria

Figure 2.19-1 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

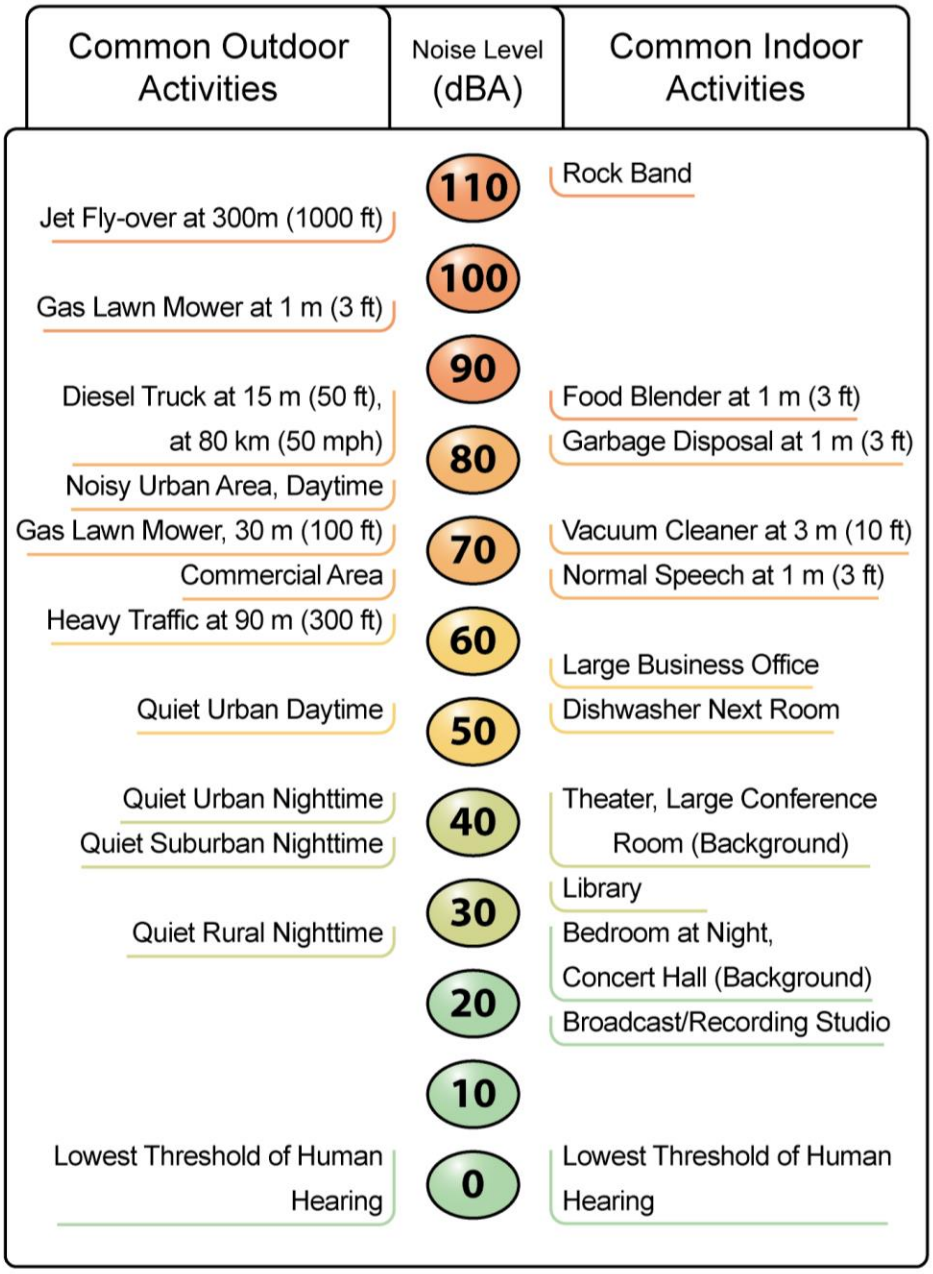

Figure 2.19-1. Noise Levels of Common Activities

According to the Department's Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more) or when the future noise level with the project approaches or exceeds the NAC. A noise level is considered to approach the NAC if it is within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

The Department's Traffic Noise Analysis Protocol sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. Noise abatement must be predicted to reduce noise by at least 5 decibels (dB) at an impacted receptor to be considered feasible from an acoustical perspective. It must also be possible to design and construct the noise abatement measure for it to be considered feasible. Factors that affect the design and constructability of noise abatement include, but are not limited to, safety, barrier height, topography, drainage, access requirements for driveways, presence of local cross streets, underground utilities, other noise sources in the area, and maintenance of the abatement measure. The overall reasonableness of noise abatement is determined by the following three factors: 1) the noise reduction design goal of 7 dB at one or more impacted receptors; 2) the cost of noise abatement; and 3) the viewpoints of benefited receptors (including property owners and residents of the benefited receptors).

2.19.2 Affected Environment

This section is based on the *Noise Study Report* (NSR) (Caltrans 2023a) and the *Noise Abatement Decision Report* (NADR) (Caltrans 2023b) that were prepared for the Project. The NSR modeled and evaluated existing and future traffic noise levels in noise-sensitive areas within the boundaries of the Noise Study Area. The Noise Study Area includes the Project limits and encompasses all short-term and long-term noise measurement locations and modeled noise receiver locations. The NADR summarizes the conclusions of the NSR, provides cost estimates for potential noise abatement, and evaluates non acoustical feasibility issues.

2.19.2.1 Surrounding Land Use and Sensitive Receptors

Developed and undeveloped land uses in the Noise Study Area were identified through field investigation to identify land uses that could be subject to traffic and construction noise impacts from the Project.

The following land uses were identified in the Noise Study Area:

- Single-family residences: Activity Category B
- High school, a cemetery and a place of worship: Activity Category C (exterior)
- Restaurants, a bank, and a medical office: Activity Category E

- Commercial retail and light industrial uses: Activity Category F
- Undeveloped lands: Activity Category G

As required by the Protocol, although all developed land uses are evaluated, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards or outdoor dining locations of commercial uses.

Land uses in the Noise Study Area are shown on Figure 2.19-2 and grouped into the following four areas:

Area 1: Area 1 is located on the east side of I-15 south of SR-74 (Central Avenue). Figure 2.19-2 (Sheets 1, 2, and 11) show the current land uses in this area. Land uses along I-15 in this area consist of light industrial and commercial uses (Activity Category F) at the south end, followed by undeveloped lands (Activity Category G), and fast-food restaurants (Activity Category E) between Dexter Place and Central Avenue. Along Central Avenue, land uses include a gas station (Activity Category F) located between I-15 and Dexter Avenue, commercial retail and fast food uses between Dexter Avenue and Cambern Avenue (Activity Category E), and undeveloped lands and single-family residential uses between Cambern Avenue and Conrad Avenue (Activity Category B and G). A noise barrier with a nominal height of 6 feet is located along the south side of SR-74, north of the residential area (refer to Figure 2.19-2, Sheet 11).

Area 2: Area 2 is located west of I-15 and south of SR-74 (Central Avenue). Figure 2.19-2 (Sheets 1 and 2) show the existing land uses in this area. Land uses along I-15 in this area consist of three single-family residential uses (Activity Category B), undeveloped lands (Activity Category G), commercial/light industrial uses (Activity Category F), an Elsinore Valley Metropolitan Water District facility (Activity Category F), and an automobile dealership (Activity Category F). Along Central Avenue, the land uses include commercial retail and fast-food restaurants (Activity Category E and F).

Area 3: Area 3 is located on the east side of I-15 north of SR-74 (Central Avenue). Figure 2.19-2 (Sheets 2 to 11) show the existing land uses in this area. Land uses along Central Avenue in Area 3 (see Figure 2.19-2, Sheet 11) include a Caltrans maintenance facility (Activity Category F) located at the northwest corner of Central Avenue and Conrad Avenue intersection, a single-family home (Activity Category B) north of the Caltrans facility, and undeveloped lands (Activity Category G) between Cambern Avenue and the maintenance facility. Between Cambern Avenue and Dexter Avenue, land uses adjacent

to Central Avenue are mainly Activity Category E uses, including two outdoor dining areas (currently a Del Taco and a Panda Express), other fast-food restaurants, a bank, an auto lube and oil shop, and a gas station. Between Dexter Avenue and I-15, there is currently a Burger King restaurant (Activity Category E) located north of Central Avenue. Moving north along the east side of Dexter Avenue in Area 3 (Figure 2.19-2, Sheets 2 and 3), existing land uses are commercial retail, including a Lowe's Home Improvement store and a Costco (Activity Category F). The Costco food court is an outdoor dining location (represented by M3.05 in Figure 2.19-2, Sheet 3). Across Dexter Avenue from these commercial uses, there is undeveloped land (Activity Category G) immediately east of I-15. Farther north, as shown in Figure 2.19-2 (Sheet 3), a church (represented by M3.06) (Activity Category C) and a wholesale landscaping materials retail (Activity Category F) exist. Areas north of 11th Street are single-family residential (Activity Category B) and the Temescal Canyon High School (Activity Category C) is at the north end of the Noise Study Area (see Figure 2.19-2, Sheets 3 and 7). The sports fields at the high school (represented by receptors M3.21 through M3.25) are directly exposed to traffic noise from I-15.

Area 4: Area 4 is located on the west side of I-15 north of SR-74 (Central Avenue). Figure 2.19-2 (Sheets 2, 3, and 7) show the existing land uses in this area. The main noise sources in Area 4 include traffic on I-15 and Collier Avenue. Land uses in this area include retail (Activity Category F) and fast-food restaurants (Activity Category E) along Collier Avenue north of Central Avenue. There are two outdoor dining areas (shown as M4.01 and M4.02 on Figure 2.19-2, Sheet 2). Farther north, land uses between I-15 and Collier Avenue include a cemetery (Elsinore Valley Cemetery) (Activity Category C), commercial storage and light industrial uses (Activity Category F), undeveloped commercial lands (Activity Category G), and the Outlets at Lake Elsinore shopping center (Activity Category F) (see Figure 2.19-2, Sheets 3 and 7).

A total of 28 receptor locations, shown in Figure 2.19-2, were selected to represent noise-sensitive land uses in the Noise Study Area. These receptor locations were representative of outdoor frequent human use areas associated with existing single-family residences, a school, a church, a cemetery, and other uses that include commercial and light industrial uses.

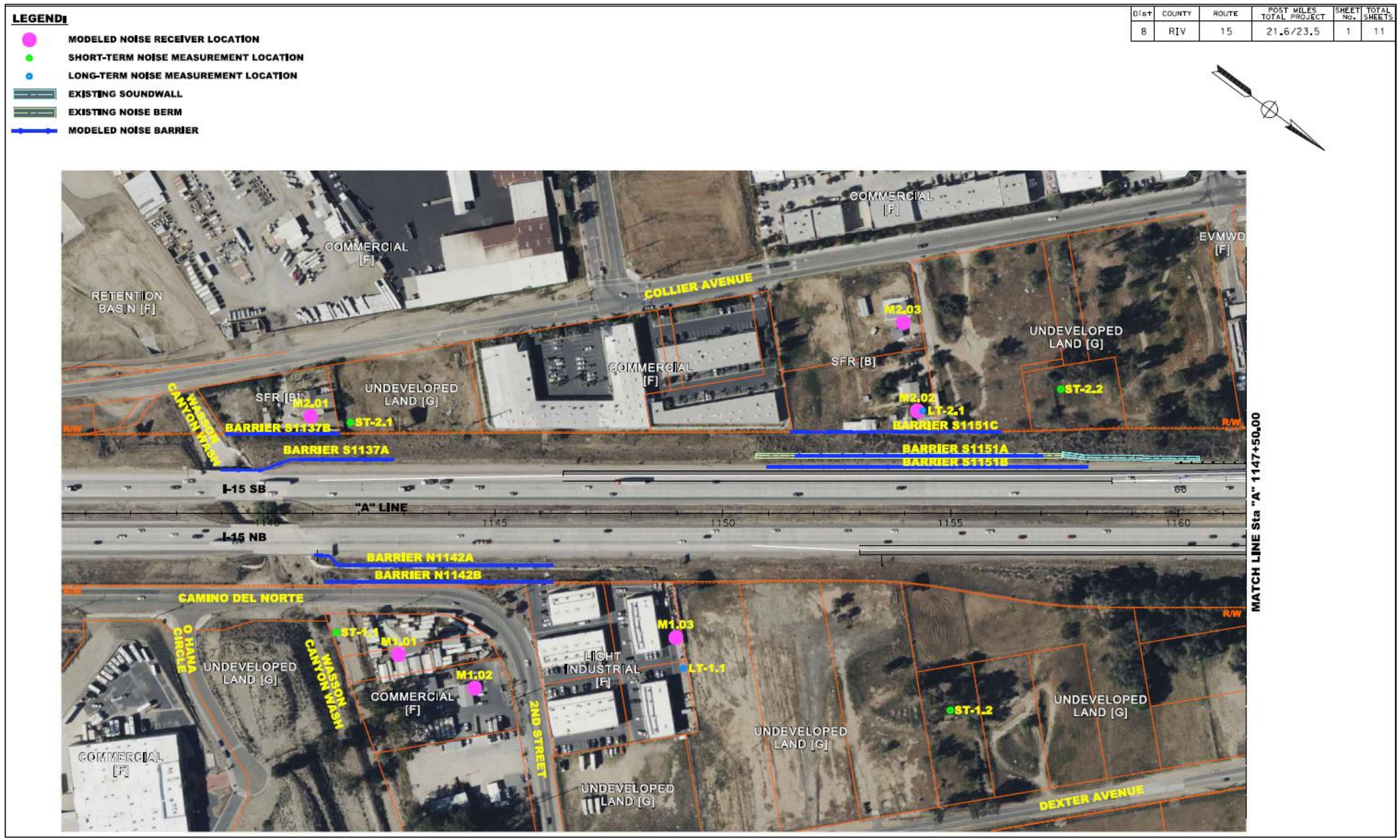

Figure 2.19-2. Noise Measurement and Modeling Locations and Analyzed Noise Barriers (Sheet 1 of 11)

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	2	11

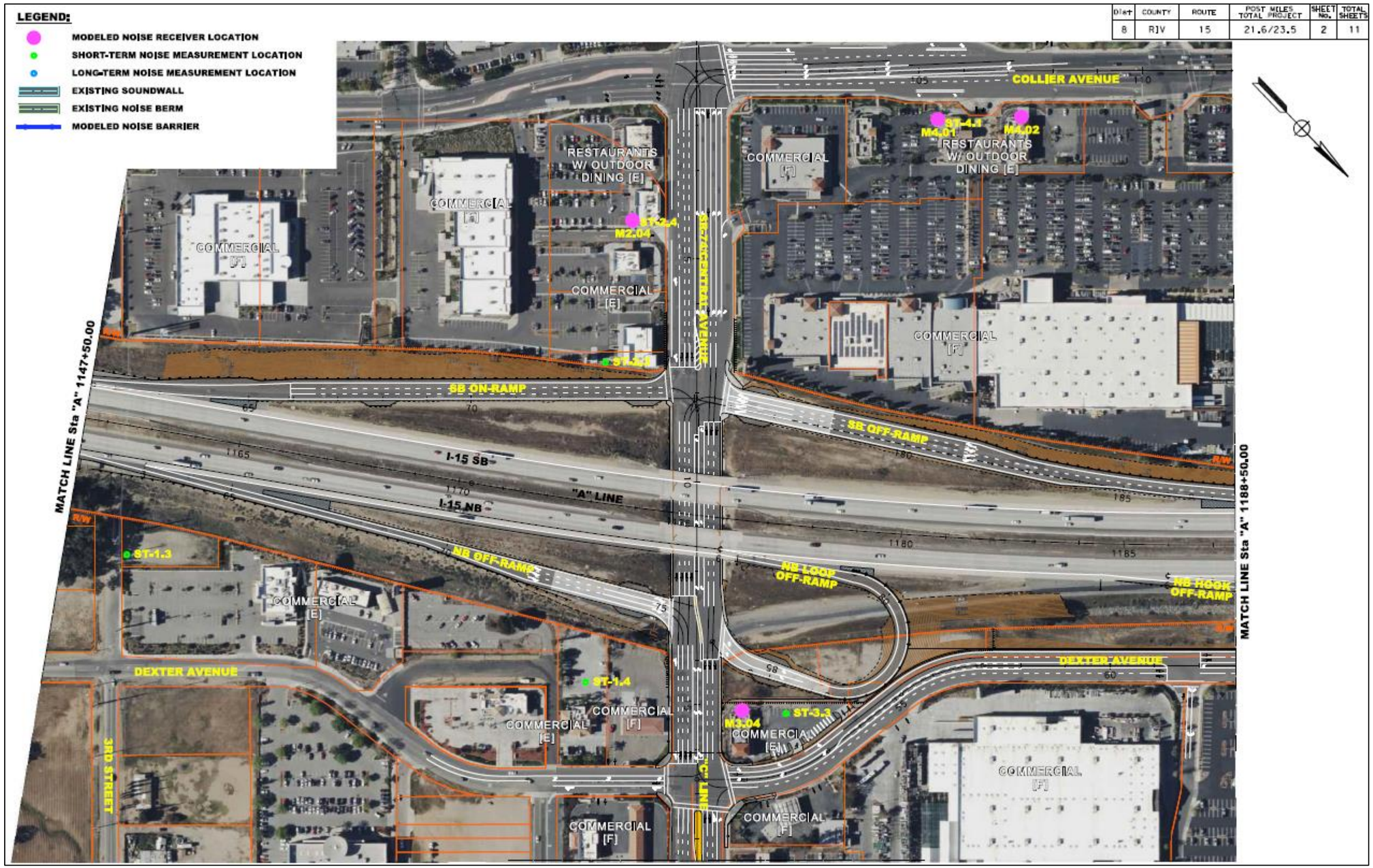

Figure 2.19-2. Noise Measurement and Modeling Locations and Analyzed Noise Barriers
(Sheet 2 of 11)

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	3	11

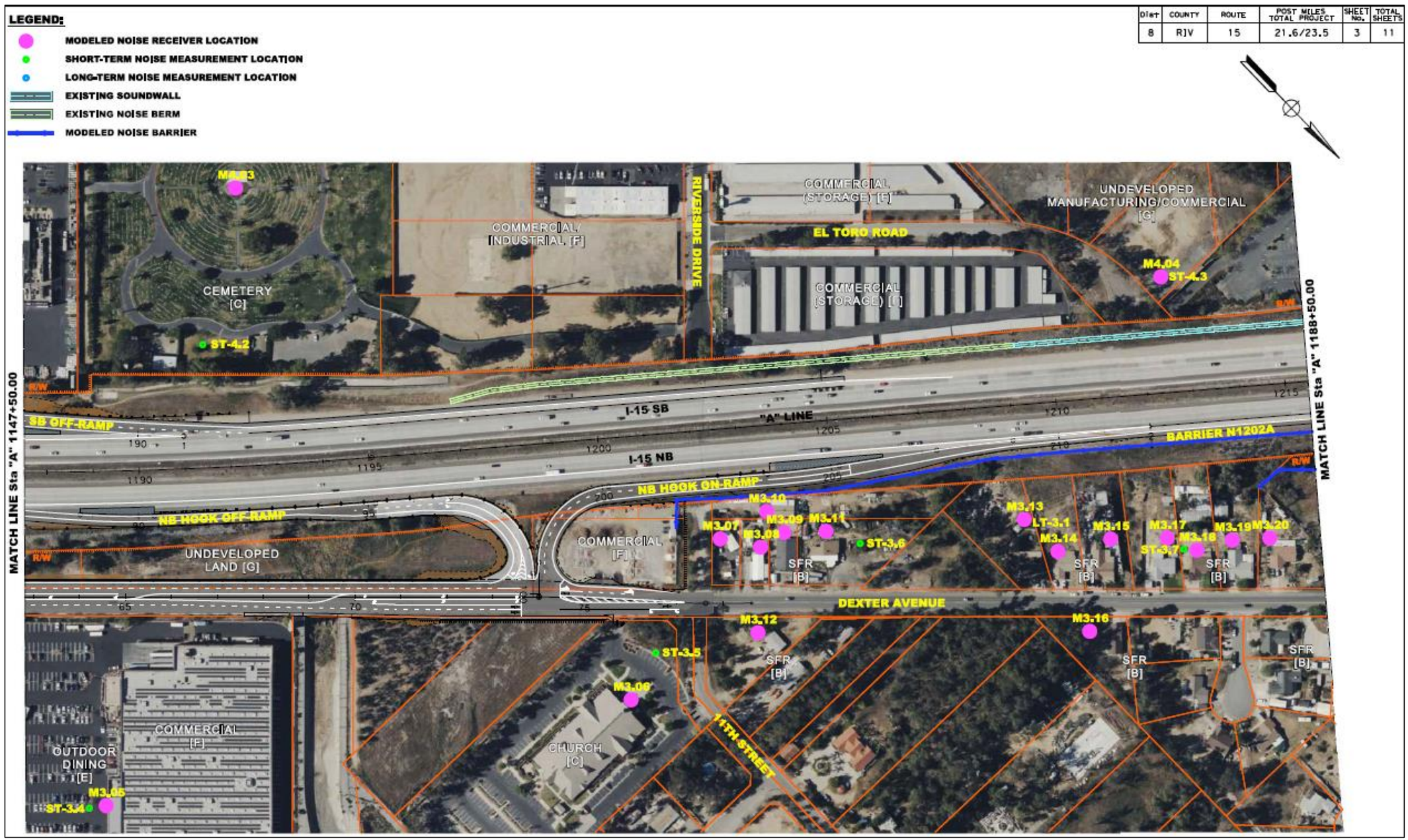

Figure 2.19-2. Noise Measurement and Modeling Locations and Analyzed Noise Barriers
(Sheet 3 of 11)

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
8	RIV	15	21.6/23.5	4	11

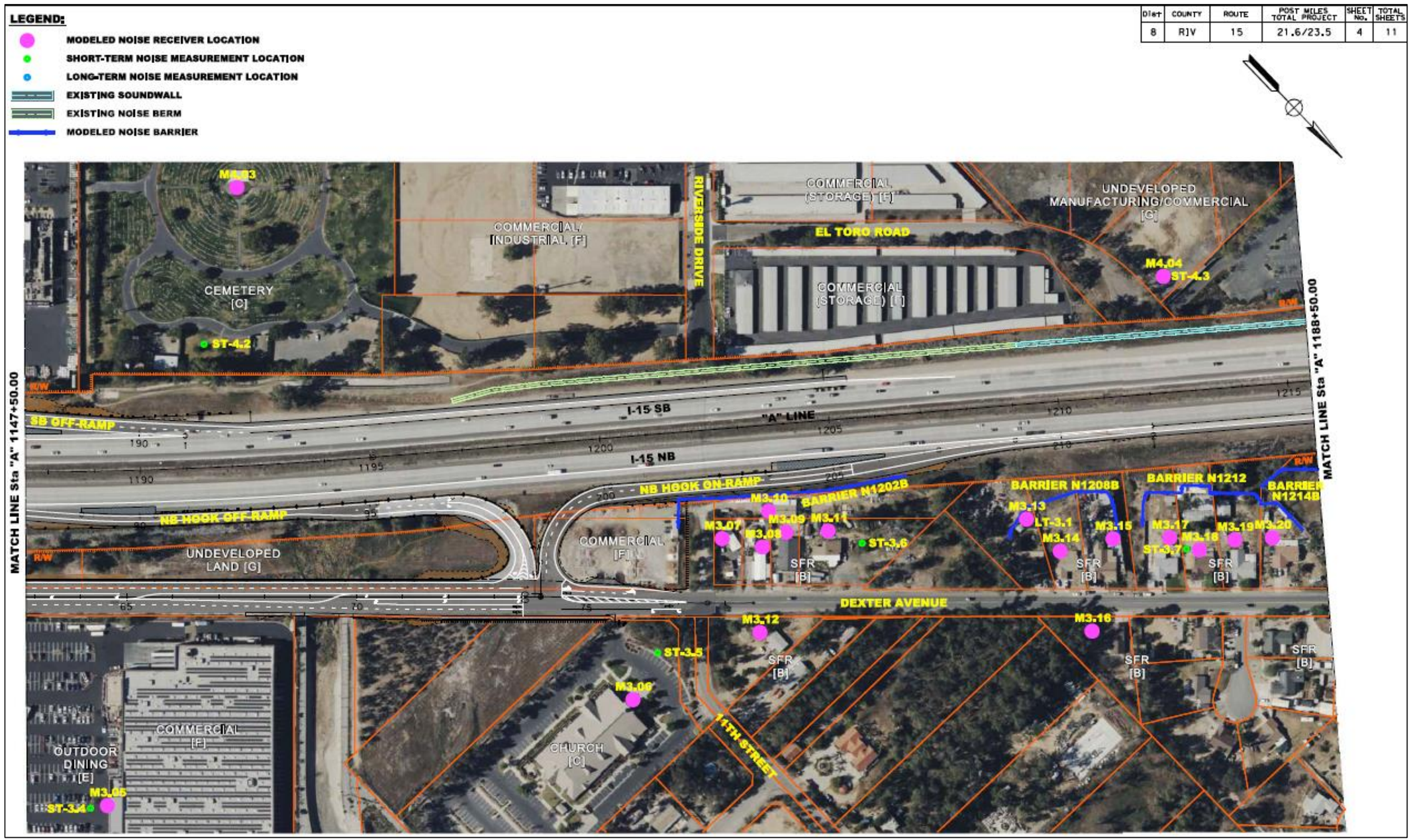

Figure 2.19-2. Noise Measurement and Modeling Locations and Analyzed Noise Barriers
(Sheet 4 of 11)

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	5	11

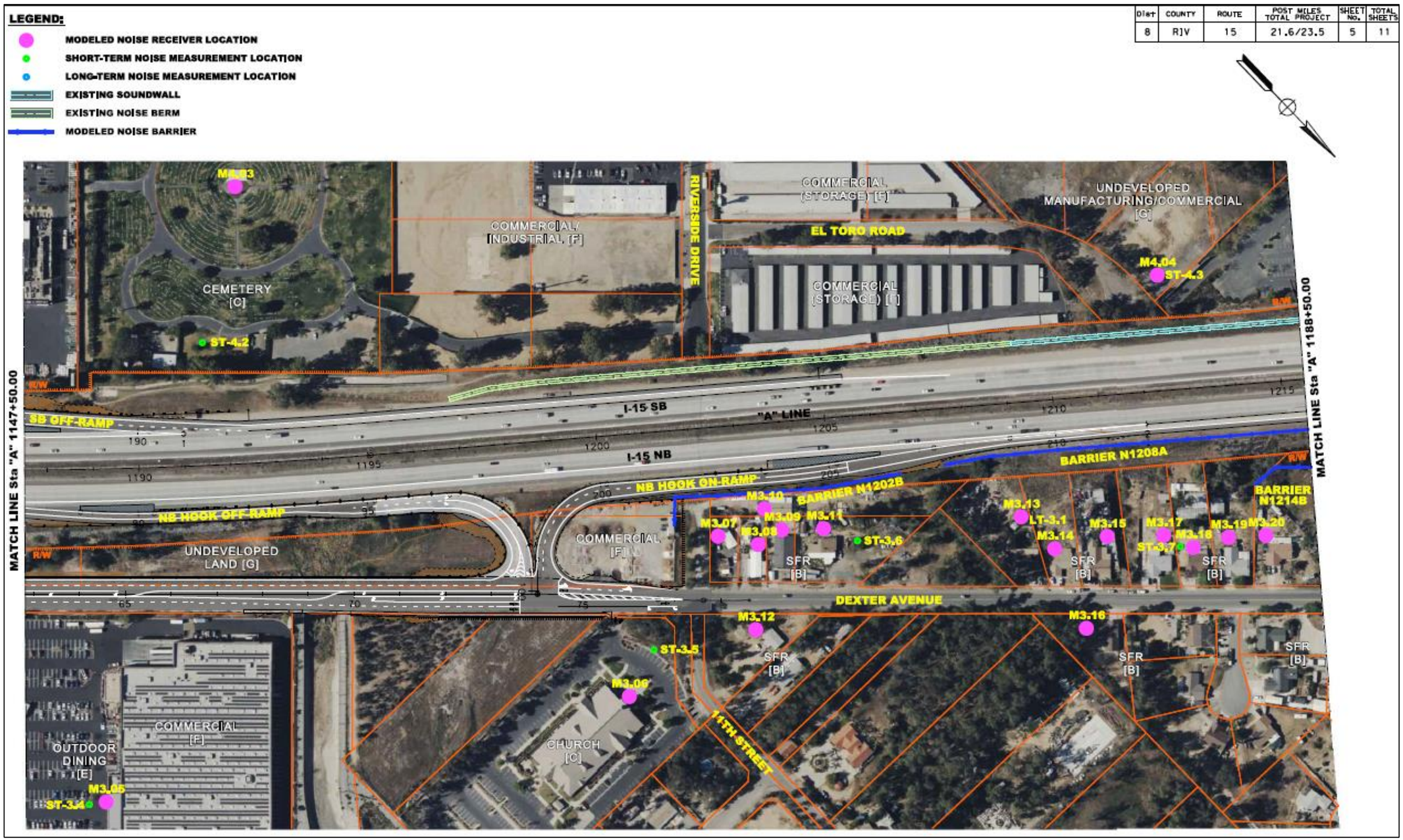

Figure 2.19-2. Noise Measurement and Modeling Locations and Analyzed Noise Barriers
(Sheet 5 of 11)

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	6	11

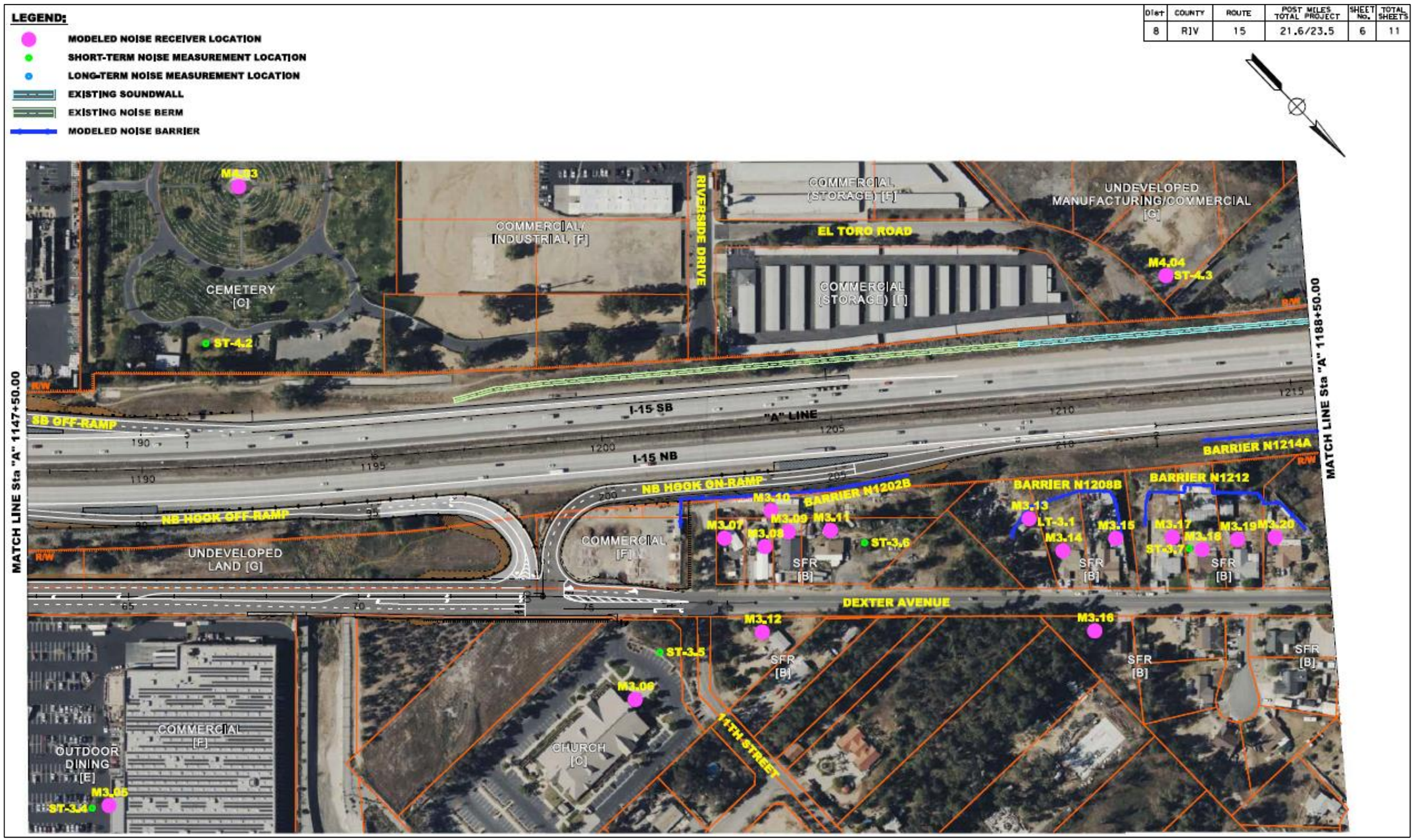

Figure 2.19-2. Noise Measurement and Modeling Locations and Analyzed Noise Barriers
(Sheet 6 of 11)

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	7	11

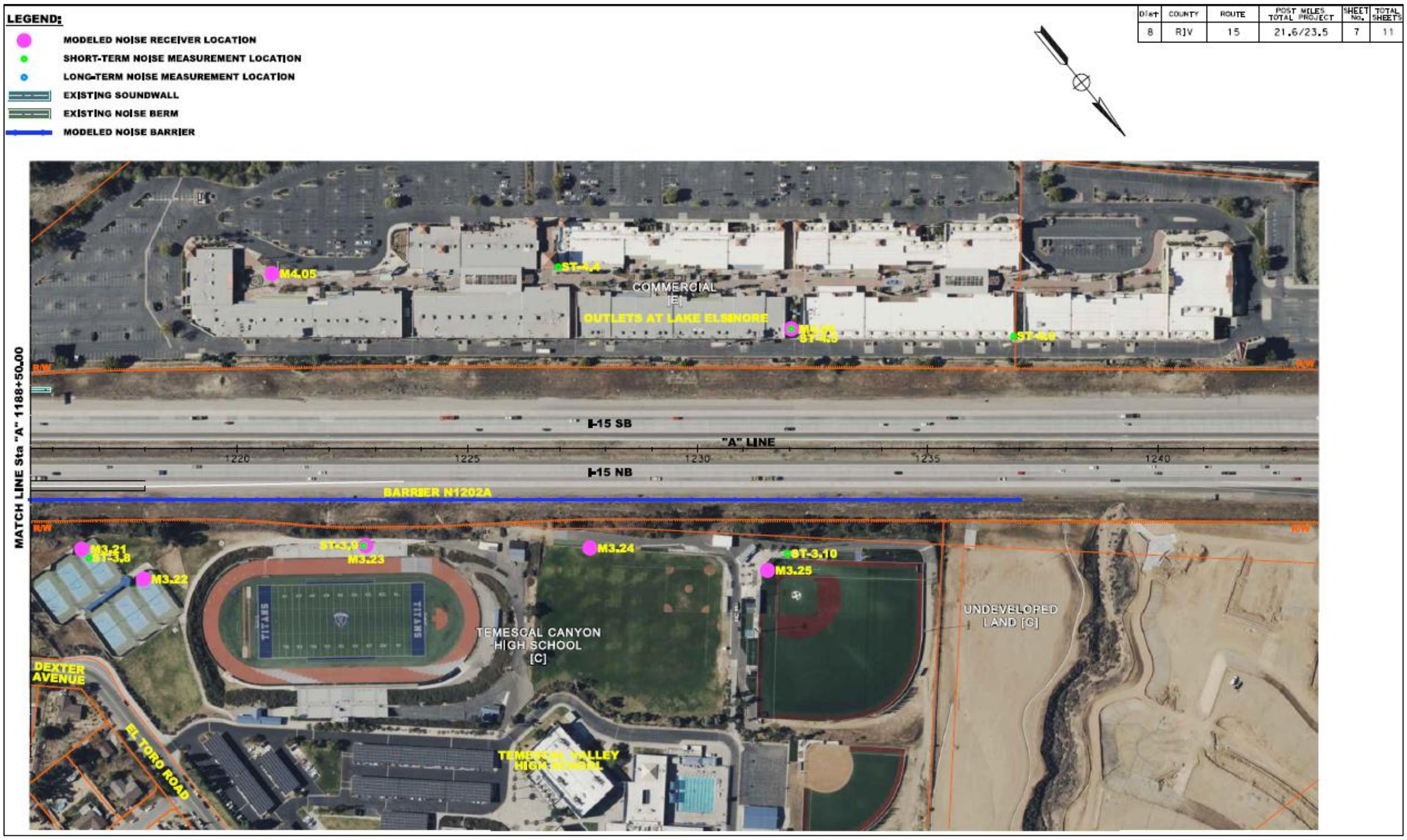

Figure 2.19-2. Noise Measurement and Modeling Locations and Analyzed Noise Barriers
(Sheet 7 of 11)

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	8	11

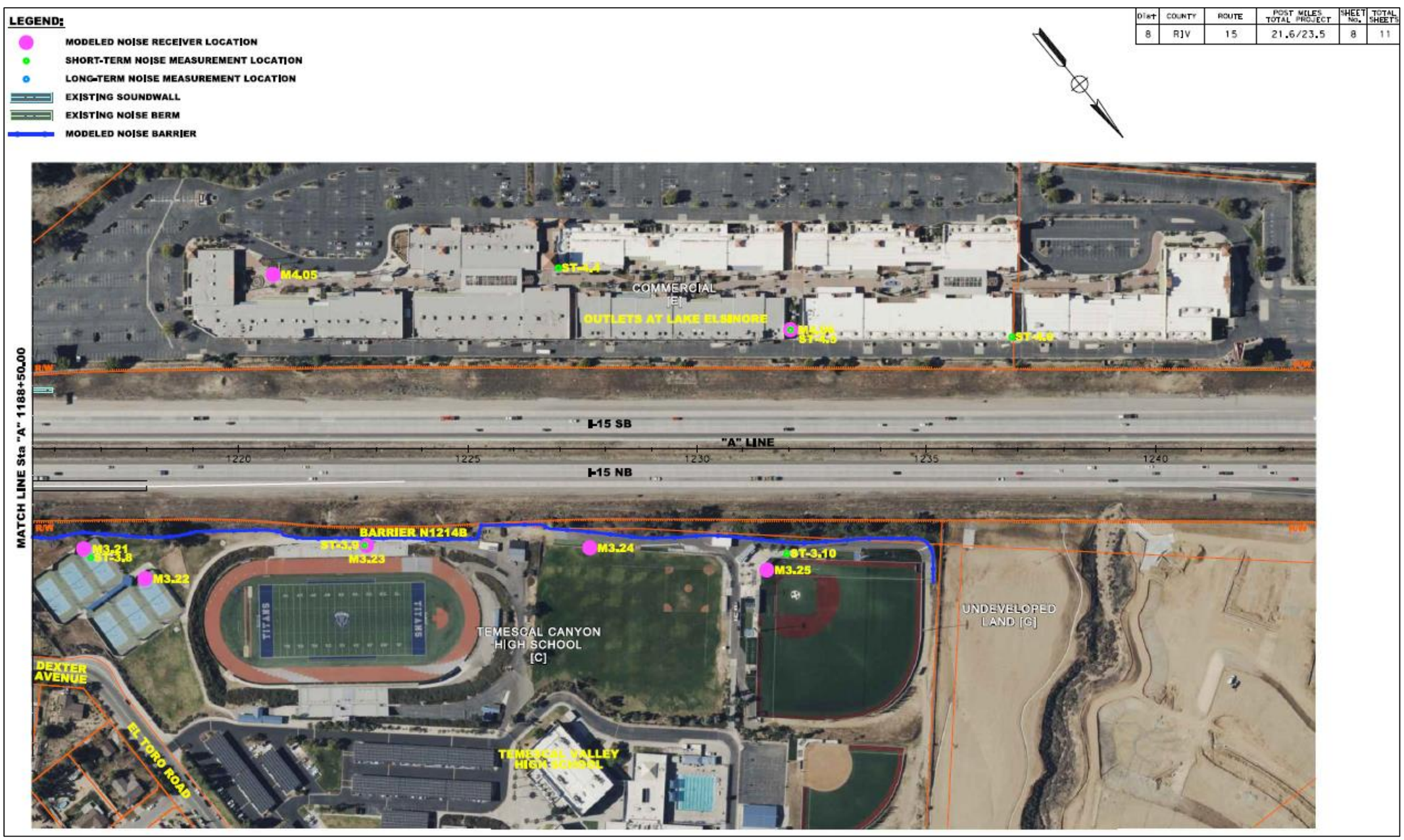

Figure 2.19-2. Noise Measurement and Modeling Locations and Analyzed Noise Barriers (Sheet 8 of 11)

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	9	11

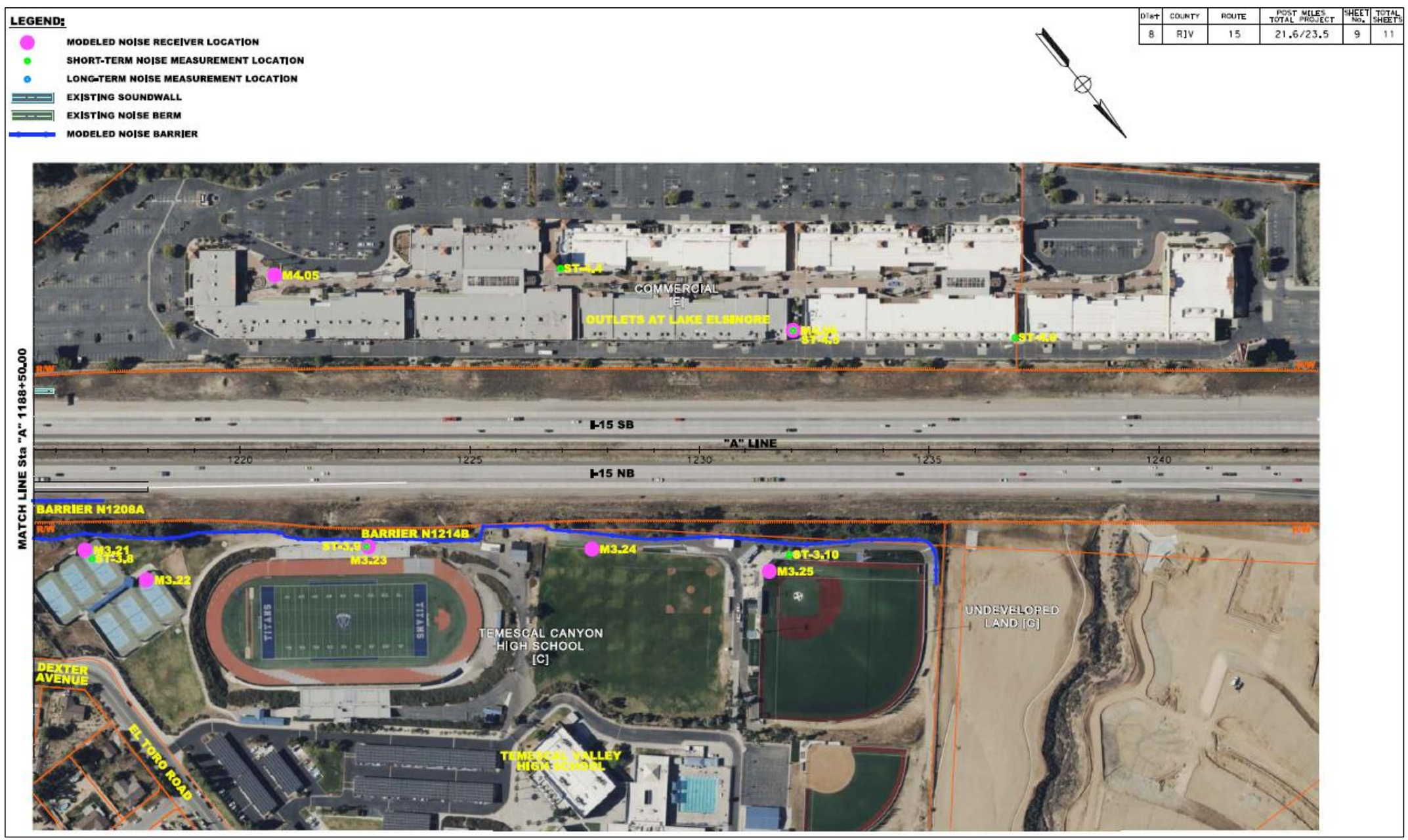

Figure 2.19-2. Noise Measurement and Modeling Locations and Analyzed Noise Barriers
(Sheet 9 of 11)

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DIst	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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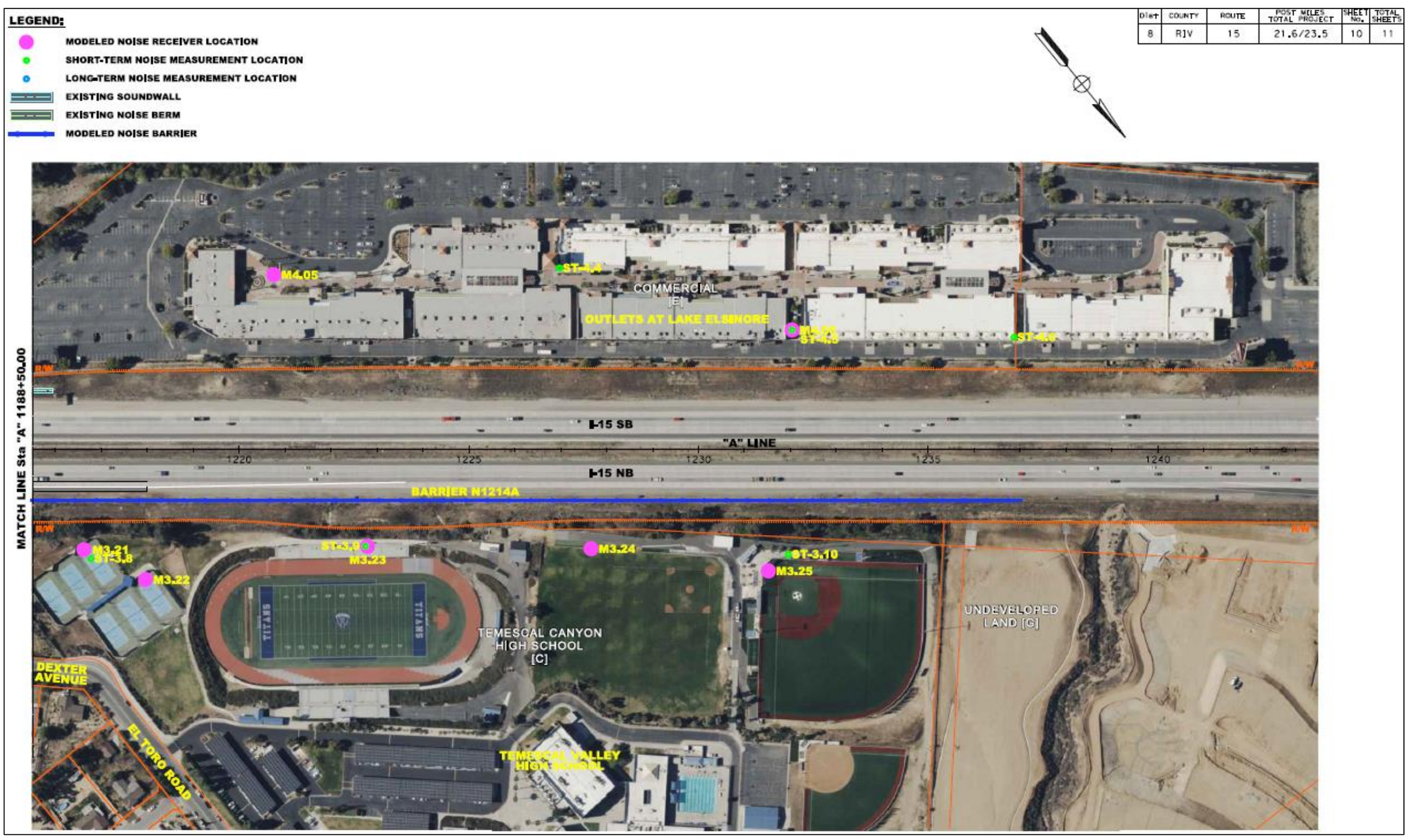

Figure 2.19-2. Noise Measurement and Modeling Locations and Analyzed Noise Barriers
(Sheet 10 of 11)

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	11	11

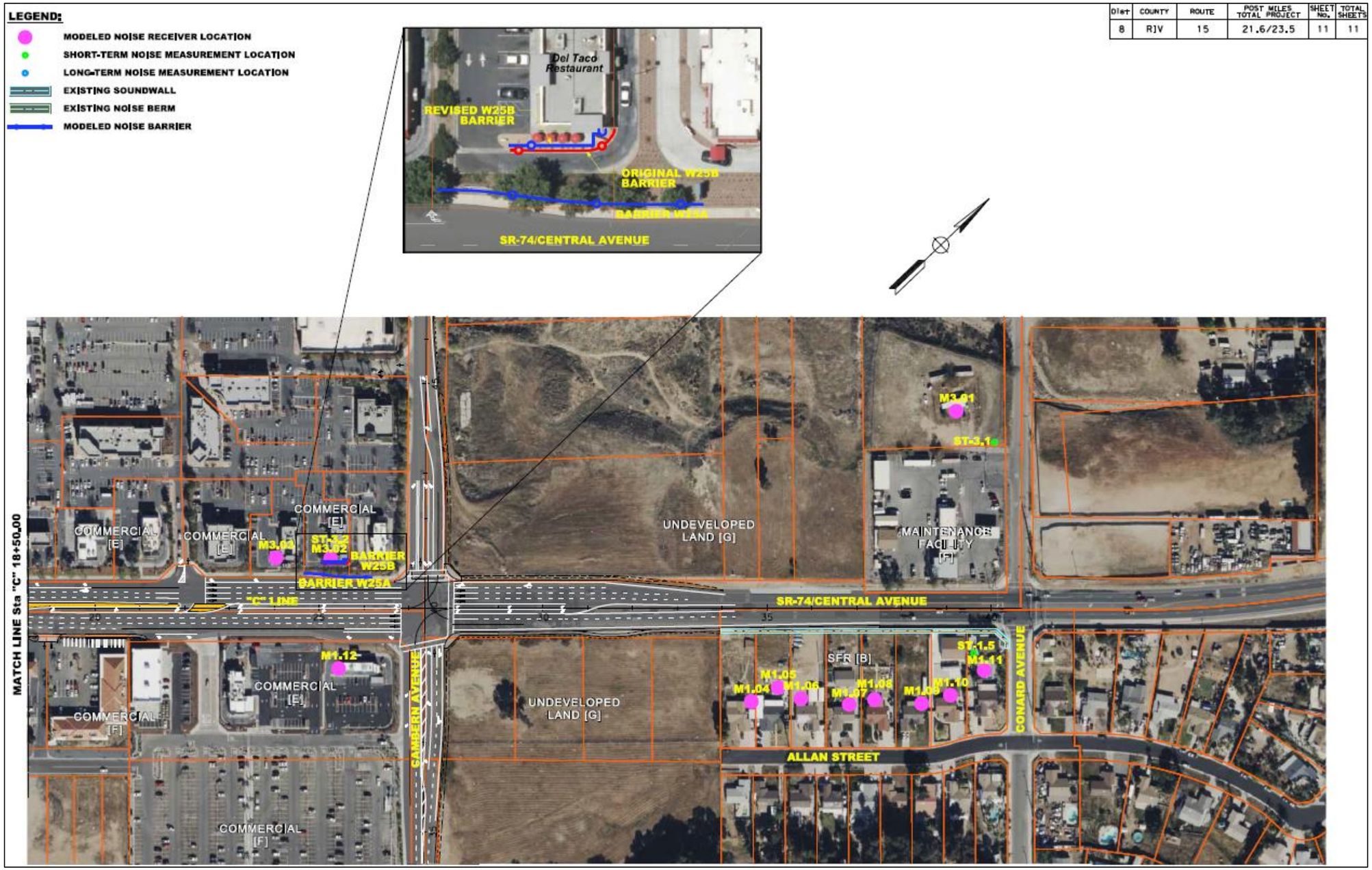

Figure 2.19-2. Noise Measurement and Modeling Locations and Analyzed Noise Barriers
(Sheet 11 of 11)

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2.19.2.2 Existing Noise Environment

The primary sources of noise in the Noise Study Area include traffic along I-15 and on surface arterials, including Central Avenue (SR-74), Collier Avenue, and Dexter Avenue.

Noise Measurement Results

Short-Term Monitoring

As it is impractical to take noise measurements at every sensitive receptor, the short-term measurement locations were selected to be representative of noise sensitive uses in the Noise Study Area. Short-term noise monitoring was conducted at 25 representative noise-sensitive receptor locations. The short-term noise measurement locations are shown in Figure 2.19-2. Table 2.19-2 summarizes the results of the short-term noise monitoring conducted in the Noise Study Area. These short-term noise measurements were used to calibrate the noise model and to predict the noise levels at all 48 modeling receptors area of the Noise Study Area.

Long-Term Monitoring

Long-term noise monitoring was conducted for one 24-hour period on Wednesday, October 14, 2020, at three locations, LT-1.1, LT-2.1, and LT-3.1, shown in Figure 2.19-2 (Sheet 1, and Sheets 3 to 6). The purpose of the long-term noise measurements was to identify variations in sound levels in the Noise Study Area throughout the day and to identify the loudest periods, between AM and PM, in order to determine which peak hour traffic data should be utilized in the noise modeling for the Project.

Long-term monitoring location LT-1.1 is within a light industrial use at APN 377-110-037, at a distance of approximately 250 feet east of the NB I-15 outside travel lane (refer to Figure 2.19-2, Sheet 1). Long-term monitoring location LT-2.1 is within APN 377-081-020 (single-family home at 18574 Collier Avenue), at a distance of approximately 150 feet west of the SB I-15 outside travel lane (refer to Figure 2.19-2, Sheet 1). Long-term monitoring location LT-3.1 is within APN 347-292-001, a single-family residence located at 18095 Dexter Avenue. The measurement microphone was placed at a distance of approximately 185 feet east of the existing NB I-15 outside travel lane (refer to Figure 2.19-2, Sheets 3 to 6).

Table 2.19-3 through Table 2.19-5 and Figure 2.19-3 through Figure 2.19-5 summarize the results of the long-term monitoring at each of the locations. From the data shown, the loudest hour in areas along I-15 south of Central Avenue was during the 6 AM hour. The loudest hour in areas between Central Avenue and Nichols Road occurred during the 7 AM hour. Therefore, AM peak hour traffic forecasts were utilized for the noise impact analysis.

Noise Model Calibration

FHWA Traffic Noise Model (TNM) version 2.5 was used for noise computations. Table 2.19-6 compares measured and modeled noise levels at the measurement locations. In order to make sure the TNM 2.5 modeling represents actual conditions, the model was calibrated by comparing measured traffic noise levels to the model's estimate of existing noise levels at field measurement locations. Short-term and long-term noise measurements (28 total) were used for model calibration. Good agreement (within ±3 dB) was achieved between the measured and modeled results at all the measurement locations, which represent the entire Noise Study Area. Therefore, the calibrated noise model was used for calculating the existing peak-noise-hour traffic noise results.

Table 2.19-2. Summary of Short-Term Noise Level Measurements (dB) I-15/SR-74 Interchange Improvement Project

Site[1]	Address/Description	Land Use	Activity Category[2]	Date	Start Time	Duration (minutes)	L_{eq}[3]	L_{max}[3]	L_{min}[3]
Area 1: East of I-15, South of SR-74 (Central Avenue)									
ST-1.1	29880 2nd Street, Lake Elsinore, California 92530 Open area to the south	General Commercial	E	10/13/2020	10:39 AM	15:00	68.8	78.7	62.4
				10/13/2020	10:57 AM	15:00	68.8	72.4	62.5
LT-1.1[4]	29885 2nd Street, Lake Elsinore, California 92530 Near north fence of Amber Air Conditioning	Light Industrial	F	10/13/2020	10:39 AM	15:00	58.7	-	-
				10/13/2020	10:57 AM	15:00	58.6	-	-
ST-1.2	18765 Dexter Avenue, Lake Elsinore, California 92532 Vacant land	General Commercial/ Undeveloped	G	10/13/2020	10:39 AM	15:00	64.2	69.1	58.9
				10/13/2020	10:57 AM	15:00	64.2	68.8	56.5
ST-1.3	3rd Street, East of Interstate 15 (I-15)- Cleared land west of parking	General Commercial	E	10/13/2020	9:40 AM	15:00	66.1	74.7	60.8
				10/13/2020	9:57 AM	15:00	66.1	70.8	57.9
ST-1.4	18461 Dexter Avenue, Lake Elsinore, California 92532 Douglas Burgers	Commercial/ Restaurant	E	10/13/2020	9:40 AM	15:00	64.1	69.4	58.7
				10/13/2020	9:57 AM	15:00	64.4	69.9	58.9
ST-1.5	29139 Allan Street, Lake Elsinore, California 92532 Residential backyard - between pool & back wall, next to garage	Residential	B	10/13/2020	9:40 AM	15:00	60.9	76.3	44.8
				10/13/2020	9:57 AM	15:00	60.2	71.9	46.6
				10/14/2020	11:03 AM	15:00	60.3	68.7	44.5
Area 2: West of I-15, South of SR-74 (Central Avenue)									
ST-2.1	18740 Collier Avenue, Lake Elsinore, California 92530 (readings taken at vacant lot to the north) Residential backyard	Residential	B	10/13/2020	12:46 PM	10:00	66.5	72.9	59.8
				10/13/2020	12:59 PM	10:00	66.1	72.7	54.9

Table 2.19-2. Summary of Short-Term Noise Level Measurements (dB) I-15/SR-74 Interchange Improvement Project

Site[1]	Address/Description	Land Use	Activity Category[2]	Date	Start Time	Duration (minutes)	L_{eq}[3]	L_{max}[3]	L_{min}[3]
LT-2.1[4]	18574 Collier Avenue, Lake Elsinore, California 92530 Residential backyard	Residential	B	10/13/2020	11:47 AM	10:00	62.1	-	-
				10/13/2020	11:59 AM	10:00	62.2	-	-
ST-2.2	Vacant Land West of I-15 (southeast quadrant of Collier Avenue/3rd Street intersection)	Undeveloped Land	G	10/13/2020	11:47 AM	10:00	58.5	63.7	54.4
				10/13/2020	11:59 AM	10:00	58.9	65.7	51.8
ST-2.3	18330 Collier Avenue, Lake Elsinore, California 92530 Central Place Shopping Center - Next to Bright Now! Dental	Commercial/ Office	E	10/13/2020	11:47 AM	10:00	67.1	85.2	57.6
				10/13/2020	11:59 AM	10:00	66.7	80.6	57.9
ST-2.4	18310 Collier Avenue, Suite B, Lake Elsinore, California 92530 Patio Dining - Pieology	Commercial/ Outdoor Dining	E	10/13/2020	11:47 AM	10:00	60.4	67.0	54.4
				10/13/2020	11:59 AM	10:00	60.4	67.0	55.5
Area 3: East of I-15, North of SR-74 (Central Avenue)									
ST-3.1	18721 Conrad Avenue, Lake Elsinore, California 92532 Residential front yard near entry gate	Residential	B	10/13/2020	10:39 AM	15:00	55.6	72.8	44.9
				10/13/2020	10:57 AM	15:00	56.5	69.2	46.3
ST-3.2	29245 Central Avenue, Lake Elsinore, California 92532 Del Taco - Outdoor Dining Area	Commercial/ Outdoor Dining	E	10/13/2020	8:39 AM	15:00	69.2	84.8	56.7
				10/13/2020	8:56 AM	15:00	68.6	84.3	55.1
ST-3.3	18611 Dexter Avenue, Lake Elsinore, California 92532 Burger King - Outdoor Dining Area	Commercial/ Restaurant	E	10/13/2020	8:39 AM	15:00	64.7	71.4	58.8
				10/13/2020	8:56 AM	15:00	64.7	69.0	60.6
ST-3.4	29315 Central Avenue, Lake Elsinore, California 92532 In Parking Lot next to Costco Food Court	Commercial/ Outdoor Dining	E	10/14/2020	7:39 AM	15:00	62.6	66.0	59.7
				10/14/2020	7:57 AM	15:00	61.3	65.2	58.6

Table 2.19-2. Summary of Short-Term Noise Level Measurements (dB) I-15/SR-74 Interchange Improvement Project

Site[1]	Address/Description	Land Use	Activity Category[2]	Date	Start Time	Duration (minutes)	L_{eq}[3]	L_{max}[3]	L_{min}[3]
ST-3.5	18220 Dexter Avenue, Lake Elsinore, California 92532 The Church of Jesus Christ of Latter-day Saints	Religious Facility	C	10/14/2020	8:57 AM	10:00	61.9	67.5	58.4
				10/14/2020	9:10 AM	10:00	61.3	70.6	56.1
ST-3.6	18159 Dexter Avenue, Lake Elsinore, California 92532 Open area next to home	Residential	B	10/14/2020	8:57 AM	10:00	65.9	69.9	59.2
				10/14/2020	9:10 AM	10:00	65.3	69.7	59.2
LT-3.1[4]	18095 Dexter Avenue, Lake Elsinore, California 92532 Residential backyard	Residential	B	10/14/2020	8:57 AM	10:00	65.4	-	-
				10/14/2020	9:10 AM	10:00	64.8	-	-
ST-3.7	18055 Dexter Avenue, Lake Elsinore, California 92532 Residential backyard	Residential	B	10/14/2020	8:57 AM	10:00	61.6	67.9	55.5
				10/14/2020	9:10 AM	10:00	61.0	65.2	54.8
ST-3.8	28755 El Toro Road, Lake Elsinore, California 92532 Temescal Canyon High School – Tennis Courts	Public/ Institutional	C	10/13/2020	3:01 PM	10:00	68.7	76.3	61.6
				10/13/2020	3:13 PM	10:00	69.4	73.8	62.9
ST-3.9	28755 El Toro Road, Lake Elsinore, California 92532 Temescal Canyon High School – Football Field Bleachers	Public/ Institutional	C	10/13/2020	3:01 PM	10:00	74.4	81.6	66.7
				10/13/2020	3:13 PM	10:00	74.8	81.2	66.6
ST-3.10	28755 El Toro Road, Lake Elsinore, California 92532 Temescal Canyon High School – Baseball Field	Public/ Institutional	C	10/13/2020	3:01 PM	10:00	73.5	80.0	66.8
				10/13/2020	3:13 PM	10:00	73.5	78.2	64.4
Area 4: West of I-15, North of SR-74 (Central Avenue)									
ST-4.1	18288 Collier Avenue, Lake Elsinore, California 92530 Farmer Boys - Outdoor Dining Area	Commercial/ Outdoor Dining	E	10/14/2020	7:39 AM	15:00	64.6	79.1	58.1
				10/14/2020	7:57 AM	15:00	63.5	77.3	56.7

Table 2.19-2. Summary of Short-Term Noise Level Measurements (dB) I-15/SR-74 Interchange Improvement Project

Site[1]	Address/Description	Land Use	Activity Category[2]	Date	Start Time	Duration (minutes)	L_{eq}[3]	L_{max}[3]	L_{min}[3]
ST-4.2	18170 Collier Avenue, Lake Elsinore, California 92530 Elsinore Valley Cemetery – Areas nearest to I-15	Public/ Institutional	C	10/13/2020	12:46 PM	10:00	65.9	69.5	58.7
				10/13/2020	12:59 PM	10:00	66.5	71.8	59.6
ST-4.3	29033 El Toro Road, Lake Elsinore, California 92530 Open space behind east property line wall	Limited Manufacturing	F	10/13/2020	12:46 PM	10:00	60.1	68.5	54.5
				10/13/2020	12:59 PM	10:00	60.6	65.1	54.2
ST-4.4	17600 Collier Avenue, Lake Elsinore, California 92530 Outlets Lake Elsinore – Interior Plaza	Commercial/ Retail, Dining	E, F	10/14/2020	10:05 AM	10:00	57.2	61.2	51.5
				10/14/2020	10:17 AM	10:00	57.0	61.6	52.1
ST-4.5	17600 Collier Avenue, Lake Elsinore, California 92530 Outlets Lake Elsinore – East Façade between Building E & G	Commercial/ Retail, Dining	E, F	10/14/2020	10:05 AM	10:00	63.2	73.2	55.1
				10/14/2020	10:17 AM	10:00	62.2	67.8	55.4
ST-4.6	17600 Collier Avenue, Lake Elsinore, California 92530 Outlets Lake Elsinore – East Façade, between Building G & J	Commercial/ Retail, Dining	E, F	10/14/2020	10:05 AM	10:00	60.6	66.4	54.1
				10/14/2020	10:17 AM	10:00	60.4	66.0	55.8

Source: NSR (Caltrans 2023a).

Notes:

[1] Refer to Figure 2.19-2 for measurement locations.

[2] Refer to Section 2.19.2.1 for definitions of activity categories.

[3] Refer to the NSR (Caltrans 2023a), Appendix D-2 and D-3, for traffic volume counts and speeds during the measurements.

[4] Short-term measurements extracted from long-term measurements were included for noise model calibration purposes.

L_{eq}=Average measured noise level during the measurement period, L_{min}=Minimum measured noise level during the measurement period, and L_{max}=Maximum measured noise level during the measurement period

Table 2.19-3. Summary of Long-Term Monitoring at Location LT-1.1, October 14, 2020

Hour Beginning	Average (dBA L_{eq}[h])	Difference from Loudest Hour (dB)
12:00 AM	55.5	-7.5
1:00 AM	55.6	-7.4
2:00 AM	55.8	-7.3
3:00 AM	59.2	-3.9
4:00 AM	61.5	-1.6
5:00 AM	62.4	-0.7
6:00 AM	**63.0**	**0.0**
7:00 AM	62.7	-0.4
8:00 AM	58.5	-4.6
9:00 AM	57.7	-5.3
10:00 AM	58.3	-4.7
11:00 AM	59.0	-4.0
12:00 PM	57.8	-5.2
1:00 PM	57.6	-5.5
2:00 PM	57.9	-5.2
3:00 PM	58.8	-4.2
4:00 PM	58.6	-4.4
5:00 PM	59.2	-3.8
6:00 PM	59.4	-3.6
7:00 PM	61.0	-2.1
8:00 PM	59.1	-3.9
9:00 PM	57.9	-5.1
10:00 PM	58.1	-4.9
11:00 PM	56.8	-6.2

Source: NSR (Caltrans 2023a)
Note: Highest noise hour is bolded. dB=decibels; dBA=A-weighted decibel; Leq(h)=hourly equivalent noise level

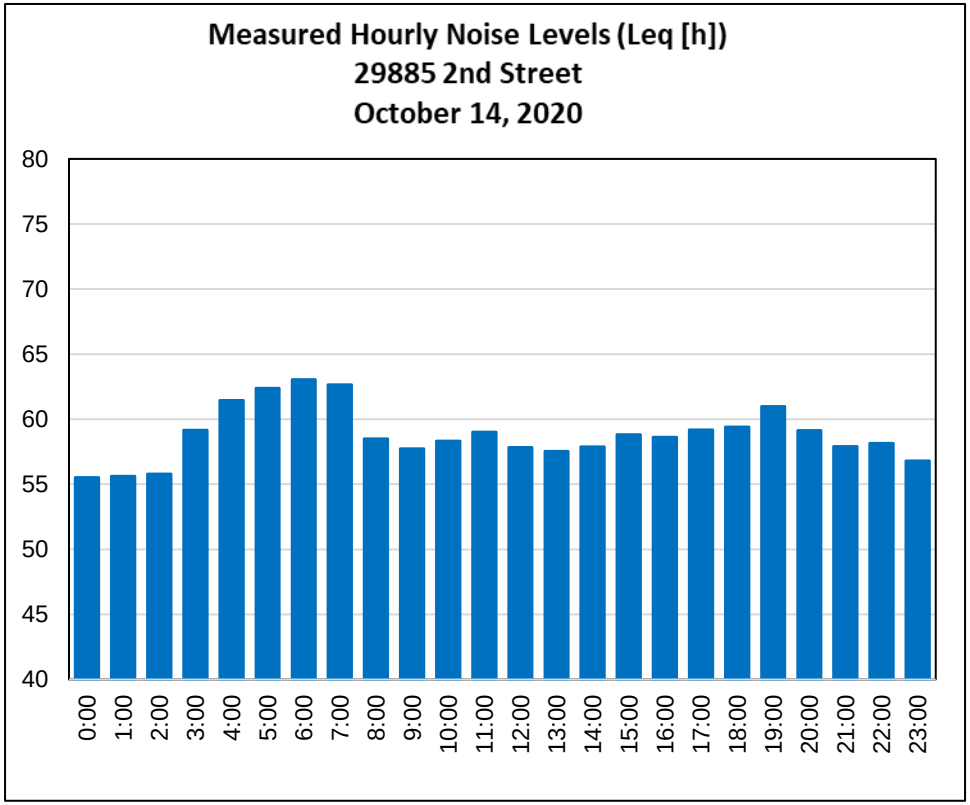

Figure 2.19-3. Long-Term Monitoring at Location LT-1.1

Table 2.19-4. Summary of Long-Term Monitoring at Location LT-2.1, October 14, 2020

Hour Beginning	Average (dBA L_{eq}[h])	Difference from Loudest Hour (dB)
12:00 AM	62.5	-5.9
1:00 AM	61.9	-6.5
2:00 AM	61.8	-6.6
3:00 AM	63.7	-4.7
4:00 AM	65.7	-2.7
5:00 AM	67.6	-0.8
6:00 AM	**68.4**	**0.0**
7:00 AM	67.8	-0.6
8:00 AM	65.2	-3.2
9:00 AM	63.9	-4.5
10:00 AM	62.9	-5.5
11:00 AM	62.2	-6.2
12:00 PM	62.3	-6.1
1:00 PM	61.9	-6.5
2:00 PM	62.0	-6.4
3:00 PM	64.0	-4.4
4:00 PM	64.6	-3.8
5:00 PM	64.6	-3.8
6:00 PM	65.8	-2.6
7:00 PM	67.4	-1.0
8:00 PM	66.2	-2.2
9:00 PM	66.2	-2.2
10:00 PM	64.4	-4.0
11:00 PM	63.6	-4.8

Source: NSR (Caltrans 2023a)

Note: Highest noise hour is bolded. dB=decibels; dBA=A-weighted decibel; Leq(h)=hourly equivalent noise level

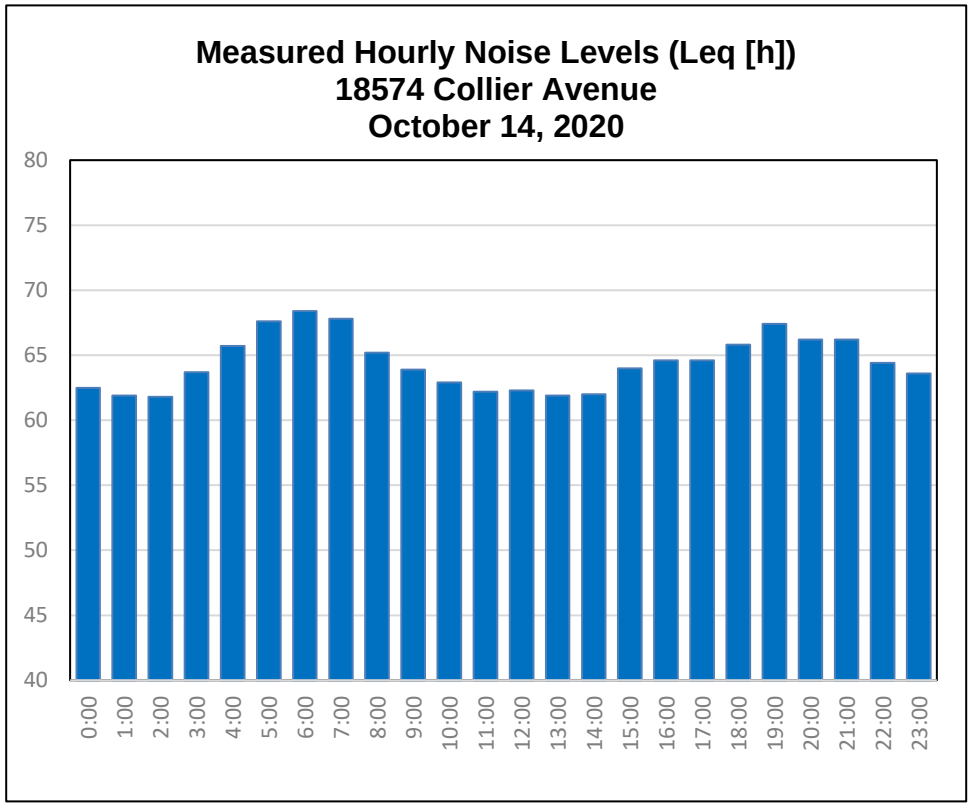

Figure 2.19-4. Long-Term Monitoring at Location LT-2.1

Table 2.19-5. Summary of Long-Term Monitoring at Location LT-3.1, October 14, 2020

Hour Beginning	Average (dBA L_{eq}[h])	Difference from Loudest Hour (dB)
12:00 AM	59.5	-7.8
1:00 AM	58.9	-8.4
2:00 AM	59.3	-8.0
3:00 AM	62.1	-5.2
4:00 AM	66.0	-1.3
5:00 AM	66.6	-0.7
6:00 AM	66.9	-0.4
7:00 AM	**67.3**	**0.0**
8:00 AM	65.6	-1.7
9:00 AM	64.5	-2.8
10:00 AM	63.5	-3.8
11:00 AM	63.3	-4.0
12:00 PM	63.3	-4.0
1:00 PM	62.8	-4.5
2:00 PM	64.0	-3.3
3:00 PM	65.7	-1.6
4:00 PM	65.1	-2.2
5:00 PM	65.4	-1.9
6:00 PM	64.6	-2.7
7:00 PM	63.8	-3.5
8:00 PM	63.0	-4.3
9:00 PM	62.6	-4.7
10:00 PM	61.1	-6.2
11:00 PM	60.0	-7.3

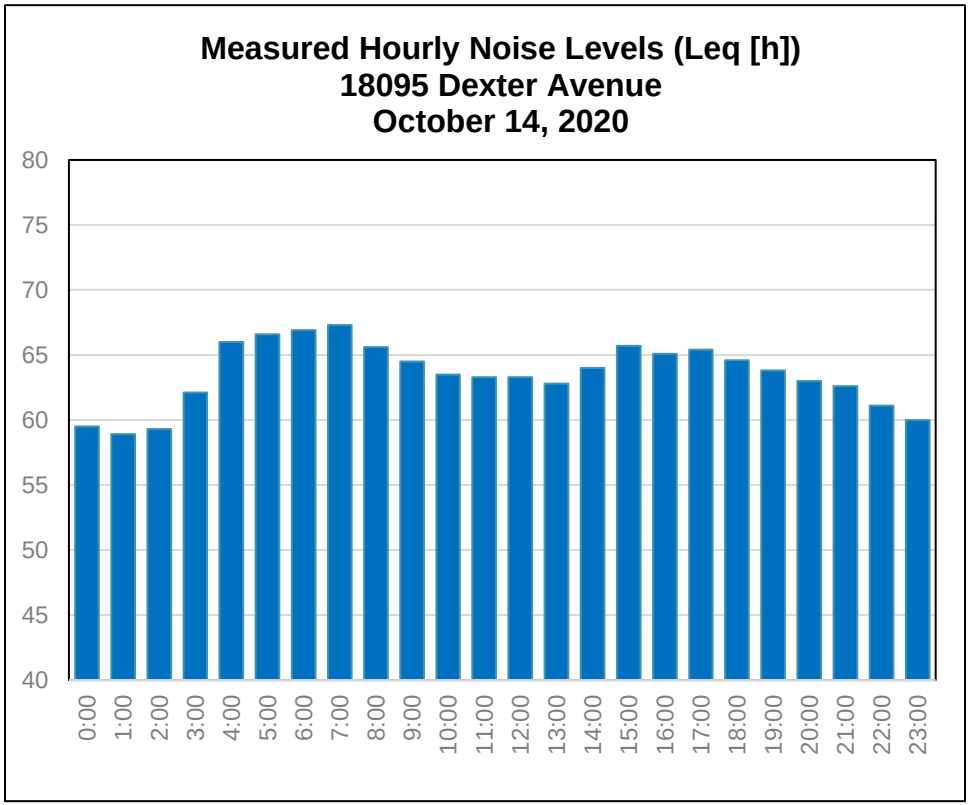

Figure 2.19-5. Long-Term Monitoring at Location LT-3.1

Source: NSR (Caltrans 2023a)

Note: Highest noise hour is bolded. dB=decibels; dBA=A-weighted decibel; Leq(h)=hourly equivalent noise level

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Table 2.19-6. Comparison of Measured and Modeled Noise Levels (dBA)

Measurement Location	Measured Noise Level		Modeled Noise Level		Average Measured Noise Level*	Average Modeled Noise Level*	Modeled minus Measured Level
	Run 1	Run 2	Run 1	Run 2			
Area 1							
ST-1.1	68.8	68.8	70.6	70.6	69	71	2
LT-1.1	58.7	58.6	58.1	58.1	59	58	-1
ST-1.2	64.2	64.2	66.5	66.5	64	67	3
ST-1.3	66.1	66.1	65.7	65.6	66	66	0
ST-1.4	64.1	64.4	66.0	65.9	64	66	2
ST-1.5	60.2	60.3	61.4	60.6	60	61	1
Area 2							
ST-2.1	66.5	66.1	68.5	68.6	66	69	3
LT-2.1	62.1	62.2	64.8	65.6	62	65	3
ST-2.2	58.5	58.9	61.6	61.1	59	61	2
ST-2.3	67.1	66.7	67.6	69.5	67	69	2
ST-2.4	60.4	60.4	62.7	63.8	60	63	3
Area 3							
ST-3.1	55.6	56.5	55.3	56.9	56	56	0
ST-3.2	69.2	68.6	67.1	67.8	69	67	-2
ST-3.3	64.7	64.7	67.1	67.2	65	67	2
ST-3.4	62.6	61.3	60.3	60.5	62	60	-2
ST-3.5	61.9	61.3	63.8	63.8	62	64	2

Table 2.19-6. Comparison of Measured and Modeled Noise Levels (dBA)

Measurement Location	Measured Noise Level		Modeled Noise Level		Average Measured Noise Level*	Average Modeled Noise Level*	Modeled minus Measured Level
	Run 1	Run 2	Run 1	Run 2			
ST-3.6	65.9	65.3	65.1	64.8	66	65	-1
LT-3.1	65.4	64.8	64.5	64.1	65	64	-1
ST-3.7	61.6	61.0	63.6	63.1	61	63	2
ST-3.8	68.7	69.4	71.8	72.3	69	72	3
ST-3.9	74.4	74.8	73.8	74.2	75	74	-1
ST-3.10	73.5	73.5	73.2	73.5	74	73	-1
Area 4							
ST-4.1	64.6	63.5	63.4	63.1	64	63	-1
ST-4.2	65.9	66.5	67.0	67.4	66	67	1
ST-4.3	60.1	60.6	62.6	63.1	60	63	3
ST-4.4	57.2	57.0	56.6	56.5	57	57	0
ST-4.5	63.2	62.2	65.1	64.3	63	65	2
ST-4.6	60.6	60.4	60.7	59.9	61	60	-1

Source: A/E Tech LLC

Notes:

* Logarithmic average

Existing Noise Levels

The noisiest hour (AM peak hour) traffic volumes and vehicle speeds were coded into the calibrated TNM 2.5 model with existing roadway conditions. A total of 48 modeling locations were selected to represent noise-sensitive areas throughout the Noise Study Area (see Figure 2.19-2). The results of the existing traffic noise modeling are shown in Table 2.19-7. Of the 48 modeled receptor locations,

seven receptors currently approach or exceed the 67 dBA L_{eq} NAC under Activity Category B and C, as described below and shown in Table 2.19-7.

- At receptor M2.01, the existing noise levels at the single-family residences are 69 dB
- At receptor M3.21 through M3.25, the existing noise levels at the high school tennis courts, football stadium, and sports fields are between 70 to 74 dB
- At receptor M3.12, the existing noise levels at the single-family residence are 67 dB

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Table 2.19-7. Existing Noise Levels

Receiver No.	Land Use	NAC	Represented Number of Units	Address	Existing Noise Level (Leq(h), dBA)
M1.01	Commercial Outdoor Area	E (72)	1	42015 Remington Avenue, Lake Elsinore, California 92530	70
M1.02	Commercial Outdoor Area	E (72)	1	29850 2nd Street, Lake Elsinore, California 92532	66
M1.03	Manufacturing Yard	F (None)	1	29885 2nd Street, Lake Elsinore, California 92532	65
M1.04	Single-family Residential	B (67)	1	29247 Allan Street, Lake Elsinore, California 92532	59
M1.05	Single-family Residential	B (67)	1	29225 Allan Street, Lake Elsinore, California 92532	59
M1.06	Single-family Residential	B (67)	1	29211 Allan Street, Lake Elsinore, California 92532	58
M1.07	Single-family Residential	B (67)	1	29193 Allan Street, Lake Elsinore, California 92532	57
M1.08	Single-family Residential	B (67)	1	29177 Allan Street, Lake Elsinore, California 92532	58
M1.09	Single-family Residential	B (67)	1	29161 Allan Street, Lake Elsinore, California 92532	57
M1.10	Single-family Residential	B (67)	1	29161 Allan Street, Lake Elsinore, California 92532	58
M1.11	Single-family Residential	B (67)	1	29139 Allan Street, Lake Elsinore, California 92532	59
M1.12	Outdoor Dining Area	E (72)	1	Taco Bell - 29230 Central Avenue, Lake Elsinore, California 92532	65
M2.01	Single-family Residential	B (67)	1	18740 Collier Avenue, Lake Elsinore, California 92530	69
M2.02	Single-family Residential	B (67)	1	18574 Collier Avenue, Lake Elsinore, California 92530	65
M2.03	Single-family Residential	B (67)	1	18570 Collier Avenue, Lake Elsinore, California 92530	64
M2.04	Outdoor Dining Area	E (72)	1	Pieology - 18310 Collier Avenue Suite B, Lake Elsinore, California 92530	61
M3.01	Single-family Residential	B (67)	1	18721 Conard Avenue, Lake Elsinore, California 92532	55

Table 2.19-7. Existing Noise Levels

Receiver No.	Land Use	NAC	Represented Number of Units	Address	Existing Noise Level (Leq(h), dBA)
M3.02	Outdoor Dining Area	E (72)	1	Del Taco - 29245 Central Avenue, Lake Elsinore, California 92532	69
M3.03	Outdoor Dining Area	E (72)	1	Panda Express - 29255 Central Avenue, Lake Elsinore, California 92532	68
M3.04	Fast-Food Restaurant	E (72)	1	Burger King - 18611 Dexter Avenue, Lake Elsinore, California 92532	68
M3.05	Outdoor Dining Area	E (72)	1	Costco Food Court – 29315 Central Avenue, Lake Elsinore, California 92532	60
M3.06	Church Outdoor	C (67)	1	Church - 18220 Dexter Avenue, Lake Elsinore, California 92532	62
M3.07	Single-family Residential	B (67)	1	18193 Dexter Avenue, Lake Elsinore, California 92532	63
M3.08	Single-family Residential	B (67)	1	18187 Dexter Avenue, Lake Elsinore, California 92532	61
M3.09	Single-family Residential	B (67)	1	18169 Dexter Avenue, Lake Elsinore, California 92532	65
M3.10	Single-family Residential	B (67)	1	29055 11th Street, Lake Elsinore, California 92532	64
M3.11	Single-family Residential	B (67)	1	18159 Dexter Avenue, Lake Elsinore, California 92532	66
M3.12	Single-family Residential	B (67)	1	28913 11th Street, Lake Elsinore, California 92532	67
M3.13	Single-family Residential	B (67)	1	18095 Dexter Avenue, Lake Elsinore, California 92532	64
M3.14	Single-family Residential	B (67)	1	18085 Dexter Avenue, Lake Elsinore, California 92532	62
M3.15	Single-family Residential	B (67)	1	18075 Dexter Avenue, Lake Elsinore, California 92532	64
M3.16	Single-family Residential	B (67)	1	18080 Dexter Avenue, Lake Elsinore, California 92532	66
M3.17	Single-family Residential	B (67)	1	18065 Dexter Avenue, Lake Elsinore, California 92532	64
M3.18	Single-family Residential	B (67)	1	18055 Dexter Avenue, Lake Elsinore, California 92532	63

Table 2.19-7. Existing Noise Levels

Receiver No.	Land Use	NAC	Represented Number of Units	Address	Existing Noise Level (Leq(h), dBA)
M3.19	Single-family Residential	B (67)	1	18045 Dexter Avenue, Lake Elsinore, California 92532	63
M3.20	Single-family Residential	B (67)	1	18035 Dexter Avenue, Lake Elsinore, California 92532	63
M3.21	Active Sports Area	C (67)	1	Temescal Valley High School, 28755 El Toro Road – Tennis Courts	73
M3.22	Active Sports Area	C (67)	1	Temescal Valley High School - Tennis Courts	70
M3.23	Active Sports Area	C (67)	1	Temescal Valley High School - Football Stadium bleachers	74
M3.24	Active Sports Area	C (67)	1	Temescal Valley High School - Soccer Field	74
M3.25	Active Sports Area	C (67)	1	Temescal Valley High School - Baseball Field	72
M3.25A	Active Sports Area	C (67)	--	Temescal Valley High School - Baseball Field	70
M4.01	Outdoor Dining Area	E (72)	1	Farmer Boys - 18288 Collier Avenue, Lake Elsinore, California 92530	66
M4.02	Outdoor Dining Area	E (72)	1	Weinerschnitzel - 18284 Collier Avenue #200, Lake Elsinore, California 92530	67
M4.03	Cemetery	C (67)	1	Elsinore Valley Cemetery - 18170 Collier Avenue, Lake Elsinore, California 92530	61
M4.04	Commercial Use	E (72)	1	29033 El Toro Road, Lake Elsinore, California 92530	62
M4.05	Commercial Outdoor Area	E (72)	1	17600 Collier Avenue, Lake Elsinore, California 92530 Outlets Lake Elsinore – Seating area next to Building A	57
M4.06	Commercial Outdoor Area	E (72)	1	Outlets Lake Elsinore – Seating area between Buildings E and G	65

Source: NSR (Caltrans 2023a).

Notes:

1 Existing noise levels were calculated for 2018. Detailed information on how traffic noise levels were calculated is provided in the NSR (Caltrans 2023a).

dBA=A-weighted decibel; Leq(h)=hourly equivalent noise level; NAC=Noise Abatement Criteria

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2.19.3 Environmental Consequences

FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway at a new location or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment of the highway or increases the number of through-traffic lanes. The Project is considered a Type I project according to 23 CFR 772 because it will alter the interchange at I-15 and SR-74 by creating new on- and off-ramps on the NB direction of I-15, modifying the southbound I-15 ramps, and creating new collector lanes in both directions of I-15 (for details, see Chapter 1, Proposed Project). A noise analysis is required for all Type I projects. The noise analysis was conducted in accordance with FHWA and Caltrans guidelines to determine whether the Project noise Under 23 CFR 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR 772 requires that the project sponsor "consider" noise abatement before adoption of the final NEPA document. This process involves identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project as well as the identification of noise impacts for which no apparent solution is available.

The noise study evaluated Alternative 1 (No-Build) and the Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]) based on a design 20-year cycle from 2025 to 2045. However, for the purposes of this noise impacts analysis, Horizon Year (2050) traffic has been used as it is consistent with the I-15 corridor horizon year that was set for the I-15 Express Lanes Project Southern Extension (ELPSE) – (EA: 0J0820), which is a separate project sponsored by RCTC that overlaps the area of the Project limits. To maintain consistency between these two projects, Caltrans recommended that the noise analysis be based on Horizon Year (2050) traffic, or noise analysis Horizon Year (2050) to objectively evaluate potential noise barriers for both the freeway corridor and the local interchange. Traffic noise modeling of the noise analysis Horizon Year (2050) conditions, including that for Alternative 1 (No-Build), Alternative 2 (NB Hook Ramps), and Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop-Off Ramp to WB SR-74), was incorporated in the I-15 ELPSE geometric design and additional traffic volumes due to the ultimate addition of potential future managed lanes.

Abatement was considered at any modeled receptors which approached or exceeded the NAC for the respective Land Use Activity Category or was predicted to have a substantial increase (12 dBA or more increase during the noise analysis Horizon Year (2050) relative to the existing traffic noise level). Abatement in the form of noise barriers, ranging in height from 6 through 16 feet at the edge of shoulder, at the right of way, or on private properties was considered in the analysis. The reasonable allowance for each noise barrier found to be feasible (5 dBA insertion loss) and meet the

design goal (7 dBA insertion loss) was calculated (based on $107,000 per benefitted receptor) and compared to the engineer's cost estimate to construct the noise barrier. If the engineer's cost estimate is less than the allowance and the abatement will provide at least 7 dBA of noise reduction at one or more benefited receptors, then the preliminary determination is that the abatement is reasonable. If the cost estimate is higher than the allowance or if the design goal cannot be achieved, the preliminary determination is that abatement is not reasonable.

2.19.3.1 Temporary Impacts

Alternative 1 (No-Build)

There will be no construction activities under Alternative 1 (No-Build). Therefore, there will be no temporary noise impacts under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

During construction of the Project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise will result from the transport of construction workers and equipment and materials to and from the Project site, as well as from actual roadway construction activities.

Table 2.19-8 lists noise levels produced by construction equipment that is commonly used on roadway construction projects, based on distances of 50 and 100 feet between the equipment and a noise receptor. Construction equipment is expected to generate noise levels up to 89 dBA at 50 feet, and 83 dBA at 100 feet. Noise produced by construction equipment will be reduced over distance at a rate of about 6 dBA per doubling of distance.

Table 2.19-8. Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)	Maximum Noise Level (dBA at 100 feet)
Scrapers	89	83
Bulldozers	85	79
Heavy Trucks	88	82
Backhoe	80	74
Pneumatic Tools	85	79
Concrete Pump	82	76

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, 2006.

The closest sensitive receptor, receptor M3.10 (residential use), is located approximately 50 feet to the north of the Project limits. Therefore, these receptor locations could be subject to short-term

noise between approximately 80 and 89 dBA maximum noise level (L_{max}) generated by construction activities along the Project limits (Table 2.19-8). However, construction noise will be short-term and intermittent, and the Project will comply with applicable noise-related local, state, and federal regulations. Additionally, the Project will implement Measure N-1, which requires adherence to Caltrans Standard Specifications Section 14-8.02 (Noise Control) and SSP 14-8.02 (which will be edited during the PS&E phase of the project), and N-2 which requires that all equipment be fitted with adequate mufflers according to the manufacturers' specifications. With the implementation of Measures N-1 and N-2, no temporary adverse impacts related to noise will occur during construction of the Project under the Build Alternatives.

2.19.3.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), long-term noise impacts will occur from traffic noise and are described in Tables 2.19-8 and 2.19-9. Noise measurement results indicate that traffic noise levels at various locations surrounding the Project limits either approach or exceed the aforementioned NAC for frequent outdoor use areas during the peak noise hour. Noise modeling results indicate many residential land use locations are projected to experience a 0 to 3 dBA increase under the noise analysis Horizon Year (2050) Alternative 1 (No-Build) conditions. However, operation of both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]) improvements to the interchange at I-15 and SR-74 will not occur under Alternative 1 (No-Build); therefore, abatement associated with the Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]) will not be implemented under the Alternative 1(No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Table 2.19-9 below shows the noise analysis Horizon Year (2050) build conditions traffic noise level results under Alternative 2. The results of the traffic noise analysis indicate that predicted traffic noise levels for the noise analysis Horizon Year (2050) will:

- Approach or exceed the NAC of 67 dB Leq(h) for Activity Category B land uses within Areas 2 and 3 and Activity Category C land uses within Area 3, and
- Approach or exceed the NAC of 72 dB Leq(h) for Activity Category E land uses within Areas 1 and 3.

Receptors where traffic noise levels are predicted to approach or exceed the NAC during the noise analysis Horizon Year (2050) under Alternative 2 are discussed in more detail below.

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Table 2.19-9. Predicted Future (2050) Noise Levels and Barrier Analysis – Alternative 2

Receiver Identification	Measurement Location	Barrier Identification	Barrier Location	Barrier Stations	Barrier Length (ft)	Land Use[2]	Number of Dwelling Units	Existing Noise Level $L_{eq}(h)$, dBA[1]	Future Worst Hour Noise Levels – $L_{eq}(h)$, dBA[1]							Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)																	
																6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
									Noise Analysis Horizon Year (2050) No-Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year (2050) Build Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) No Build Noise Level and Existing Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) Build Noise Level and Noise Analysis Horizon Year No Build Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) Build Noise Level and Existing Noise Level $L_{eq}(h)$, dBA[1]	Activity Category (NAC)	Impact Type[3]	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
M1.01	--	N1142A	EOS	1141+07 – 1146+25	526	COM	1	70	71	71	1	0	1	E (72)	A/E	67	4	0	66	5	1	65	6	1	64	7	1	63	8	1	63	8	1
M1.02	--					COM	1	66	68	68	2	0	2	E (72)	--	65	3	0	64	4	0	64	4	0	63	5	1	62	6	1	62	6	1
M1.01	--	N1142B	ROW	1141+30 – 1146+25	495	COM	1	70	71	71	1	0	1	E (72)	A/E	71	0	0	69	2	0	67	4	0	66	5	1	65	6	1	63	8	1
M1.02	--					COM	1	66	68	68	2	0	2	E (72)	--	68	0	0	67	1	0	66	2	0	64	4	0	63	5	1	63	5	1
M1.03 [4]	--					MAN	1	65	67	67	2	0	2	F (None)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.04	--					SFR	1	59	61	62	2	1	3	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.05	--					SFR	1	59	62	61	3	-1	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.06	--					SFR	1	58	61	60	3	-1	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.07	--					SFR	1	57	60	60	3	0	3	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.08	--					SFR	1	58	60	60	2	0	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.09	--					SFR	1	57	60	59	3	-1	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.10	--					SFR	1	58	60	60	2	0	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.11	--					SFR	1	59	61	61	2	0	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.12	--					COM	1	65	67	68	2	1	3	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M2.01	--	S1137A	EOS	1139+00 – 1142+75	380	SFR	1	69	70	70	1	0	1	B (67)	A/E	68	2	0	67	3	0	66	4	0	66	4	0	66	4	0	65	5	1
M2.01	--	S1137B	ROW	1139+11 – 1141+58	238	SFR	1	69	70	70	1	0	1	B (67)	A/E	69	1	0	69	1	0	67	3	0	66	4	0	65	5	1	65	5	1
M2.02	LT-2.1	S1151A	TOB	1151+61 – 1157+00	539	SFR	1	65	67	67	2	0	2	B (67)	A/E	66	1	0	66	1	0	65	2	0	65	2	0	65	2	0	65	2	0
M2.03	--					SFR	1	64	65	66	1	1	2	B (67)	A/E	65	1	0	65	1	0	65	1	0	65	1	0	65	1	0	65	1	0
M2.02	LT-2.1	S1151B	EOS	1151+00 – 1158+00	700	SFR	1	65	67	67	2	0	2	B (67)	A/E	66	1	0	65	2	0	66	1	0	65	2	0	64	3	0	63	4	0
M2.03	--					SFR	1	64	65	66	1	1	2	B (67)	A/E	66	0	0	65	1	0	66	0	0	65	1	0	65	1	0	65	1	0

Table 2.19-9. Predicted Future (2050) Noise Levels and Barrier Analysis – Alternative 2

Receiver Identification	Measurement Location	Barrier Identification	Barrier Location	Barrier Stations	Barrier Length (ft)	Land Use[2]	Number of Dwelling Units	Existing Noise Level $L_{eq}(h)$, dBA[1]	Future Worst Hour Noise Levels – $L_{eq}(h)$, dBA[1]																										
									Noise Analysis Horizon Year (2050) No-Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year (2050) Build Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) No Build Noise Level and Existing Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) Build Noise Level and Noise Analysis Horizon Year No Build Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) Build Noise Level and Existing Noise Level $L_{eq}(h)$, dBA[1]	Activity Category (NAC)	Impact Type[3]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)																			
																	6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
																	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
M2.02	LT-2.1	S1151C	ROW	1151+52 – 1156+09	457	SFR	1	65	67	67	2	0	2	B (67)	A/E	67	0	0	67	0	0	64	3	0	64	3	0	63	4	0	63	4	0
M2.03	--					SFR	1	64	65	66	1	1	2	B (67)	A/E	66	0	0	66	0	0	66	0	0	66	0	0	66	0	0	66	0	0
M2.04	ST-2.4					COM	1	61	62	63	1	1	2	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M3.01	--					SFR	1	55	57	57	2	0	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M3.02	ST-3.2	W25A	ROW	24+69 – 26+17	150	COM	1	69	71	71	2	0	2	E (72)	A/E	66	5	1	65	6	1	65	6	1	65	6	1	65	6	1	64	7	1
M3.02	ST-3.2	W25B[1]	P.P.	25+09 – 25+61	60	COM	1	69	71	71	2	0	2	E (72)	A/E	66	5	1	62	9	1	61	10	1	60	11	1	59	12	1	59	12	1
M3.03	--					COM	1	68	70	70	2	0	2	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M3.05	--					COM	1	60	61	62	1	1	2	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M3.06 [4]	--					REL	1	62	63	65	1	2	3	C (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M3.07	--	N1202A	EOS	1201+54 – 1237+00	3,602	SFR	1	63	64	69	1	5	6	B (67)	A/E	68	1	0	66	3	0	64	5	1	63	6	1	63	6	1	62	7	1
M3.08	--					SFR	1	61	62	68	1	6	7	B (67)	A/E	65	3	0	63	5	1	63	5	1	62	6	1	62	6	1	61	7	1
M3.09	--					SFR	1	65	66	70	1	4	5	B (67)	A/E	68	2	0	67	3	0	66	4	0	64	6	1	63	7	1	63	7	1
M3.10	--					SFR	1	64	65	73	1	8	9	B (67)	A/E	70	3	0	67	6	1	65	8	1	63	10	1	62	11	1	61	12	1
M3.11	ST-3.6					SFR	1	66	67	72	1	5	6	B (67)	A/E	69	3	0	67	5	1	66	6	1	65	7	1	64	8	1	63	9	1
M3.12	--					SFR	1	67	68	68	1	0	1	B (67)	A/E	68	0	0	68	0	0	68	0	0	68	0	0	68	0	0	68	0	0
M3.13	LT-3.1					SFR	1	64	65	66	1	1	2	B (67)	A/E	65	1	0	63	3	0	62	4	0	62	4	0	61	5	1	60	6	1
M3.14	--					SFR	1	62	64	64	2	0	2	B (67)	--	63	1	0	62	2	0	61	3	0	60	4	0	60	4	0	60	4	0
M3.15	--					SFR	1	64	65	66	1	1	2	B (67)	A/E	65	1	0	64	2	0	63	3	0	62	4	0	62	4	0	61	5	1
M3.16	--					SFR	1	66	66	68	0	2	2	B (67)	A/E	67	1	0	67	1	0	67	1	0	67	1	0	67	1	0	67	1	0

[1]These values were collected from the Addendum to the Noise Study Report (Caltrans 2023c)

Table 2.19-9. Predicted Future (2050) Noise Levels and Barrier Analysis – Alternative 2

Receiver Identification	Measurement Location	Barrier Identification	Barrier Location	Barrier Stations	Barrier Length (ft)	Land Use[2]	Number of Dwelling Units	Existing Noise Level $L_{eq}(h)$, dBA[1]	Future Worst Hour Noise Levels – $L_{eq}(h)$, dBA[1]																						
																	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)														
																	6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
									Noise Analysis Horizon Year (2050) No-Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year (2050) Build Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) No Build Noise Level and Existing Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) Build Noise Level and Noise Analysis Horizon Year No Build Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) Build Noise Level and Existing Noise Level $L_{eq}(h)$, dBA[1]	Activity Category (NAC)	Impact Type[3]	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
M3.17	--					SFR	1	64	66	66	2	0	2	B (67)	A/E	65	1	0	63	3	0	62	4	0	62	4	0	61	5	1	60	6	1
M3.18	--					SFR	1	63	64	64	1	0	1	B (67)	--	63	1	0	62	2	0	61	3	0	60	4	0	59	5	1	59	5	1
M3.19	--					SFR	1	63	64	64	1	0	1	B (67)	--	64	0	0	63	1	0	62	2	0	61	3	0	61	3	0	60	4	0
M3.20	--					SFR	1	63	65	65	2	0	2	B (67)	--	64	1	0	63	2	0	62	3	0	62	3	0	61	4	0	60	5	1
M3.21	ST-3.8					REC	1	73	74	74	1	0	1	C (67)	A/E	74	0	0	71	3	0	69	5	1	67	7	1	65	9	1	64	10	1
M3.22	--					REC	1	70	72	72	2	0	2	C (67)	A/E	69	3	0	67	5	1	66	6	1	64	8	1	63	9	1	62	10	1
M3.23	ST-3.9					REC	1	74	75	75	1	0	1	C (67)	A/E	74	1	0	71	4	0	69	6	1	68	7	1	66	9	1	64	11	1
M3.24	--					REC	1	74	75	75	1	0	1	C (67)	A/E	75	0	0	73	2	0	71	4	0	69	6	1	67	8	1	65	10	1
M3.25	ST-3.10					REC	1	72	73	73	1	0	1	C (67)	A/E	73	0	0	72	1	0	70	3	0	68	5	1	67	6	1	65	8	1
M3.25A	--					REC	--	70	71	71	1	0	1	C (67)	A/E	71	0	0	69	2	0	68	3	0	67	4	0	66	5	--	65	6	--
M3.07	--	N1202B	EOS	1201+54 – 1206+80	580	SFR	1	63	64	69	1	5	6	B (67)	A/E	68	1	0	66	3	0	64	5	1	63	6	1	63	6	1	62	7	1
M3.08	--					SFR	1	61	62	68	1	6	7	B (67)	A/E	65	3	0	63	5	1	63	5	1	62	6	1	62	6	1	61	7	1
M3.09	--					SFR	1	65	66	70	1	4	5	B (67)	A/E	69	1	0	68	2	0	67	3	0	66	4	0	65	5	1	65	5	1
M3.10	--					SFR	1	64	65	73	1	8	9	B (67)	A/E	70	3	0	67	6	1	65	8	1	63	10	1	62	11	1	61	12	1
M3.11	ST-3.6					SFR	1	66	67	72	1	5	6	B (67)	A/E	69	3	0	68	4	0	67	5	1	67	5	1	66	6	1	66	6	1
M3.12	--					SFR	1	67	68	68	1	0	1	B (67)	A/E	68	0	0	68	0	0	68	0	0	68	0	0	68	0	0	68	0	0
M3.13	LT-3.1	N1208A	EOS	1207+50 – 1217+00	947	SFR	1	64	65	66	1	1	2	B (67)	A/E	65	1	0	64	2	0	63	3	0	63	3	0	62	4	0	62	4	0
M3.14	--					SFR	1	62	64	64	2	0	2	B (67)	--	64	0	0	63	1	0	62	2	0	62	2	0	62	2	0	62	2	0
M3.15	--					SFR	1	64	65	66	1	1	2	B (67)	A/E	65	1	0	64	2	0	63	3	0	63	3	0	62	4	0	62	4	0
M3.16	--					SFR	1	66	66	68	0	2	2	B (67)	A/E	68	0	0	68	0	0	67	1	0	67	1	0	67	1	0	67	1	0
M3.17	--					SFR	1	64	66	66	2	0	2	B (67)	A/E	65	1	0	64	2	0	63	3	0	62	4	0	62	4	0	61	5	1

Table 2.19-9. Predicted Future (2050) Noise Levels and Barrier Analysis – Alternative 2

Receiver Identification	Measurement Location	Barrier Identification	Barrier Location	Barrier Stations	Barrier Length (ft)	Land Use[2]	Number of Dwelling Units	Existing Noise Level $L_{eq}(h)$, dBA[1]	Future Worst Hour Noise Levels – $L_{eq}(h)$, dBA[1]							Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)																	
																6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
									Noise Analysis Horizon Year (2050) No-Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year (2050) Build Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) No Build Noise Level and Existing Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) Build Noise Level and Noise Analysis Horizon Year No Build Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) Build Noise Level and Existing Noise Level $L_{eq}(h)$, dBA[1]	Activity Category (NAC)	Impact Type[3]	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
M3.18	--					SFR	1	63	64	64	1	0	1	B (67)	--	63	1	0	62	2	0	61	3	0	61	3	0	60	4	0	60	4	0
M3.19	--					SFR	1	63	64	64	1	0	1	B (67)	--	64	0	0	63	1	0	63	1	0	62	2	0	62	2	0	62	2	0
M3.20	--					SFR	1	63	65	65	2	0	2	B (67)	--	65	0	0	64	1	0	63	2	0	63	2	0	62	3	0	62	3	0
M3.13	LT-3.1					SFR	1	64	65	66	1	1	2	B (67)	A/E	66	0	0	63	3	0	62	4	0	61	5	1	60	6	1	59	7	1
M3.14	--	N1208B	P.P.	1208+71 – 1211+15	361	SFR	1	62	64	64	2	0	2	B (67)	--	64	0	0	63	1	0	62	2	0	62	2	0	61	3	0	61	3	0
M3.15	--					SFR	1	64	65	66	1	1	2	B (67)	A/E	65	1	0	63	3	0	63	3	0	62	4	0	61	5	1	61	5	1
M3.16	--					SFR	1	66	66	68	0	2	2	B (67)	A/E	68	0	0	68	0	0	68	0	0	68	0	0	68	0	0	68	0	0
M3.17	--					SFR	1	64	66	66	2	0	2	B (67)	A/E	65	1	0	64	2	0	63	3	0	63	3	0	62	4	0	62	4	0
M3.18	--					SFR	1	63	64	64	1	0	1	B (67)	--	64	0	0	63	1	0	62	2	0	61	3	0	61	3	0	61	3	0
M3.19	--	N1212	P.P.	1211+60 – 1215+06	483	SFR	1	63	64	64	1	0	1	B (67)	--	65	-1	0	64	0	0	63	1	0	62	2	0	62	2	0	61	3	0
M3.20	--					SFR	1	63	65	65	2	0	2	B (67)	--	65	0	0	64	1	0	63	2	0	62	3	0	62	3	0	61	4	0
M3.21	ST-3.8					REC	1	73	74	74	1	0	1	C (67)	A/E	74	0	0	71	3	0	70	4	0	68	6	1	67	7	1	66	8	1
M3.22	--	N1214A	EOS	1214+00 – 1237+00	2,300	REC	1	70	72	72	2	0	2	C (67)	A/E	69	3	0	68	4	0	66	6	1	65	7	1	64	8	1	63	9	1
M3.23	ST-3.9					REC	1	74	75	75	1	0	1	C (67)	A/E	74	1	0	71	4	0	69	6	1	68	7	1	66	9	1	64	11	1
M3.24	--					REC	1	74	75	75	1	0	1	C (67)	A/E	75	0	0	74	1	0	71	4	0	69	6	1	67	8	1	65	10	1
M3.25	ST-3.10	N1214A	EOS	1214+00 – 1237+00	2,300	REC	1	72	73	73	1	0	1	C (67)	A/E	73	0	0	72	1	0	70	3	0	68	5	1	67	6	1	65	8	1
M3.25A	--					REC	--	70	71	71	1	0	1	C (67)	A/E	71	0	--	69	2	--	69	2	--	68	3	--	67	4	--	66	5	--
M3.21	ST-3.8					REC	1	73	74	74	1	0	1	C (67)	A/E	68	6	1	66	8	1	64	10	1	63	11	1	62	12	1	61	13	1
M3.22	--	N1214B	P.P.	1214+26 – 1235+15	2,214	REC	1	70	72	72	2	0	2	C (67)	A/E	65	7	1	64	8	1	63	9	1	62	10	1	62	10	1	61	11	1
M3.23	ST-3.9					REC	1	74	75	75	1	0	1	C (67)	A/E	75	0	0	69	6	1	65	10	1	63	12	1	62	13	1	60	15	1

Table 2.19-9. Predicted Future (2050) Noise Levels and Barrier Analysis – Alternative 2

Receiver Identification	Measurement Location	Barrier Identification	Barrier Location	Barrier Stations	Barrier Length (ft)	Land Use[2]	Number of Dwelling Units	Existing Noise Level $L_{eq}(h)$, dBA[1]	Future Worst Hour Noise Levels – $L_{eq}(h)$, dBA[1]						
									Noise Analysis Horizon Year (2050) No-Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year (2050) Build Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) No Build Noise Level and Existing Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) Build Noise Level and Noise Analysis Horizon Year No Build Noise Level $L_{eq}(h)$, dBA[1]	Net Change between Noise Analysis Horizon Year (2050) Build Noise Level and Existing Noise Level $L_{eq}(h)$, dBA[1]	Activity Category (NAC)	Impact Type[3]
									Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers						
									6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
									$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
M3.24	--					REC	1	74	75	75	1	0	1	C (67)	A/E	67	8	1	66	9	1	64	11	1	63	12	1	62	13	1	61	14	1
M3.25	ST-3.10					REC	1	72	73	73	1	0	1	C (67)	A/E	65	8	1	64	9	1	63	10	1	62	11	1	61	12	1	60	13	1
M3.25A	--					REC	--	70	71	71	1	0	1	C (67)	A/E	63	8	--	62	9	--	61	10	--	60	11	--	60	11	--	59	12	--
M4.01	ST-4.1					COM	1	66	69	69	3	0	3	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M4.02	--					COM	1	67	69	69	2	0	2	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M4.03	ST4.2					CEM	1	61	63	64	2	1	3	C (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M4.04 [4]	ST-4.3					COM	1	62	64	64	2	0	2	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M4.05	--					COM	1	57	58	58	1	0	1	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M4.06	ST-4.5					COM	1	65	65	65	0	0	0	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Source: NSR (Caltarns 2023a).

Notes:

1 – $L_{eq}(h)$ are A-weighted, peak hour noise levels in decibels.

2 – Land Use: SFR – single-family residence; REC – recreational; REL – religious institution; CEM – cemetery; COM – commercial; MAN – Manufacturing; UND – Undeveloped Land

3 – S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC

4 – This receptor does not represent a frequent outdoor use area and is for reporting purposes only.

EOS = Edge of Shoulder

ROW = Right of Way

TOB = Top of Berm

I.L. = Insertion Loss

NBR = Number of Benefited Receivers

Special Note: Based on a field review, it is deemed that a right of way noise barrier will not be feasible for receivers M3-07 through M3-25 due to large variations in topography along the I-15 NB right of way line and related drainage issues, which will render a noise barrier ineffective at many of the noise receivers in this area.

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In Area 1, the noise analysis Horizon Year (2050) traffic noise levels at receptor M1.01 will approach the NAC of 72 dBA Leq(h) for Activity Category E land uses.

In Area 2, the noise analysis Horizon Year (2050) traffic noise levels at receptors M2.01, M2.02, and M2.03, representing three residential receptors, will approach the NAC of 67 dBA Leq(h) for Activity Category B land uses.

In Area 3, the noise analysis Horizon Year (2050) highest-hour traffic noise level at receptor M3.02 will approach the NAC of 72 dBA Leq(h) for Activity Category E land uses. Also in Area 3, the noise analysis Horizon Year (2050) traffic noise levels at 10 residential properties represented by receptors M3.07 through M3.13 and receptors M3.15 through M3.17 will approach or exceed the NAC of 67 dBA Leq(h). In addition, the noise analysis Horizon Year (2050) traffic noise levels at five locations within the Temescal Canyon High School sports area, shown as receptors M3.21 through M3.25, will exceed the NAC of 67 dBA Leq(h).

In Area 4, the noise analysis Horizon Year (2050) worst-hour noise levels at all the modeled receptors will remain below the applicable NAC under Alternative 2.

Based on the above results, noise abatement must be considered for receptors located in Areas 1, 2, and 3 under Alternative 2, and are discussed in Section 2.19.4.5.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Table 2.19-10 below shows the noise analysis Horizon Year build conditions traffic noise level results under Alternative 3 (Preferred Alternative). The results of the traffic noise analysis indicate that predicted traffic noise levels for the noise analysis Horizon Year (2050) will:

- Approach or exceed the NAC of 67 dBA Leq(h) for Activity Category B land uses within Areas 2 and 3 and Activity Category C land uses within Area 3, and
- Approach or exceed the NAC of 72 dBA Leq(h) for Activity Category E land uses within Areas 1 and 3.

Receptors where traffic noise levels are predicted to approach or exceed the NAC during the noise analysis Horizon Year (2050) under Alternative 3 (Preferred Alternative) are discussed in more detail below.

In Area 1, the noise analysis Horizon Year (2050) traffic noise level at receptor M1.01 will approach the NAC of 72 dBA Leq(h) for Activity Category E land uses.

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Table 2.19-10. Predicted Future (2050) Noise Levels and Barrier Analysis – Alternative 3 (Preferred Alternative)

Receiver Identification	Measurement Location	Barrier Identification	Barrier Location	Barrier Stations	Barrier Length (ft)	Land Use[2]	Number of Dwelling Units	Existing Noise Level $L_{eq}(h)$, dBA[1]	Future Worst Hour Noise Levels – $L_{eq}(h)$, dBA[1]																										
									Noise Analysis Horizon Year No-Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year No Build Noise Level Minus Existing Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level Minus Noise Analysis Horizon Year No Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level Minus Existing Noise Level $L_{eq}(h)$, dBA[1]	Activity Category (NAC)	Impact Type[3]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)																			
																	6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
																	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
M1.01	--	N1142A	EOS	1141+07 – 1146+25	526	COM	1	70	71	71	1	0	1	E (72)	A/E	67	4	0	66	5	1	65	6	1	64	7	1	63	8	1	63	8	1
M1.02	--					COM	1	66	68	68	2	0	2	E (72)	--	65	3	0	64	4	0	64	4	0	63	5	1	62	6	1	62	6	1
M1.01	--	N1142B	ROW	1141+30 – 1146+25	495	COM	1	70	71	71	1	0	1	E (72)	A/E	71	0	0	69	2	0	67	4	0	66	5	1	65	6	1	63	8	1
M1.02	--					COM	1	66	68	68	2	0	2	E (72)	--	68	0	0	67	1	0	66	2	0	64	4	0	63	5	1	63	5	1
M1.03 [4]	--					MAN	1	65	67	67	2	0	2	F (None)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.04	--					SFR	1	59	61	62	2	1	3	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.05	--					SFR	1	59	62	61	3	-1	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.06	--					SFR	1	58	61	60	3	-1	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.07	--					SFR	1	57	60	60	3	0	3	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.08	--					SFR	1	58	60	60	2	0	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.09	--					SFR	1	57	60	59	3	-1	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.10	--					SFR	1	58	60	60	2	0	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.11	--					SFR	1	59	61	61	2	0	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M1.12	--					COM	1	65	67	68	2	1	3	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M2.01	--	S1137A	EOS	1139+00 – 1142+75	380	SFR	1	69	70	70	1	0	1	B (67)	A/E	68	2	0	67	3	0	66	4	0	66	4	0	66	4	0	65	5	1
M2.01	--	S1137B	ROW	1139+11 – 1141+58	238	SFR	1	69	70	70	1	0	1	B (67)	A/E	69	1	0	69	1	0	67	3	0	66	4	0	65	5	1	65	5	1
M2.02	LT-2.1	S1151A	TOB	1151+61 – 1157+00	539	SFR	1	65	67	67	2	0	2	B (67)	A/E	66	1	0	66	1	0	65	2	0	65	2	0	65	2	0	65	2	0
M2.03	--					SFR	1	64	65	66	1	1	2	B (67)	A/E	65	1	0	65	1	0	65	1	0	65	1	0	65	1	0	65	1	0
M2.02	LT-2.1	S1151B	EOS	1151+00 – 1158+00	700	SFR	1	65	67	67	2	0	2	B (67)	A/E	66	1	0	65	2	0	66	1	0	65	2	0	64	3	0	63	4	0
M2.03	--					SFR	1	64	65	66	1	1	2	B (67)	A/E	66	0	0	65	1	0	66	0	0	65	1	0	65	1	0	65	1	0

Table 2.19-10. Predicted Future (2050) Noise Levels and Barrier Analysis – Alternative 3 (Preferred Alternative)

Receiver Identification	Measurement Location	Barrier Identification	Barrier Location	Barrier Stations	Barrier Length (ft)	Land Use[2]	Number of Dwelling Units	Existing Noise Level $L_{eq}(h)$, dBA[1]	Future Worst Hour Noise Levels – $L_{eq}(h)$, dBA[1]																										
									Noise Analysis Horizon Year No-Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year No Build Noise Level Minus Existing Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level Minus Noise Analysis Horizon Year No Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level Minus Existing Noise Level $L_{eq}(h)$, dBA[1]	Activity Category (NAC)	Impact Type[3]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)																			
																	6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
																	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
M2.02	LT-2.1	S1151C	ROW	1151+52 – 1156+09	457	SFR	1	65	67	67	2	0	2	B (67)	A/E	67	0	0	67	0	0	64	3	0	64	3	0	63	4	0	63	4	0
M2.03	--					SFR	1	64	65	66	1	1	2	B (67)	A/E	66	0	0	66	0	0	66	0	0	66	0	0	66	0	0	66	0	0
M2.04	ST-2.4					COM	1	61	62	63	1	1	2	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M3.01	--					SFR	1	55	57	57	2	0	2	B (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M3.02	ST-3.2	W25A	ROW	24+69 – 26+17	150	COM	1	69	71	71	2	0	2	E (72)	A/E	66	5	1	65	6	1	65	6	1	65	6	1	65	6	1	64	7	1
M3.02	ST-3.2	W25B[2]	P.P.	25+09 – 25+61	60	COM	1	69	71	71	2	0	2	E (72)	A/E	66	5	1	62	9	1	61	10	1	60	11	1	59	12	1	59	12	1
M3.03	--					COM	1	68	70	70	2	0	2	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M3.04	--					COM	1	68	69	69	1	0	1	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M3.05	--					COM	1	60	61	60	1	-1	0	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M3.06 [4]	--					REL	1	62	63	64	1	1	2	C (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M3.07	--	N1202A	EOS	1201+54 – 1237+00	3,602	SFR	1	63	64	69	1	5	6	B (67)	A/E	68	1	0	65	4	0	64	5	1	63	6	1	62	7	1	62	7	1
M3.08	--					SFR	1	61	62	67	1	5	6	B (67)	A/E	64	3	0	63	4	0	62	5	1	61	6	1	61	6	1	61	6	1
M3.09	--					SFR	1	65	66	70	1	4	5	B (67)	A/E	68	2	0	67	3	0	66	4	0	64	6	1	63	7	1	63	7	1
M3.10	--					SFR	1	64	65	73	1	8	9	B (67)	A/E	70	3	0	67	6	1	65	8	1	63	10	1	62	11	1	61	12	1
M3.11	ST-3.6					SFR	1	66	67	72	1	5	6	B (67)	A/E	69	3	0	67	5	1	66	6	1	64	8	1	63	9	1	63	9	1
M3.12	--					SFR	1	67	68	68	1	0	1	B (67)	A/E	68	0	0	68	0	0	68	0	0	67	1	0	67	1	0	67	1	0
M3.13	LT-3.1					SFR	1	64	65	65	1	0	1	B (67)	--	64	1	0	63	2	0	62	3	0	61	4	0	60	5	1	60	5	1
M3.14	--					SFR	1	62	64	64	2	0	2	B (67)	--	63	1	0	62	2	0	61	3	0	60	4	0	60	4	0	60	4	0

[2] These values were collected from the Addendum to the Noise Study Report (Caltrans 2023c)

Table 2.19-10. Predicted Future (2050) Noise Levels and Barrier Analysis – Alternative 3 (Preferred Alternative)

Receiver Identification	Measurement Location	Barrier Identification	Barrier Location	Barrier Stations	Barrier Length (ft)	Land Use[2]	Number of Dwelling Units	Existing Noise Level $L_{eq}(h)$, dBA[1]	Future Worst Hour Noise Levels – $L_{eq}(h)$, dBA[1]																								
									Noise Analysis Horizon Year No-Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year No Build Noise Level Minus Existing Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level Minus Noise Analysis Horizon Year No Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level Minus Existing Noise Level $L_{eq}(h)$, dBA[1]	Activity Category (NAC)	Impact Type[3]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)																	
																	6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
																	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
M3.15	--					SFR	1	64	65	65	1	0	1	B (67)	--	64	1	0	63	2	0	63	2	0	62	3	0	61	4	0	61	4	0
M3.16	--					SFR	1	66	66	67	0	1	1	B (67)	A/E	67	0	0	67	0	0	67	0	0	67	0	0	67	0	0	67	0	0
M3.17	--					SFR	1	64	66	66	2	0	2	B (67)	A/E	64	2	0	63	3	0	62	4	0	61	5	1	60	6	1	60	6	1
M3.18	--					SFR	1	63	64	64	1	0	1	B (67)	--	63	1	0	62	2	0	61	3	0	60	4	0	59	5	1	59	5	1
M3.19	--					SFR	1	63	64	64	1	0	1	B (67)	--	64	0	0	63	1	0	62	2	0	61	3	0	60	4	0	60	4	0
M3.20	--					SFR	1	63	65	65	2	0	2	B (67)	--	64	1	0	63	2	0	62	3	0	61	4	0	61	4	0	60	5	1
M3.21	ST-3.8					REC	1	73	74	74	1	0	1	C (67)	A/E	74	0	0	71	3	0	69	5	1	67	7	1	65	9	1	63	11	1
M3.22	--					REC	1	70	72	72	2	0	2	C (67)	A/E	69	3	0	67	5	1	65	7	1	64	8	1	62	10	1	61	11	1
M3.23	ST-3.9					REC	1	74	75	75	1	0	1	C (67)	A/E	74	1	0	71	4	0	69	6	1	67	8	1	65	10	1	64	11	1
M3.24	--					REC	1	74	75	74	1	-1	0	C (67)	A/E	74	0	0	73	1	0	70	4	0	68	6	1	67	7	1	64	10	1
M3.25	ST-3.10					REC	1	72	73	73	1	0	1	C (67)	A/E	73	0	0	72	1	0	70	3	0	68	5	1	66	7	1	64	9	1
M3.25A	--					REC	--	70	71	71	1	0	1	C (67)	A/E	71	0	0	69	2	0	68	3	0	66	5	--	66	5	--	65	6	--
M3.07	--	N1202B	EOS	1201+54 – 1206+80	580	SFR	1	63	64	69	1	5	6	B (67)	A/E	68	1	0	65	4	0	64	5	1	63	6	1	62	7	1	62	7	1
M3.08	--					SFR	1	61	62	67	1	5	6	B (67)	A/E	64	3	0	63	4	0	62	5	1	61	6	1	61	6	1	61	6	1
M3.09	--					SFR	1	65	66	70	1	4	5	B (67)	A/E	69	1	0	68	2	0	67	3	0	66	4	0	65	5	1	65	5	1
M3.10	--					SFR	1	64	65	73	1	8	9	B (67)	A/E	70	3	0	67	6	1	65	8	1	63	10	1	62	11	1	61	12	1
M3.11	ST-3.6					SFR	1	66	67	72	1	5	6	B (67)	A/E	69	3	0	68	4	0	67	5	1	66	6	1	66	6	1	66	6	1
M3.12	--					SFR	1	67	68	68	1	0	1	B (67)	A/E	68	0	0	68	0	0	68	0	0	68	0	0	68	0	0	68	0	0
M3.13	LT-3.1	N1208A	EOS	1207+50 – 1217+00	947	SFR	1	64	65	65	1	0	1	B (67)	--	65	0	0	64	1	0	63	2	0	62	3	0	62	3	0	62	3	0
M3.14	--					SFR	1	62	64	64	2	0	2	B (67)	--	63	1	0	62	2	0	62	2	0	62	2	0	62	2	0	61	3	0
M3.15	--					SFR	1	64	65	65	1	0	1	B (67)	--	64	1	0	64	1	0	63	2	0	62	3	0	62	3	0	61	4	0

Table 2.19-10. Predicted Future (2050) Noise Levels and Barrier Analysis – Alternative 3 (Preferred Alternative)

Receiver Identification	Measurement Location	Barrier Identification	Barrier Location	Barrier Stations	Barrier Length (ft)	Land Use[2]	Number of Dwelling Units	Existing Noise Level $L_{eq}(h)$, dBA[1]	Future Worst Hour Noise Levels – $L_{eq}(h)$, dBA[1]																						
																	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)														
																	6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
									Noise Analysis Horizon Year No-Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year No Build Noise Level Minus Existing Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level Minus Noise Analysis Horizon Year No Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level Minus Existing Noise Level $L_{eq}(h)$, dBA[1]	Activity Category (NAC)	Impact Type[3]	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
M3.16	--					SFR	1	66	66	67	0	1	1	B (67)	A/E	67	0	0	67	0	0	67	0	0	67	0	0	67	0	0	67	0	0
M3.17	--					SFR	1	64	66	66	2	0	2	B (67)	A/E	64	2	0	63	3	0	62	4	0	62	4	0	61	5	1	61	5	1
M3.18	--					SFR	1	63	64	64	1	0	1	B (67)	--	63	1	0	62	2	0	61	3	0	61	3	0	60	4	0	60	4	0
M3.19	--					SFR	1	63	64	64	1	0	1	B (67)	--	64	0	0	63	1	0	62	2	0	62	2	0	61	3	0	61	3	0
M3.20	--					SFR	1	63	65	65	2	0	2	B (67)	--	64	1	0	64	1	0	63	2	0	63	2	0	62	3	0	62	3	0
M3.17	--	N1212	P.P.	1211+60 – 1215+06	483	SFR	1	64	66	66	2	0	2	B (67)	A/E	65	1	0	63	3	0	63	3	0	62	4	0	62	4	0	62	4	0
M3.18	--					SFR	1	63	64	64	1	0	1	B (67)	--	64	0	0	62	2	0	62	2	0	61	3	0	61	3	0	60	4	0
M3.19	--					SFR	1	63	64	64	1	0	1	B (67)	--	65	-1	0	63	1	0	63	1	0	62	2	0	62	2	0	61	3	0
M3.20	--					SFR	1	63	65	65	2	0	2	B (67)	--	65	0	0	64	1	0	63	2	0	62	3	0	62	3	0	61	4	0
M3.21	ST-3.8	N1214A	EOS	1214+00 – 1237+00	2,300	REC	1	73	74	74	1	0	1	C (67)	A/E	74	0	0	71	3	0	70	4	0	68	6	1	67	7	1	66	8	1
M3.22	--					REC	1	70	72	72	2	0	2	C (67)	A/E	69	3	0	68	4	0	66	6	1	65	7	1	64	8	1	63	9	1
M3.23	ST-3.9					REC	1	74	75	75	1	0	1	C (67)	A/E	74	1	0	71	4	0	69	6	1	68	7	1	66	9	1	64	11	1
M3.24	--					REC	1	74	75	75	1	0	1	C (67)	A/E	75	0	0	74	1	0	71	4	0	69	6	1	67	8	1	65	10	1
M3.25	ST-3.10				2,300	REC	1	72	73	73	1	0	1	C (67)	A/E	73	0	0	72	1	0	70	3	0	68	5	1	67	6	1	65	8	1
M3.25A	--					REC	--	70	71	71	1	0	1	C (67)	A/E	71	0	--	69	2	--	69	2	--	68	3	--	67	4	--	66	5	--
M3.21	ST-3.8	N1214B	P.P.	1214+26 – 1235+15	2,214	REC	1	73	74	74	1	0	1	C (67)	A/E	68	6	1	66	8	1	64	10	1	63	11	1	62	12	1	61	13	1
M3.22	--					REC	1	70	72	72	2	0	2	C (67)	A/E	65	7	1	64	8	1	63	9	1	62	10	1	62	10	1	61	11	1
M3.23	ST-3.9					REC	1	74	75	75	1	0	1	C (67)	A/E	75	0	0	69	6	1	65	10	1	63	12	1	62	13	1	60	15	1
M3.24	--					REC	1	74	75	75	1	0	1	C (67)	A/E	67	8	1	66	9	1	64	11	1	63	12	1	62	13	1	61	14	1
M3.25	ST-3.10					REC	1	72	73	73	1	0	1	C (67)	A/E	65	8	1	64	9	1	63	10	1	62	11	1	61	12	1	60	13	1
M3.25A	--					REC	--	70	71	71	1	0	1	C (67)	A/E	63	8	--	62	9	--	61	10	--	60	11	--	60	11	--	59	12	--

Table 2.19-10. Predicted Future (2050) Noise Levels and Barrier Analysis – Alternative 3 (Preferred Alternative)

Receiver Identification	Measurement Location	Barrier Identification	Barrier Location	Barrier Stations	Barrier Length (ft)	Land Use[2]	Number of Dwelling Units	Existing Noise Level $L_{eq}(h)$, dBA[1]	Future Worst Hour Noise Levels – $L_{eq}(h)$, dBA[1]							Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)																	
																6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
									Noise Analysis Horizon Year No-Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year No Build Noise Level Minus Existing Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level Minus Noise Analysis Horizon Year No Build Noise Level $L_{eq}(h)$, dBA[1]	Noise Analysis Horizon Year Build Noise Level Minus Existing Noise Level $L_{eq}(h)$, dBA[1]	Activity Category (NAC)	Impact Type[3]	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
M4.01	ST-4.1					COM	1	66	69	69	3	0	3	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M4.02	--					COM	1	67	69	69	2	0	2	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M4.03	ST4.2					CEM	1	61	63	63	2	0	2	C (67)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M4.04 [4]	ST-4.3					COM	1	62	64	63	2	-1	1	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M4.05	--					COM	1	57	58	58	1	0	1	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M4.06	ST-4.5					COM	1	65	65	64	0	-1	-1	E (72)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Source: NSR (Caltrans 2023a).

Notes:

1 – $L_{eq}(h)$ are A-weighted, peak hour noise levels in decibels.

2 – Land Use: SFR – single-family residence; REC – recreational; REL – religious institution; CEM – cemetery; COM – commercial; MAN – Manufacturing; UND – Undeveloped Land

3 – S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC

4 – This receptor does not represent a frequent outdoor use area and is for reporting purposes only.

EOS = Edge of Shoulder

ROW = Right of Way

TOB = Top of Berm

I.L. = Insertion Loss

NBR = Number of Benefited Receivers

Special Note: Based on a field review, it was deemed that a right of way noise barrier will not be feasible for receivers M3-07 through M3-25 due to large variations in topography along the I-15 NB right of way line and related drainage issues, which will render a noise barrier ineffective at many of the noise receivers in this area.

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In Area 2, the noise analysis Horizon Year (2050) traffic noise levels at receptors M2.01, M2.02, and M2.03, representing three residential receptors, will approach the NAC of 67 dBA Leq(h) for Activity Category B land uses.

In Area 3, the noise analysis Horizon Year (2050) highest-hour traffic noise level at receptor M3.02 will approach the NAC of 72 dBA Leq(h) for Activity Category E land uses.

Also in Area 3, the noise analysis Horizon Year (2050) traffic noise levels at eight residential properties represented by receptors M3.07 through M3.12, M3.16, and M3.17 will approach or exceed the NAC of 67 dBA Leq(h). In addition, the noise analysis Horizon Year (2050) traffic noise levels at five locations within the Temescal Canyon High School sports areas, shown as receptors M3.21 through M3.25, will exceed the NAC of 67 dBA Leq(h).

In Area 4, the noise analysis Horizon Year (2050) worst-hour noise levels at all the modeled receptors will remain below the applicable NAC under Alternative 3 (Preferred Alternative).

Based on the above results, noise abatement must be considered for receptors located in Areas 1, 2, and 3 under Alternative 3 (Preferred Alternative), and are discussed in Section 2.19.4.5.

2.19.4 Avoidance, Minimization, and/or Abatement Measures

TNM 2.5 was used to model noise barriers and determine the level of noise reduction (insertion loss) provided for modeled locations that were found to approach or exceed the applicable NAC. For each impacted location or area, a number of noise barrier location options were evaluated, including at the State ROW, at the freeway edge of shoulder (EOS), and on private properties. Based on the studies completed to date, the Project team considered the following noise abatement barriers discussed in Section 2.19.4.1 through Section 2.19.4.3. The noise barriers were evaluated in 2-foot increments from 6 and 16 feet in height. The calculated noise reductions are summarized in Table 2.19-9 and Table 2.19-10 by barrier height for Alternative 2 and Alternative 3 (Preferred Alternative), respectively.

2.19.4.1 Area 1: East of I-15, South of SR-74 (Central Avenue)

During the noise analysis Horizon Year (2050), under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]), modeled location M1.01 is predicted to experience a noise level of 71 dBA Leq(h), which will approach the NAC of 72 dBA Leq(h) for Activity Category E land uses. Therefore, noise barriers, identified as Barriers N1142A and N1142B (Figure 2.19-2, Sheet 1), were evaluated.

Barrier N1142A

The analysis of Barrier N1142A (at I-15 EOS) found that a barrier height of 12 feet will be feasible and meet the design goal (i.e., 7 dBA insertion loss). The total reasonable allowance for the barrier height (12 feet) that is considered feasible and meet the design goal will be $214,000. The current estimated construction cost for the minimum wall height (12 feet) which met the design goal will be $391,000. Therefore, Barrier N1142A was found not to be reasonable from a cost perspective. Based on studies completed to date, the Project Development Team (PDT) does not intend to incorporate Barrier N1142A as abatement as part of the Project under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

Barrier N1142B

The analysis of Barrier N1142B (at the ROW) found that a barrier height of 16 feet will be feasible and meet the design goal (i.e., 7 dBA insertion loss). The total reasonable allowance for the barrier height (16 feet) that is considered feasible and meet the design goal will be $214,000. The current estimated construction cost for the minimum wall height (16 feet) which met the design goal will be $483,000. Therefore, Barrier N1142B was found not to be reasonable from a cost perspective. Based on studies completed to date, the PDT does not intend to incorporate Barrier N1142B as abatement as part of the Project under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

2.19.4.2 Area 2: West of I-15, South of SR-74 (Central Avenue)

During the noise analysis Horizon Year (2050), under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]), modeled location M2.01 is predicted to experience a noise level of 70 dBA Leq(h), which will exceed the NAC of 67 dBA Leq(h) for Activity Category B land uses. Therefore, noise barriers, identified as Barriers S1137A and S1137B (Figure 2.19-2, Sheet 1), were evaluated.

In addition, during the noise analysis Horizon Year (2050), under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]), modeled receptors M2.02 and M2.03 are predicted to experience noise levels of 67 dBA and 66 dBA Leq(h), respectively, which will approach or exceed the NAC of 67 dBA Leq(h) for Activity Category B land uses. Therefore, noise barriers, identified as Barriers S1151A, S1151B, and S1151C (Figure 2.19-2, Sheet 1), were evaluated.

Barriers S1137A and S1137B

The analysis of both Barriers S1137A and S1137B found that while both noise barriers will be feasible (provide a 5 dBA insertion loss), neither will meet the design goal (i.e., 7 dBA insertion loss).

Therefore, based on studies completed to date, neither of these two noise barriers will be reasonable to build, and the PDT does not intend to incorporate them as abatement as part of the Project under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

Barriers S1151A, S1151B, and S1151C

The analysis of Barriers S1151A, S1151B, and S1151C found that the noise barriers will not be acoustically feasible (i.e, provide a 5 dBA insertion loss). Therefore, the PDT does not intend to incorporate these barriers as abatement as part of the Project under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

2.19.4.3 Area 3: East of I-15, North of SR-74 (Central Avenue)

During the noise analysis Horizon Year (2050), under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]), modeled receptor M3.02 (outdoor dining area of the Del Taco) is predicted to experience a noise level of 71 dBA Leq(h), which will approach the NAC of 72 dBA Leq(h) for Activity Category E land uses. Therefore, noise barriers, identified as Barriers W25A and W25B, located along the south side of the outdoor dining area (Figure 2.19-2, Sheet 11), were evaluated.

Also in Area 3, noise analysis Horizon Year (2050) traffic noise levels at 10 residential properties represented by receptors M3.07 through M3.13 and receptors M3.15 through M3.17 under Alternative 2 and at eight residential properties represented by receptors M3.07 through M3.12, M3.16, and M3.17 under Alternative 3 (Preferred Alternative) will approach or exceed the NAC of 67 dBA Leq(h). In addition, noise analysis Horizon Year (2050) traffic noise levels at five locations within the Temescal Canyon High School sports areas, receptors M3.21 through M3.25, will exceed the NAC of 67 dBA Leq(h) under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]). Therefore, noise barriers, identified as Barriers N1202A, N1202B, N1208A, N1208B (Alternative 2), N1214A, and N1214B (Figure 2.19-2, Sheets 3 through 10), were evaluated.

Barrier W25A

The analysis of Barrier W25A found that a barrier height of 16 feet will be feasible and meet the design goal (i.e., 7 dBA insertion loss). The total reasonable allowance for the barrier height (16 feet) that is considered feasible and meet the design goal will be $107,000. The current estimated construction cost for the minimum wall height (16 feet) which met the design goal will be $304,000. Therefore, Barrier W25A was found not to be reasonable from a cost perspective. Based on studies completed to date, the PDT does not intend to incorporate Barrier W25A as abatement as part of the Project under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

Barrier W25B

The analysis of Barrier W25B found that a barrier height of 8 feet will be feasible and meet the design goal (i.e., 7 dBA insertion loss). The total reasonable allowance for the barrier height (8 feet) that is considered feasible and meet the design goal will be $107,000. The current estimated construction cost for the minimum wall height (8 feet) which meets the design goal will be $163,000. Therefore, Barrier W25B was found not to be reasonable from a cost perspective. Based on studies completed to date, the PDT does not intend to incorporate Barrier W25B as abatement as part of the Project under either Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

Barrier N1202A

Barrier N1202A was modeled as a noise barrier placed at the NB I-15 EOS between Stations 1201+54 and 1237+00 (Figure 2.19-2, Sheets 3 and 7). This noise barrier will benefit up to 15 receptors under Alternative 2 and 14 receptors under Alternative 3 (Preferred Alternative) at a height of 16 feet. The minimum height at which Barrier N1202A will be feasible and meet the design goal of achieving 7 dBA insertion loss at a minimum of one receptor is 10 feet under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]). The total reasonable allowance for Barrier N1202A at a height of 10 feet is $749,000 and the estimated construction cost for this barrier height is $3,563,000 under both Alternative 2 and Alternative 3 (Preferred Alternative). At a height of 16 feet, the total reasonable allowances for Barrier N1202A are $1,605,000 and $1,498,000 under Alternative 2 and Alternative 3 (Preferred Alternative), respectively. The estimated construction cost for Barrier N1202A at a height of 16 feet is $4,690,000. Therefore, Barrier N1202A will not be reasonable from a cost standpoint and the PDT does not intend to incorporate this barrier as abatement as part of the Project under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

Barrier N1202B

Barrier N1202B was modeled as a noise barrier placed on the shoulder of NB I-15 starting with a wing wall along the ROW south of 11th Street, across from Station 1201+54, and terminating at Station 1206+80 (Figure 2.19-2, Sheet 4). The receptors evaluated with this barrier are M3.07 through M3.12, which represent the cluster of single-family residential uses immediately north of 11th Street and west of Dexter Avenue.

Barrier N1202B will benefit up to five receptors under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]). Noise barrier of heights 10 feet to 16 feet will be acoustically feasible and meet the design goal of achieving 7 dBA insertion loss at one or more receptors. At a height of 14 feet, Barrier N1202B will benefit all five residential receptors (receptors M3.07 through

M3.11) located immediately behind the noise barrier. The cost allowance at a height of 14 feet for this barrier is $535,000 and the estimated construction cost is $795,000. However, although this noise barrier will not be reasonable from a cost perspective, it will be used for construction by the PDT as it will be a replacement barrier for the existing noise barrier that will be removed as a part of the Project to construct the new NB Hook On-Ramp under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

Barrier N1208A

Barrier N1208A was modeled as a noise barrier located along the shoulder of NB I-15 starting at Station 1207+50 and ending at Station 1217+00 (Figure 2.19-2, Sheets 5 and 9). The receptors evaluated with this barrier were M3.13 through M3.20, which represent the single-family residential uses with existing private property block walls.

Barrier N1208A will benefit one receptor (M3.18) under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]), affording the receptor a 5 dBA noise reduction at a barrier height of 16 feet. However, this noise barrier will not achieve the 7 dBA noise reduction design goal at a minimum of one receptor. Therefore, the PDT does not intend to incorporate this barrier as abatement as part of the Project under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

Barrier N1208B (Alternative 2)

Barrier N1208B was modeled under Alternative 2 as a noise barrier located on private property in place of an existing 6-foot-high block wall wrapping around residential receptors M3.13 through M3.15 (Figure 2.19-2, Sheet 4). This noise barrier will benefit two receptors under Alternative 2 and will meet the design goal of 7 dBA insertion loss at a height of 16 feet. The total reasonable allowance for the barrier height (16 feet) that is considered feasible and meet the design goal will be $214,000. The current estimated construction cost for the minimum wall height (16 feet) which meets the design goal will be $513,000. Therefore, Barrier N1208B was found not to be reasonable from a cost perspective. Based on studies completed to date, the PDT does not intend to incorporate Barrier N1208B as abatement as part of the Project under Alternative 2.

Barrier N1214A

Barrier N1214A (Figure 2.19-2, Sheets 6 and 10) is a noise barrier located on the shoulder of NB I-15 starting from Station 1214+00 and terminating at Station 1237+00. The receptors evaluated with this barrier were M3.21 through M3.25, which represent the tennis courts, football stadium, and other sports fields at the Temescal Canyon High School.

The minimum barrier height at which Barrier N1214A will be both acoustically feasible and meet the barrier design goal will be 12 feet. The total cost allowance for Barrier N1214A at this height is $535,000 and the estimated construction cost is $2,609,000. Therefore, Barrier N1214A will not be reasonable from a cost standpoint. The PDT does not intend to incorporate Barrier N1214A as abatement as part of the Project under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

Barrier N1214B

Barrier N1214B is located on the Temescal Canyon High School property east of I-15 starting from Station 1214+26 and ending at Station 1235+15 (Figure 2.19-2, Sheets 5 and 8). The receptors evaluated with this barrier were M3.21 through M3.25, which represent the tennis courts, football stadium, and other sports fields at the high school.

The minimum barrier height at which Barrier N1214B will be both acoustically feasible and meet the barrier design goal will be 6 feet, but an 8-foot-high noise barrier at this location will benefit all five impacted receptors. The total cost allowance for Barrier N1214B at a height of eight feet is $535,000 and the estimated construction cost is $1,683,000. Therefore, Barrier N1214B will not be reasonable from a cost standpoint. The PDT does not intend to incorporate Barrier N1214B as abatement as part of the Project under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

2.19.4.4 Barrier

Table 2.19-11 provides a summary of information and comparison between the total reasonable allowance and estimated construction cost for each barrier. Only the barrier heights that are acoustically feasible and achieve the 7 dBA noise reduction design goal are included in this table. Nine modeled noise barriers will provide a line-of-sight break between a receptor and an 11.5-foot-high truck stack, are acoustically feasible, and achieve the 7 dBA noise reduction design goal at one or more benefited receivers. However, the construction cost for each of the barriers analyzed exceeds the allowance for the number of benefitted receptor(s), and therefore are determined to be economically unreasonable.

Table 2.19-11. Summary of Abatement Key Information

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Design Goal Achieved?	Total Reasonable Allowance	Estimated Construction Cost[4]	Cost Less than Allowance?	Recommended for Construction?
N1142A	12[1]	Yes	2	Yes	$214,000	$391,000	No	No
	14	Yes	2	Yes	$214,000	$422,000	No	No
	16[2]	Yes	2	Yes	$214,000	$454,000	No	No
N1142B	16[1, 2]	Yes	2	Yes	$214,000	$483,000	No	No
W25A	16[3]	Yes	1	Yes	$107,000	$177,000	No	No
W25B	8[1, 3]	Yes	1	Yes	$107,000	$163,000	No	No
	10	Yes	1	Yes	$107,000	$171,000	No	No
	12	Yes	1	Yes	$107,000	$180,000	No	No
	14	Yes	1	Yes	$107,000	$188,000	No	No
	16	Yes	1	Yes	$107,000	$196,000	No	No
N1202A	10	Yes	7	Yes	$749,000	$3,563,000	No	No
(Alt.2)	12	Yes	10	Yes	$1,070,000	$3,912,000	No	No
	14	Yes	13	Yes	$1,391,000	$4,285,000	No	No
	16[1, 2]	Yes	15	Yes	$1,605,000	$4,690,000	No	No
N1202A	10	Yes	7	Yes	$749,000	$3,563,000	No	No
(Alt.3)	12	Yes	11	Yes	$1,177,000	$3,912,000	No	No
	14	Yes	13	Yes	$1,391,000	$4,285,000	No	No
	16[1, 2]	Yes	14	Yes	$1,498,000	$4,690,000	No	No
N1202B	10	Yes	4	Yes	$428,000	$662,000	No	No
	12[1]	Yes	4	Yes	$428,000	$726,000	No	No
	14	Yes	5	Yes	$535,000	$795,000	No	No

Table 2.19-11. Summary of Abatement Key Information

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Design Goal Achieved?	Total Reasonable Allowance	Estimated Construction Cost[4]	Cost Less than Allowance?	Recommended for Construction?
	16[2]	Yes	5	Yes	$535,000	$868,000	No	No
N1208B (Alt.2)	16[3]	Yes	2	Yes	$214,000	$449,000	No	No
N1214A	12	Yes	5	Yes	$535,000	$2,609,000	No	No
	14	Yes	5	Yes	$535,000	$2,857,000	No	No
	16[1, 2]	Yes	5	Yes	$535,000	$3,127,000	No	No
N1214B	6	Yes	4	Yes	$428,000	$1,466,000	No	No
	8[2]	Yes	5	Yes	$535,000	$1,599,000	No	No
	10[1]	Yes	5	Yes	$535,000	$1,754,000	No	No
	12	Yes	5	Yes	$535,000	$1,977,000	No	No
	4	Yes	5	Yes	$535,000	$2,200,000	No	No
	16	Yes	5	Yes	$535,000	$2,469,000	No	No

Source: NADR (Caltrans 2023b)

Notes:

[1] = *Minimum height needed to break the line of sight between 11.5 foot truck exhaust stack and first receptor. When not shown, the barrier height(s) exceed this minimum.*

[2] = *Maximum noise barrier height recommended to comply with HDM, City of Lake Elsinore Ordinance, or County of Riverside design guidelines.*

[3] = *Noise barrier exceeds maximum height recommendation, see discussion below for details.*

[4] = *Additional construction costs may be required upon further investigation of existing facilities at each barrier location.*

Based on the studies completed to date and input from the public, the Department intends to incorporate noise abatement in the form of a barrier (Barrier N1202B) located within Caltrans ROW, at an offset of 16 to 25 feet from the NB Hook On-Ramp's edge of travel way, with an approximate length of 722 feet and average height of 14 feet. Although Barrier N1202B will not be reasonable from a cost perspective, it will be used for construction by the PDT to replace an existing noise barrier that currently serves five residents (receptors M3.07 through M3.11). The existing noise barrier will be removed to construct the new NB hook on-ramp as part of the Project under Alternative 3 (Preferred Alternative). Implementation of Barrier N1202B will be considered a Project feature since it replaces an existing noise barrier that is already in place to abate noise along the highway.

Calculations based on preliminary design data show that the barrier will reduce noise levels by 5 to 11 dBA for the five residences (receptors M3.07 through M3.11) at a cost of $795,000. If conditions have substantially changed during final design, noise abatement may not be constructed. The final decision on noise abatement will be made upon completion of the Project design.

2.19.4.5 Minimization Measures

The following measures will be implemented to minimize noise impacts from Project construction under the Build Alternatives.

N-1 During Project construction, the City's Resident Engineer will ensure that appropriate noise reduction measures to minimize temporary noise impacts are implemented, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources. To further minimize construction noise impacts on sensitive receptors adjacent to the Project site, the City's Resident Engineer will ensure that noise levels from construction operations between the hours 9 p.m. to 6 a.m. will not exceed 86 dBA Lmax at a distance of 50 feet from the job site, in accordance with Caltrans Standard Specification in section 14-8.02, Noise Control, and also SSP 14-8.02 which will be edited during the PS&E phase of the Project.

N-2 During Project construction, the City's Resident Engineer will ensure all construction equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.

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2.20 Energy

2.20.1 Regulatory Setting

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

The California Environmental Quality Act (CEQA) Guidelines section 15126.2(b) and Appendix G, Energy Conservation, require an analysis of a project's energy use to determine if the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources.

2.20.2 Affected Environment

2.20.2.1 Transportation Energy

Transportation energy is generally described in terms of direct and indirect energy. Direct energy is the energy consumed in the actual propulsion (e.g., automobiles, trains, airplanes). This energy consumption is a function of traffic characteristics such as VMT, speed, vehicle mix, and thermal value of the fuel being used. Some projects may also include features such as new or replacement roadway lighting or other features requiring electricity, which is an ongoing and permanent source of direct energy consumption. The one-time energy expenditure involved in constructing a project is also considered direct energy. Indirect energy is defined as all of the remaining energy consumed to run a transportation system, including construction energy, maintenance energy, and any substantial impacts to energy consumption related to project-induced land use changes and mode shifts, as well as any substantial changes in energy associated with vehicle operation, manufacturing, or maintenance due to increased automobile use.

Traffic Analysis

Refer to Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities of this IS/EA for a detailed traffic analysis of the Project under the Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

Overall Network Performance

Network performance measures for the Horizon Year (2045) analysis include number of vehicles served by the network, vehicle-hours delay (VHD), and delay per vehicle. Implementation of the Build Alternatives are anticipated to improve network performance within the traffic study area. Table 2.20-1 provides a comparison of Horizon Year (2045) AM and PM peak period performance metrics between the No-Build and Build Alternatives.

Compared to Alternative 1 (No-Build), during the AM peak period Alternative 2 would serve 15 percent more vehicles, reduce VHD by 52 percent, and reduce average delay per vehicle by 56 percent. Alternative 3 (Preferred Alternative) will serve 16 percent more vehicles, reduce VHD by 53 percent, and reduce average delay per vehicle by 57 percent.

In comparison to Alternative 1 (No-Build), during the PM peak period Alternative 2 will serve 42 percent more vehicles, reduce VHD by 62 percent, and reduce average delay per vehicle by 71 percent. Alternative 3 (Preferred Alternative) will serve 41 percent more vehicles, reduce VHD by 66 percent, and reduce average delay per vehicle by 73 percent.

Table 2.20-1. Horizon Year (2045) Network Performance Measures

	Alternative 2			Alternative 3 (Preferred Alternative)		
Performance Measure	**No-Build**	**Build**	**Change**	**No-Build**	**Build**	**Change**
AM Peak Period						
Number of Vehicles Served	10,477	12,074	15%	10,477	12,119	16%
Vehicle Hours Delay (Vehicle-hours)	712	341	-52%	712	337	-53%
Average Vehicle Delay (seconds per vehicle)	221	97	-56%	221	95	-57%
PM Peak Period						
Number of Vehicles Served	9,220	13,077	42%	9,220	13,038	41%
Vehicle Hours Delay (Vehicle-hours)	1,266	478	-62%	1,266	434	-66%
Average Vehicle Delay (seconds per vehicle)	422	124	-71%	422	113	-73%

Source: Caltrans 2020a

Based on information contained in Table 2.20-1, the increase in number of vehicles served, decrease in vehicle hours delay, and decrease in average delay per vehicle indicates there will be an improvement during the Horizon Year (2045) under the Build Alternatives. Congestion levels will be reduced under the Build Alternatives when compared with Alternative 1 (No-Build). Therefore, the Build Alternatives will improve performance within the Project limits.

2.20.3 Environmental Consequences

2.20.3.1 Temporary Impacts

Alternative 1 (No-Build)

No construction will occur under Alternative 1 (No-Build). Alternative 1 (No-Build) will not involve any construction energy impacts. Therefore, no temporary impacts to energy resources will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Direct Energy Use

Construction of Alternative 2 will involve temporary fuel usage associated with construction vehicles and equipment. Project construction will involve grubbing/land clearing, grading/excavation, drainage/utilities/sub-grade, paving, and striping. The Project's construction emissions under Alternative 2 were estimated using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, Version 9.0.0. Most default equipment assumptions for the road construction emissions model were used in developing the emissions estimates. The emissions assume that the schedule for all improvements is anticipated to begin in 2024 and will take 14 to 18 months. Table 2.20-2 provides the peak daily and total diesel fuel consumption per Project phase of Alternative 2 and Alternative 3 (Preferred Alternative) since both Build Alternatives will require the same construction activities.

Table 2.20-2. Construction Fuel Consumption for Alternative 2 and Alternative 3 (Preferred Alternative)

Project Phase	Diesel Fuel Consumption (gallons per day)	Estimated Number of Working Days	Estimated Diesel Fuel Consumption by Activity (gallons)
Grubbing/land clearing	203.1	20	4,062
Grading/excavation	540.8	80	43,264
Drainage/utilities/sub-grade	396.1	90	35,649
Paving	265.3	60	15,918
Project total (gallons)	—	—	98,893

Source: Caltrans 2020d

The grading and excavation phase during construction activities will result in maximum daily fuel consumption and be the most energy intensive. As indicated above, energy use associated with Project construction under Alternative 2 and Alternative 3 {Preferred Alternative) is estimated to result in the short-term consumption of 78,327 gallons of diesel fuel from construction equipment. This represents a small demand on local and regional fuel supplies that will be easily accommodated, and this demand will cease once construction is complete. Moreover, construction-related energy consumption will be temporary, and demand for fuel will have no noticeable impact on peak or baseline demands for energy.

The Project, under Alternative 2 and Alternative 3 (Preferred Alternative), will comply with all SCAQMD regulations regarding use of construction vehicles and equipment. During construction activities, construction traffic will be scheduled and reduce congestion caused by idling vehicles along local roads during peak travel times (Caltrans 2020d), as referenced in Measure AQ-12 in Section 2.18, Air Quality.

Measure AQ-12 will reduce construction-related energy consumption by idling vehicles. As construction activities will last approximately 14 to 18 months, construction-related energy consumption will be temporary, and demand for fuel will have no noticeable impact on energy resources. In addition, energy minimization measures will reduce energy use during construction activities. With implementation of Measure AQ-12 and minimization measure E-2 to reduce construction-related vehicle and equipment energy consumption, the Project under Alternative 2 will not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction.

Indirect Energy Use

Construction indirect energy consumption will result from traffic delays due to construction of the Project under Alternative 2. The implementation of a TMP, referenced in Measure TR-1 in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, will reduce construction-related traffic impacts. The TMP will assist in managing traffic congestion and provide signage to affected residents and businesses in the event temporary closures or detours are warranted during construction activities. Compared with direct energy use by construction vehicles and equipment, indirect energy use due to construction-related traffic delays will be minimal and be reduced with implementation of the TMP.

Based on the discussion above, with the implementation of Measure AQ-12, in Section 2.18, Air Quality, Measure TR-1 in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, and Measure E-2, no substantial direct or indirect temporary adverse impacts on energy resources are anticipated under Alternative 2.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Since the construction activities under Alternative 3 (Preferred Alternative) will be similar as under Alternative 2, the findings will be the same. Therefore, with the implementation of Measure AQ-12, in Section 2.18, Air Quality, Measure TR-1 in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, and Measure E-2, no substantial direct or indirect temporary adverse impacts to energy resources are anticipated under Alternative 3 (Preferred Alternative).

2.20.3.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be implemented. Therefore, no permanent impacts to energy resources will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Vehicle Energy Consumption

Alternative 2 will not generate new vehicular traffic trips, as it will not trigger the need to construct new homes or businesses. Based on the TOAR (Caltrans 2020e), Alternative 2 provides better LOS when compared with Alternative 1 (No-Build). As a result of improved traffic operations, energy savings are expected with Alternative 2 compared with Alternative 1 (No-Build). Regional VMT data for the existing conditions, No-Build, and Build Alternatives, along with the EMFAC2017 emission rates, were used to calculate the gasoline and diesel fuel consumptions for the Existing Year (2018), Opening Year (2025), and Horizon Year (2045) conditions as shown in Table 2.20-3.

Although there is a modeled slight increase in VMT and fuel consumption with Alternative 2 when compared to Alternative 1 (No-Build), during operation of the Project over the long term, newer and more fuel-efficient vehicles will enter the fleet, resulting in an overall lower potential for an increase in energy consumption due to vehicle traffic. In September of 2021 California Governor Gavin Newson signed Executive Order N-79-20 requiring that by 2035 all new cars and passenger trucks sold in California be zero-emission vehicles. Compared with Alternative 1 (No-Build), the Project under Alternative 2 will improve highway operations and reduce traffic delay within the Project limits. Thus, vehicle delay and congestion within the Project limits will decrease compared with Alternative 1 (No-Build).

Table 2.20-3. Modeled Annual Fuel Consumption and Vehicle Miles Traveled by Alternative

Alternative	Annual VMT	Annual Diesel Fuel Consumption (gallons)	Annual Gasoline Fuel Consumption (gallons)
Existing/Baseline (2018)	984,853,491	9,381,092	36,866,058
Opening Year (2025)			
Alternative 1 (No-Build)	1,112,149,467	9,518,131	33,120,273
Alternative 2 (NB Hook Ramps)	1,113,299,069	9,527,969	33,154,509
Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)	1,112,071,425	9,517,463	33,117,949
Horizon Year (2045)			
Alternative 1 (No-Build)	1,475,852,258	10,350,334	33,049,397
Alternative 2 (NB Hook Ramps)	1,477,592,679	10,362,540	33,088,371
Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)	1,475,790,645	10,349,902	33,048,017

Source: Caltrans 2020d

Notes:

CARB=California Air Quality Board; NB=northbound; SR-74=State Route 74; VMT=vehicle miles traveled; WB=westbound

Electricity Consumption during Project Operation

SCE provides electricity service within the Project limits. Operational direct energy use will include electricity usage associated with highway and street lighting as part of Project improvements. Light-emitting diode (LED) lights consume 10 percent of the electricity of traditional lights. With the implementation of Measure E-1, which will require the incorporation of LED lights as part of the Project, electricity consumption associated with the Project's operational energy impacts will be minimized, and no substantial permanent adverse impacts are anticipated.

Long-Term Indirect Energy Use

Indirect energy use involving maintenance activities on roadways will result in long-term indirect energy consumption by equipment required to operate and maintain the roadway. However, this long-term indirect energy use will be minimal compared with the direct energy use by vehicles on roadways within the Project limits. Therefore, Alternative 2 will not have substantial adverse long-term indirect energy impacts.

Total Energy Impacts

Based on the TOAR (Caltrans 2020e), Alternative 2 yields better LOS results compared with Alternative 1 (No-Build). As a result, energy savings are associated with Alternative 2 when compared with Alternative 1 (No-Build). In addition, with the implementation of Measure AQ-12, as referenced in Section 2.18, Air Quality, Measure TR-1, as referenced in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, as well as minimization of temporary impacts associated with construction, identified in Measure E-2, the Project under Alternative 2 will reduce impacts to energy resources. Therefore, when balancing energy used during construction and operation against energy saved by relieving congestion and other transportation efficiencies, Alternative 2 will not have substantial permanent adverse impacts to total energy.

Alternative 3 (Preferred Alternative; NB Hook Ramps with NB Loop Off-Ramp to WB SR-74)

Based on the TOAR (Caltrans 2020e), Alternative 3 (Preferred Alternative) improves operations at 16 study intersections, compared to 15 under Alternative 2, and yields superior LOS results compared with Alternative 1 (No-Build). Project implementation under Alternative 3 (Preferred Alternative) will be the same as under Alternative 2, the impact findings for vehicle energy consumption, electricity consumption during Project operation, long-term indirect energy use, and total energy impacts will be similar. There is a modeled slight decrease in VMT and fuel consumption with Alternative 3 (Preferred Alternative) when compared to Alternatives 1 (No-Build) and Alternative 2. Implementation of Measure AQ-12, as referenced in Section 2.18, Air Quality, Measure TR-1, as referenced in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, as well as minimization of temporary impacts associated with construction, identified in Measure E-2, the Project under Alternative 3 (Preferred Alternative) will reduce impacts to energy resources. Therefore, when balancing energy used during construction and operation against energy saved by relieving congestion and other transportation efficiencies, Alternative 3 (Preferred Alternative) will not have substantial permanent adverse impacts to total energy.

2.20.4 Avoidance, Minimization, and/or Mitigation Measures

In addition to Measure AQ-12, as referenced in Section 2.18, Air Quality, Measure TR-1, as referenced in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, the following minimization measures will be implemented:

E-1 During final design (PS&E), the City's Resident Engineer will ensure that any lighting used as part of the roadway improvements are energy-efficient, which will include LED lighting, to the extent feasible.

E-2 During final design (PS&E), the City's Resident Engineer will ensure that a construction efficiency plan be prepared, which may include the following:

- Reuse of existing guard rail, steel, and lumber, wherever possible, such as for falsework, shoring, and other applications during the construction process.
- Recycling of asphalt and concrete taken up from existing median shoulders, where practicable and cost-effective.
- Use of newer, more energy-efficient equipment, where feasible, and maintenance of older construction equipment to keep in good working order.
- Promoting of scheduling of construction operations to efficiently use construction equipment (i.e., only haul waste when haul trucks are full and combine smaller dozer operations into a single comprehensive operation, where possible).
- Promotion of construction employee carpooling.
- Reuse of existing sign panels with the implementation of overlays rather than full replacement sign panels.

2.21 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. Natural communities are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status plants or animals occurring in those habitats. CDFW maintains a list of natural communities that are provided sensitivity rankings of S1 through S5 and considers those with ranks of S1 through S3 sensitive.

This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below in the Threatened and Endangered Species section, Section 2.25. Wetlands and Other Waters, including habitat associated with them, are areas subject to USACE, RWQCB, and/or CDFW jurisdiction pursuant to Sections 404 and 401 of the Clean Water Act and Section 1602 of the California Fish and Game Code, respectively, and are also discussed below in the Wetlands and Other Waters section, Section 2.22.

2.21.1 Affected Environment

This section is based on the NES(MI) (Caltrans 2020l) prepared for the Project. The NES(MI) describes the existing biological resources and reviews the Project to determine the extent the Project may affect biological resources. The NES(MI) also evaluates the Project's compliance with the requirements of the Western Riverside County MSHCP. A Determination of Biologically Equivalent or Superior Preservation (DBESP) (Caltrans 2021g) was also prepared for the Project. The DBESP, discusses the Project's compliance with Western Riverside County MSHCP requirements for *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools* as identified in Section 6.2 of the Western Riverside County MSHCP and will be submitted to the Western Riverside Regional Conservation Authority (RCA) and wildlife agencies for review and approval through the WRCMSHCP's Joint Project Review (JPR) Process.

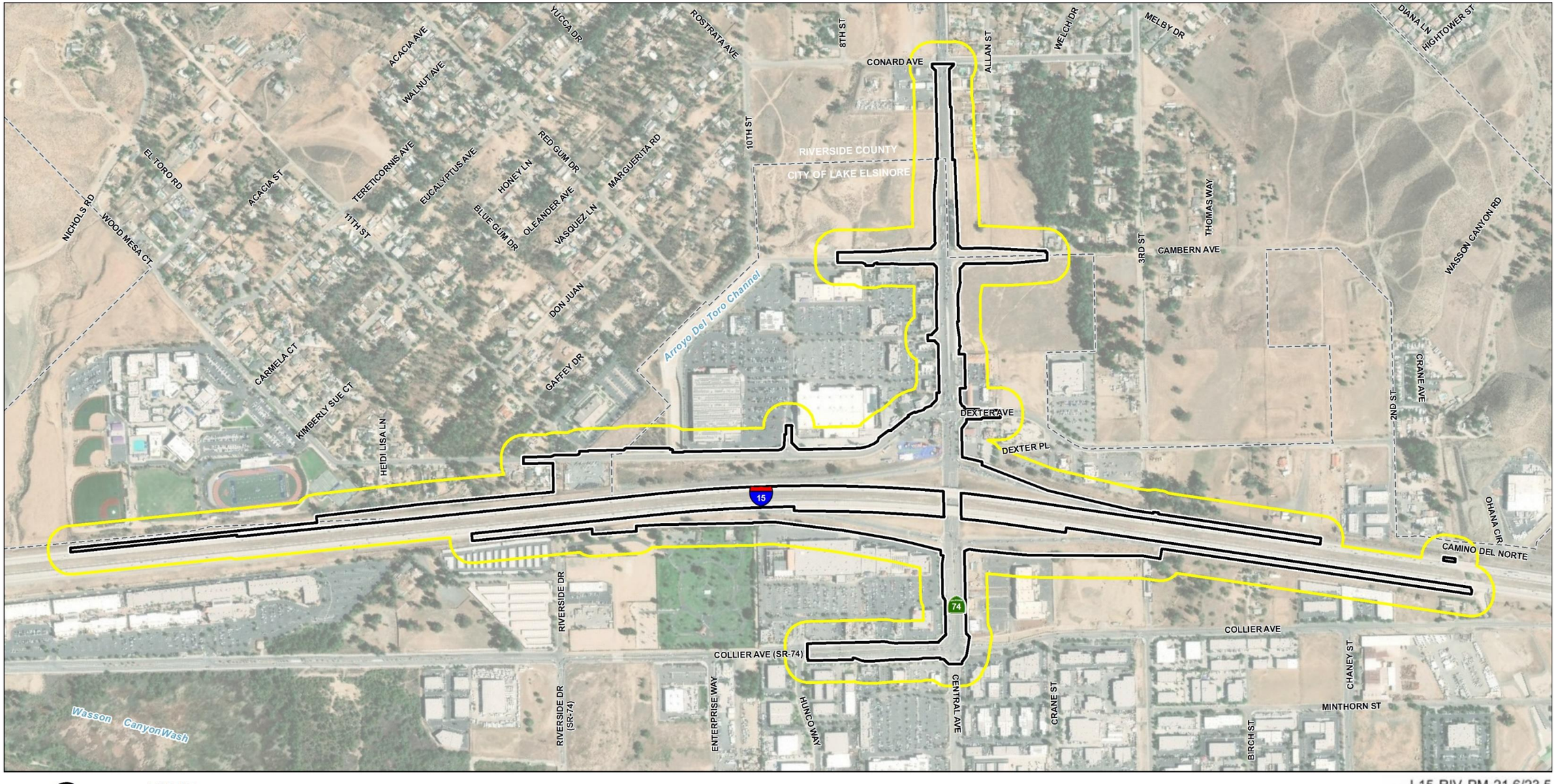
2.21.1.1 Biological Study Area

The Biological Study Area (BSA) includes the Project limits and a 150-foot buffer around the Project limits. The BSA was used as the resource study area for general biological field studies, where ROW access was permitted. The BSA is shown on Figure 2.21-1.

The BSA is located within an urban area associated with the I-15/SR-74 interchange. The majority of the BSA is developed and consists of the I-15 and SR-74 interchange infrastructure and adjacent commercial and residential development. Land uses immediately surrounding the Project limits consist of commercial and residential, with pockets of undeveloped disturbed areas located adjacent to I-15.

2.21.1.2 Western Riverside County Multiple Species Habitat Conservation Plan

The Western Riverside County MSHCP serves as a comprehensive, multijurisdictional MSHCP and Natural Communities Conservation Plan (NCCP) and focuses on the conservation of species and their associated habitats in western Riverside County. The Western Riverside County MSHCP allows participating jurisdictions to authorize the "take" of plant and animal species identified in the Western Riverside County MSHCP and found within the boundaries of the Western Riverside County MSHCP Plan Area. Regulation of the "take" of threatened, endangered, and rare species is authorized by the wildlife agencies [United States Fish and Wildlife Service (USFWS) and CDFW]. The wildlife agencies allow "Take Authorization" for otherwise lawful actions (e.g., public and private development) in exchange for the assembly and management of a coordinated Western Riverside County MSHCP Conservation Area. The Conservation Area is assembled from portions of the Western Riverside County MSHCP Criteria Area, which consists of one-quarter-section (i.e., approximately 160 acres) cells, each with specific criteria for conservation requirements. As permittees under the Western Riverside County MSHCP, the City and Caltrans are obligated to implement specific conditions, as described in Sections 13.2 and 13.8 of the Western Riverside County MSHCP Implementation Agreement, and to abide by the Section 10(a)(1) permit conditions. Such requirements include: (1) compliance with the policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools as set forth in Section 6.1.2 of the WRCMSHCP; (2) compliance with the policies for the Protection of Narrow Endemic Plant Species as set forth in Section 6.1.3 of the Western Riverside County MSHCP; (3) compliance with surveys to be conducted as set forth in Section 6.3.2 of the Western Riverside County MSHCP; (4) compliance with the Urban/Wildlands Interface Guidelines as set forth in Section 6.1.4 of the Western Riverside County MSHCP; and (5) compliance with the BMPs and the siting and design criteria as set forth in Section 7.0 and Appendix C of the Western Riverside County MSHCP.



LEGEND
- Project Limits
- Biological Study Area
- City/County Boundary

0 Feet 700

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 2.21-1. Biological Study Area

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2.21.1.3 Natural Communities Mapped within the Biological Study Area

The BSA supports eight different natural communities or land cover types, with the predominant land cover identified as urban/developed, as identified in Table 2.21-1 and shown on Figure 2.21-2. Undeveloped lands support a mix of native and nonnative plant species, and native vegetation in all areas of the BSA has been subject to disturbance and/or clearing at some point in the past. California buckwheat (*Eriogonum fasciulatum*) scrub and mulefat (*Baccharis salicifolia*) thickets are the only special-interest natural communities that occur in the BSA. A summary of existing acreages is provided in Table 2.21-1. Descriptions of the California buckwheat scrub and mulefat thicket communities within the BSA are provided below.

Table 2.21-1. Natural Communities and Other Land Cover Types within the Biological Study Area

Vegetation Community	Existing Acreage
Arundo donax Semi-Natural Herbaceous Stands (Giant Reed Breaks)	0.06
Baccharis salicifolia Alliance (Mulefat Scrub)	0.57
Mediterranean California Naturalized Annual and Perennial Grassland (Annual Grassland)	56.36
Eriogonum fasciculatum Association (California Buckwheat Scrub)	0.10
Eucalyptus (*globulus*, *camaldulensis*) Semi-Natural Woodland Stands (Eucalyptus Groves)	5.90
Salsola tragus Alliance	13.66
Tamarix spp. Shrubland Semi-Natural Alliance (Tamarisk Thickets)	0.17
Urban/Developed	115.01
Channel	0.97
Total Acreage	**192.79**

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Figure 2.21-2. Natural Communities and Other Land Cover Types within the Biological Study Area (Sheet 1 of 3)

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Figure 2.21-2. Natural Communities and Other Land Cover Types within the Biological Study Area (Sheet 2 of 3)

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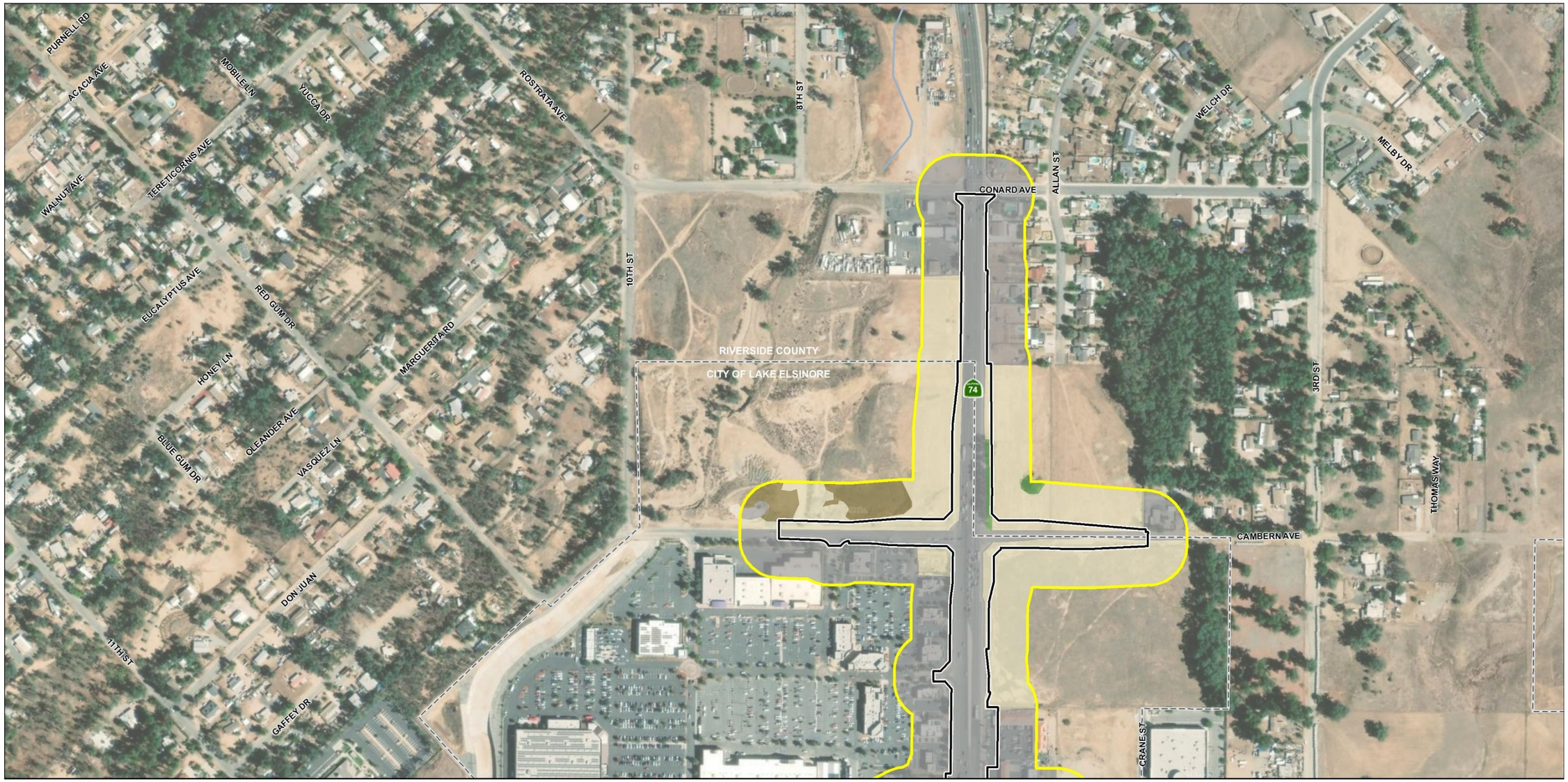

Figure 2.21-2. Natural Communities and Other Land Cover Types within the Biological Study Area (Sheet 3 of 3)

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Baccharis salicifolia Alliance (Mulefat Thickets)

Mulefat thicket communities are a shrub community dominated by mulefat (*Baccharis salicifolia*) with other shrub species dominant or co-dominant in the shrub canopy. This community is listed as S4 (apparently secure within California, factors exist to cause concern) by the California Native Plant Society (CNPS). Mulefat thicket communities are characterized by a continuous shrub canopy and a sparse herbaceous layer. This community generally occurs in canyon bottoms, floodplains, irrigation ditches, lake margins, stream channels, and in mixed alluvium soils (Regents of the University of California 2020). Within the BSA, this community occurs in the artificially created basin located between Dexter Avenue and I-15, north of SR-74. Mulefat thickets cover approximately 0.57 acre in the BSA.

Eriogonum fasciculatum Association (California Buckwheat Scrub)

California buckwheat scrub communities are dominated by either California buckwheat (*Eriogonum fasciculatum*) or chaparral yucca (*Hesperoyucca whipplei*) in the shrub canopy with other native shrubs also present in smaller amounts. This community is listed as S5 (demonstrably secure to ineradicable in California) by CNPS. California buckwheat scrub is characterized by a continuous or intermittent canopy of California buckwheat (greater than 50 percent relative cover) or chaparral yucca and a sparse, grassy herbaceous layer. This community occurs on upland slopes, intermittently flooded arroyos, channels and washes, in coarse, well drained, and moderately acidic to slightly saline soils (Regents of the University of California 2020). Within the BSA, this community is dominated by California buckwheat and is located on the shoulder of NB I-15 in the northern portion of the BSA. California buckwheat scrub covers approximately 0.10 acre in the BSA.

2.21.1.4 Wildlife Corridors

Wildlife corridors connect fragmented patches of habitat. The main goal of a wildlife corridor (also referred to as a linkage) is to facilitate movement of animals through dispersal and migration. The removal of native habitat or the construction of buildings, roads, and fences can either degrade or eliminate the functionality of a wildlife corridor. Wildlife corridors along developed freeways generally occur as undercrossings associated with bridges or channels and culverts.

Since much of the BSA is already developed, it provides very little habitat for wildlife movement. Most of the culverts within the BSA that cross under I-15 are too long and/or are too small of a diameter to support wildlife movement, and most of the areas under bridges within the BSA support busy roadways that are unsuitable for wildlife movement. Wasson Canyon Wash, at the south end of the BSA, provides a constrained wildlife crossing under I-15. While it has potential to connect wildlife

habitat east of I-15 to Lake Elsinore, much of the potential corridor west of the BSA is within a confined concrete channel that is surrounded by development.

The Western Riverside County MSHCP provides for the conservation of existing lands that serve as wildlife movement corridors within lands identified for inclusion in the Western Riverside County MSHCP conservation area. The Western Riverside County MSHCP conservation area comprises a variety of existing and proposed cores, linkages, constrained linkages, and noncontiguous habitat blocks that are used, or could be used, by wildlife for movement throughout the Western Riverside County MSHCP plan area. Portions of the BSA north of Riverside Drive, in the northern portion of the BSA, are located within Western Riverside County MSHCP-designated criteria cells identified for inclusion with Proposed Linkage 2, which is intended to be composed of wetland habitat associated with Collier Marsh in the City. However, the BSA is isolated from any habitat that meets conservation criteria associated with Proposed Linkage 2.

Land uses immediately surrounding the Project limits are commercial and residential with undeveloped, disturbed areas located adjacent to I-15. The Project will not result in impacts to Wasson Wash. The rest of the BSA is isolated from open space areas and does not provide any direct linkage between open space areas east of I-15 and Lake Elsinore, approximately 1.25 mile southwest of the BSA. The BSA is not directly adjacent to any large open space areas. Therefore, the Project will not affect any potential wildlife movement.

2.21.2 Environmental Consequences

2.21.2.1 Temporary Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be constructed; and therefore, no temporary impacts to natural communities will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

The Project under Alternative 2 will not result in any direct or indirect temporary impacts to California buckwheat scrub. However, as identified in Table 2.21-2 and shown on Figure 2.21-3, Alternative 2 will result in direct temporary impacts to up to 0.47 acre of mulefat thickets due to equipment access and work areas needed to construct new off-ramps from I-15 onto Dexter Avenue.

Table 2.21-2. Vegetation Communities within the Biological Study Area Impacted under Alternative 2

Vegetation Community	Acreage mapped in BSA	Alternative 2 Impacts (acres)	
		Temporary[a]	Permanent
Arundo donax Semi-Natural Herbaceous Stands (Giant Reed Breaks)	0.06	—	—
Baccharis salicifolia Alliance (Mulefat Thickets)	0.57	0.47	0.11
Mediterranean California Naturalized Annual and Perennial Grassland (Annual Grassland)	56.36	12.79	4.80
Eriogonum fasciculatum Association (California Buckwheat Scrub)	0.10	—	—
Eucalyptus (*globulus*, *camaldulensis*) Semi-Natural Woodland Stands (Eucalyptus Groves)	5.9	0.96	0.18
Salsola tragus Alliance	13.66	7.19	1.21
Tamarix spp. *Shrubland Semi-Natural Alliance (Tamarisk Thickets)*	0.17	0.11	0.06
Urban/Developed	115.01	29.43	4.75
Channel	0.97	0.01	—
Total	192.79	50.78	11.10

Notes:

[a] Temporary impacts include temporary impacts for construction access, TCEs, and staging areas.

BSA=biological study area; TCE=temporary construction easement

All mulefat thickets within the BSA are located within areas identified as streambeds or riparian habitat subject to CDFW jurisdiction pursuant to Section 1602 of the California Fish and Game Code.

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Figure 2.21-3. Impacts to Land Cover Types: Alternative 2 (Sheet 1 of 3)

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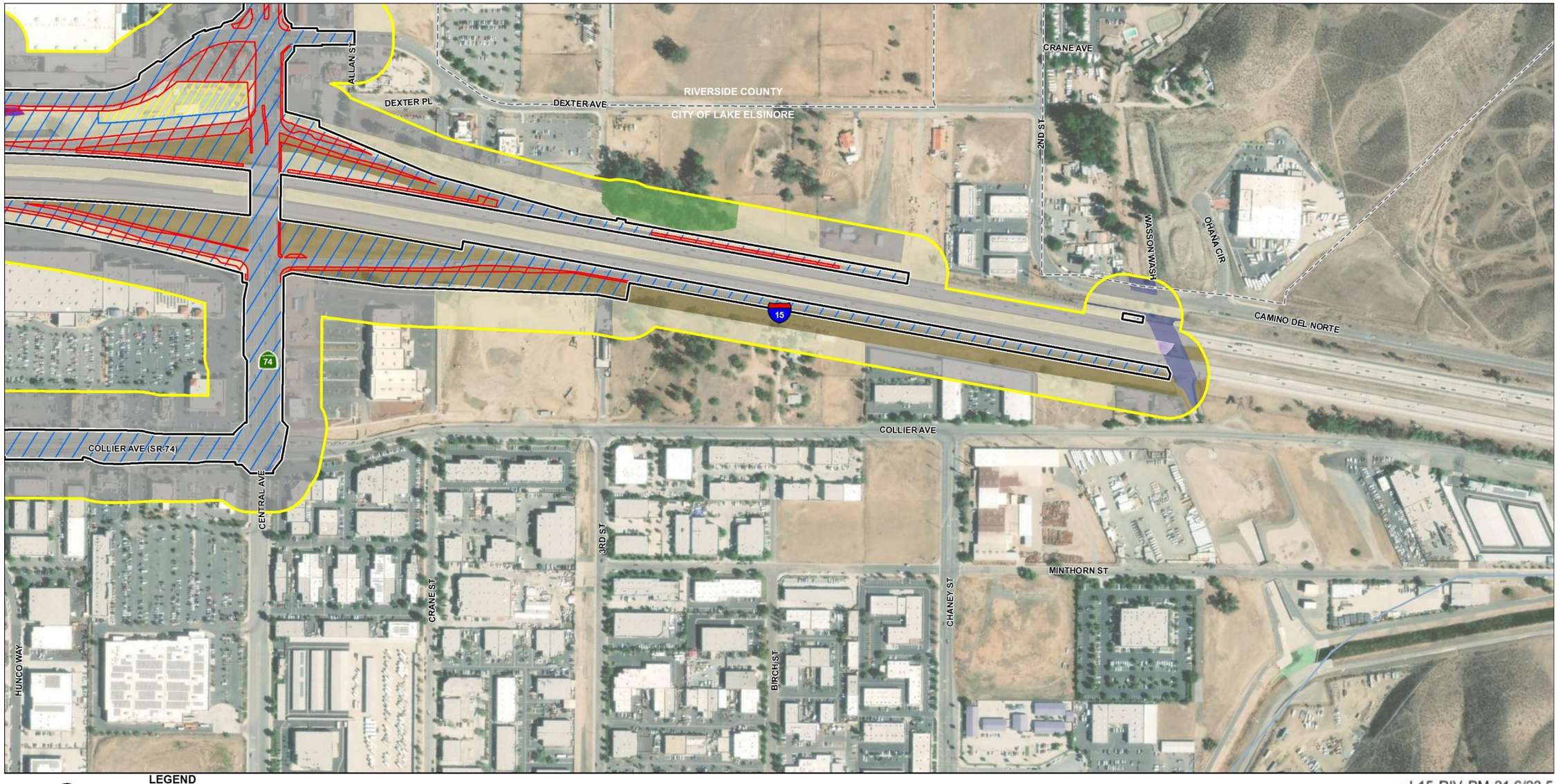

Figure 2.21-3. Impacts to Land Cover Types: Alternative 2 (Sheet 2 of 3)

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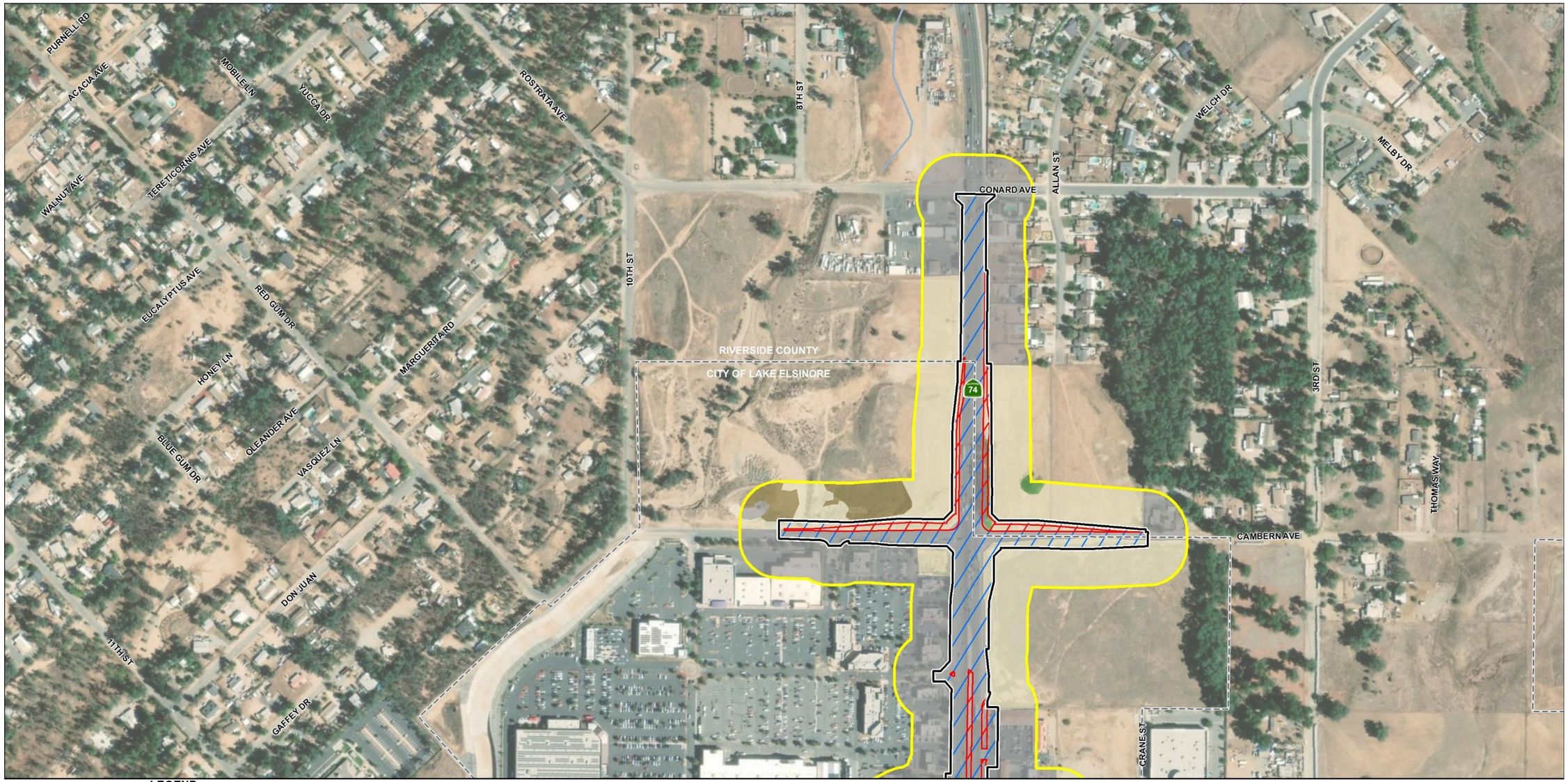

Figure 2.21-3. Impacts to Land Cover Types: Alternative 2 (Sheet 3 of 3)

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Temporary Project impacts on sensitive natural communities will be avoided or reduced to the fullest extent possible in areas where California buckwheat scrub and mulefat thickets are present within the BSA with the implementation of Measures NC-1 and WET-1, from Section 2.22, Wetlands and Other Waters.

Measure NC-1 requires that California buckwheat scrub and mulefat thickets present within the BSA will be identified as Environmentally Sensitive Areas (ESA); and thus, prior to construction, exclusionary fencing will be installed around all ESAs to prevent accidental encroachment into these areas.

Measure WET-1, in Section 2.22, Wetlands and Other Waters identifies anticipated habitat restoration and/or compensatory mitigation that will be required for temporary impacts to mulefat thickets will be determined during the CDFW Section 1602 Permit process during final design (PS&E).

In addition, Measures NC-2 through NC-5 will also be implemented to avoid and minimize impacts related to the spread of invasive species with the provision of temporary sediment control, soil stabilization, and the preservation of existing vegetation, as applicable. With the implementation of Measures NC-1 through NC-5, and Measure WET-1, from Section 2.22, Wetlands and Other Waters no substantial temporary adverse impacts to natural communities are anticipated under Alternative 2.

Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) (Preferred Alternative)

Similar to Alternative 2, Alternative 3 (Preferred Alternative) will not result in temporary impacts to California buckwheat scrub. However, as identified in Table 2.21-3 and Figure 2.21-4, Alternative 3 (Preferred Alternative) will result in direct temporary impacts to up to 0.51 acre of mulefat thickets due to equipment access and work areas needed to construct new off-ramps from I-15 onto Dexter Avenue.

Table 2.21-3. Vegetation Communities within the Biological Study Area Impacted under Alternative 3 (Preferred Alternative)

Vegetation Community	Acreage mapped in BSA	Alternative 3 Impacts (acres)	
		Temporary[a]	Permanent
Arundo donax Semi-Natural Herbaceous Stands (Giant Reed Breaks)	0.06	—	—

Table 2.21-3. Vegetation Communities within the Biological Study Area Impacted under Alternative 3 (Preferred Alternative)

Vegetation Community	Acreage mapped in BSA	Alternative 3 Impacts (acres)	
		Temporary[a]	Permanent
Baccharis salicifolia Alliance (Mulefat Thickets)	0.57	0.51	0.07
Mediterranean California Naturalized Annual and Perennial Grassland (Annual Grassland)	56.36	12.49	4.80
Eriogonum fasciculatum Association (California Buckwheat Scrub)	0.10	—	—
Eucalyptus (*globulus*, *camaldulensis*) Semi-Natural Woodland Stands (Eucalyptus Groves)	5.9	0.81	0.15
Salsola tragus Alliance	13.66	1.36	7.04
Tamarix spp. Shrubland Semi-Natural Alliance (Tamarisk Thickets)	0.17	0.11	0.06
Urban/Developed	115.01	28.17	4.00
Channel	0.97	0.01	—
Total	192.79	49.14	10.43

Notes:

[a] Temporary impacts include temporary impacts for construction access, TCEs, and staging areas.

BSA=biological study area; TCE=temporary construction easement

Therefore, the same avoidance, minimization and/or mitigation measures will be implemented to address temporary Project impacts to sensitive natural communities. Thus, with the implementation of Measures NC-1 through NC-5, and Measure WET-1 from Section 2.22, Wetlands and Other Waters, no substantial temporary adverse impacts to natural communities are anticipated under Alternative 3 (Preferred Alternative).

Figure 2.21-4. Impacts to Land Cover Types: Alternative 3 (Preferred Alternative) (Sheet 1 of 3)

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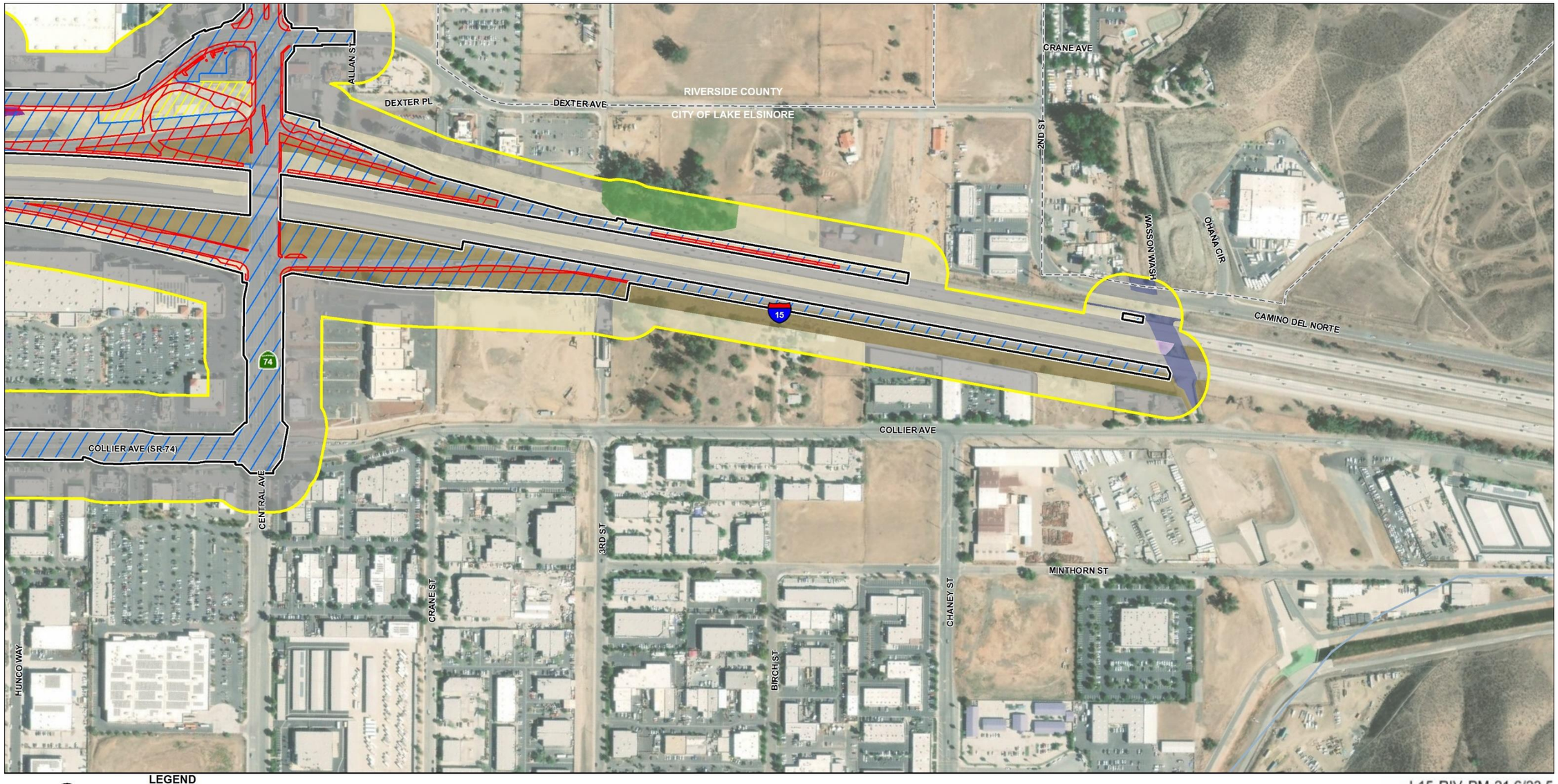

Figure 2.21-4. Impacts to Land Cover Types: Alternative 3 (Preferred Alternative) (Sheet 2 of 3)

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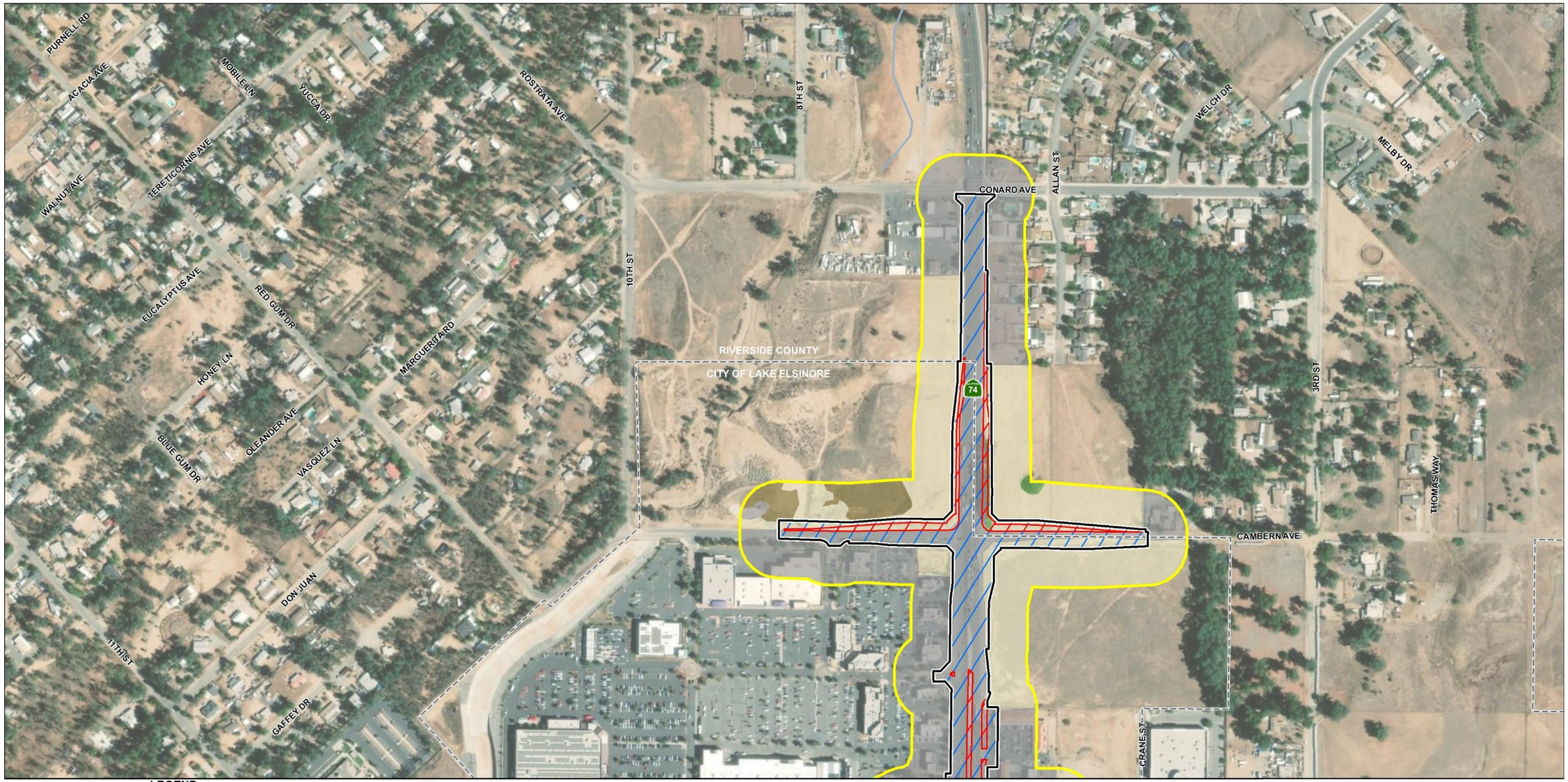

Figure 2.21-4. Impacts to Land Cover Types: Alternative 3 (Preferred Alternative) (Sheet 3 of 3)

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2.21.2.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be implemented; thus, no permanent impacts to natural communities will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Alternative 2 will not result in permanent impacts to California Buckwheat Scrub. However, it will result in a permanent loss of 0.11 acre of mulefat thickets due to the construction of the off-ramp from I-15 to Dexter Avenue, as shown earlier in Figure 2.21-3. However, with the implementation of Measure WET-1, in Section 2.22, Wetlands and Other Waters, compensatory mitigation for permanent loss of riparian habitat subject to CDFW jurisdiction, including mulefat thickets, will be determined through the CDFW Section 1602 Permit process during final design (PS&E). A compensatory mitigation ratio of 2:1 for permanent loss of riparian habitat subject to CDFW jurisdiction will be used for the Project under Alternative 2. Compensatory mitigation will be implemented prior to construction of the Project, through participation in an in-lieu fee program, mitigation bank, or restoration or enhancement of riparian habitat in the same watershed as the location of the Project. As a result, no substantial adverse permanent impacts to sensitive natural communities will occur under Alternative 2.

Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) (Preferred Alternative)

Similar to Alternative 2, Alternative 3 (Preferred Alternative) will not result in permanent impacts to California Buckwheat Scrub. However, Alternative 3 (Preferred Alternative) will result in permanent loss of 0.07 acre of mulefat thickets due to the construction of the off-ramp from I-15 to Dexter Avenue, as shown earlier in Figure 2.21-4.

As discussed previously, all mulefat thickets within the BSA are located within areas identified as streambeds or riparian habitat subject to CDFW jurisdiction and similar to Alternative 2, Alternative 3 (Preferred Alternative) will implement Measure WET-1, which requires compensatory mitigation for permanent loss of riparian habitat subject to CDFW jurisdiction, including mulefat thickets. Similar to Alternative 2, Alternative 3 (Preferred Alternative) will also use a compensatory mitigation ratio of 2:1 for permanent loss of riparian habitat subject to CDFW jurisdiction, and similar to Alternative 2, compensatory mitigation will be implemented prior to construction of the Project, through participation in an in-lieu fee program, mitigation bank, or restoration or enhancement of riparian habitat in the same watershed as the location of the Project. As a result, no substantial adverse

permanent impacts to sensitive natural communities will occur under Alternative 3 (Preferred Alternative).

2.21.3 Avoidance, Minimization, and/or Mitigation Measures

In addition, to the measures identified, below, the Project will also implement Measure WET-1, in Section 2.22.

NC-1 Prior to construction, the City's Resident Engineer will ensure that California buckwheat scrub and mulefat thickets located outside of the Project limits, and that are not to be impacted by the Project, will be demarcated as environmentally sensitive areas. Exclusionary fencing will be installed around all environmentally sensitive areas under supervision of a biologist familiar with the biological resources in the BSA, to prevent accidental encroachment into these areas.

NC-2 In accordance with Caltrans Non-Standard Specification 14-6.05, prior to construction, the City's Resident Engineer will ensure that a weed abatement program be developed and implemented to minimize the importation and spread of nonnative plant material during and after construction. Eradication strategies from the weed abatement program will be employed during construction activities, should an invasion occur. The weed abatement program will include measures to address retention of all fill material on site to prevent the spread of invasive plants to uninfected areas, use of weed-free sources for project materials, appropriate staging and storage of equipment in areas free of invasive species, and cleaning of off-road construction equipment before entering the Project area and before moving from an area with invasive species to another area.

NC-3 During construction, the City's Resident Engineer will ensure that when work is conducted during the fire season (as identified by the Riverside County Fire Authority) adjacent to any vegetation, the appropriate firefighting equipment (e.g., extinguishers, shovels, and water tankers) will be made available on site during all phases of Project construction to minimize the potential for human-caused wildfires. Shields, protective mats, and/or other fire preventive methods will be used during grinding, welding, and other spark-inducing activities. Personnel trained in fire hazards, preventive actions, and responses to fires will advise the construction contractors regarding fire risk from all construction-related activities.

NC-4 During construction, the City's Resident Engineer will ensure that all equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities will occur in developed or designated non-sensitive upland habitat areas. The designated upland

areas will be located so as to prevent runoff from any spills from entering USACE/RWQCB-regulated waters of the U.S., RWQCB-regulated waters of the State, or CDFW-regulated streambed.

NC-5 During final design (PS&E), the City's Resident Engineer will ensure that a SWPPP and soil erosion and sedimentation plan be developed to minimize erosion and identify specific pollution prevention measures that will eliminate or control potential point and nonpoint pollution sources on site during construction and operation. The SWPPP will identify specific best management practices to be implemented during construction so as not to cause or contribute to an exceedance of any water quality standard. In addition, the SWPPP will contain provisions for changes to the plan, such as alternative mechanisms, if necessary, during Project design and/or construction to achieve the stated goals and performance standards.

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2.22 Wetlands and Other Waters

2.22.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high water mark (OHWM), in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (U.S. EPA).

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a "least environmentally damaging practicable alternative" (LEDPA)

to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, EO 11990 states that a federal agency, such as FHWA and/or the Department, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCBs) and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the 2.14 Water Quality section for more details.

2.22.2 Affected Environment

This section is based on the NES(MI) and the *Jurisdictional Delineation* (JD) (Caltrans 2020m) prepared for the Project.

As shown on Figure 2.22-1, the BSA contains five jurisdictional features potentially subject to regulation by USACE per Section 404 of the CWA, RWQCB per Section 401 of the CWA, and CDFW per Section 1602 of the California Fish and Game Code.

2.22.2.1 Jurisdictional Features Mapped Within the Biological Study Area

Wasson Canyon Wash

Wasson Canyon Wash is located at the southern end of the BSA. It originates east of the BSA and extends west, where it confluences with Temescal Creek approximately 1,000 feet southwest of the BSA. Within the BSA, Wasson Canyon Wash consists of a maintained, soft-bottomed flood control channel as it crosses under I-15 and is then channelized into a concrete-lined channel prior to being conveyed underground at Collier Avenue. The earthen portion of the wash supports a small patch of nonnative giant reed (*Arundo donax*) vegetation between the NB and SB I-15 bridges. All portions of Wasson Canyon Wash within USACE jurisdiction are considered nonwetland waters of the U.S.

Arroyo Del Toro

Arroyo Del Toro is an ephemeral[1], modified channel that conveys flows from east of the BSA and eventually into Temescal Wash, which is approximately 2,400 feet southwest of the BSA. Flows are conveyed under the Dexter Avenue Bridge and into the Caltrans detention basin. The portion of Arroyo Del Toro between Dexter Avenue and I-15 is lined with large riprap that is now buried with sediment and overgrown with upland vegetation. Concrete-lined portions of Arroyo del Toro within the BSA do not support any vegetation. Surface flows that enter this basin drain quickly through a series of existing culverts to a concrete-lined ditch located immediately west of I-15 and then into an existing underground storm drain system. A second concrete lined ditch receives surface flows from the adjacent hillside and from the southern portion of the Caltrans detention basin during large storm events. All areas of USACE jurisdiction within Arroyo Del Toro in the BSA were determined to be nonwetland waters of the U.S. The portion of Arroyo Del Toro within the BSA is not identified on the National Wetlands Inventory.

[1] Determined based on review of Google Earth aerial imagery taken during different times of the year and over multiple years.

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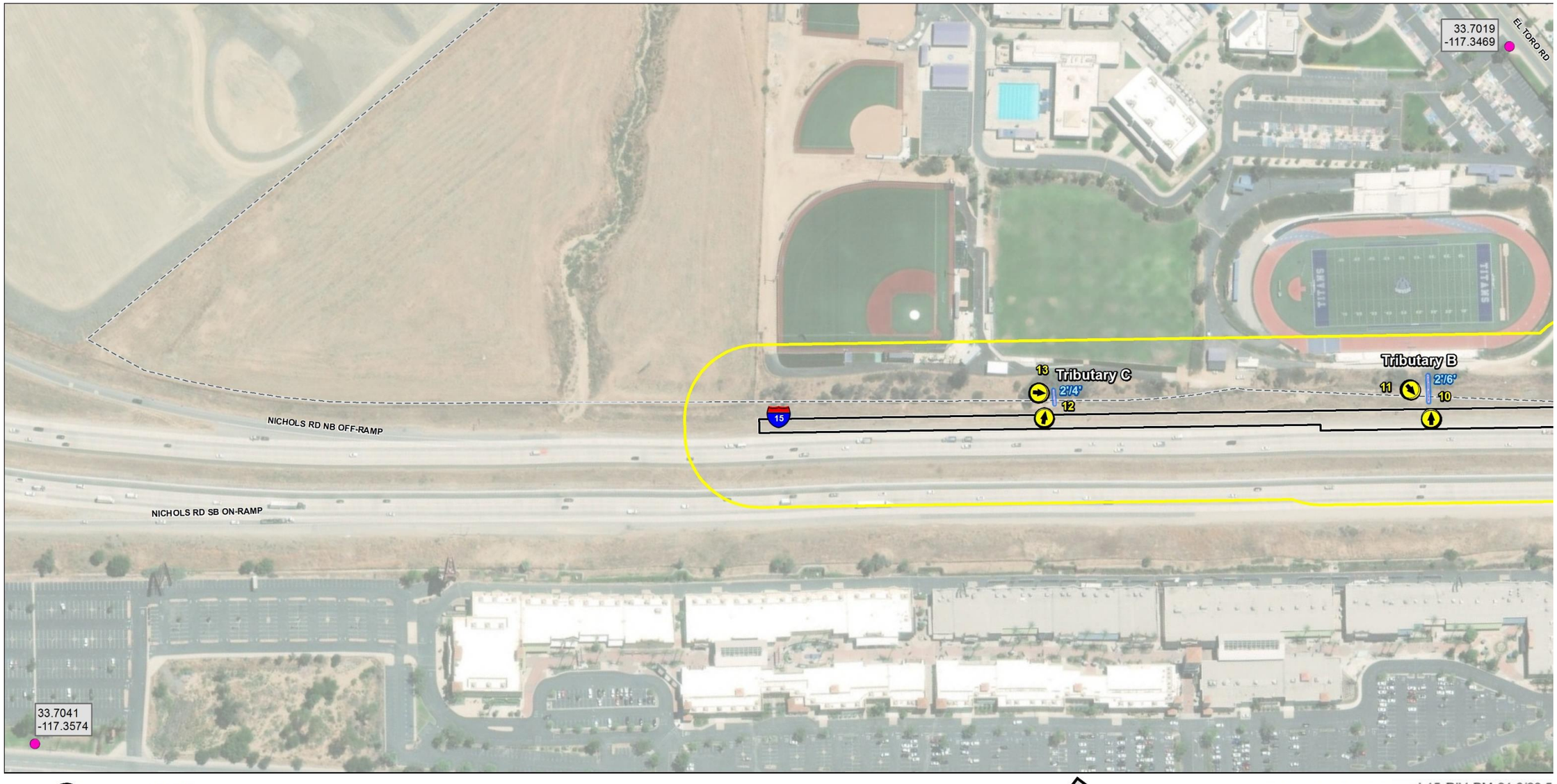

Figure 2.22-1. United States Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife Jurisdictional Resources within the Biological Study Area (Sheet 1 of 7)

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Figure 2.22-1. United States Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife Jurisdictional Resources within the Biological Study Area (Sheet 2 of 7)

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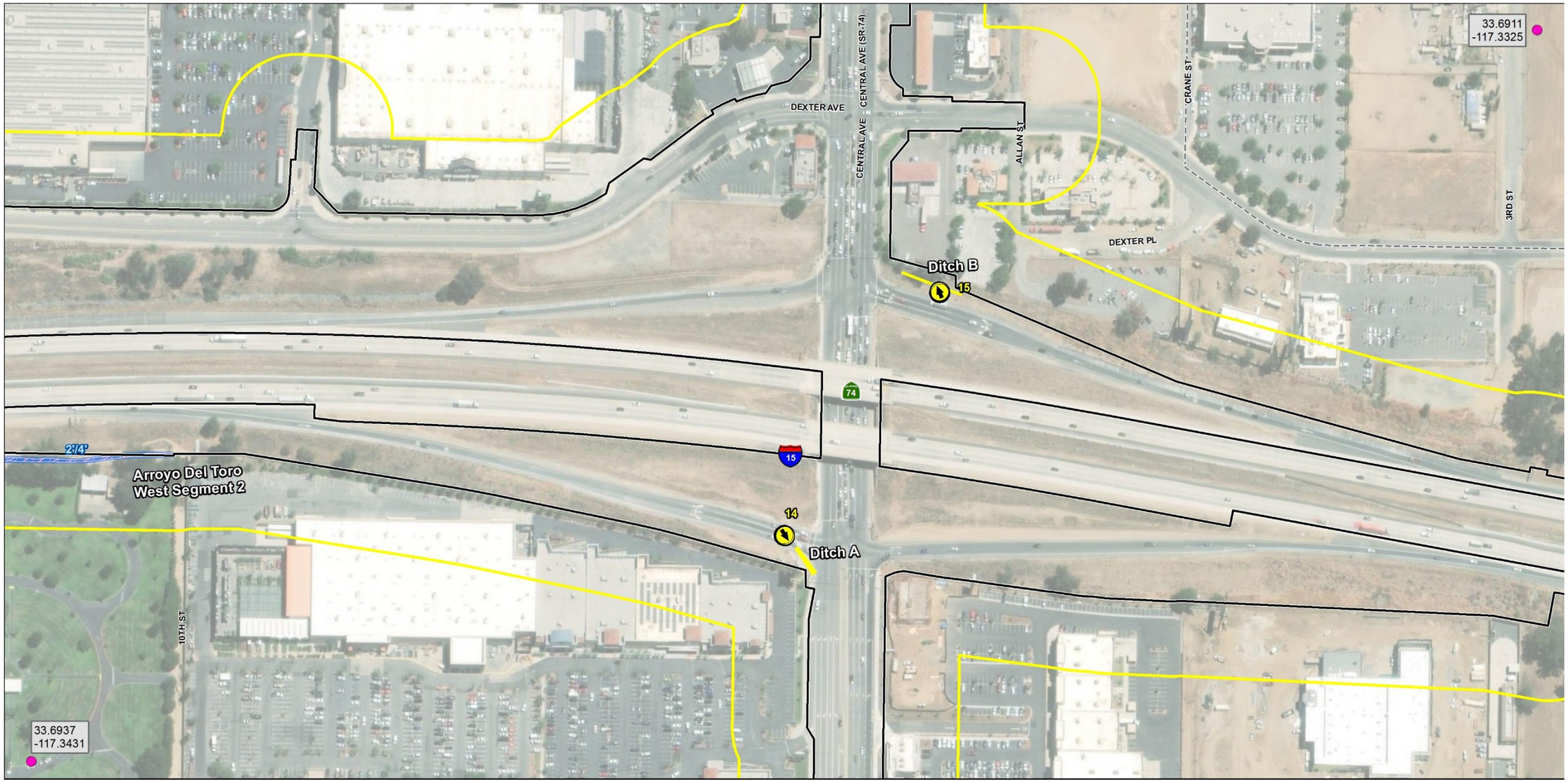

Figure 2.22-1. United States Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife Jurisdictional Resources within the Biological Study Area (Sheet 3 of 7)

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Figure 2.22-1. United States Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife Jurisdictional Resources within the Biological Study Area (Sheet 4 of 7)

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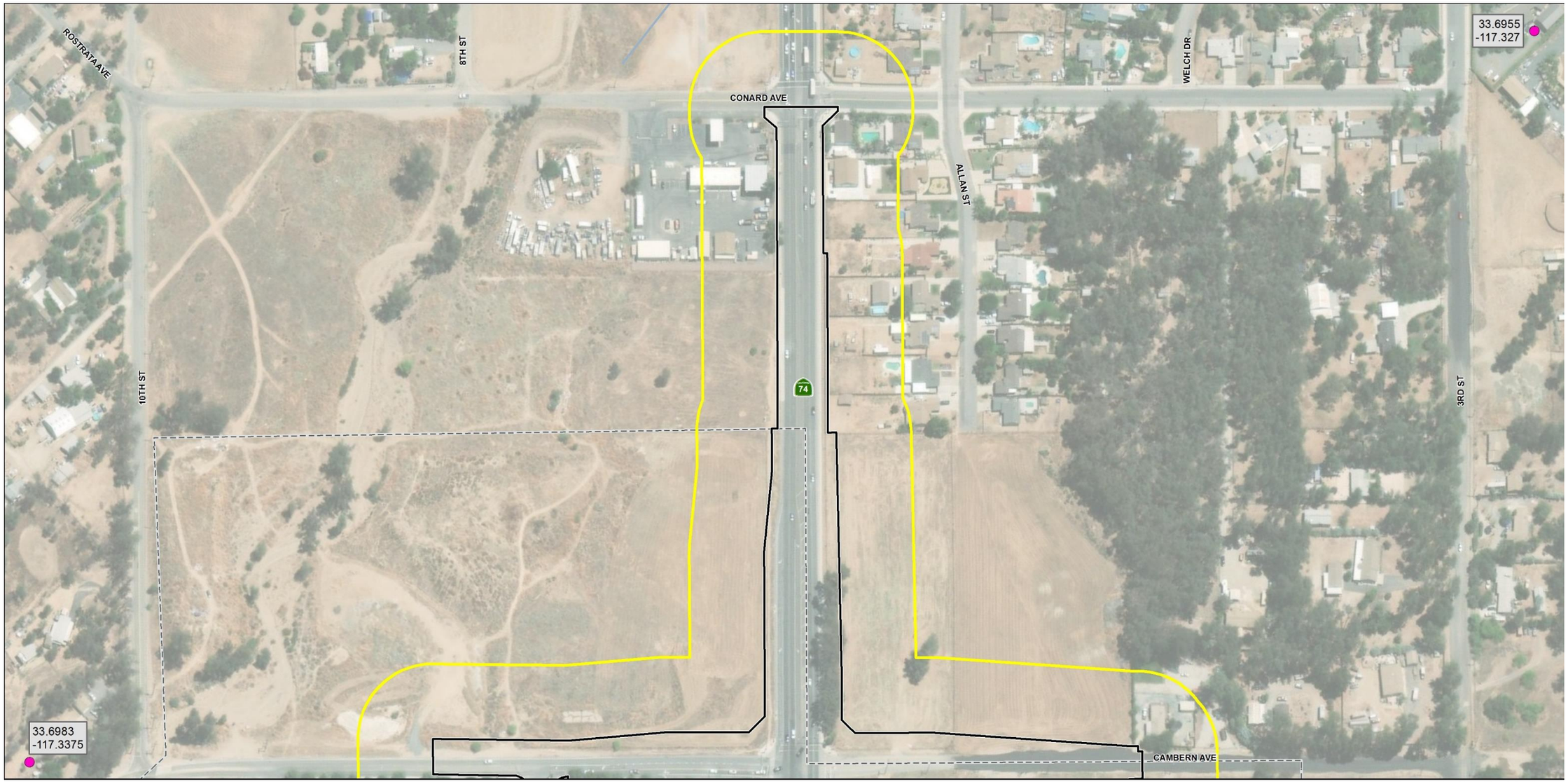

Figure 2.22-1. United States Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife Jurisdictional Resources within the Biological Study Area (Sheet 5 of 7)

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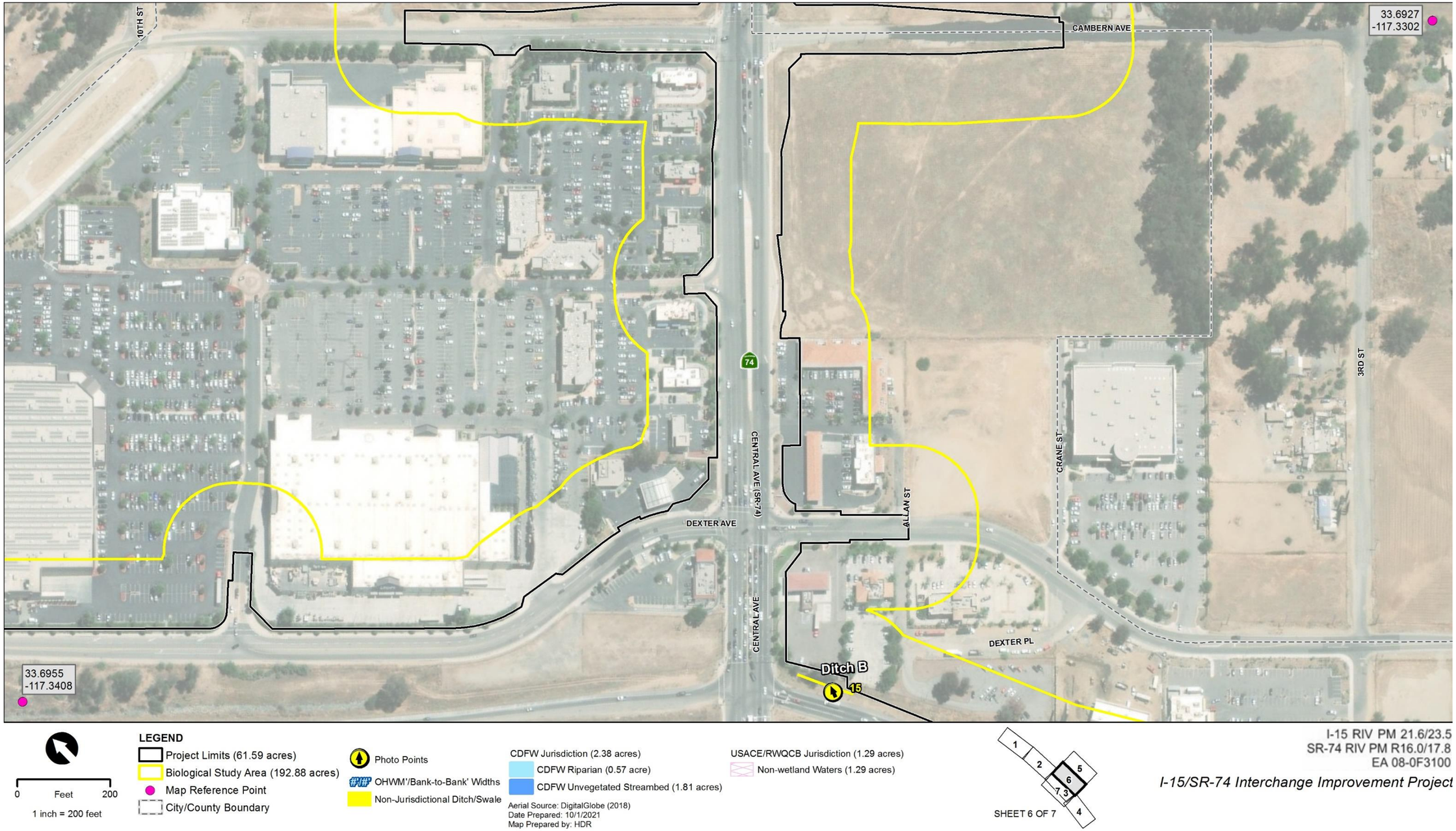

Figure 2.22-1. United States Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife Jurisdictional Resources within the Biological Study Area (Sheet 6 of 7)

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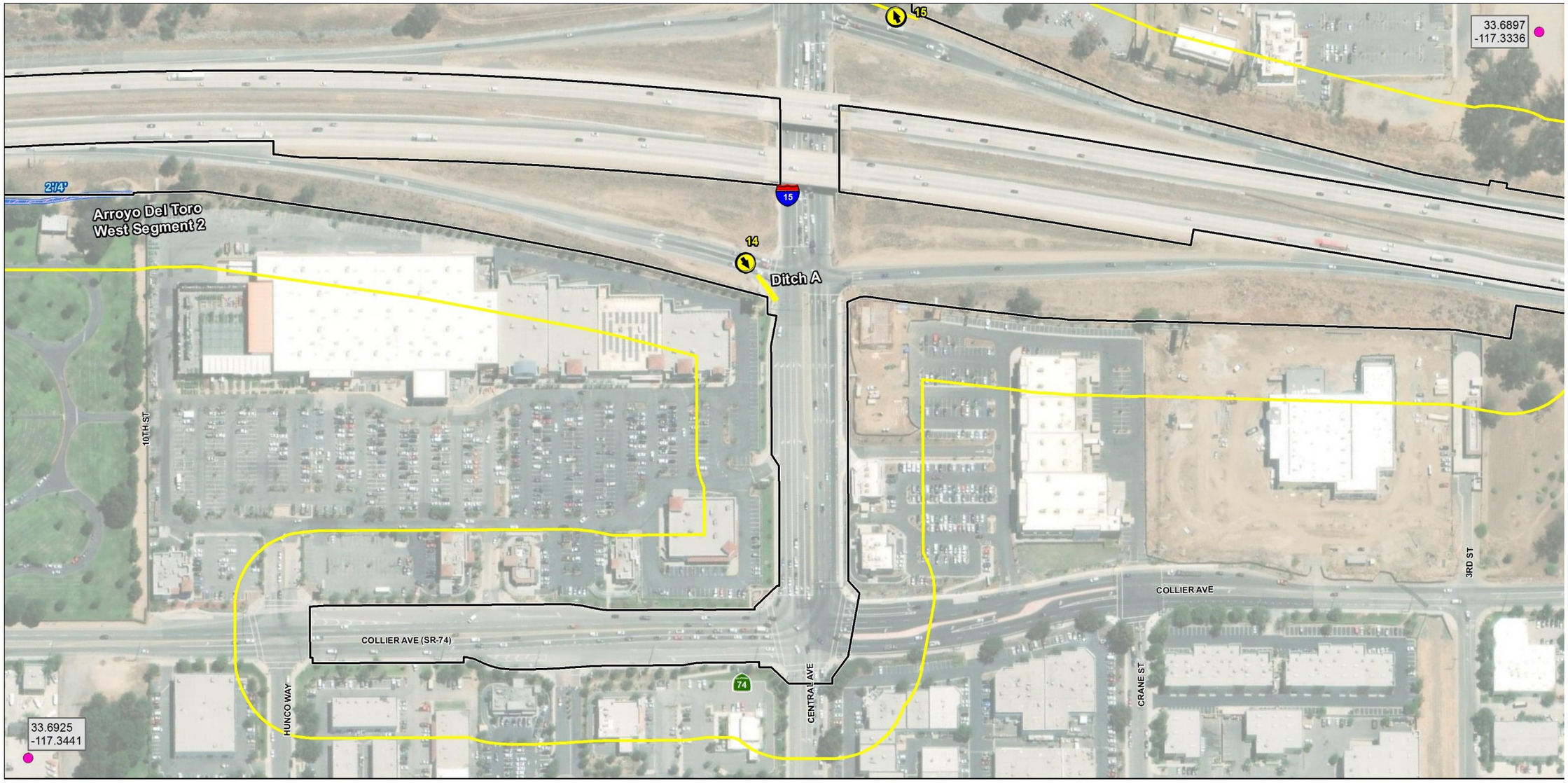

Figure 2.22-1. United States Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife Jurisdictional Resources within the Biological Study Area (Sheet 7 of 7)

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Tributary A

Tributary A is an ephemeral feature that enters the BSA via a concrete culvert in the NB shoulder of I-15 adjacent to the Temescal Canyon High School tennis courts. Within the BSA, Tributary A conveys flows via a narrow earthen channel across the shoulder into an 18-inch corrugated metal pipe (CMP) culvert.

Tributary B

Tributary B is an ephemeral feature that enters the BSA via a concrete culvert east of I-15 adjacent to the Temescal Canyon High School track. Within the BSA, flows from the culvert are conveyed across a concrete pad into an 18-inch CMP culvert at I-15. The 18-inch CMP culvert conveys flows under I-15 and outlets into the adjacent shopping center parking lot outside of the BSA, just west of I-15. Since Tributary B is ephemeral, it is not subject to USACE jurisdiction under the Navigable Waters Protection Rule.

Tributary C

Tributary C is an ephemeral feature that also enters the BSA via a concrete culvert east of I-15 adjacent to the Temescal Canyon High School baseball fields. Within the BSA, flows from the culvert are conveyed across the earthen I-15 shoulder into an 18-inch CMP culvert.

Ditches Constructed in Uplands

Two ephemeral ditches constructed in uplands, Ditch A and Ditch B, were also mapped within the BSA. Based on their characteristics, these features have been determined to be nonjurisdictional[2].

2.22.2.2 United States Army Corps of Engineers Jurisdictional Areas

As identified in Table 2.22-1, and shown on Figure 2.22-1, the BSA contains a total of 0.42 acre of potential CWA Section 404/401 jurisdictional nonwetland waters of the U.S.

Table 2.22-1. United States Army Corps of Engineers and Regional Water Quality Control Board Jurisdictional Features within the Biological Study Area

Feature Identification	Flow Regime	USACE and RWQCB Jurisdiction	
		Nonwetland (acres)	Wetland (acres)
Wasson Canyon Wash	Intermittent	0.42	—

[2] United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) have the ultimate authority of determining whether or not permits will be required for Project impacts to these features.

Table 2.22-1. United States Army Corps of Engineers and Regional Water Quality Control Board Jurisdictional Features within the Biological Study Area

Feature Identification	Flow Regime	USACE and RWQCB Jurisdiction	
		Nonwetland (acres)	Wetland (acres)
Arroyo Del Toro	Ephemeral	0.86	—
Tributary A	Ephemeral	<0.01	—
Tributary B	Ephemeral	<0.01	—
Tributary C	Ephemeral	<0.01	—
Subtotal		0.87	—
Total		1.29	—

Notes:

Total acreage may not equal sums as listed in table as a result of rounding.

RWQCB=Regional Water Quality Control Board; USACE=United States Army Corps of Engineers

2.22.2.3 Regional Water Quality Control Board Jurisdictional Areas

Waters of the state, as defined by the SWRCB's 2019 Wetland and Riparian Area Protection Policy, include jurisdictional waters of the U.S. as well as some isolated features not regulated by USACE. As identified in Table 2.22-1 and shown on Figure 2.22-1, there are no isolated features within the BSA, and all features within the BSA subject to USACE jurisdiction pursuant to Section 404 of the CWA are also subject to RWQCB jurisdiction pursuant to Section 401 of the CWA.

2.22.2.4 California Department of Fish and Wildlife Jurisdictional Areas

As identified in Table 2.22-2, and shown on Figure 2.22-1, the BSA contains a total of 2.38 acres of streambed (bank to bank), including 0.57 acre of riparian habitat, subject to CDFW jurisdiction under Section 1602 of the California Fish and Game Code.

Table 2.22-2. California Department of Fish and Wildlife Jurisdictional Features within the Biological Study Area

Feature Identification	CDFW Jurisdiction	
	Unvegetated Streambed (acres)	Riparian Habitat (acres)
Wasson Canyon Wash	0.92	—
Arroyo Del Toro	0.86	0.57
Tributary A	<0.01	—
Tributary B	<0.01	—
Tributary C	<0.01	—
Total	1.80	0.57

Notes:

Total acreage may not equal sums as listed in table as a result of rounding.

CDFW=California Department of Fish and Wildlife

2.22.2.5 Western Riverside Multiple Species Habitat Conservation Plan Section 6.1.2 (Riparian/Riverine Resources)

As identified in Table 2.22-2 and Figure 2.22-1, the BSA contains 2.38 acres of Western Riverside County MSHCP riparian/riverine resources, consistent with CDFW jurisdictional streambed and associated riparian vegetation as discussed in the section, above.

2.22.3 Environmental Consequences

The discussion regarding potential temporary and permanent Project impacts to jurisdictional features should be considered preliminary until the findings and conclusions of the JD are verified by USACE, RWQCB, and CDFW.

2.22.3.1 Temporary Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be constructed. Therefore, no temporary impacts to wetlands and other waters will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

As identified in in Table 2.22-3, under Alternative 2, the Project will result in temporary impacts to up to 0.40 acre of nonwetland waters of the U.S. potentially subject to USACE and RWQCB jurisdiction pursuant to Sections 404 and 401 of the CWA, respectively.

Table 2.22-3. Temporary Project Impacts to Potential United States Army Corps of Engineers and Regional Water Quality Control Board Jurisdictional Areas under Alternative 2

	Alternative 2
	Nonwetland Waters (acres)
Feature Identification	Temporary Impacts
Waters of the U.S. [USACE (CWA 404) and RWQCB (CWA 401)]	
Wasson Canyon Wash	—
Arroyo Del Toro	0.39
Tributary A	<0.01
Tributary B	—
Tributary C	—
Subtotal	<0.40
Total	<0.40

Notes:

Total acreage may not equal sums as listed in table as a result of rounding.

CWA=Clean Water Act; RWQCB=Regional Water Quality Control Board; USACE=United States Army Corps of Engineers

The Project will also result in temporary impacts of up to 0.41 acre of unvegetated streambed, and up to 0.48 acre of riparian habitat potentially subject to CDFW jurisdiction pursuant to Section 1602 of the California Fish and Game Code, as shown on Figure 2.22-2 and identified in Table 2.22-4.

Figure 2.22-2. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 2 (Sheet 1 of 7)

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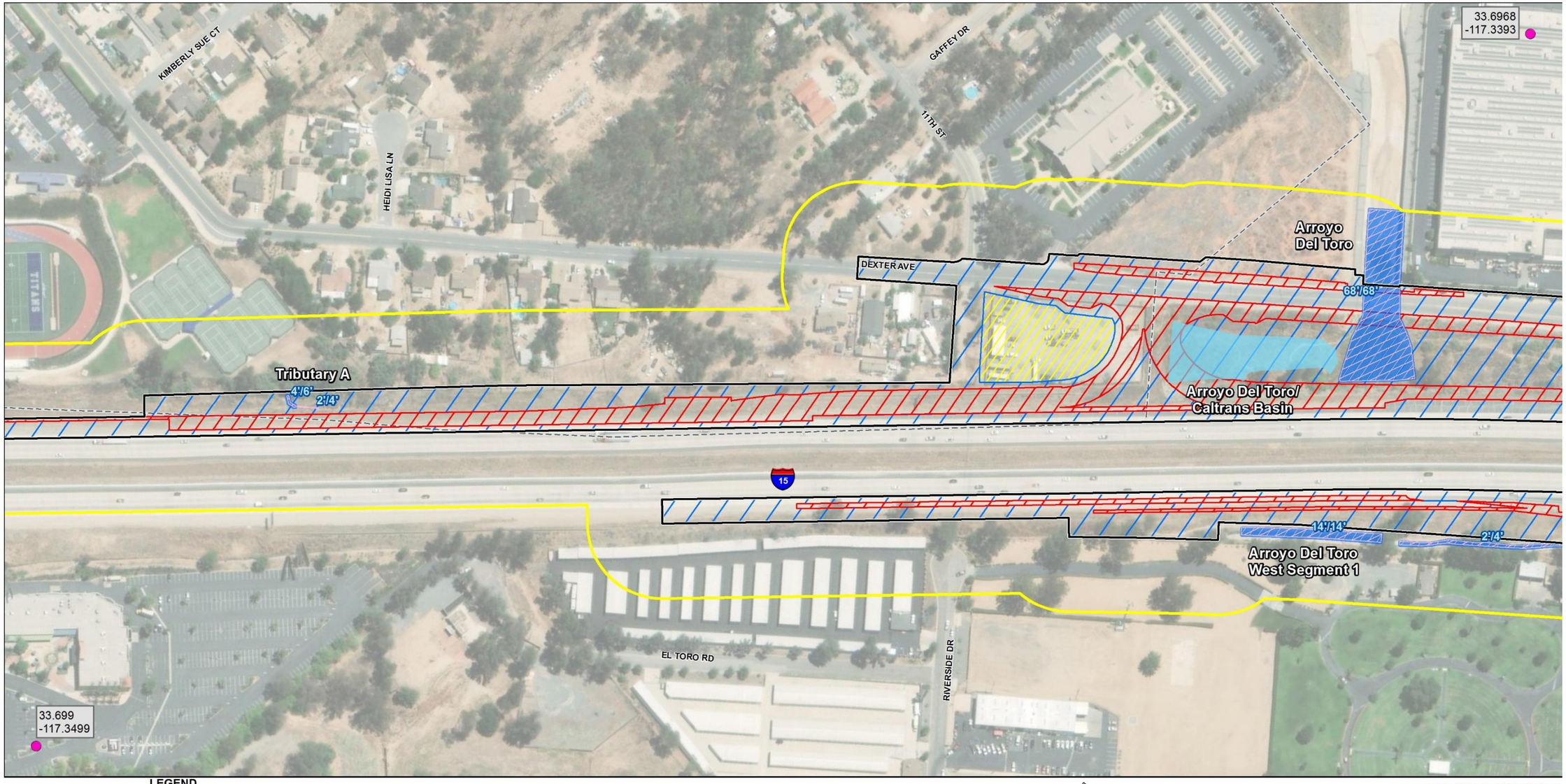

Figure 2.22-2. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 2 (Sheet 2 of 7)

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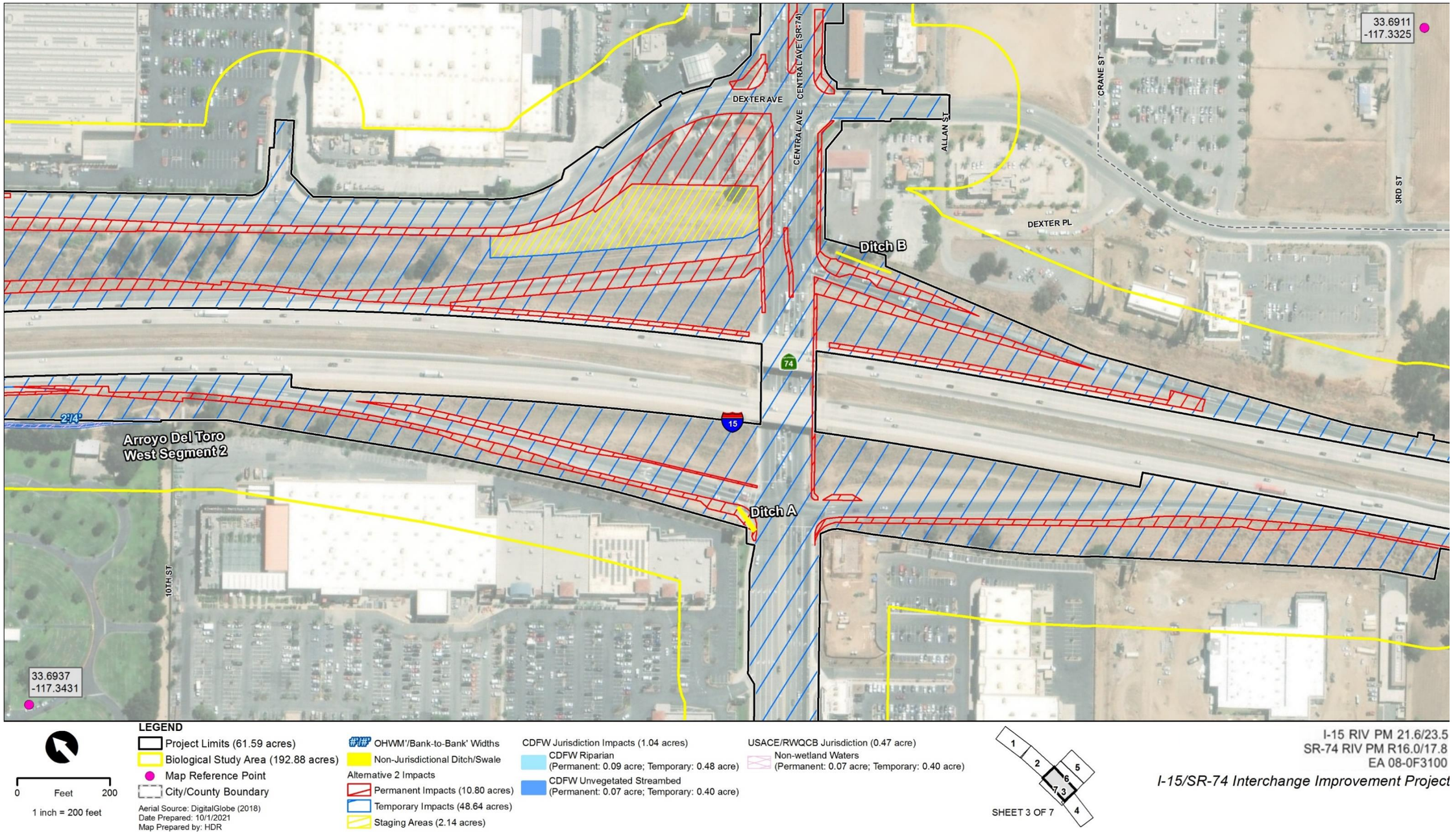

Figure 2.22-2. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 2 (Sheet 3 of 7)

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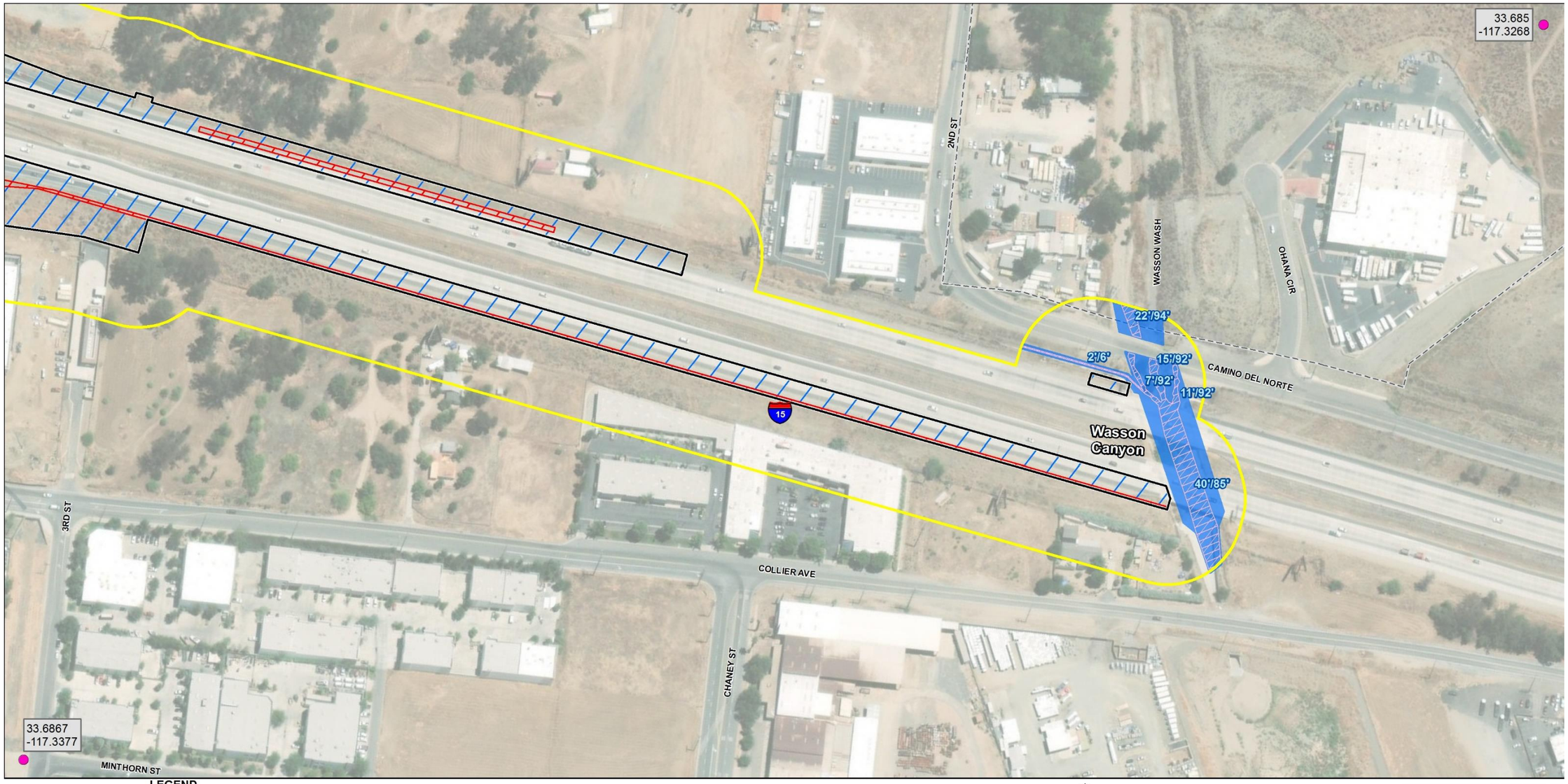

Figure 2.22-2. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 2 (Sheet 4 of 7)

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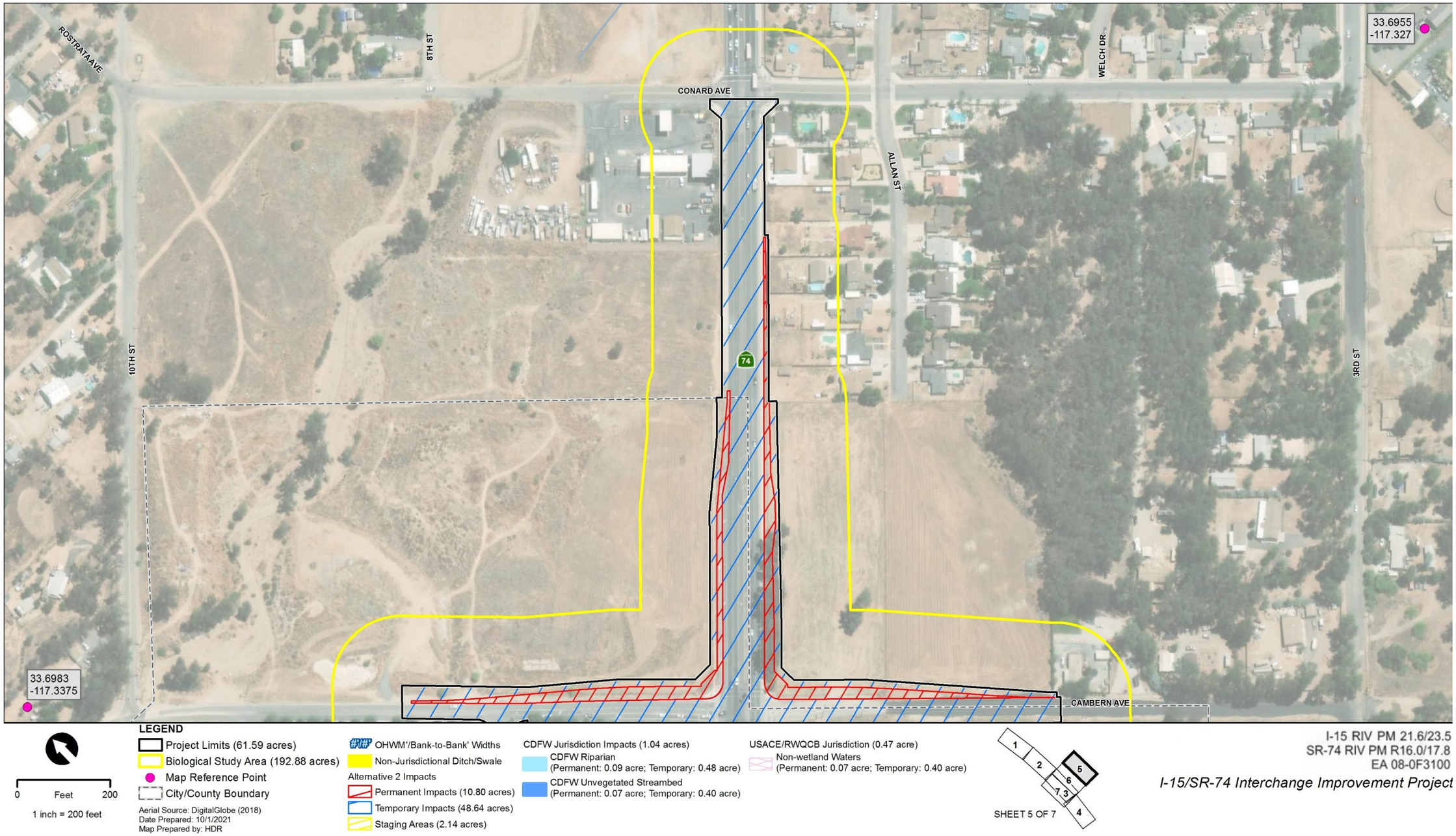

Figure 2.22-2. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 2 (Sheet 5 of 7)

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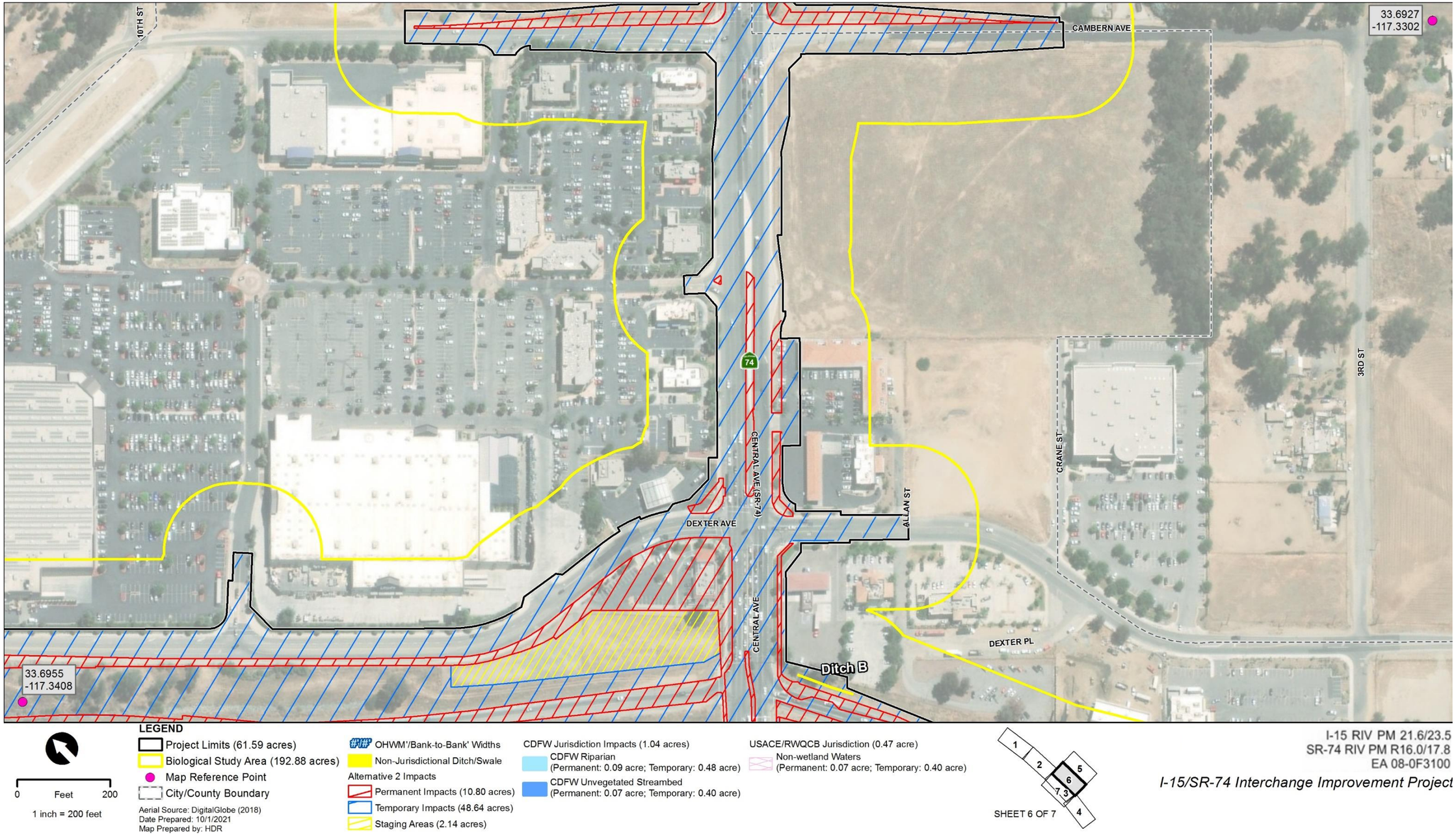

Figure 2.22-2. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 2 (Sheet 6 of 7)

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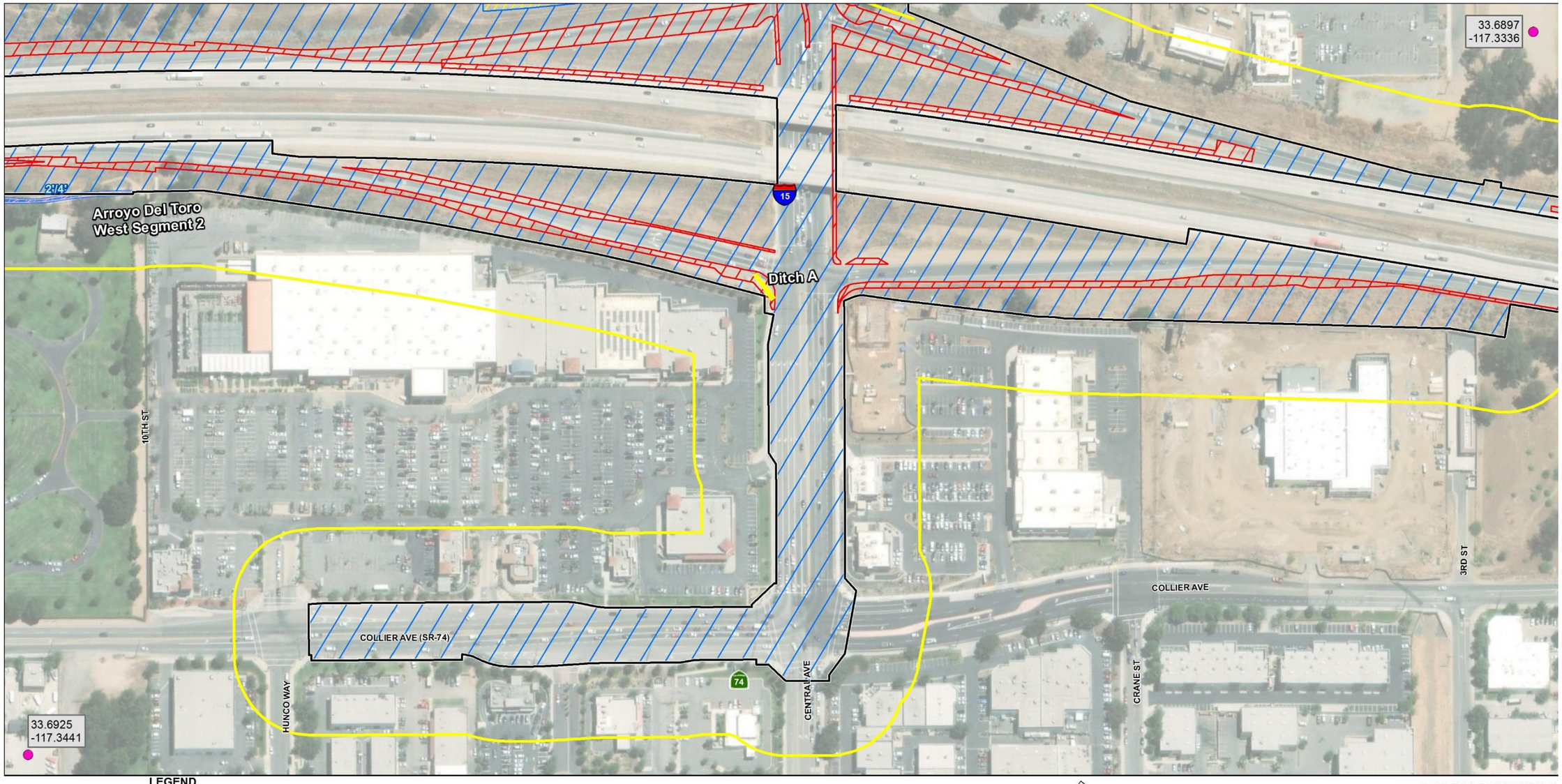

Figure 2.22-2. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 2 (Sheet 7 of 7)

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Table 2.22-4. Temporary Project Impacts to Potential California Department of Fish and Wildlife Jurisdictional Areas and Multiple Species Habitat Conservation Plan Riparian/Riverine Resources under Alternative 2

	Alternative 2	
	Unvegetated Streambed/ Riverine Areas (acres)	Riparian Habitat (acres)
Feature Identification	Temporary Impacts	Temporary Impacts
Wasson Canyon Wash	—	—
Arroyo Del Toro	0.39	0.48
Tributary A	0.01	—
Tributary B	—	—
Tributary C	—	—
Total	0.41	0.48

Notes:

Total acreage may not equal sums as listed in table as a result of rounding.

Temporary impacts to Western Riverside County MSHCP riparian/riverine resources will be consistent with the impacts to CDFW jurisdictional streambed and associated riparian vegetation. Temporary Project impacts to nonwetland waters of the U.S., unvegetated streambed, and riparian habitat will be mitigated for with the implementation of Measure WET-1. Measure WET-1 identifies anticipated habitat restoration and compensatory mitigation that will be required in order to obtain Clean Water Act Section 401 and 404 permits, and CDFW Section 1602 Streambed Alteration Agreement. Therefore, with the implementation of Measure WET-1, no substantial temporary impacts to jurisdictional resources will occur under Alternative 2.

Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) (Preferred Alternative)

As identified in Table 2.22-5, similar to Alternative 2, Alternative 3 (Preferred Alternative) will result in temporary impacts of up to 0.40 acre of nonwetland waters of the U.S. potentially subject to USACE and RWQCB jurisdiction pursuant to Sections 404 and 401 of the CWA, respectively.

Table 2.22-5. Temporary Project Impacts to Potential United States Army Corps of Engineers and Regional Water Quality Control Board Jurisdictional Areas under Alternative 3 (Preferred Alternative)

	Alternative 3
	Nonwetland Waters (acres)
Feature Identification	Temporary Impacts
Waters of the U.S. [USACE (CWA 404) and RWQCB (CWA 401)]	
Wasson Canyon Wash	—
Arroyo Del Toro	0.39
Tributary A	<0.01
Tributary B	—
Tributary C	—
Subtotal	<0.40
Total	<0.40

Notes:

Total acreage may not equal sums as listed in table as a result of rounding.

CWA=Clean Water Act; RWQCB=Regional Water Quality Control Board; USACE=United States Army Corps of Engineers

Alternative 3 (Preferred Alternative) will also result in temporary impacts of up to 0.41 acre of unvegetated streambed and up to 0.52 acre of riparian habitat potentially subject to CDFW jurisdiction pursuant to Section 1602 of the California Fish and Game Code, as shown on Figure 2.22-3 and identified in Table 2.22-6.

Figure 2.22-3. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 3 (Preferred Alternative) (Sheet 1 of 7)

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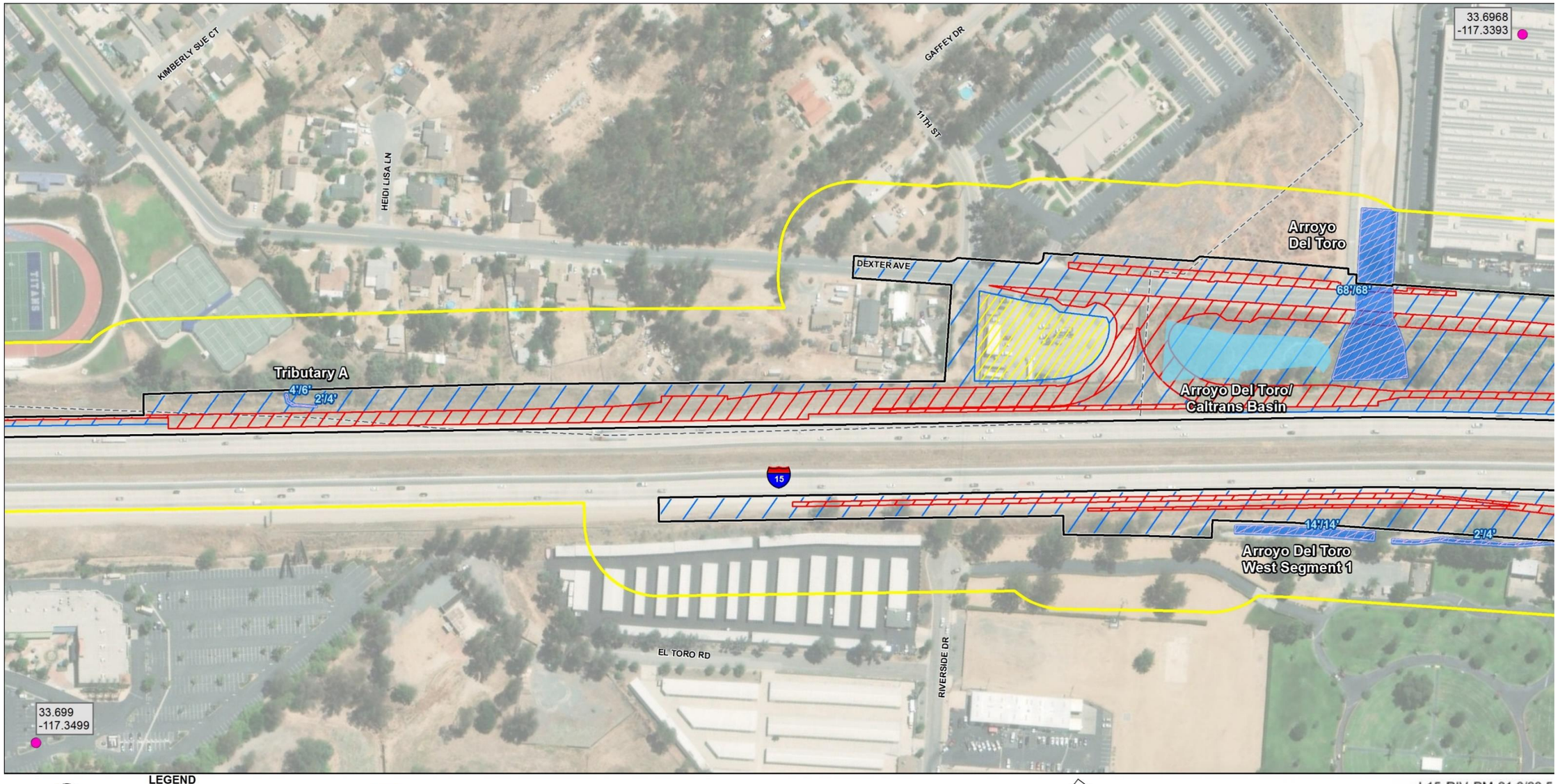

Figure 2.22-3. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 3 (Preferred Alternative) (Sheet 2 of 7)

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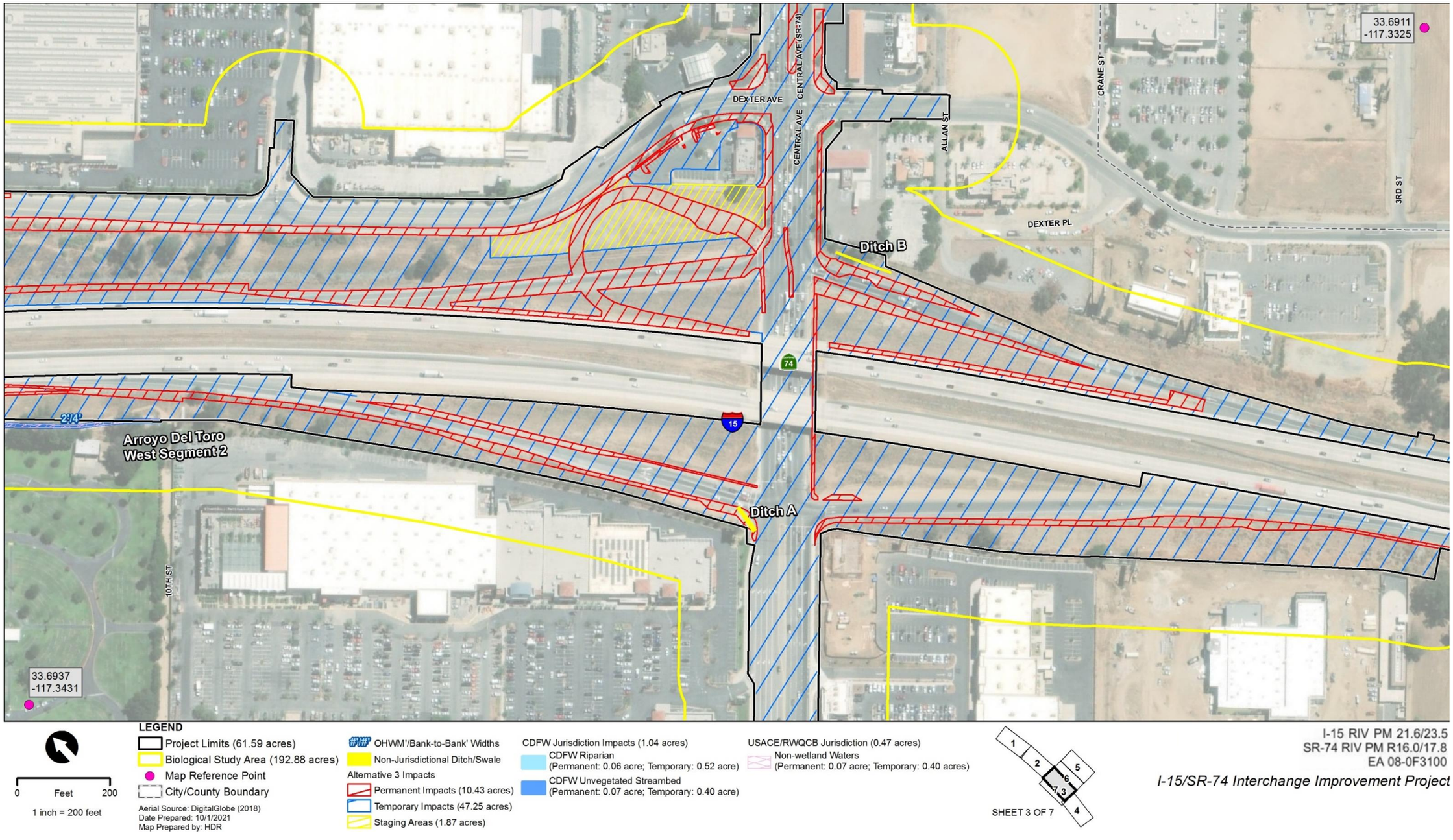

Figure 2.22-3. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 3 (Preferred Alternative) (Sheet 3 of 7)

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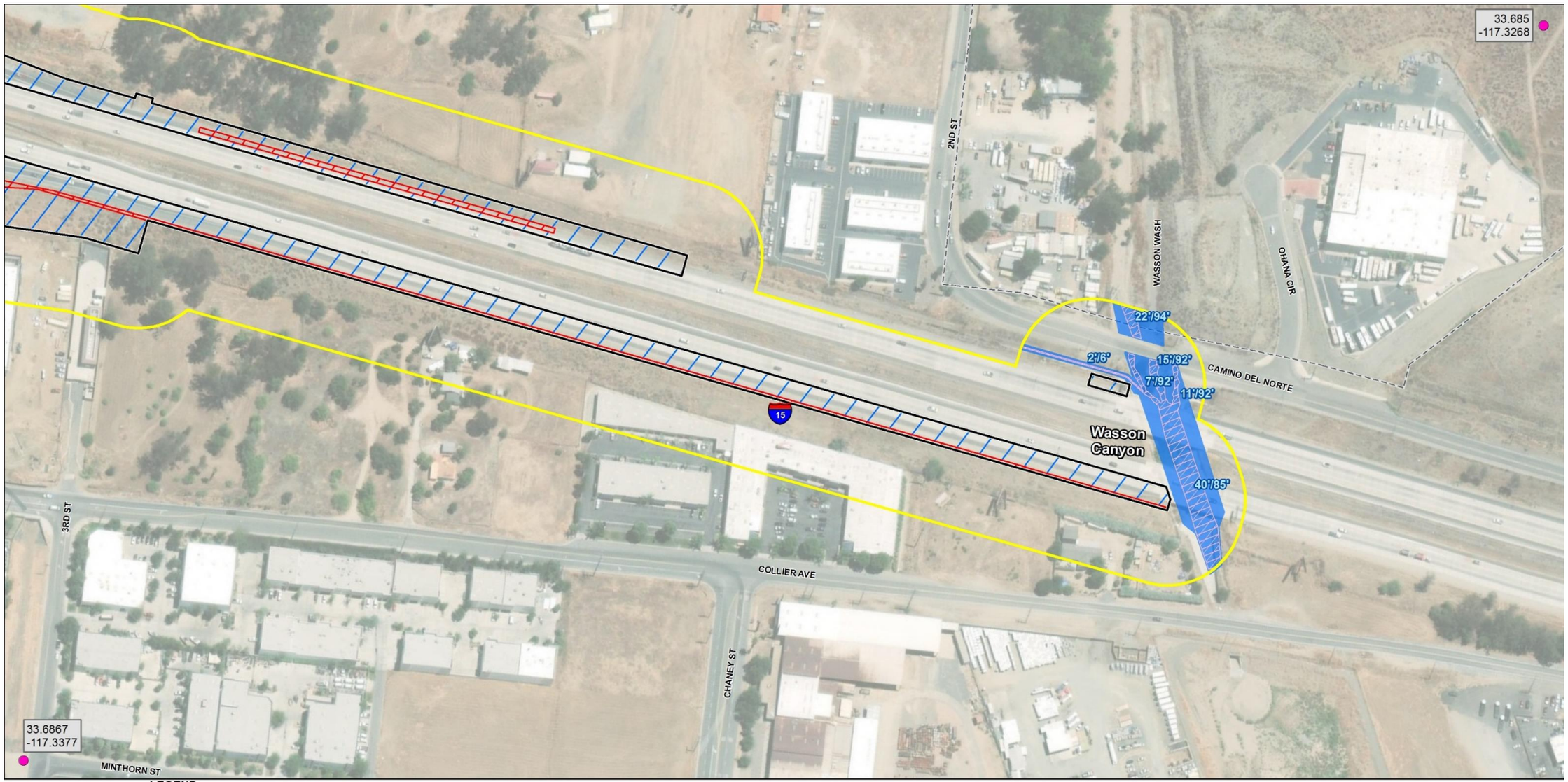

Figure 2.22-3. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 3 (Preferred Alternative) (Sheet 4 of 7)

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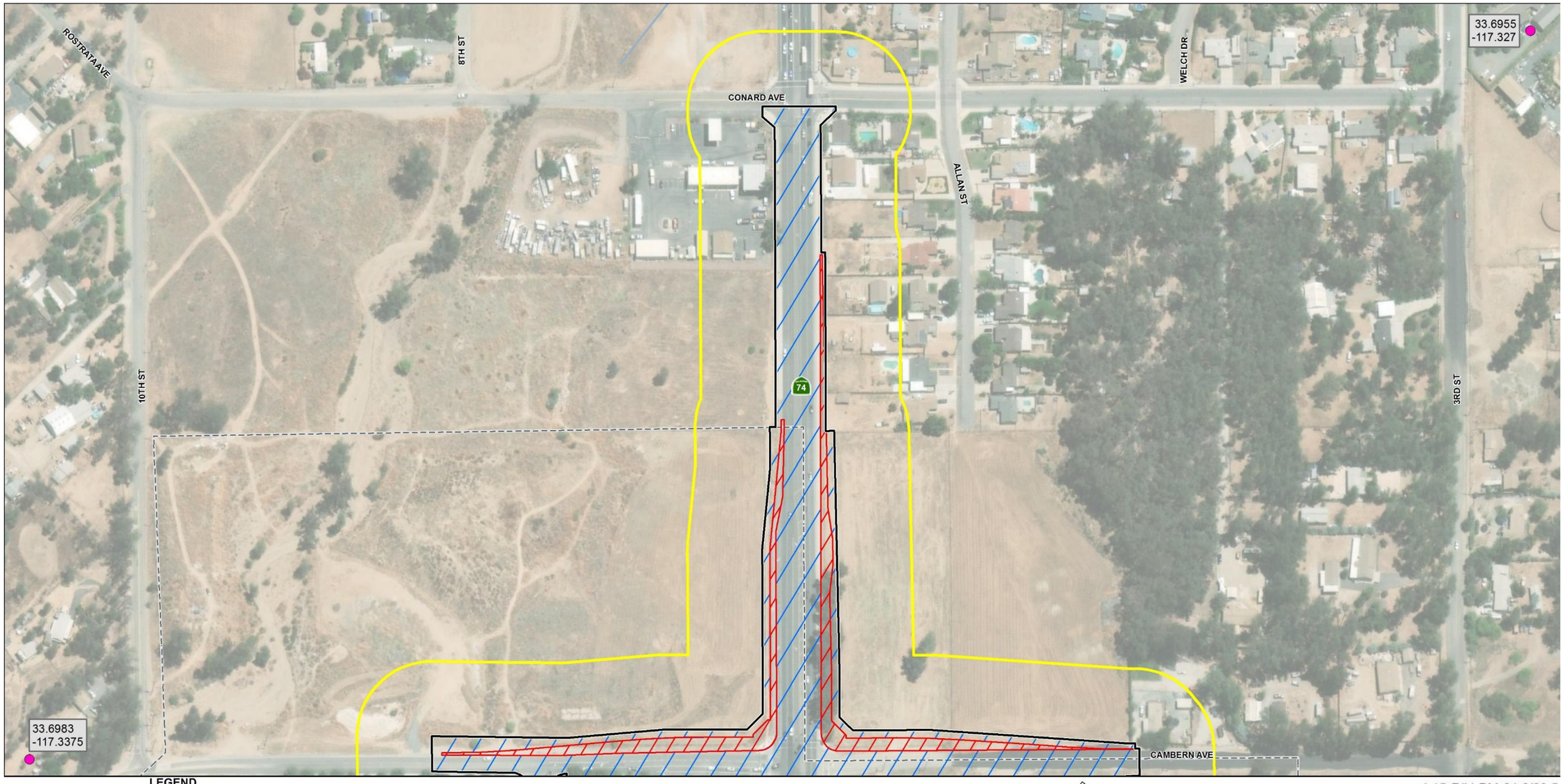

Figure 2.22-3. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 3 (Preferred Alternative) (Sheet 5 of 7)

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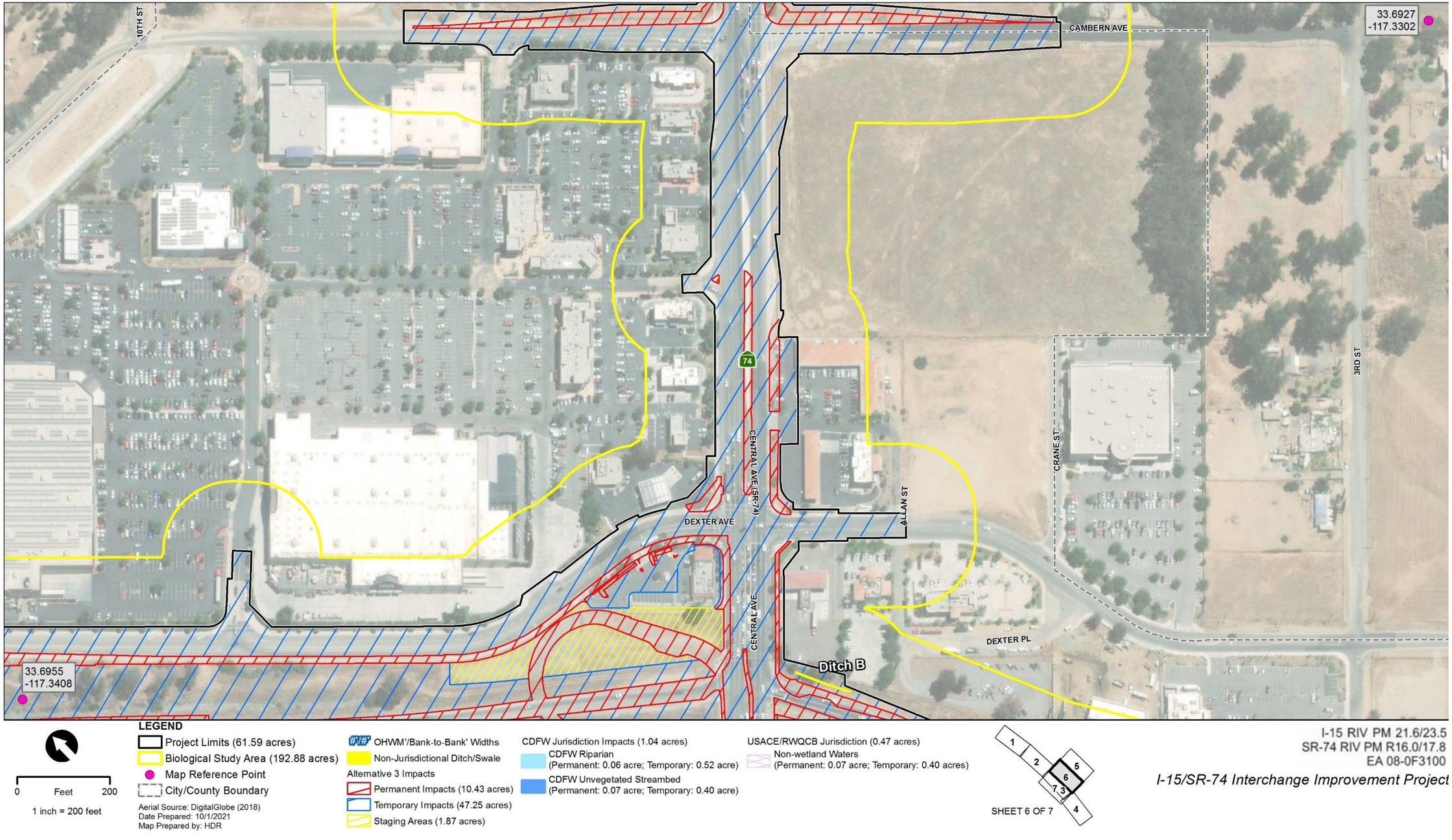

Figure 2.22-3. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 3 (Preferred Alternative) (Sheet 6 of 7)

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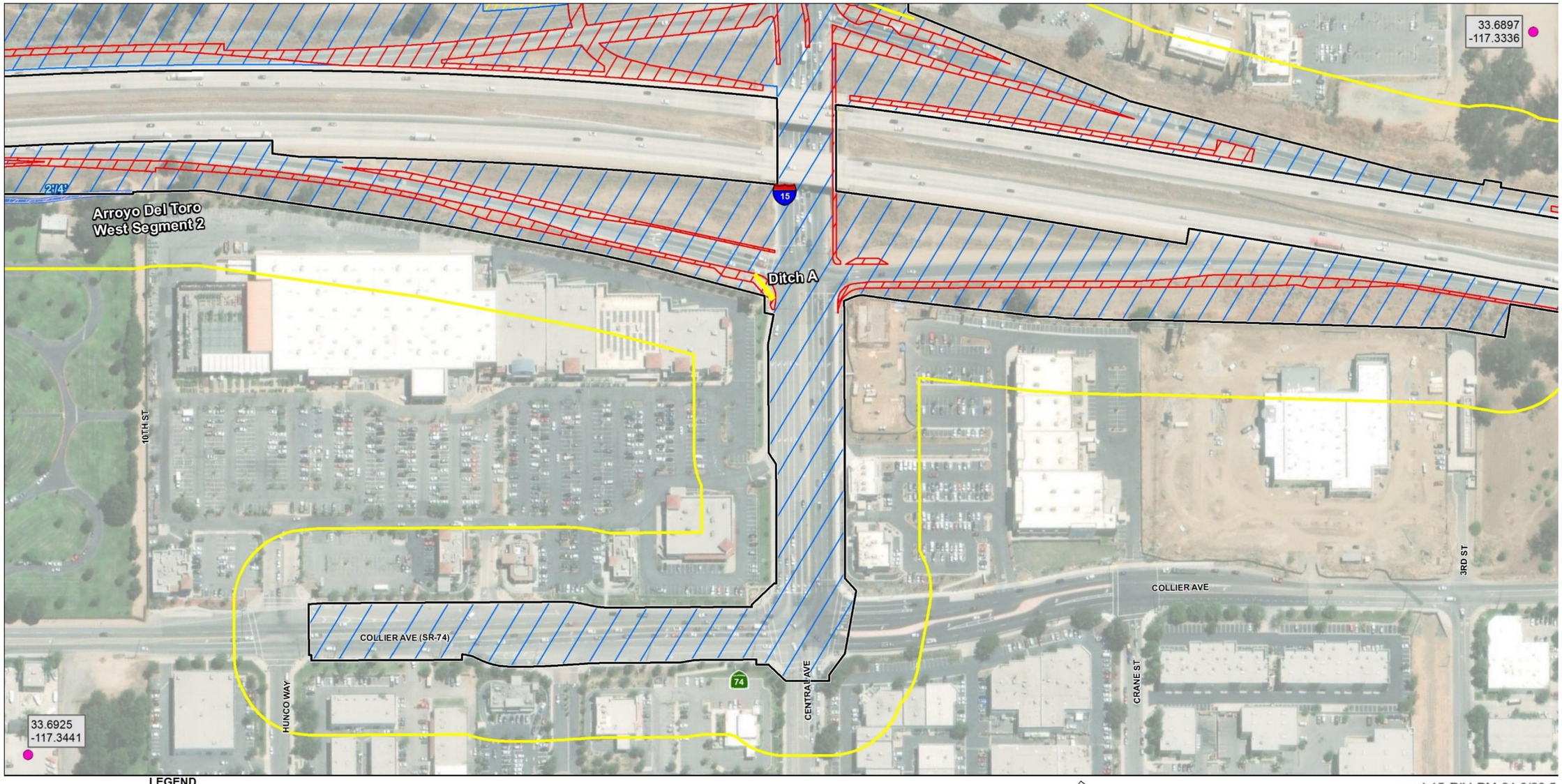

Figure 2.22-3. Project Impacts to Regional Water Quality Control Board and California Department of Fish and Wildlife Jurisdictional Resources: Alternative 3 (Preferred Alternative) (Sheet 7 of 7)

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Table 2.22-6. Temporary Project Impacts to Potential California Department of Fish and Wildlife Jurisdictional Areas and Multiple Species Habitat Conservation Plan Riparian/Riverine Resources under Alternative 3 (Preferred Alternative)

	Alternative 3	
	Unvegetated Streambed/ Riverine Areas (acres)	Riparian Habitat (acres)
Feature Identification	Temporary Impacts	Temporary Impacts
Wasson Canyon Wash	—	—
Arroyo Del Toro	0.39	0.52
Tributary A	0.01	—
Tributary B	—	—
Tributary C	—	—
Total	0.41	0.52

Notes:

Total acreage may not equal sums as listed in table as a result of rounding.

2.22.3.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be implemented. Therefore, no permanent impacts to wetlands and other waters will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

The Project, under Alternative 2, will permanently impact up to 0.07 acre of nonwetland waters of the U.S., up to 0.07 acre of CDFW unvegetated streambed, and up to 0.09 acre of CDFW riparian habitat, as detailed in Table 2.22-7 and Table 2.22-8 and shown on Figure 2.22-3.

Table 2.22-7. Permanent Project Impacts to Potential United States Army Corps of Engineers and Regional Water Quality Control Board Jurisdictional Areas under Alternative 2

Feature Identification	Alternative 2 Nonwetland Waters (acres) Permanent Impacts
Waters of the U.S. [USACE (CWA 404) and RWQCB (CWA 401)]	
Wasson Canyon Wash	—
Arroyo Del Toro	0.07
Tributary A	—
Tributary B	—
Tributary C	—
Subtotal	0.07
Total	0.07

Notes:

Total acreage may not equal sums as listed in table as a result of rounding.

CWA=Clean Water Act; RWQCB=Regional Water Quality Control Board; USACE=United States Army Corps of Engineers

Impacts to Western Riverside County MSHCP riparian/riverine areas under Alternative 2 will be consistent with impacts to CDFW jurisdictional streambed and associated riparian vegetation.

Table 2.22-8. Permanent Project Impacts to Potential California Department of Fish and Wildlife Jurisdictional Areas and Multiple Species Habitat Conservation Plan Riparian/Riverine Resources under Alternative 2

	Alternative 2	
	Unvegetated Streambed/Riverine Areas (acres)	Riparian Habitat (acres)
Feature Identification	Permanent Impacts	Permanent Impacts
Wasson Canyon Wash	—	—
Arroyo Del Toro	0.07	0.09
Tributary A	—	—
Tributary B	—	—
Tributary C	—	—
Total	0.07	0.09

Notes:

Total acreage may not equal sums as listed in table as a result of rounding.

The Project, under Alternative 2, has been designed to minimize permanent impacts to jurisdictional features. Permanent Project impacts to nonwetland waters of the U.S., unvegetated streambed, and riparian habitat will be mitigated for with the implementation of Measure WET-1.

In addition, implementation of Measure NC-4, in Section 2.21, Natural Communities, will prevent unauthorized impacts to nonwetland and streambed areas. Implementation of Measure NC-5 will protect off-site waters from inadvertent impacts during construction. In addition, the Project will comply with the requirements as stated in the Caltrans NPDES Statewide Storm Water Permit and NPDES Construction General Permit as stipulated in Measure WQ-1, in Section 2.14, Water Quality, and Measure WQ-2, which specifies the preparation of a SWPPP and implementation of erosion and sediment control BMPs detailed in the SWPPP during construction. With the implementation of Measures NC-4 and NC-5, in Section 2.21, Natural Communities, Measures WQ-1 and WQ-2, in Section 2.14, Water Quality, and Measure WET-1, no permanent adverse impacts to wetlands and other waters are anticipated under Alternative 2.

Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) (Preferred Alternative)

Similar to Alternative 2, the Project, under Alternative 3 (Preferred Alternative), will permanently impact up to 0.07 acre of nonwetland waters of the U.S., up to 0.07 acre of CDFW unvegetated streambed, and up to 0.06 acre of CDFW riparian habitat, as identified in Table 2.22-9 and Table 2.22-10, and shown on Figure 2.22-3.

Similar to Alternative 2, impacts to Western Riverside County MSHCP riparian/riverine areas under Alternative 3 (Preferred Alternative) will be consistent with impacts to CDFW jurisdictional streambed and associated riparian vegetation.

Table 2.22-9. Permanent Project Impacts to Potential United States Army Corps of Engineers and Regional Water Quality Control Board Jurisdictional Areas under Alternative 3 (Preferred Alternative)

	Alternative 3
	Nonwetland Waters (acres)
Feature Identification	Permanent Impacts
Waters of the U.S. [USACE (CWA 404) and RWQCB (CWA 401)]	
Wasson Canyon Wash	—
Arroyo Del Toro	0.07
Tributary A	—
Tributary B	—
Tributary C	—
Subtotal	0.07
Total	0.07

Notes:

Total acreage may not equal sums as listed in table as a result of rounding.

CWA=Clean Water Act; RWQCB=Regional Water Quality Control Board; USACE=United States Army Corps of Engineers

Table 2.22-10. Permanent Project Impacts to Potential California Department of Fish and Wildlife Jurisdictional Areas and Multiple Species Habitat Conservation Plan Riparian/Riverine Resources under Alternative 3 (Preferred Alternative)

	Alternative 3	
	Unvegetated Streambed/ Riverine Areas (acres)	Riparian Habitat (acres)
Feature Identification	Permanent Impacts	Permanent Impacts
Wasson Canyon Wash	—	—
Arroyo Del Toro	0.07	0.06
Tributary A	—	—
Tributary B	—	—
Tributary C	—	—
Total	0.07	0.06

Notes:

Total acreage may not equal sums as listed in table as a result of rounding.

The Project, under Alternative 3 (Preferred Alternative), has been designed to minimize permanent impacts to jurisdictional features. Similar to the findings under Alternative 2, the implementation of Measure WET-1 will provide for compensatory mitigation for permanent loss of nonwetland waters of the U.S., unvegetated streambed and riparian habitat.

In addition, implementation of Measures NC-4 and NC-5, in Section 2.21, Natural Communities, Measures WQ-1 and WQ-2, in Section 2.14, Water Quality, will protect off-site waters from inadvertent impacts during construction. Therefore, with the implementation of Measures NC-4 and NC-5, in Section 2.21, Natural Communities, Measures WQ-1 and WQ-2, in Section 2.14, Water Quality, and Measure WET-1, no permanent adverse impacts to wetlands and other waters are anticipated under Alternative 3 (Preferred Alternative).

2.22.3.3 Permits Required

USACE and RWQCB regulate the discharge of fill to waters of the U.S. pursuant to Sections 404 and 401 of the CWA and require Section 404 authorization and a Section 401 Water Quality Certification, respectively. CDFW regulates substantial modification of bed and bank or diversion or obstruction of flows of a stream pursuant to Section 1602 of the California Fish and Game Code and

requires a Streambed Alteration Agreement when it determines that the activity may substantially adversely affect existing fish or wildlife resources. Project activities that result in the discharge of fill to, or modification of, any features subject to USACE, RWQCB, and CDFW jurisdiction, including temporary work areas, will require permits and/or authorization from USACE, RWQCB, and CDFW.

A DBESP was prepared to address Project impacts and identify mitigation for impacts to Western Riverside County MSHCP riparian/riverine resources. The DBESP discusses the Project's compliance with Western Riverside County MSHCP requirements for Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools as identified in Section 6.2 of the Western Riverside County MSHCP. All areas considered riparian/riverine areas within the BSA are also considered CDFW jurisdictional areas. These areas also overlap with, and extend beyond, the limits of those areas subject to USACE and RWQCB jurisdiction as discussed in Section 2.22, Wetlands and Other Waters. The DBESP identifies mitigation for impacts to Western Riverside County MSHCP riparian/riverine areas, which is at the same ratios as CDFW unvegetated streambed and riparian habitat. The DBESP was submitted to CDFW and USFWS for approval through the Western Riverside County MSHCP's State Consistency Review Process on November 22, 2021. Concurrence of the DBESP, and mitigation in the DBESP, was received on June 14, 2024 (see Appendix L.2).

Based on the type of work, it is anticipated that the Project will require Section 404 authorization and a Section 401 Water Quality Certification as it will impact waters of the U.S. Therefore, a pre-construction notification for a nationwide permit will need to be prepared and submitted to USACE and a Water Quality Certification will need to be prepared and submitted to RWQCB to acquire these permits prior to construction. It is anticipated that the Project will require a standard Section 1602 Streambed Alteration Agreement. Therefore, a Streambed Alteration Notification will need to be prepared and submitted to CDFW to acquire a Streambed Alteration Agreement prior to construction.

2.22.4 Avoidance, Minimization, and/or Mitigation Measures

The following mitigation measure will be implemented under Alternative 2 and Alternative 3 (Preferred Alternative).

WET-1 During final design (PS&E), the City's Resident Engineer will ensure that compensatory mitigation for Project impacts to wetlands and other waters will be determined and any temporary impacts will be restored to pre-Project contours, or mitigation credits will be purchased from a mitigation bank in the Santa Ana River watershed (i.e., Riverside Corona Resource Conservation District) at a 1:1 ratio. Based on the low function of

waters of the U.S., unvegetated streambeds, and riparian habitat within the BSA, a compensatory mitigation ratio of 1:1 for permanent loss of waters of the U.S. and CDFW jurisdictional streambed will be used for the Project. A compensatory mitigation ratio of 2:1 for permanent loss of riparian habitat subject to CDFW jurisdiction will be used for the Project.

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2.23 Plant Species

2.23.1 Regulatory Setting

USFWS and CDFW have regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special-status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see Section 2.25 Threatened and Endangered Species in this document for detailed information about these species.

This section of the document discusses all other special-status plant species, including CDFW species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the CEQA, found at California Public Resources Code, Sections 21000-21177.

2.23.2 Affected Environment

This section discusses special-status plant species with the potential to occur within the BSA and summarizes the results of research and fieldwork that have been conducted to date for the Project in the NES(MI) (Caltrans 2020l). A discussion of natural communities mapped within the BSA is included in Section 2.21, Natural Communities of this IS/EA.

2.23.2.1 Western Riverside County Multiple Species Habitat Conservation Plan

Through agreements with USFWS and CDFW, the Western Riverside County MSHCP designates approximately 146 special-status animal and plant species that receive some level of coverage under the plan. Of the 146 covered species designated under the Western Riverside County MSHCP, the majority of these species have no additional survey/conservation requirements. Beyond the fully covered species, there are species with additional survey/ conservation requirements. These include 14 Narrow Endemic Plant Species identified within designated Narrow Endemic Plant Species Survey Areas (NEPSSA); 13 Criteria Area Plant Species identified within designated

Criteria Area Species Survey Areas (CASSA); and an additional 19 plant species (Table 9.3 of the Western Riverside County MSHCP document) not yet adequately conserved.

A portion of the BSA is located within the Western Riverside County MSHCP NEPSSA for Munz's onion (*Allium munzii*), San Diego ambrosia (*Ambrosia pumila*), slender-horned spineflower (*Dodecahema leptoceras*), many-stemmed dudleya (*Dudleya multicaulis*), spreading navarretia (*Navarretia fossalis*), California Orcutt grass (*Orcuttia californica*), San Miguel savory (*Satureja chandleri*), Hammitt's clay-cress (*Sibaropsis hammittii*), and Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*).

The BSA is located within the Western Riverside County MSHCP CASSA for plants, including thread-leaved brodiaea (*Brodiaea filifolia*), Davidson's saltscale (*Atriplex serenana* var. *davidsonii*), Parish's brittlescale (*Atriplex parishii*), smooth tarplant (*Centromadia pungens ssp. laevis*), roundleaved filaree (*Erodium macrophyllum*), Coulter's goldfields (*Lasthenia glabrata ssp. coulteri*), and little mousetail (*Myosurus minimus*).

2.23.2.2 Existing Conditions

A list of special-status species and habitats that have the potential to occur within the vicinity of the BSA was prepared using information provided by the CDFW's California Natural Diversity Database Rarefind program (CDFW 2024) and the CNPS Inventory of Rare and Endangered Plants of California (CNPS 2024). Searches of these databases were conducted for the nine USGS quadrangles including and surrounding the BSA (*Lake Elsinore, Lake Mathews, Steele Peak, Perris, Romoland, Murrieta, Wildomar, Sitton Peak,* and *Alberhill, California* USGS 7.5' quadrangles) and were refined based on the elevation range of the BSA. An official USFWS species list was obtained from the online *Information for Planning and Conservation Environmental Conservation Online System* on May 22, 2024 (USFWS 2024) and is provided in Appendix I. Special-status plants include those listed by USFWS as threatened or endangered or candidates for listing by USFWS and CDFW, as well as those considered sensitive by CNPS (California Rare Plant Rank [CRPR] Lists 1B, 2A, and 2B). These species include those conserved by the Western Riverside County MSHCP.

The literature review indicated known occurrences of 46 special-status plant species within the nine USGS 7.5-minute quadrangles surrounding the BSA. Nine of these special-status plant species are federally and/or state-listed endangered, threatened, or candidate species. The potential for occurrence of threatened and endangered species is discussed in further detail in Section 2.25, Threatened and Endangered Species.

Thirty-four non-listed special-status plant species have been recorded within the vicinity of the BSA. The BSA does not contain suitable habitat to support these or any of the special-status plant species

identified for the region. No special-status plants were observed within the BSA during field surveys conducted in support of the NES(MI). Additional information on these species, including status, habitat requirements, and potential for occurrence, is summarized in Table 2.23-1.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
BRYOPHYTES				
Campbell's liverwort Geothallus tuberosus	US: — CA: 1B MSHCP: NC	Found in mesic conditions in coastal sage scrub and vernal pools at 10 to 600 meters (30 to 2,000 feet) elevation. Known in California only from Riverside and San Diego Counties. Ephemeral.	Absent	Suitable vegetation communities and vernal pools are absent.
Bottle liverwort *Sphaerocarpos drewei*	US:— CA: 1B MSHCP: NC	Found within soil openings in chaparral and coastal sage scrub in Riverside and San Diego Counties. Elevation from 90 to 600 meters (300 to 2,000 feet). Ephemeral.	Absent	Suitable vegetation communities are absent.
California screw-moss *Tortula californica*	US:— CA: 1B MSHCP: NC	Moss of sandy soils in chenopod scrub and valley and foothill grassland at 10 to 1,460 meters (30 to 4,800 feet) elevation. Known only from Modoc, Kern, and western Riverside Counties, California. Seasonally following rains.	Absent	Suitable vegetation communities are absent.
PLANTS				
Chaparral sand-verbena *Abronia villosa var. aurita*	US: — CA: 1B MSHCP: NC	Sandy areas (generally flats and benches along washes) in chaparral and coastal sage scrub, and improbably in desert dunes or other sandy areas, below 1,600 meters (5,300 feet) elevation. In California, reported from	Absent	Suitable vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		Riverside, San Diego, Imperial, Los Angeles, and Ventura Counties. Believed extirpated from Orange County. Also reported from Arizona and Mexico (Baja California). Plants reported from desert communities are likely misidentified. Blooms mostly March through August (annual or perennial herb).		
Munz's onion *Allium munzii*	US: FE CA: ST/1B MSHCP: S	Seasonally moist sites on clay soils (generally) or within rocky outcrops (pyroxenite) on rocky-sandy loams (such as Cajalco, Las Posas, and Vallecitos) with clay subsoils, in openings within coastal sage scrub, pinyon juniper woodland, and grassland, at 300 to 1,070 meters (1,000 to 3,500 feet) elevation. Known only from western Riverside County in the greater Perris Basin (Temescal Canyon-Gavilan Hills/Plateau, Murrieta-Hot Springs areas) and within the Elsinore Peak (Santa Ana Mountains) and Domenigoni Hills regions. Clay soils on mesic exposures or seasonally moist microsites in grassy openings of coastal sage scrub, chaparral, juniper woodland or valley and foothill grassland. Blooms April	Absent	Suitable soils and vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		through May (perennial bulbiferous herb).		
San Diego ambrosia *Ambrosia pumila*	US: FE CA: 1B MSHCP: S	Open floodplain terraces on Garretson gravelly fine sandy loams, or in the watershed margins of vernal pools or alkali playas on Las Posas loam in close proximity to Willow silty alkaline soils at 20 to 487 meters (70 to 1,600 feet) elevation. Known from western Riverside and western San Diego Counties. Also occurs in Mexico. Open floodplain terraces on Garretson gravelly fine sandy loams, or in the watershed margins of vernal pools or alkali playas on Las Posas loam in close proximity to Willow silty alkaline soils. Occurs in sparse annual vegetation. Generally nonflowering (perennial herb). Occurs in sparse annual vegetation.	Absent	Suitable combination of seasonally wet areas and soils are absent.
Santa Lucia dwarf rush *Juncus luciensis*	US: — CA: 1B MSHCP: NC	Chaparral, Great Basin scrub, lower montane coniferous forest, meadows and seeps, and vernal pools. Elevation: 984–6,693 feet. Blooming period: April–July	Absent	Suitable vegetation communities are absent.
Rainbow manzanita *Arctostaphylos rainbowensis*	US: — CA: 1B MSHCP: P	Generally in gabbro chaparral in northwestern San Diego and southwestern Riverside Counties at 205 to 790 meters (670 to 2,600 feet) elevation. Known only	Absent	Suitable vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		from Riverside and San Diego Counties, California. Blooms December through March (evergreen shrub).		
San Jacinto Valley crownscale *Atriplex coronata var. notatior*	US: FE CA: 1B MSHCP: S	Alkaline flats in playas, chenopod scrub, valley and foothill grasslands, vernal pools at 365 to 520 meters (1,200 to 1,700 feet) elevation. Endemic to the San Jacinto River Valley area of western Riverside County. Highly alkaline silty-clay soils in association with the Traver-Domino-Willows soil association in floodplains (seasonal wetlands) dominated by alkali scrub, alkali playas, vernal pools, and, to a lesser extent, alkali grasslands. The majority (approximately 80 percent) of the populations are associated with Willows soils.	Absent	Suitable soils and vegetation communities are absent.
South coast saltscale *Atriplex pacifica*	US: — CA: 1B MSHCP: NC	Alkali soils in coastal sage scrub, playas, coastal bluff scrub, coastal dunes, and chenopod scrub below 200 meters (600 feet) elevation, and perhaps formerly up to about 430 meters (1,400 feet) in Los Angeles County. In California, known from the Channel Islands and mainland Los Angeles, San Diego and Orange Counties. Also occurs in Mexico. Believed extirpated from Ventura County.	Absent	Suitable soils and vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		Reports of this species from Riverside County are based on misidentification of Atriplex serenana ssp. davidsonii (Roberts et al. 2004). Blooms March through October (annual herb)		
Parish's brittlescale *Atriplex parishii*	US: — CA: 1B MSHCP: S	Domino, Willows and Traver soils in alkali vernal pools, alkali annual grassland, alkali playa, and alkali scrub components of alkali vernal plains. In California, known from Riverside and San Diego Counties. Also occurs in Mexico. Believed extirpated from Los Angeles, Orange, and San Bernardino Counties. Blooms June through October (annual herb).	Absent	Suitable soils and vegetation communities are absent.
Davidson's saltscale *Atriplex serenana var. davidsonii*	US: — CA: 1B MSHCP: S	Domino, Willows and Traver soils in alkali vernal pools, alkali annual grassland, alkali playa, and alkali scrub components of alkali vernal plains from 10 to 460 meters (30 to 1,500 feet) elevation. In California, known only from Los Angeles, Orange, Riverside, San Diego, San Luis Obispo, and Ventura Counties. Believed extirpated from Santa Barbara and perhaps Los Angeles Counties. Blooms April through October (annual herb).	Absent	Suitable soils and vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
California ayenia *Ayenia compacta*	US: — CA: 2B MSHCP: NC	Rocky canyons and sandy and gravelly washes from 150 to 1,095 meters (500 to 3,600 feet) elevation in desert scrub. In California, occurs in Providence Mountains, Eagle Mountains, and west edge of Sonoran Desert. Blooms March through April (subshrub).	Absent	Suitable vegetation communities are absent.
Thread-leaved brodiaea *Brodiaea filifolia*	US: FT CA: SE/1B MSHCP: S	Clay or alkaline silty-clay soils in semi-alkaline mudflats, vernal pools, mesic southern needlegrass grassland, mixed native – nonnative grassland and alkali grassland from 25 to 1,120 meters (80 to 3,700 feet) elevation. Known only from Los Angeles, Orange, Riverside, San Bernardino, San Diego, and San Luis Obispo Counties, California. Blooms March through June (perennial herb).	Absent	Suitable soils and vegetation communities are absent.
Orcutt's brodiaea *Brodiaea orcuttii*	US: — CA: 1B MSHCP: C	Clay and some serpentine soils, usually associated with streams or vernal pools, from 30 to 1,700 meters (100 to 5,600 feet) elevation. In California, known only from Riverside and San Diego Counties. Also occurs in Mexico. Blooms May through July (perennial herb).	Absent	Suitable combination of soils and habitat are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
Santa Rosa Basalt brodiaea *Brodiaea santarosae*	US: — CA: 1B.2 MSHCP: NC	Santa Rosa basalt in grassland at 580 to 1,045 meters (1,900 to 3,430 feet) elevation. Known only from Riverside and San Diego Counties, California. Blooms May through June (perennial herb).	Absent	Suitable soils and vegetation communities are absent.
Intermediate mariposa lily *Calochortus weedii var. intermedius*	US: — CA: 1B MSHCP: P	Dry, open rocky slopes and rock outcrops in chaparral, coastal sage scrub, and grassland, at 105 to 855 meters (340 to 2,800 feet) elevation. Known only from Los Angeles, Orange, Riverside, and San Bernardino Counties, California. In the western Riverside County area, this species is known from the hills and valleys west of Lake Skinner and Vail Lake (Roberts et al. 2004). Appears to intergrade with *Calochortus plummerae*, which is mostly east and north of Santa Ana Mountains. Blooms May through July (perennial herb).	Absent	Suitable soils and vegetation communities are absent.
Smooth tarplant *Centromadia pungens ssp. laevis*	US: — CA: 1B MSHCP: S	Primarily alkaline soils in alkali scrub, alkali playas, riparian woodland, watercourses, and alkaline grasslands below 480 meters (1,600 feet) elevation. Although the species is sometimes found on clay, this is generally in combination with alkalinity or intense disturbance that reduces competition from other species. Known from	Absent	Suitable soils and vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		Riverside and San Bernardino Counties, extirpated from San Diego County.Blooms April through November (annual herb).		
Parry's spineflower *Chorizanthe parryi var. parryi*	US: — CA: 1B MSHCP: P	Sandy or rocky soils in chaparral, coastal scrub, or woodlands at 40 to 1,705 meters (100 to 5,600 feet) elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties. Blooms April through June (annual herb)	Absent	Suitable vegetation communities are absent.
Long-spined spineflower *Chorizanthe polygonoides var. longispina*	US: — CA: 1B MSHCP: C	Generally clay soils in chaparral, coastal sage scrub, and grassland at 30 to 1,530 meters (100 to 5,000 feet) elevation. In California, known only from Orange, Riverside, Santa Barbara, and San Diego Counties. Also occurs in Mexico. Blooms April through July (annual herb).	Absent	Suitable soils and vegetation communities are absent.
San Miguel savory *Clinopodium chandleri*	US: — CA: 1B MSHCP: S	Rocky moist sites in oak woodland or tall dense chaparral or at the margins these communities in coastal sage scrub or grassland, at 110 to 1,210 meters (400 to 4,000 feet) elevation. Prefers moist rocky canyons with trees or large shrubs. Known only from Orange, Riverside, and San Diego Counties, and Baja California, Mexico. In western Riverside County restricted to Santa Ana	Absent	Suitable soils and vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		Mountains. Blooms March through May (perennial herb).		
Summer holly *Comarostaphylis diversifolia ssp. diversifolia*	US: — CA: 1B MSHCP: NC	Chaparral or cismontane woodland at 30 to 790 meters (100 to 2,600 feet). In California, known only from Orange, Riverside, and Santa Barbara, and San Diego Counties. Also occurs in Mexico. Blooms April through June (evergreen shrub).	Absent	Suitable soils and vegetation communities are absent.
Slender-horned spineflower *Dodecahema leptoceras*	US: FE CA: SE/1B MSHCP: S	Sandy soils in association with mature alluvial scrub (Riversidian alluvial fan sage scrub); or gravel soils of Temecula arkose deposits (i.e., coarse, decomposing pale feldspar-rich sandstone) in association with open chamise chaparral in the Vail Lake area. The ideal habitat appears to be terraces and benches that receive overbank deposits every 50 to 100 years. Occurs at 200 to 760 meters (600 to 2,500 feet) elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties, California. Blooms April through June (annual herb). The Western Riverside County MSHCP account for this species states that "this species is dependent on mature alluvial scrub that is maintained by	Absent	Suitable soils and vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		periodic flooding and sediment transport and only occurs along Arroyo Seco and Kolb Creeks, Temescal Wash at Indian Creek, central Bautista Creek, Vail Lake and the upper San Jacinto River near Valle Vista and Hemet...Cryptogamic crusts are frequently present in areas occupied by slender-horned spine flower."		
Many-stemmed dudleya *Dudleya multicaulis*	US: — CA: 1B MSHCP: S	The Western Riverside County MSHCP account for this species states that "Many-stemmed dudleya is associated with openings in chaparral, coastal sage scrub, and grasslands underlain by clay and cobbly clay soils of the following series: Altamont, Auld, Bosanko, Claypit, and Porterville." Found below 790 meters (2,600 feet) elevation. Known only from Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties. Blooms April through July (perennial herb).	Absent	Suitable soils and vegetation communities are absent.
Sticky dudleya *Dudleya viscida*	US: — CA: 1B MSHCP: P	Rocky areas in coastal bluff scrub, chaparral, coastal sage scrub, and cismontane woodland from 10 to 550 meters (30 to 1,800 feet) elevation. Known only from Orange and San Diego Counties,	Absent	Suitable soils and vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		California. Blooms May through June (perennial herb).		
San Diego button-celery *Eryngium aristulatum var. parishii*	US: FE CA: SE/1B MSHCP: C	Vernal pools and similar mesic habitats in coastal scrub and grassland at 15 to 620 meters (50 to 2,000 feet) elevation. In California, known only from Riverside and San Diego Counties. In Riverside County, this species is known only from the Santa Rosa Plateau. Also occurs in Mexico. Blooms April through June (annual or perennial herb).	Absent	Project site is north of species known range and does not support a suitable combination of vegetation communities and mesic microhabitat.
Tecate cypress *Hesperocyparis (Callitropsis, Cupressus) forbesii*	US: — CA: 1B MSHCP: C	Evergreen tree found in closed-cone coniferous forest and chaparral at elevations from 255 to 1,500 meters (800 to 5,000 feet). In California, known from Orange and San Diego Counties. Trees known from Riverside County are planted. Also occurs in Mexico. Year-round (evergreen tree).	Absent	Suitable vegetation communities are absent.
Mesa horkelia *Horkelia cuneata ssp. puberula*	US: — CA: 1B MSHCP: NC	Sandy or gravelly soils in chaparral, or rarely in cismontane woodland or coastal scrub at 70 to 825 meters (200 to 2,700 feet) elevation. Known only from San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Bernardino Counties, California. Believed extirpated	Absent	Suitable soils and vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		from Riverside and San Diego Counties. Blooms February through July (sometimes to September) (perennial herb).		
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	US: — CA: 1B MSHCP: S	Traver, Domino or (usually) Willows soils in alkali scrub, alkali playas, vernal pools, and alkali grasslands below 1,400 meters (4,600 feet) elevation. Known from Colusa, Merced, Tulare, Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties. Believed extirpated from Kern, Los Angeles, San Bernardino Counties, and possibly Tulare Counties. Also occurs in Mexico. Blooms February through June (annual herb).	Absent	Suitable soils and vegetation communities are absent.
Heart-leaved pitcher sage *Lepechinia cardiophylla*	US: — CA: 1B MSHCP: S	Decomposed granite soils of closed-cone coniferous forest, chaparral and cismontane woodland at 550 to 1,370 meters (1,800 to 4,500 feet) elevation. Occurs in the Santa Ana Mountains in Riverside and Orange Counties. Also reported from San Diego County and Baja California. Blooms April through July (perennial herb).	Absent	Suitable soils and vegetation communities are absent.
Lemon lily *Lilium parryi*	US: — CA: 1B	Bulbiferous perennial herb of wet areas in meadows and riparian and montane coniferous forests at	Absent	Suitable vegetation communities

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
	MSHCP: P	1,220 to 2,790 meters (4,000 to 9,200 feet) elevation. In California, known from Los Angeles, Riverside, San Bernardino, and San Diego Counties. Also occurs in Arizona and Mexico. Blooms July through August (perennial herb).		and soil conditions are absent.
Parish's meadowfoam *Limnanthes alba ssp.Parishii*	US: — CA: SE/1B MSHCP: C	Seasonally wet meadows and edges of vernal pools and intermittent streams; 550 to 2,000 meters (1,800 to 6,600 feet) elevation. Known from Peninsular Ranges in Riverside and San Diego Counties. Blooms April through June (annual herb).	Absent	Project site is north of and at lower elevations than the species' known range.
Intermediate monardella *Monardella hypoleuca ssp. intermedia*	US: — CA: 1B MSHCP: NC	Usually understory often found in steep, brushy areas in chaparral, cismontane woodland, and sometimes in lower montane coniferous forests from 200 to 1,250 meters (660 to 4,100 feet). Endemic to California, only known from Orange, Riverside, and San Diego Counties. Blooms April through September (perennial rhizomatous herb)	Absent	Suitable vegetation communities are absent.
Felt-leaved monardella *Monardella hypoleuca ssp. lanata*	US: — CA: 1B MSHCP: NC	Chaparral and cismontane woodland from 300 to 1,575 meters (1,000 to 5,200 feet) elevation. Known from Peninsular Ranges in Orange and San Diego Counties and from northern Baja	Absent	Suitable vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		California. Blooms June through August (perennial herb).		
Hall's monardella *Monardella macrantha ssp. hallii*	US: — CA: 1B MSHCP: C	Dry slopes and ridges in openings in chaparral, woodland, and forest at 695 to 2,195 meters (2,280 to 7,200 feet) elevation. Known only from Los Angeles, San Diego, Orange, Riverside, and San Bernardino Counties, California. In the western Riverside County area, known only from higher elevations in the Santa Ana and Aqua Tibia Mountains (Roberts et al. 2004). Blooms June through August (sometimes to October) (perennial herb).	Absent	Suitable vegetation communities are absent.
Spreading navarretia *Navarretia fossalis*	US: FT CA: 1B MSHCP: S	The Western Riverside County MSHCP account for this species states that it "is primarily restricted to the alkali floodplains of the San Jacinto River, Mystic Lake and Salt Creek in association with Willows, Domino and Traver soils" and that "in western Riverside County, spreading navarretia has been found in relatively undisturbed and moderately disturbed vernal pools, within a larger vernal floodplains dominated by annual alkali grassland or alkali playa." Occurs from 30 to 1,310 meters (100 to	Absent	Suitable soils are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		4,300 feet) elevation. Blooms April through June (annual herb).		
Prostrate vernal pool navarretia *Navarretia prostrata*	US: — CA: 1B MSHCP: S	Vernal pools or alkaline washes of coastal sage scrub and valley and foothill grassland from 15 to 1,210 meters (50 to 4,000 feet) elevation. Known only from Alameda, Fresno, Los Angeles, Merced, Monterey, Orange, Riverside, San Benito, San Diego, and San Luis Obispo Counties. Presumed extirpated from San Bernardino County. Blooms April through July (annual herb).	Absent	Project site does not support a suitable combination of vegetation community and alkaline mesic microhabitat.
Chaparral nolina *Nolina cismontana*	US: — CA: 1B MSHCP: NC	Sandstone or gabbro in chaparral and coastal sage scrub at 140 to 1,275 meters (500 to 4,200 feet) elevation. Known from Orange, Riverside, San Diego, and Ventura Counties, California. Blooms May through July (perennial shrub).	Absent	Suitable soils and vegetation communities are absent.
California Orcutt grass *Orcuttia californica*	US: FE CA: SE/1B MSHCP: S	Alkaline soils and southern basaltic claypan in vernal pools from 15 to 660 meters (50 to 2,200 feet) elevation. The Western Riverside County MSHCP account for this species states that, in Riverside County, it "is found in southern basaltic claypan vernal pools at the Santa Rosa Plateau, and alkaline vernal pools as at Skunk Hollow and at	Absent	Suitable soils absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		Salt Creek west of Hemet." Blooms April through August (annual grass).		
White rabbit-tobacco *Pseudognaphalium leucocephalum*	US: — CA: 2B MSHCP: NC	Sand and gravel at the edges of washes or mouths of steep canyons at 0 to 2,100 meters (0 to 7,000 feet) elevation. In California, known from Los Angeles, Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties. Also occurs in Arizona, New Mexico, Texas, and Mexico. Blooms usually August through November (perennial herb).	Absent	Suitable site factors are absent.
Southern mountains skullcap *Scutellaria bolanderi ssp. austromontana*	US: — CA: 1B MSHCP: NC	Mesic areas in gravelly soils of stream banks or in oak or pine woodland (rarely chaparral) at 425 to 2,000 meters (1,400 to 6,600 feet) elevation. Known from Riverside and San Diego Counties. Believed extirpated from San Bernardino County and perhaps Los Angeles County. Blooms June through August (perennial herb).	Absent	Suitable vegetation communities are absent.
Hammitt's clay-cress *Sibaropsis hammittii*	US: — CA: 1B MSHCP: S	The Western Riverside County MSHCP account for this species states that "Hammitt's clay-cress is associated with clay soils, such as Altamont, Auld, Bosanko, Claypit, and Porterville soil series" and that, in western Riverside	Absent	Suitable soils and vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		County "Hammitt's clay-cress is only known from the Elsinore Peak area of the Santa Ana Mountains in grasslands." Occurs at 700 to 1,100 meters (2,300 to 3,600 feet) elevation Blooms March through April (annual herb).		
San Bernardino aster *Symphyotrichum defoliatum*	US: — CA: 1B MSHCP: NC	Vernally wet sites (such as ditches, streams, and springs) in many plant communities below 2,040 meters (6,700 feet) elevation. In California, known from Ventura, Kern, San Bernardino, Los Angeles, Orange, Riverside, and San Diego Counties. May also occur in San Luis Obispo County. In the western Riverside County area, this species is scarce, and documented only from Temescal and San Timoteo Canyons (Roberts et al. 2004). Blooms July through November (perennial herb).	Absent	Suitable combination of vegetation community and vernally mesic microhabitat is absent.
Parry's tetracoccus *Tetracoccus dioicus*	US: — CA: 1B MSHCP:	Dry stony slopes in chaparral and coastal sage scrub at 165 to 1,000 meters (500 to 3,300 feet) elevation. Known in California only from Orange, Riverside, and San Diego Counties. Also occurs in Mexico. Blooms April through May (perennial deciduous shrub).	Absent	Suitable vegetation communities are absent.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
Wright's trichocoronis *Trichocoronis wrightii var. wrightii*	US: — CA: 2B MSHCP: S	Alkali soils in alkali playa, alkali annual grassland, and alkali vernal pools.at 5 to 435 meters (20 to 1,430 feet) elevation. In California, known from the Central Valley and Riverside County. Also occurs in Texas and Baja California. The Western Riverside County MSHCP account for this species states that "Wright's trichocoronis is restricted to highly alkaline, silty-clay soils in association with Traver, Domino, and Willows soils. Blooms May through September (annual or perennial herb)."	Absent	Suitable soils and vegetation communities are absent.
La purisima viguera *Viguiera purisimae*	US: — CA: 2B MSHCP: NC	Dry, rocky places in coastal bluff scrub and chaparral at 365 to 425 meters (1,200 to 1,400 feet) elevation. Known in California only from Camp Pendleton in San Diego County. Also occurs in Mexico. Blooms April through September (shrub).	Absent	Suitable soils and vegetation communities are absent.

Notes:

BSA=biological study area; FE=Federally Endangered; FT=Federally Threatened; SE=State Endangered; ST=State Endangered

CRPR (CA) =California Rare Plant Rank:

1B=Plants rare, threatened, or endangered in California and elsewhere

2B=Plants rare, threatened, or endangered in California but more common elsewhere

MSHCP=Western Riverside County Multiple Species Habitat Conservation Plan

C=Species is covered and adequately conserved under the MSHCP. No additional surveys or analysis needed for MSHCP Compliance.

Table 2.23-1. Special-Status Plant Species Known from the Region

Species	Status	Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale

S=Species is covered and adequately conserved under the MSHCP, but surveys are required within indicated habitats or survey areas.

CR=Species is covered and will be adequately conserved when MSHCP-specified requirements are met.

NC=Species is not covered under the MSHCP.

2.23.3 Environmental Consequences

2.23.3.1 Temporary Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not include any construction or other disturbance in the BSA; therefore, Alternative 1 (No-Build) will not result in temporary impacts to special-status plant species.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

No suitable habitat for any of the special-status plant species are known to occur in the vicinity of the BSA under Alternative 2; therefore, Alternative 2 will not result in temporary impacts to special-status plant species.

Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) (Preferred Alternative)

Similar to Alternative 2, no suitable habitat for any of the special-status plant species are known to occur in the vicinity of the BSA under Alternative 3 (Preferred Alternative); therefore, Alternative 3 (Preferred Alternative) will not result in temporary impacts to special-status plant species.

2.23.3.2 Permanent Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not involve any construction or other disturbance in the BSA; therefore, Alternative 1 (No-Build) will not result in permanent impacts to special-status plant species.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

No suitable habitat for any of the special-status plant species are known to occur in the vicinity of the BSA under Alternative 2; therefore, Alternative 2 will not result in permanent impacts to special-status plant species.

Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) (Preferred Alternative)

Similar to Alternative 2, no suitable habitat for any of the special-status plant species are known to occur in the vicinity of the BSA under Alternative 3 (Preferred Alternative); therefore, Alternative 3 (Preferred Alternative) will not result in permanent impacts to special-status plant species.

2.23.4 Avoidance, Minimization, and/or Mitigation Measures

Based on the absence of suitable habitat within the BSA to support special-status plant species, no avoidance, minimization, and/or mitigation measures for potential adverse impacts to special-status plant species are required.

2.24 Animal Species

2.24.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The USFWS, the NOAA's National Marine Fisheries Service, and the CDFW are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Acts. Species listed or proposed for listing as threatened or endangered are discussed in the Threatened and Endangered Species Section 2.25, below. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 – 1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

2.24.1.1 Western Riverside County Multiple Species Habitat Conservation Plan

As with plant species discussed in Section 2.23, Plant Species, the Western Riverside County MSHCP designates approximately 146 special-status animal and plant species that receive some level of coverage under the plan. Of the 146 covered species designated under the Western Riverside County MSHCP, the majority of these species have no additional survey/conservation requirements. Beyond the fully covered species, there are species with additional survey/conservation requirements. These include animal species associated with Riparian/Riverine Areas and Vernal Pools as set forth in Section 6.1.2 of the Western Riverside County MSHCP and animal species associated with additional survey needs and procedures as set forth in Section 6.3.2 of the Western Riverside County MSHCP.

The BSA supports riparian/riverine areas and vernal pools, as listed in the Western Riverside County MSHCP Section 6.1.2, and the Project was assessed for the probability of species protected under the Western Riverside County MSHCP Section 6.1.2 occurring within and adjacent to the Project limits. The BSA is within the Western Riverside County MSHCP Section 6.3.2 Survey Area for BUOW (*Athene cunicularia*). The BSA is not located within any other Western Riverside County MSHCP survey areas for animal species.

2.24.2 Affected Environment

This section discusses special-status animal species that have the potential to occur within the BSA and summarizes the findings in relation to special-status animal species detailed in the NES(MI) (Caltrans 2020l). The results of the literature review identified 40 special-status animal species that are known to occur in the region. Information on these species, including status, habitat requirements, and potential for occurrence, is summarized in Table 2.24-1.

The BSA supports suitable habitat for a variety of special-status animal species. Twelve of these species are federally and/or state-listed endangered or threatened, or proposed endangered or threatened; therefore, additional detailed discussion regarding these eleven species, has been provided Section 2.25, Threatened and Endangered Species.

Animal species observed during the field surveys, conducted on April 9 and 13, 2018 and August 23, 27, 29 and 30, 2019, included house finch (*Haemorhous mexicanus*), house sparrow (*Passer domesticus*), black phoebe (*Sayornis nigricans*), red-tailed hawk (*Buteo jamaicensis*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimulus polyglottos*), and western fence lizard (*Sceloporus occidentalis*). These animal species are considered common species observed within the BSA that is generally disturbed, where these species have adapted to human presence.

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
Invertebrates				
Crotch's bumble bee *Bombus crotchii*	US: none CA: CS MSHCP: NC	Occurs primarily in California, ranging through most of southwestern California. Known to inhabit open grassland and shrublands. Requires floral resources and undisturbed nesting and overwintering sites.	Present	Suitable habitat present.

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
Vernal pool fairy shrimp *Branchinecta lynchi*	US: FT CA: none MSHCP: S	Cool-water vernal pools and swales in grassland areas. Known from the Central Valley, the central coast and south coast mountains as far south as Ventura County, and from the Santa Rosa Plateau, Skunk Hollow, and the Stowe Road vernal pool near Salt Creek just west of Hemet in Riverside County. At the southernmost extreme of its range (Riverside County), this species is only present in large, deep pools. Seasonally follow rains; typically January through April. Requires water temperatures of 50 Fahrenheit or lower to hatch. The time to maturity and reproduction is temperature dependent, varying between 18 days and 147 days, with a mean of 39.7 days (Witham et al. 1998).	Present	Focused fairy shrimp surveys consisting of a habitat assessment and wet and dry season sampling for potentially suitable depressions were conducted for the Project between 2018 and 2021.Vernal pool fairy shrimp was not detected during these surveys; therefore, this species is not present within the BSA.
Monarch butterfly *Danaus plexippus pop. 1*	Federal: FC State: — MSHCP: NC	Typically overwinter in groves of blue gum eucalyptus (*Eucalyptus globulus*), Monterey pine (*Pinus radiata*), or Monterey cypress (*Hesperocyparis macrocarpa*) along the California coast. Adult females lay eggs on milkweed species (*Asclepias* spp.). Milkweeds are critical for successful development of the caterpillar into an adult butterfly (Western Monarch Milkweed Mapper 2022).	Absent	Not Expected. There are no documented occurrences of milkweed or monarch breeding within the Project vicinity on the Western Monarch Milkweed Mapper[1].

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
				Milkweed was not documented within the BSA during field surveys. Eucalyptus groves potentially suitable for overwintering were mapped within the BSA, however, the site is likely too far inland to support overwintering and there are no documented overwintering sites in Riverside County[2].
Quino checkerspot butterfly *Euphydryas editha quino*	US: FE CA: none MSHCP: C	Meadows or openings within coastal sage scrub or chaparral below about 5,000 feet where food plants (*Plantago erecta* and/or *Orthocarpus purpurescens*) are present. Historically known from Santa Monica Mountains to northwest Baja California; currently known only from southwestern Riverside County, southern San Diego County, and northern Baja California. January through late April.	Absent	Suitable vegetation communities are absent.

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
Riverside fairy shrimp *Streptocephalus woottoni*	US: FE CA: none MSHCP: S	Warm-water vernal pools (i.e., large, deep pools that retain water into the warm season) with low to moderate dissolved solids, in annual grassland areas interspersed through chaparral or coastal sage scrub vegetation. Suitable habitat includes some artificially created or enhanced pools, such as some stock ponds, that have vernal pool like hydrology and vegetation. This species requires seven to eight weeks to mature after hatching (Hathaway and Simovich 1996). Known from areas within about 50 miles of the coast from Ventura County south to San Diego County and Baja California. Seasonally following rains; typically January through April.	Absent	Depressions that pond seasonally at a suitable depth for a suitable length of time are absent.
Fish				
Arroyo chub *Gila orcuttii*	US: None CA: SCC MSHCP: C	Native to Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita Rivers, as well as Malibu and San Juan Creeks. Has been extirpated from much of its native range but introduced to streams along the coast and the Mojave River system, where they have eliminated the Mohave tui chub (Siphateles bicolor mohavensis). Southern coastal streams in habitats characterized by slow-moving water, mud or sand substrate, and depths greater than 15 inches. Have also	Absent	Suitable habitat not present.

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		been found in pool habitats with gravel, cobble, and boulder substrates. Adapted to survive in low oxygen waters and wide temperature fluctuations		
Amphibians				
Arroyo toad *Anaxyrus (Bufo) californicus*	US: FE CA: SSC MSHCP: S	Washes and arroyos with open water; sand or gravel beds; for breeding, pools with sparse overstory vegetation. Coastal and a few desert streams from Santa Barbara County to Baja California. March through July.	Absent	Suitable combination of open water, sand, and gravel beds absent. Breeding pools absent.
California red-legged frog *Rana draytonii*	US: FT CA: SSC MSHCP: C	Aquatic breeding habitat is generally found in still or slow-moving water and can have a wide range of edge and emergent cover amounts. In streams and creeks, frogs have been documented in low, moderate, high, and extreme gradients ranging from 0.4 percent to 21.0 percent slopes; however, the most stable populations and the highest breeding densities occur in low and moderate stream gradient types (less than 4 percent) with minimal scouring flows.	Present	Suitable habitat is present; however the Project is not within the MSHCP Amphibian Survey Area.
Western spadefoot *Spea hammondii*	US: FC CA: SSC MSHCP: C	Grasslands and occasionally hardwood woodlands; largely terrestrial but requires rain pools or other ponded water persisting at least three weeks for breeding; burrows in loose soils during dry season. Occurs	Absent	Suitable vegetation communities and rain pools or other ponded water absent.

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		in the Central Valley and adjacent foothills, the nondesert areas of Southern California, and Baja California. October through April (following onset of winter rains).		
Coast Range newt *Taricha torosa torosa*	US: — CA: SSC MSHCP: C	Breeds in ponds, reservoirs, and slow-moving streams with long-lasting (at least through July), clean water; uses nearby upland areas including grassland, chaparral, and woodland; coastal drainages from Mendocino County south to San Diego County, with populations from San Luis Obispo County south designated as sensitive. October through May.	Absent	Suitable vegetation communities and slow-moving water absent.
Reptiles				
California legless lizard *Anniella pulchra*	US: — CA: SSC MSHCP: NC	Inhabits sandy or loose loamy soils with high moisture content under sparse vegetation from central California to northern Baja California. Nearly year round, at least in southern areas.	Present	Small amount of suitable loose soils associated with wash at south end of BSA.
California glossy snake *Arizona elegans*	US: — CA: SSC MSHCP: NC	Most common in desert areas. Inhabits arid scrub, rocky washes, grasslands, chaparral. Appears to prefer microhabitats of open areas and areas with soil loose enough for easy burrowing.	Present	Small amount of suitable loose soils associated with wash at south end of BSA.
Coast patch-nosed snake	US: — CA: SSC	Ranges in cismontane southern California and southern San Luis Obispo County. Generally found in	Present	Suitable vegetation

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
Salvadora hexalepis virgultea	MSHCP: NC	relatively dense chaparral but also known in a wide variety of habitats with dense shrub cover.		communities present.
Orange-throated whiptail *Aspidoscelis hyperythra*	US: — CA: SSC MSHCP: C	Prefers washes and other sandy areas with patches of brush and rocks, in chaparral, coastal sage scrub, juniper woodland, and oak woodland from sea level to 915 meters (3,000 feet) elevation. Perennial plants required. Occurs in Riverside, Orange, San Diego Counties, in extreme southern San Bernardino County near Colton, and in Baja California. March through July with reduced activity August through October.	Absent	Suitable vegetation communities absent.
Red diamond rattlesnake *Crotalus ruber*	US: — CA: SSC MSHCP: C	Desert scrub, thornscrub, open chaparral and woodland; occasional in grassland and cultivated areas. Prefers rocky areas and dense vegetation. Morongo Valley in San Bernardino and Riverside Counties to the west and south into Mexico. Mid-spring through mid-fall.	Absent	Suitable combination of rocky areas and vegetation communities absent.
Western pond turtle *Emys marmorata (Actinemys) marmorata*	US: — CA: SSC MSHCP: C	Inhabits permanent or nearly permanent water. Absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. Requires basking sites such as partially submerged logs, rocks, or open mud banks.	Absent	Permanent waters absent.

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		Year-round with reduced activity November through March.		
Blainville's horned lizard *Phrynosoma blainvillii (coronatum)*	US: — CA: SSC MSHCP: C	Primarily in sandy soil in open areas, especially washes and floodplains, in many plant communities. Requires open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants or other insects. Occurs west of the deserts from northern Baja California north to Shasta County below 2,400 meters (8,000 feet) elevation. April through July with reduced activity August through October	Present	Small amount of suitable loose soils associated with wash at south end of BSA.
Two-striped garter snake *Thamnophis hammondii*	US: — CA: SSC MSHCP: NC	Highly aquatic. Only in or near permanent sources of water. Streams with rocky beds supporting willows or other riparian vegetation. From Monterey County to northwest Baja California. Diurnal Year-round	Absent	Permanent waters absent.
Birds				
Tricolored blackbird *Agelaius tricolor* (nesting colony)	US: — CA: ST MSHCP: C	Open country in western Oregon, California, and northwestern Baja California. Forages in grassland and cropland habitats. Nests in large groups near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, or tall herbs. Seeks cover for roosting in emergent wetland vegetation,	Absent	Suitable foraging and nesting habitat absent.

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		especially cattails and tules, and also in trees and shrubs.		
Burrowing owl *Athene cunicularia* (burrow sites)	US: — CA: SSC (breeding) MSHCP: S	Open country in much of North and South America. Usually occupies ground squirrel burrows in open, dry grasslands, agricultural and range lands, railroad ROWs, and margins of highways, golf courses, and airports. Often utilizes man-made structures, such as earthen berms, cement culverts, cement, asphalt, rock, or wood debris piles. They avoid thick, tall vegetation, brush, and trees, but may occur in areas where brush or tree cover is less than 30 percent.	Present	Not observed during focused surveys. Preconstruction surveys are required.
Western snowy plover *Charadrius alexandrinus nivosus* (nesting)	US: FT (coastal population) CA: SSC MSHCP: NC	Sandy coastal beaches, lakes, alkaline playas. Scattered locations along coastal California and Channel Islands, inland at Salton Sea and at various alkaline lakes.	Absent	Suitable vegetation communities absent.
White-tailed kite *Elanus leucurus* (nesting)	US: — CA: FP MSHCP: C	Typically nests in riparian trees such as oaks, willows, and cottonwoods at low elevations. Forages in open country. Found in South America and in southern areas and along the western coast of North America.	Absent	Suitable riparian trees absent.
Southwestern willow flycatcher *Empidonax traillii extimus*	US: FE CA: SE MSHCP: S	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water, in the southwestern U.S. and possibly extreme northwestern Mexico. Winters in	Absent	Suitable riparian habitat absent.

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		Central and South America. Below 6,000 feet elevation.		
Bald eagle *Haliaeetus leucocephalus* (nesting and wintering)	US: — CA: SE/FP MSHCP: C	Winters locally at deep lakes and reservoirs feeding on fish and waterfowl. Locally rare throughout North America.	Absent	Suitable lacustrine habitat absent.
Loggerhead shrike *Lanius ludovicianus* (nesting)	US: — CA: SSC (breeding) MSHCP: C	Prefers open habitats with scattered small trees and with fences, utility lines, or other perches. Inhabits open country with short vegetation, pastures, old orchards, cemeteries, golf courses, riparian areas, and open woodlands. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Occurs only rarely in heavily urbanized areas, but often found in open cropland. Found in open country in much of North America.	Present	Suitable foraging habitat occurs in ruderal habitat.
Coastal California gnatcatcher *Polioptila californica californica*	US: FT CA: SSC MSHCP: C	Inhabits coastal sage scrub in low-lying foothills and valleys up to about 500 meters (1,640 feet) elevation in cismontane southwestern California and Baja California.	Absent	Suitable coastal sage scrub habitat absent.
Least Bell's vireo *Vireo bellii pusillus*	US: FE CA: SE MSHCP: S	Riparian forests and willow thickets. The most critical structural component of Least Bell's Vireo habitat in California is a dense shrub layer 2 to 10 feet (0.6 to 3.0 meters)	Absent	Suitable riparian habitat absent.

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		above ground. Nests from central California to northern Baja California. Winters in southern Baja California.		
Mammals				
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	US: — CA: SSC MSHCP: C	Low elevation grasslands, alluvial sage scrub, and coastal sage scrub	Absent	Suitable habitat not present.
Western mastiff bat *Eumops perotis californicus*	US: — CA: SSC MSHCP: NC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in vertical cliff faces, high buildings, and tunnels, and travels widely when foraging. Year-round; nocturnal.	Present	Suitable day-roost habitat in riparian scrub and eucalyptus trees throughout BSA.
Western yellow bat *Lasiurus xanthinus*	US: — CA: SSC MSHCP: NC	Found mostly in desert and desert riparian areas of the southwest U.S. but also expanding its range with the increased usage of native and nonnative ornamental palms in landscaping. Individuals typically roost amid dead fronds of palms in desert oases but have also been documented roosting in cottonwood trees. Forage over many habitats. Year-round; nocturnal.	Present	Suitable day-roost habitat in riparian scrub and eucalyptus trees throughout BSA.
Pocketed free-tailed bat *Nyctinomops femorasaccus*	US: — CA: SSC MSHCP: NC	Usually associated with cliffs, rock outcrops, or slopes. May roost in buildings (including roof tiles) or caves. Rare in California, where it is	Present	Suitable day-roost habitat in riparian scrub and eucalyptus

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		found in Riverside, San Diego, Imperial and possibly Los Angeles Counties. More common in Mexico. Year-round; nocturnal.		trees throughout BSA.
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	US: — CA: SSC MSHCP: C	Specifically, prefers rocky and gravelly areas with a yucca (Yucca spp.) overstory and desert scrub communities near or in pine-juniper woodland.	Absent	Suitable habitat not present.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	US: — CA: SSC MSHCP: C	Variety of habitats including herbaceous and desert scrub areas, early stages of open forest and chaparral. Most common in relatively open habitats. Restricted to the cismontane areas of Southern California, extending from the coast to the Santa Monica, San Gabriel, San Bernardino, and Santa Rosa Mountain ranges.	Present	Suitable habitat occurs in open, undeveloped areas of BSA.
Dulzura pocket mouse *Chaetodipus californicus femoralis*	US: — CA: SSC MSHCP: NC	Found in a variety of habitats including coastal sage scrub, chaparral and grassland in northern Baja California, San Diego, and extreme southwestern and western Riverside Counties. Limit of range to northwest (at interface with C. c. dispar) unclear.	Absent	Suitable vegetation communities absent.
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	US: — CA: SSC MSHCP: C	Found in sandy herbaceous areas, usually associated with rocks or coarse gravel in coastal scrub, chaparral, grasslands, and sagebrush, from Los Angeles County	Absent	Suitable combination of preferred vegetation communities with

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		through southwestern San Bernardino, western Riverside, and San Diego Counties to northern Baja California.		sandy herbaceous areas absent.
San Bernardino kangaroo rat *Dipodomys merriami parvus*	US: FE CA: SSC MSHCP: S	Gravelly and sandy soils of alluvial fans, braided river channels, active channels and terraces; San Bernardino Valley (San Bernardino County) and San Jacinto Valley (Riverside County). In Riverside County, occurs along the San Jacinto River east of approximately Sanderson Avenue, and along Bautista Creek. Remnant populations may also occur within Riverside County in Reche Canyon, San Timoteo Canyon, Laborde Canyon, the Jurupa Mountains, and the Santa Ana River Wash north of State Route 60.	Absent	Suitable alluvial habitat absent.
Stephens' kangaroo rat *Dipodomys stephensi*	US: FT CA: ST MSHCP: C	Found in plant communities transitional between grassland and coastal sage scrub, with perennial vegetation cover of less than 50 percent. Most commonly associated with *Artemisia tridentata*, *Eriogonum fasciculatum*, and *Erodium*. Requires well-drained soils with compaction characteristics suitable for burrow construction (neither sandy nor too hard). Not found in soils that are highly rocky or sandy, less than 20 inches deep, or heavily alkaline or clay, or in areas exceeding 25	Absent	Suitable transitional grassland/coastal sage scrub habitat absent.

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
		percent slope. Occurs only in western Riverside County, northern San Diego County, and extreme southern San Bernardino County, below 915 meters (3,000 feet) elevation. In northwestern Riverside County, known only from east of I-15. Reaches its northwest limit in south Norco, southeast Riverside, and in the Reche Canyon area of Riverside and extreme southern San Bernardino Counties.		
Southern grasshopper mouse *Onychomys torridus ramona*	US: — CA: SSC MSHCP: NC	Believed to inhabit sandy or gravelly valley floor habitats with friable soils in open and semi-open scrub, including coastal sage scrub, mixed chaparral, low sagebrush, riparian scrub, and annual grassland with scattered shrubs, preferring low to moderate shrub cover. More susceptible to small- and large-scale habitat loss and fragmentation than most other rodents, due to its low fecundity, low population density, and large home range size. Arid portions of southwestern California and northwestern Baja California.	Present	Suitable habitat occurs in Caltrans detention basin between I-15 and Collier Street.
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	US: — CA: SSC MSHCP: S	Prefers sandy soil for burrowing but has been found on gravel washes and stony soils. Found in coastal sage scrub in Los Angeles, Riverside, and San Bernardino Counties.	Absent	Suitable coastal sage scrub habitat absent.

Table 2.24-1. Special-Status Wildlife Species Known in the Region

Species	Status	General Habitat and Distribution	Habitat Present/ Absent	Potential for Occurrence and Rationale
American badger *Taxidea taxus*	US: — CA: SSC MSHCP: NC	Primary habitat requirements seem to be sufficient food and friable soils in relatively open uncultivated ground in grasslands, woodlands, and desert. Widely distributed in North America.	Absent	Suitable large tracts of open space absent.

Notes:

Status

Federal
Federal Endangered (FE)
Federal Threatened (FT)
Federal Candidate (FC)

State
State Endangered (SE)
State Threatened (ST)
Fully Protected (FP)
State Species of Special Concern (SSC)

Western Riverside MSHCP (Western Riverside County Multiple Species Habitat Conservation Plan)
NC: Species is not covered under the Western Riverside County MSHCP
C: Species is covered and adequately conserved under the Western Riverside County MSHCP
S: Species is covered and adequately conserved under the Western Riverside County MSHCP surveys are required within indicated habitats and/or survey areas
P: Species is covered and will be adequately conserved when Western Riverside County MSHCP specified requirements are met.

Habitat Present/Absent
Absent: no habitat present, and no further work needed
Present: habitat is, or may be, present.

BSA=biological study area; I-15=Interstate 15; U.S.=United States; Western Riverside County MSHCP=Western Riverside Multiple Species Habitat Conservation Plan

[1] Xerces Society. 2023. Western Monarch Milkweed Mapper: a project through the partnership of The Xerces Society, Idaho Department of Fish and Game, Washington Department of Fish and Wildlife, National Fish and Wildlife Foundation, and US Fish and Wildlife Service. Accessed at https://www.monarchmilkweedmapper.org/app/#/combined/map on August 24, 2023.

[2] Xerces Society. 2016. State of the Monarch Butterfly Overwintering Sites in California. Prepared for the U.S. Fish and Wildlife Service. Accessed at https://xerces.org/sites/default/files/2018-05/16-015_01_XercesSoc_State-of-Monarch-Overwintering-Sites-in-California_web.pdf on August 24, 2023.

2.24.2.1 Burrowing Owl

As shown on Figure 2.24-1, suitable BUOW habitat was identified in several areas throughout the BSA. Habitat assessments for BUOW were conducted on April 9, 2018 and August 23, 2019. Focused BUOW surveys were conducted in all suitable BUOW habitat within the Western Riverside

County MSHCP BUOW survey areas on August 26, 27, 28 and 29, 2019, and it was determined that BUOW were absent from the BSA at the time of the surveys.

2.24.2.2 Bat Species

Bats are known to use features in highway bridges such as expansion joints, crevices, or areas sheltered by bridge support beams as daytime and nighttime roosts. Roosts provide important refuges as they provide protection from predators, weather changes, and areas to rest while foraging. While bats do not roost in every highway bridge, certain features make some bridges more suitable for bat roosting than others.

Bridges within the BSA are either located over high-traffic streets (i.e., SR-74) or do not contain crevices that will support daytime bat roosts, as described above. Night roosts do not require crevices but are generally located in close proximity to foraging habitat (Keeley and Tuttle 1999).

Based on a review of aerial photographs, the nearest riparian habitat is associated with Temescal Creek and is approximately 1,000 feet west of I-15 at the northern end of the BSA.

It is unlikely that special-status bat species identified in Table 2.24-1 will roost in the BSA. Due to the lack of preferred crevices, high amount of traffic under bridges within the BSA, and higher quality foraging habitat occurring outside of the BSA, bats are not likely to occur within the BSA. No sign (i.e., guano or staining) that bats frequently use areas within the BSA was observed during the general field surveys conducted on April 9 and 13, 2018 and August 23, 27, 29 and 30, 2019. However, surveys were conducted during the daytime when bats are typically roosting and more difficult to observe.

2.24.2.3 Other Special-Status Wildlife Species

As identified in Table 2.24-1, of the remaining nonlisted special-status animal species known to occur within the vicinity of the Project, six were determined to have potential for occurrence within the BSA. Nonlisted special-status animal species with potential for occurrence in the BSA include California legless lizard (*Anniella pulchra*), California glossy snake (*Arizona elegans*), coast horned lizard (*Phrynosoma blainvillii coronatum*), loggerhead shrike (*Lanius ludovicianus*), San Diego black-tailed jackrabbit (*Lepus californicus bennetii*), and southern grasshopper mouse (*Onychomys torridus ramona*).

Suitable habitat to support California legless lizard, California glossy snake, and coast horned lizard occurs in Wasson Canyon Wash, located at the south end of the BSA, where sandy soils and sparse vegetation occur. The BSA supports a total of 0.92 acre of suitable habitat for these species.

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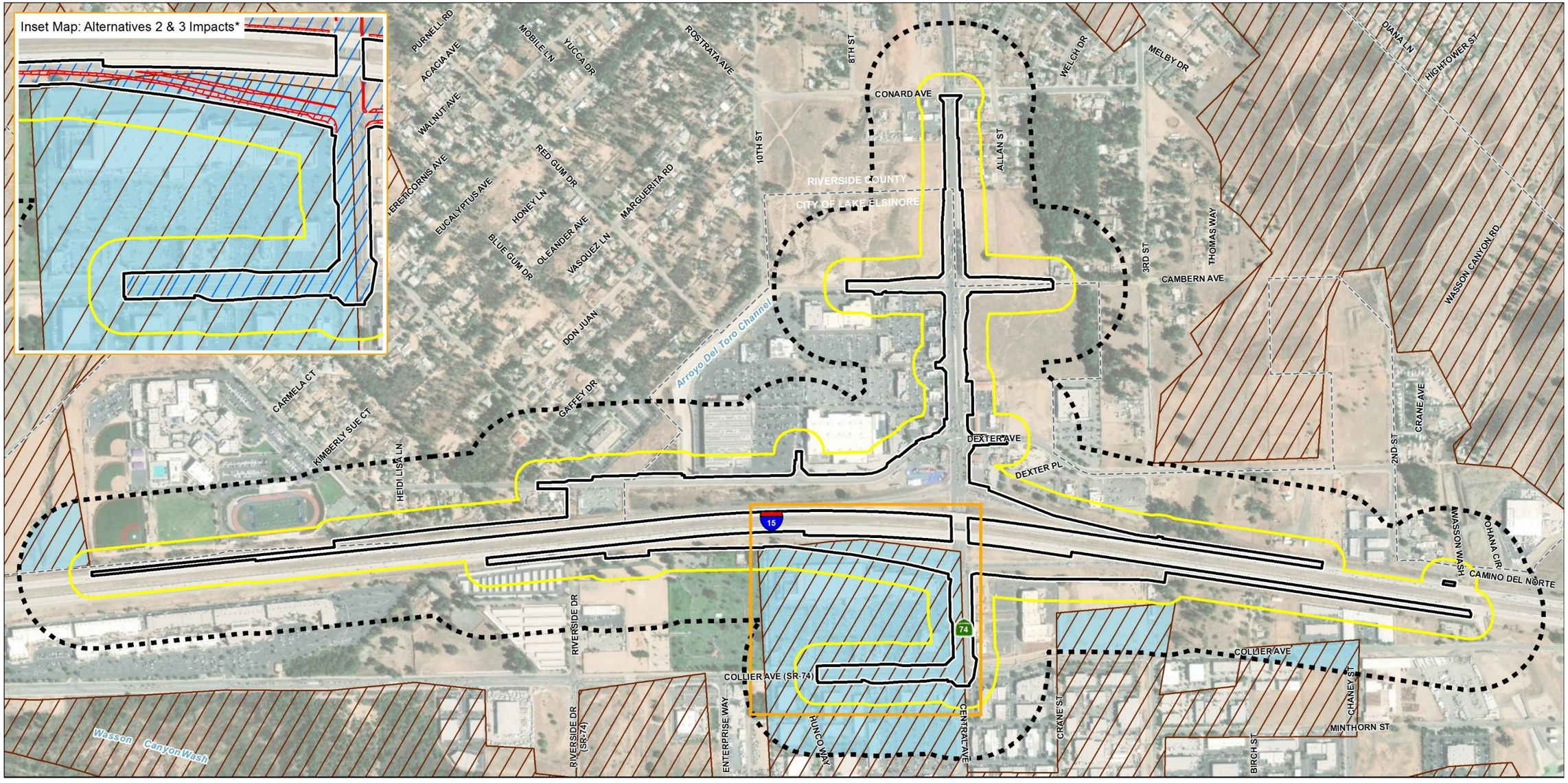

Figure 2.24-1. Western Riverside County Multiple Species Habitat Conservation Plan Burrowing Owl Survey Area and Survey Results

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Suitable habitat to support loggerhead shrike and San Diego black-tailed jackrabbit occurs throughout undeveloped, sparsely vegetated areas within the BSA, including Mediterranean California Naturalized Annual and Perennial Grassland and California Buckwheat Scrub association. The BSA supports a total of 56.46 acres of suitable habitat for these species.

Suitable habitat to support southern grasshopper mouse occurs in the Caltrans detention basin located between I-15 and Dexter Avenue. Since this area has been modified and consists of compacted soils, habitat quality for this species within the BSA is low. The BSA supports a total of 0.57 acre of suitable habitat for this species.

None of these species were observed within the BSA during the general field surveys conducted on April 9 and 13, 2018 and August 23, 27, 29 and 30, 2019.

2.24.3 Environmental Consequences

2.24.3.1 Temporary Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build) no construction or other disturbance will occur within the BSA; therefore, Alternative 1 (No-Build) will not result in temporary impacts to special-status animal species.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Under Alternative 2, temporary impacts to several special-status animal species may occur during construction, when habitats are temporarily disturbed during grading or other activities. These impacts are discussed in the following subsections.

Burrowing Owl

Under Alternative 2 a temporary reduction in the quality of BUOW foraging habitat will occur during construction activities, due to indirect impacts from construction related noise, vibration, dust, and human encroachment in areas adjacent to suitable BUOW habitat.

However, with the implementation of Measure AS-1, which requires that a preconstruction survey for BUOW be conducted prior to any clearing, grading, and construction activities and in the event BUOWs are found adjacent to work areas, avoidance buffers will be established to ensure impacts to BUOWs are minimized. Therefore, with the implementation of Measure AS-1, which is consistent with the requirements identified within the Western Riverside County MSHCP, the California Fish

and Game Code, and the MBTA, no substantial temporary adverse impacts to BUOWs are anticipated under Alternative 2.

Bat Species

Temporary indirect impacts to roosting bats will occur if Project construction activities are conducted adjacent to eucalyptus trees that provide suitable roosting habitat. These indirect impacts will consist of exhaust from construction equipment or lighting used during nighttime work. Although special-status bat species are not anticipated to occur in the BSA, with the implementation of Measures AS-2 through AS-5 temporary impacts to bat species will be avoided in the event they are present during construction activities. Measure AS-2 requires a pre-construction survey for bats prior to removal of tree species that could support roosting bats in leaves or loose bark. Measures AS-3 and AS-4 require that construction activities near bridges, trees, and other suitable bat habitat be conducted during the day, or measures to reduce noise and lighting impacts be implemented if construction activities near these areas must be conducted at night. Measure AS-5 requires that a qualified bat biologist evaluate the Project area to determine the need for temporary exclusion of bats prior to the start of construction. If exclusion is needed, Measure AS-5 requires that exclusion is conducted during the appropriate season to avoid impacts to maternity roosts and that exclusion is conducted in coordination with the appropriate resource agencies. Therefore, with the implementation of Measure AS-2 through AS-5, no substantial temporary adverse impacts to bat species are anticipated under Alternative 2.

Other Special-Status Wildlife Species

As shown in Table 2.21-2, in Section 2.21 Natural Communities, Alternative 2 will not result in any impacts to California Buckwheat Scrub. However, Alternative 2 will result in temporary impacts to 12.79 acres of Mediterranean California Naturalized Annual and Perennial Grassland habitat. Of the nonlisted special-status wildlife species that could occur in Mediterranean California Naturalized Annual and Perennial Grassland, only the coast horned lizard, loggerhead shrike and San Diego black-tailed jackrabbit are Western Riverside County MSHCP-covered species. Temporary Project impacts to these species under Alternative 2 are covered and mitigated for through participation in the Western Riverside County MSHCP.

In addition, with the implementation of Measures NC-1 through NC-5, in Section 2.21, Natural Communities, which identify California buckwheat scrub and mulefat thickets outside of the Project limits as ESAs and provide protection for these ESA's from invasive species, fire, equipment spills, erosion and sedimentation, and Measures AS-1 through AS-5, these temporary Project impacts under Alternative 2 on habitat for nonlisted special-status animal species within and/or adjacent to Project work areas will be avoided and/or minimized. Further, the Project will also implement

Measure AS-6, which requires pre-construction surveys for nesting birds during the nesting season and establishment of avoidance buffers if active nests are identified in or adjacent to work areas. Therefore, with the implementation of Measures NC-1 through NC-5, in Section 2.21, Natural Communities, and Measures AS-1 through AS-6, no substantial temporary adverse impacts to special-status migratory bird species within and/or adjacent to Project work areas will occur under Alternative 2.

Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) (Preferred Alternative)

Since construction activities under Alternative 2 will also occur under Alternative 3 (Preferred Alternative), the temporary impacts to several special-status animal species, namely on BUOW, bat species, and other wildlife species such as coast horned lizard, loggerhead shrike and San Diego black-tailed jackrabbit (Western Riverside County MSHCP-covered species) and California legless lizard and California glossy snake (non-listed special-status species) will occur during construction activities that will occur under Alternative 2 will also occur under Alternative 3 (Preferred Alternative). However, with the implementation requirements within the Western Riverside County MSHCP, California Fish and Game Code, MBTA, Measures NC-1 through NC-5, in Section 2.21, Natural Communities, and Measures AS-1 through AS-6, no substantial temporary adverse impacts to special-status species such as BUOW, native bat species, or other special-status wildlife species discussed under Alternative 2, will occur under Alternative 3 (Preferred Alternative).

2.24.3.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build), the Project will not be implemented; therefore, Alternative 1 (No-Build) will not result in permanent impacts to special-status wildlife species.

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Alternative 2 will not result in any permanent impacts to bat species or bat roosting habitat and although Alternative 2 will result in permanent impacts to 0.47 acre of suitable BUOW habitat comprised of Mediterranean California Naturalized Annual and Perennial Grassland, the BUOW focused survey determined that BUOW was absent from the BSA at the time of the survey. Therefore, the Project will not result in loss of any occupied BUOW habitat under Alternative 2.

Alternative 2 will not result in loss of California Buckwheat Scrub. However, as shown in Table 2.24-1, in Natural Communities, Alternative 2 will result in a permanent loss of 4.80 acres of Mediterranean California Naturalized Annual and Perennial Grassland. As such, permanent impacts

to Western Riverside County MSHCP-covered nonlisted special-status animal species under Alternative 2, are covered through participation in the Western Riverside County MSHCP.

While the remaining nonlisted special-status animal species known to occur within the vicinity of the Project (California legless lizard and California glossy snake) are not Western Riverside County MSHCP-covered, participation in the Western Riverside County MSHCP contributes to the establishment of a county-wide Reserve system that sets aside lands, including those with suitable habitat for California legless lizard and California glossy snake, for permanent conservation.

Permanent indirect impacts to special-status wildlife species in areas adjacent to the Project footprint under Alternative 2 will result from the introduction or spread of invasive plant species, fire, human encroachment, and pollutants associated with vehicles once the Project is in operation. However, with the incorporation of BMPs in accordance with Caltrans' Construction Site BMP Manual (Caltrans 2017b) and the implementation of Measures NC-2 and NC-3, in Section 2.21, Natural Communities, no substantial permanent adverse impacts to special-status wildlife species will occur under Alternative 2.

Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) (Preferred Alternative)

Similar to the findings of Alternative 2, Alternative 3 (Preferred Alternative) will not result in any permanent impacts to bat species or bat roosting habitat, and although, Alternative 2 will result in permanent impacts to 0.44 acre of suitable BUOW habitat comprised of Mediterranean California Naturalized Annual and Perennial Grassland, the BUOW focused survey determined that BUOW was absent from the BSA at the time of the survey. Therefore, the Project will not result in loss of any occupied BUOW habitat under Alternative 3 (Preferred Alternative).

Additionally, similar to the Alternative 2, Alternative 3 (Preferred Alternative) will not result in loss of California Buckwheat Scrub. However, as shown in Table 2.24-1, in Natural Communities, Alternative 3 (Preferred Alternative) will result in a permanent loss of 4.80 acres of Mediterranean California Naturalized Annual and Perennial Grassland. As such, permanent impacts to Western Riverside County MSHCP-covered nonlisted special-status animal species under Alternative 3 (Preferred Alternative), are covered through participation in the Western Riverside County MSHCP.

Although, remaining nonlisted special-status animal species known to occur within the vicinity of the Project (California legless lizard and California glossy snake) are not Western Riverside County MSHCP-covered, participation in the Western Riverside County MSHCP contributes to the establishment of a county-wide Reserve system that sets aside lands, including those with suitable habitat for California legless lizard and California glossy snake, for permanent conservation.

Similar to Alternative 2, permanent indirect impacts to special-status wildlife species in areas adjacent to the Project footprint under Alternative 3 (Preferred Alternative) will result from the introduction or spread of invasive plant species, fire, human encroachment, and pollutants associated with vehicles once the Project is in operation. However, with the incorporation of BMPs in accordance with Caltrans' Construction Site BMP Manual (Caltrans 2017b) and the implementation of Measures NC-2 and NC-3, in Section 2.21, Natural Communities, no substantial permanent adverse impacts to special-status wildlife species will occur under Alternative 3 (Preferred Alternative).

2.24.4 Avoidance, Minimization, and/or Mitigation Measures

In addition to Measures NC-1 through NC-5, under Section 2.21, Natural Communities, the following avoidance and minimization measures, below, will also be implemented under the Build Alternatives.

AS-1 Prior to construction, the City's Resident Engineer will ensure that a preconstruction survey for BUOW be conducted by a contractor-supplied, qualified biologist within 30 days prior to vegetation clearing/grading. If BUOW are found within 500 feet (150 meters) of the Project limits during the preconstruction survey, a Burrowing Owl Management Plan will be prepared and submitted to CDFW and USFWS for review and approval. The Burrowing Owl Management Plan will include appropriate measures necessary to ensure that there is no take of active BUOW nests and that WRMSHCP requirements with regard to BUOW are met.

AS-2 Prior to construction, the City's Resident Engineer will ensure that direct mortality of bats that could roost in trees within the BSA is avoided with a preconstruction survey conducted prior to removal of any trees. Should the preconstruction bat survey determine that trees slated for removal are suitable for bat roosting, a contractor-supplied, qualified bat biologist will monitor the tree removal activities. To minimize the potential for direct impacts to tree-roosting bats, trees that must be removed will be pushed down using heavy machinery rather than felling the tree with a chainsaw, where feasible, under the supervision of a contractor-supplied, qualified bat biologist. To ensure the optimum warning for any roosting bats that may still be present, the tree will be pushed lightly two to three times, with a pause of approximately 30 seconds between each nudge to allow bats to become active. The tree will then be pushed to the ground slowly. The contractor-supplied, qualified bat specialist will determine the optimal time to disturb occupied bat habitat to maximize bats escaping during low light levels. Downed trees will remain in place until they are inspected by a bat specialist. Trees that are known to be

bat roosts will not be sawn-up or mulched immediately. A period of at least 24 hours (preferably 48 hours) will elapse prior to such operations to allow bats to escape.

AS-3 If bats are found to be present during construction, the City's Resident Engineer will ensure that all work conducted on bridges or around trees will take place during the day to the best extent feasible. If this is not feasible, impacts will be minimized by directing lighting and noise away from potential night roosting areas as much as possible.

AS-4 During construction, the City's Resident Engineer will ensure that all work conducted adjacent to suitable roosting habitat will take place during the day. If this is not feasible, lighting and noise will be directed away from night roosting and foraging areas.

AS-5 Prior to construction, the City's Resident Engineer will ensure that a contractor-supplied, qualified bat biologist evaluates the need for temporary exclusion measures, which will be implemented to avoid indirect disturbance of bats and birds while roosting in areas that will be adjacent to construction activities. These areas will include any portion of the structure that is deemed by the contractor-supplied, qualified bat biologist to have potential bat-roosting habitat and may be affected by the Project. Such an area will have temporary bat eviction and exclusion devices installed under the supervision of a contractor-supplied, qualified and permitted bat biologist. Eviction and subsequent exclusion will be conducted during the fall (September or October) to avoid trapping flightless young bats inside during the summer months or hibernating/overwintering individuals during the winter. Such exclusion efforts are dependent on weather conditions, take a minimum of 2 weeks to implement, and must be continued to keep the structures free of bats until the completion of construction. All eviction and/or exclusion techniques will be coordinated between the qualified bat biologist and the appropriate resource agencies (e.g., CDFW) if the structure is occupied by bats.

AS-6 Prior to construction, the City's Resident Engineer will ensure that impacts on nesting birds are avoided, and any native vegetation removal or tree (native or exotic) trimming activities will occur outside of the nesting bird season. In the event that vegetation clearing is necessary during the nesting season (i.e., February 1 through September 30), a contractor-supplied, qualified biologist will conduct a preconstruction survey to determine whether any active bird nests are present and, if so, identify their locations. Should nesting birds be found, an exclusionary buffer will be established by a contractor-supplied, qualified biologist, in coordination with Caltrans and the appropriate wildlife agencies (i.e., CDFW and USFWS). This buffer should be clearly marked in the field under guidance of the contractor-supplied, qualified biologist. Project activities within 50

feet of the buffer will be monitored daily by the qualified biologist to ensure that nesting activity is not disturbed by construction. Should nesting birds show signs of being disturbed, the qualified biologist will stop work and expand the buffer prior to approving restart of construction activities. The buffer will not be removed, and construction or clearing will not be conducted within the buffer zone until the contractor-supplied, qualified biologist determines that the young have fledged or the nest is no longer active.

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2.25 Threatened and Endangered Species

2.25.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 USC Section 1531, et seq. See also 50 CFR Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the FHWA (and Caltrans, as assigned), are required to consult with the USFWS and the NOAA Fisheries to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take Statement or a Letter of Concurrence. Section 3 of FESA defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. CDFW is the agency responsible for implementing CESA. Section 2080 of the California Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

2.25.2 Affected Environment

This section is based on the NES(MI) (Caltrans 2020l) and DBESP (Caltrans 2021g) prepared for the Project.

A list of special-status species and habitats that have the potential to occur within the vicinity of the BSA was prepared using information provided by the CDFW's California Natural Diversity Database Rarefind program (CDFW 2024) and the CNPS Inventory of Rare and Endangered Plants of California (CNPS 2024). Searches of these databases were conducted for the nine USGS quadrangles including and surrounding the BSA (*Lake Elsinore, Lake Mathews, Steele Peak, Perris, Romoland, Murrieta, Wildomar, Sitton Peak,* and *Alberhill, California* USGS 7.5' quadrangles) and were refined based on the elevation range of the BSA. An official USFWS species list was obtained from the online *Information for Planning and Consultation Environmental Conservation Online System* on May 22, 2024 (USFWS 2024) and is provided in Appendix I. An official National Marine Fisheries Service Federal Endangered Species Act list was obtained for the Lake Elsinore topographic quadrangle on March 3, 2020, using the National Marine Fisheries (NMFS) California Species List Tool. Results of the literature review can be referenced in the NES(MI).

Nine federally and/or state-listed plant species and 12 federally and/or state-listed animal species are known to occur in the vicinity of the BSA. Information on these species, including status, habitat requirements, and potential for occurrence, is summarized in Table 2.23-1, in Section 2.23 Plant Species, and Table 2.24-1, in Section 2.24, Animal Species.

No federally or state-listed endangered or threatened plant or wildlife species were observed within the BSA during surveys. However, as identified in the NES(MI), the BSA supports several unvegetated road ruts, basins and depressions that were studied for their potential to support federally-listed vernal pool fairy shrimp (*Branchinecta lynchi*) and Riverside fairy shrimp (*Streptocephalus wootoni*). Protocol fairy shrimp surveys, consisting of a habitat assessment and wet and dry season sampling, were conducted for all suitable depressions within the BSA as part of surveys for the Interstate 15 Express Lanes Project Southern Extension (I-15 ELPSE), which has an overlapping footprint with the Project. The habitat assessment, wet season sampling, and dry season sampling were conducted between 2018 and 2021. Fairy shrimp reports and data are provided as appendices to the NES(MI) and DBESP. As shown in Figure 2.25-1, 14 total depressions with potential to support fairy shrimp were mapped within the BSA.

None of the depressions exhibited the vegetative, hydrologic, or soil characteristics associated with vernal pools. Nor did any of the depressions occur over Willow, Traver or Domino soils, which are

suitable soils to support vernal pools. No listed fairy shrimp or cysts were collected during protocol fairy shrimp surveys; therefore, listed fairy shrimp are absent from the BSA.

Further, there is no designated critical habitat in the BSA nor does the BSA contain any areas designated as Essential Fish Habitat subject to regulation under the Magnuson-Stevens Fishery and Conservation Management Act. Additionally, the BSA does not contain any suitable aquatic habitat to support any NMFS-listed species or Marine Mammal Protection Act Species.

2.25.3 Environmental Consequences

2.25.3.1 Temporary Impacts

Alternative 1 (No-Build)

Alternative 1 (No-Build) will not involve any construction or other disturbance in the BSA; therefore, no temporary impacts to threatened or endangered listed species will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Threatened or endangered listed species were determined to be absent from the BSA under Alternative 2; therefore, no temporary impacts to threatened or endangered listed species will occur under Alternative 2.

Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) (Preferred Alternative)

Similar to Alternative 2, threatened or endangered listed species were determined to be absent from the BSA under Alternative 3 (Preferred Alternative); no temporary impacts to threatened or endangered listed species will occur under Alternative 3 (Preferred Alternative).

2.25.3.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build) the Project will not be implemented; and thus, no disturbance will occur within the BSA; no permanent impacts to threatened or endangered listed species will occur under Alternative 1 (No-Build).

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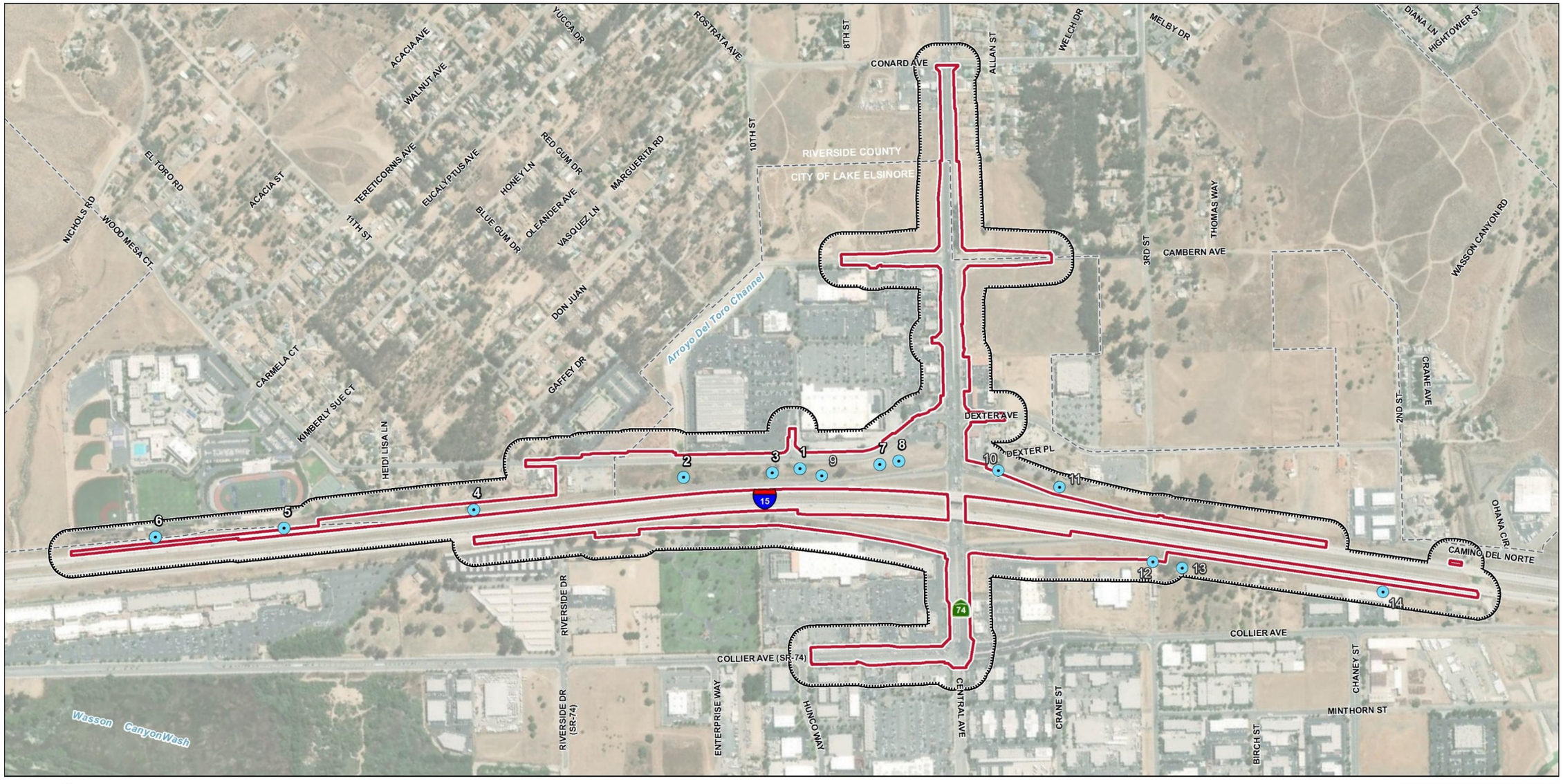

Figure 2.25-1. Fairy Shrimp Dry Season Sampling Locations

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Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

Threatened or endangered listed species were determined to be absent from the BSA under Alternative 2; therefore, no permanent impacts to threatened or endangered listed species will occur under Alternative 2.

Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) (Preferred Alternative)

Similar to Alternative 2, threatened or endangered listed species were determined to be absent from the BSA under Alternative 3 (Preferred Alternative); no permanent impacts to threatened or endangered listed species will occur under Alternative 3 (Preferred Alternative).

2.25.4 Federal Effects Determination

A USFWS species list of federally listed species that, according to USFWS records, could occur within the BSA was most recently acquired from the USFWS Information for Planning and Consultation website on May 22, 2024 (Appendix I). An effect determination for each listed species and critical habitat known from the Project vicinity is included in Table 2.25-1. Either no effect, may affect, not likely to adversely affect or likely to adversely affect determinations are provided. The Project under Alternative 2 and Alternative 3 (Preferred Alternative) will have no effect on any federally listed endangered, proposed threatened, threatened, or candidate species.

Table 2.25-1. Federal Endangered Species Act Effect Findings

Species	Status	Effect Finding	Effect Finding for Critical Habitat
Flowering Plants			
California orcutt grass (Orcuttia californica)	Endangered	No effect	N/A
Munz's onion (Allium munzii)	Endangered	No effect	N/A
San Diego ambrosia (Ambrosia pumila)	Endangered	No effect	N/A
San Jacinto Valley crownscale (Atriplex coronata var. notatior)	Endangered	No effect	N/A
Slender-horned spineflower (Dodecahema leptoceras)	Endangered	No effect	N/A

Table 2.25-1. Federal Endangered Species Act Effect Findings

Species	Status	Effect Finding	Effect Finding for Critical Habitat
Spreading navarretia (Navarretia fossalis)	Threatened	No effect	N/A
Thread-leaved (Brodiaea filifolia)	Threatened	No effect	N/A
Amphibians			
California red-legged frog (Rana draytonii)	Threatened	No effect	N/A
Reptiles			
Southwestern pond turtle (Actinemys pallida)	Proposed Threatened	No effect	N/A
Insects			
Monarch butterfly (Danaus plexippus pop. 1)	Candidate	No effect	N/A
Quino checkerspot butterfly (Euphydras editha quino)	Endangered	No effect	N/A
Crustaceans			
Riverside fairy shrimp (Streptocephalus woottoni)	Endangered	No effect	N/A
Vernal pool fairy shrimp (Branchinecta lynchi)	Threatened	No effect	N/A
Birds			
Coastal California Gnatcatcher *(Polioptila californica californica)*	Threatened	No effect	N/A
Least Bell's Vireo *(Vireo bellii pusillus)*	Endangered	No effect	N/A
Southwestern Willow Flycatcher *(Empidonax traillii extimus)*	Endangered	No effect	N/A
Western Snowy Plover *(Charadrius nivosus nivosus)*	Threatened	No effect	N/A

Table 2.25-1. Federal Endangered Species Act Effect Findings

Species	Status	Effect Finding	Effect Finding for Critical Habitat
Mammals			
San Bernardino Merriam's Kangaroo Rat *(Dipodomys merriami parvus)*	Endangered	No effect	N/A
Stephens' Kangaroo Rat *(Dipodomys stephensi)*	Threatened	No effect	N/A

Notes:

N/A=Not Applicable

2.25.5 State Effects Determination

CDFW authorizes take of endangered, threatened, or candidate species through Sections 2081 and 2080.1 of the California Fish and Game Code. The BSA does not support suitable habitat for any species listed under CESA; therefore, no Incidental Take Permit under Section 2081 is required. The Project under Alternative 2 and Alternative 3 (Preferred Alternative) will have no effect on any state listed endangered, threatened, or candidate species.

2.25.6 Avoidance, Minimization, and/or Mitigation Measures

Based on the findings that (1) the depressions within the BSA are not occupied by any species of fairy shrimp, (2) there is no suitable habitat for any other federally-listed species within the BSA, (3) there is no suitable habitat for state-listed species within the BSA, and (4) there is no critical habitat, Essential Fish Habitat, or suitable habitat for NMFS-listed species or Marine Mammal Protection Species within the BSA, no avoidance, minimization, and/or mitigation measures for potential adverse impacts to listed species are required.

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2.26 Invasive Species

2.26.1 Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State’s invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

2.26.2 Affected Environment

Exotic plant species exist within the nonnative plant communities throughout the BSA, within patches of native plant communities, and in areas that have been disturbed by human activities. Exotic species are typically more numerous adjacent to roads and developed areas and frequently border the ornamental landscape. In the past, these areas likely supported grasslands, oak woodland, coastal sage scrub, chaparral, and riparian habitats. Consequently, scattered plant species associated with these plant communities are often found in these areas as remnants.

The California Invasive Plant Council (Cal-IPC) Invasive Plant Inventory (Cal-IPC 2024) is based on information submitted by members, land managers, botanists, and researchers throughout the state, as well as published sources. The inventory highlights nonnative plants that are serious problems in wildlands (natural areas that support native ecosystems, including national, state, and local parks; ecological reserves; wildlife areas; National Forests; Bureau of Land Management lands; etc.). The inventory categorizes plants as high, moderate, or limited, based on the species’ negative ecological impact in California. Plants categorized as high have severe ecological impacts. Plants categorized as moderate have substantial and apparent, but not severe, ecological impacts. Plants categorized as limited are invasive, but their ecological impacts are minor on a statewide level.

The NES(MI) (Caltrans 2020l) identified a total of 26 nonnative plant species within the BSA. Of these, 18 are listed on the Cal-IPC California Invasive Plant Inventory: 2 with a high rating: Tamarisk (*Tamarix sp.)* and red brome (*Bromus madritensis ssp. rubens*); 6 with a moderate rating: Maltese star-thistle (*Centaurea melitensis)*, shortpod mustard (*Hirschfeldia incana)*, common fig (*Ficus carica)*, tree tobacco (*Nicotiana glauca)*, slender wild oat (*Avena barbata)*, and ripgut brome (*Bromus*

diandrus); and 10 with a limited rating: Peruvian pepper tree (*Schinus molle)*, brass buttons (*Cotula coronopifolia)*, bristly oxtongue (*Helminthotheca echioides)*, London rocket (*Sisymbrium irio)*, Russian thistle (*Salsola tragus)*, castor bean (*Ricinus communis)*, redstem filaree (*Erodium cicutarium)*, river red gum (*Eucalyptus camaldulensis)*, European olive (*Olea europaea)*, and soft brome (*Bromus hordeaceus*). Invasive species with a high rating can have "severe ecological impacts to physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed" (Cal-IPC 2024).

2.26.3 Environmental Consequences

2.26.3.1 Temporary Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build) the construction of improvements will not occur. As a result, there is no potential for invasive species to be introduced in the Project limits. Therefore, no temporary impacts associated with invasive species will occur under Alternative 1 (No-Build).

Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative])

Alternative 2 (NB Hook Ramps)

The introduction of invasive species into previously undisturbed areas that would cause invasive species to spread is considered a permanent impact, because it would then cause permanent changes to the existing habitat. Therefore, no temporary impacts as a result of invasive species will occur under Alternative 2.

Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) (Preferred Alternative)

As stated above, invasive species impacts are considered a permanent impact. Therefore, similar to Alternative 2, no temporary impacts as a result of invasive species will occur under Alternative 3 (Preferred Alternative).

2.26.3.2 Permanent Impacts

Alternative 1 (No-Build)

Under Alternative 1 (No-Build) the Project will not be implemented; therefore, no permanent impacts associated with invasive species will occur under Alternative 1 (No-Build).

Alternative 2 (NB Hook Ramps)

Under Alternative 2, there will be the potential to spread invasive species by construction equipment contaminated with invasive species accessing the Project site, disturbances to soil surfaces, and improper removal and disposal of invasive species that result in the seed being spread along I-15 and SR-74, as well as into adjacent areas. Invasive species also have the potential to be included in seed mixtures and mulch used for revegetation or landscaping.

However, with the implementation of Measures IS-1 and IS-2, these permanent impacts will be avoided and/or minimized. Measure IS-1 will require the compliance with EO 13112, which requires that weed control be performed to minimize the importation of non-native plant material during and after construction. Measure IS-2 will require Project compliance with Caltrans Standard Special Provisions (SSP) 14.6-05, Invasive Species Control. Further, in order to limit permanent impacts to native species in the Project area due to the potential for the introduction and spread of invasive plant species. Further, standard BMPs will be implemented to avoid or minimize the spread of invasive plant species. These standard BMPs include, but are not limited to the following:

- During construction, compliance with all construction site BMPs identified in the SWPPP will be required on-site;
- Following completion of Project-related disturbance, affected areas adjacent to native vegetation will be reseeded with plant species approved by the Caltrans District Biologist that are native to the vicinity; and
- After construction, all reseeded areas will avoid the use of species listed in the Cal-IPC inventory that have a high or moderate rating.

A plant establishment period will be developed for reseeded areas during final design (PS&E). A plant establishment period is a duration of time that allows newly installed plant material to reach a state of maturity, requiring minimal ongoing maintenance for survival. A plant establishment period typically includes the removal of litter and trash, weeding, water application, irrigation repair, replacement of plant material that dies, and other activities required to ensure the long-term survival of plant material.

In addition to Measures IS-1 and IS-2, the Project will also implement Measure NC-2, in Section 2.21, Natural Communities, which will minimize impacts of the introduction and spread of invasive species to and from the Project work areas into environmentally sensitive areas by developing and implementing a weed abatement program.

Therefore, with the incorporation of standard BMPs to prevent the spread of invasive species, the implementation of Measure NC-2, in Section 2.21, Natural Communities, and Measures IS-1 and IS-2, no substantial permanent adverse impacts related to invasive species will occur under Alternative 2.

Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) (Preferred Alternative)

The potential to spread invasive species under Alternative 3 (Preferred Alternative) will be similar to that described under Alternative 2. Therefore, with the incorporation of standard BMPs to prevent the spread of invasive species, the implementation of Measure NC-2, in Section 2.21, Natural Communities, and Measures IS-1 and IS-2, no substantial permanent adverse impacts related to invasive species will occur under Alternative 3 (Preferred Alternative).

2.26.4 Avoidance, Minimization, and/or Mitigation Measures

In addition to the implementation of Measure NC-2, in Section 2.21, Natural Communities, the following measures will be implemented for the Project under the Build Alternatives to avoid and/or minimize impacts associated with the spread of invasive species.

IS-1 During and after construction, the City's Resident Engineer will ensure compliance with EO 13112, which requires weed control to be performed to minimize the importation of non-native plant material during and after construction.

IS-2 During and after construction, the City's Resident Engineer will ensure compliance with Caltrans SSP 14.6-05, Invasive Species Control, which includes specifications for preventing the introduction and spread of invasive species to and from the job site.

2.27 Construction Impacts

The City, in cooperation with Caltrans, plans to improve the I-15/SR-74 interchange to reduce traffic congestion, improve operations, and comply with current Caltrans and local agency design standards. The Project is considering two build alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]) and one no-build alternative (Alternative 1). Under Alternative 2, Project improvements will include replacing the existing NB SR-74 on-ramp with on- and off-NB hook ramps; providing additional turn lanes; widening Dexter Avenue, the SR-74 (Central Avenue) at Dexter Avenue and SR-74 (Central Avenue), and the SB on- and off-ramps; modifying and constructing new traffic signals; modifying outside shoulders on NB and SB I-15; replacing an existing noise barrier; constructing new sidewalks; minor utility relocations; restriping; and paving. The same improvements under Alternative 2 will occur under Alternative 3 (Preferred Alternative). The primary difference between the Build Alternatives is that Alternative 3 (Preferred Alternative) will provide three consecutive NB off-ramps. Additional information on improvements for the Build Alternatives is provided in Chapter 1, Project Description.

The improvements will occur within existing Caltrans, City, and County ROW. Project construction is anticipated to last approximately 14 to 18 months. During construction, the Project will strive to maintain continuous access to and from the freeway ramps, driveways, private properties, and businesses at all times. Weekend and night work will be considered to minimize the impacts to traffic. The need for a flag man and signal operation engineer on site during construction will be evaluated during final design (PS&E) for the stage construction, detours, and traffic handling plans.

The infield areas next to the ramps and the City's ROW available on the northeast quadrant of the interchange provide opportunities for potential staging laydown areas. Generally, any work for new roadway segments can be done first and then the transitions between the new and existing roads can be constructed. The staging for both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]) will be similar.

A general description of the different stages of construction of the Project is described below. Detailed stage construction plans will be included in the final design (PS&E) package for the selected alternative.

- Prior to commencing the work, the appropriate construction and temporary signs will be installed to inform and warn motorists about the construction activities that will be taking place.

- Any utility relocation, demolition of buildings (if applicable), and clearing and grubbing needed for the Project will take place as the first order of work to clear the work areas free of obstructions prior to the beginning of construction.
- Extend Arroyo del Toro channel outlet structure.
- Widen local roads: Dexter Avenue, segments of Central Avenue, and Cambern Avenue.
- Modify or install traffic signals.
- Install signage and restripe local roads.
- Build NB hook on-ramp and portion of NB hook off-ramp.
- Re-route traffic from existing NB on-ramp to the new NB hook on-ramp, close and remove existing NB on-ramp.
- Construct remaining portion of NB hook off-ramp and re-grade detention basin. For Alternative 3 (Preferred Alternative) also build the NB loop off-ramp.
- Modify or construct drainage systems for ramp widening and grade BMP areas.
- Widen the ramps and pave outside shoulders on the mainline for the segments of auxiliary lanes.
- Temporary ramp lane closures will be implemented at off-ramps to replace asphalt concrete pavement at terminals with concrete pavement.
- Install/modify signage, stripe auxiliary lanes on the mainline and restripe ramps.

Under the Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]), construction-related impacts may result in temporary or permanent impacts to environmental resources within and surrounding the Project limits. Some construction-related impacts such as staging and TCEs are considered temporary impacts to resources, but construction-related impacts can also have a permanent impact on a resource, such as paleontological and biological resources. These temporary and permanent impacts are discussed in detail in Chapter 2 (Sections 2.1, Existing and Future Land Use through Section 2.26, Invasive Species).

With implementation of the avoidance, minimization, and/or mitigation measures identified in Sections 2.1, Existing and Future Land Use through Section 2.26, Invasive Species, no substantial temporary adverse impacts will occur under the Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]). Further, since the Project will not be implemented under Alternative 1 (No-Build), no temporary impacts will occur under Alternative 1 (No-Build).

2.28 Cumulative Impacts

2.28.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

The California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations (CFR) Section 1508.7.

2.28.2 Methodology

The methodology used in the cumulative impacts analysis for the Project was developed by following the eight-step process set forth in the Caltrans *Guidance for Preparers of Cumulative Impact Analysis* (Caltrans 2005). The eight-step process is comprised of the following actions:

1. Identify the resources to consider in the cumulative impacts analysis by gathering input from knowledgeable individuals and reliable information sources. This process is initiated during project scoping and continues throughout the NEPA/CEQA analysis.
2. Define the geographic boundary or resource study area for each resource to be addressed in the cumulative impacts analysis.
3. Describe the current health and historical context of each resource.

4. Identify the direct and indirect impacts of each of the project alternatives that might contribute to a cumulative impact on the identified resources.
5. Identify other current and reasonably foreseeable future actions or projects and their associated environmental impacts to include in the cumulative impacts analysis.
6. Assess the potential cumulative impacts.
7. Report the results of the cumulative impact analysis.
8. Assess the need for avoidance, minimization, and/or mitigation measures and/or recommendations for actions by other agencies to address a cumulative impact.

2.28.3 Resources Included in Cumulative Impact Analysis

As specified in the Caltrans *Guidance for Preparers of Cumulative Impact Analysis* (Caltrans 2005), if the project would not result in a direct or indirect impact on a resource, it would not contribute to a cumulative impact on that resource. In addition, resources currently in poor or declining health should be considered in the cumulative impact analysis even if project impacts are not substantially adverse or less than significant.

The following discussion of potential cumulative impacts is presented by environmental resource area. A list of the reasonably foreseeable projects considered in this analysis is presented in Table 2.28-1 and shown in Figure 2.28-1. There are 17 projects in the City of Lake Elsinore that have been recently completed, are currently planned, or are currently under construction within 0.5 mile of the Project limits. Construction of the Project is anticipated to start in 2024 and last approximately 14 to 18 months. Based on available information, one of the related projects called Upgrade Facilities to American with Disabilities Act Standards would be constructed concurrently with the Project; therefore, there is potential for cumulative temporary construction impacts resulting from the concurrent execution of multiple projects within the various cumulative study resource areas. There are four listed projects that do not have an identified construction schedule, which could also potentially overlap with the Project.

Table 2.28-1. Current Reasonably Foreseeable Projects Considered in Cumulative Impact Analysis

No.	Name	Jurisdiction	Descriptions of Projects	Status
1	Central Plaza	City of Lake Elsinore	The project consists of a commercial center totaling approximately 65,803 square feet of development consisting of a main building located on the southern portion of the site and four pad buildings located along Central Avenue. This commercial center will be comprised of approximately 53,469 square feet of retail and 12,334 square feet of restaurant uses. Three of the pad buildings, two with drive-thru windows, will host fast-food restaurant uses.	**Completed**. The project's IS/MND was approved on March 28, 2017. Construction began in August 2018 and was completed in 2021.
2	Tigé Watersport	City of Lake Elsinore	The project is proposing to establish a boat sales, service, and assembly facility that involves the construction of a 25,682 square foot building, and a 9,800 square foot storage building with 66 parking spaces, 44,142 square foot paved area, and 18,469 square foot landscaped area on a lot that is approximately 2.78 acres. The 25,682 square foot building will include office areas along with a service area, manufacturing and assembly area, and show room associated with boat manufacturing and sales. The building will be constructed to a height of 30 feet with two stories. The 9,800 square foot accessory building will be located in the rear and will be used as a temporary boat storage facility to store boats during repair, maintenance, or extended repairs.	**Constructed.** The project's IS/MND was approved on March 27, 2018.
3	Lake Elsinore Honda	City of Lake Elsinore	The project provides a new automobile sales and service facility on an undeveloped parcel at the northeast corner of 3rd Street and Collier Avenue. The building is 53,425 square feet. Two new driveways have been constructed on Collier Avenue.	**Constructed.** The project's IS/MND was approved on August 14, 2018. The project was completed in 2020.

Table 2.28-1. Current Reasonably Foreseeable Projects Considered in Cumulative Impact Analysis

No.	Name	Jurisdiction	Descriptions of Projects	Status
4	Pennington Industrial Project	City of Lake Elsinore	The project proposes to construct three industrial buildings that are 91,140 square foot in total area with 167 parking spaces. Building 1 will have 32,940 square feet gross floor area, building 2 will have 39,000 square feet gross floor area, and building 3 will have 19,200 square feet gloss floor area. Each building will consist of a planned open warehouse with truck access doors and a planned office area with mezzanine level.	**Proposed.** The project IS/MND was approved on April 28, 2020.
5	Downtown Curb, Gutter, and Sidewalk Replacement	City of Lake Elsinore	The project involved the design and construction of sidewalks, curb, and gutters and street reconstruction along and near East Pottery Street, East Flint Street, West Franklin Street, East Heald Avenue (from North Chestnut Street to Moroni Avenue), Silver Street (from Sumner to Pottery Street), North Lowell Street and North Kellogg Street (between Lakeshore Drive and Graham Avenue), and North Poe Street and North Langstaff Street (Northeast of West Flint Street).	**Constructed.** The project was completed at the end of 2020.
6	Kassab Travel Center	City of Lake Elsinore	This project proposes to construct a new travel center consisting of an 8,360 square foot convenience store with concurrent sale of alcoholic beverages, three quick serve restaurants, two covered gas dispensing areas totaling 6,092 square feet, a free standing 2,543-square foot fast food restaurant with a drive-through; as well as 59 vehicular parking spaces and three RV parking spaces on an approximately 2.39-net acre site.	**Proposed.** The project IS/MND was approved on July 14, 2020.
7	3rd Street Drainage Improvements Phase III	City of Lake Elsinore	This project involves the construction of missing storm drain improvements along Third Street, Conard Avenue and Welch Drive starting at Cambern Avenue. Improvements include the construction of new storm drains, catch basins, laterals, and modifications to existing flood control channel downstream.	**Proposed.** The project is currently in the final design phase. The project is anticipated to be complete by 2025.

Table 2.28-1. Current Reasonably Foreseeable Projects Considered in Cumulative Impact Analysis

No.	Name	Jurisdiction	Descriptions of Projects	Status
8	3rd Street Drainage Improvement Phase II	City of Lake Elsinore	This project involves the construction of missing storm drain improvements along Third Street, Conard Avenue and Welch Drive starting at Cambern Avenue. Improvements include the construction of new storm drains, catch basins, laterals, and modifications to existing flood control channel downstream.	**Constructed.** This project was completed in Fall 2018.
9	SR-74 Widening	City of Lake Elsinore	This project will consist of widening SR-74 from two to six lanes (three lanes in each direction), west of the I-15 to the Ortega mountains. Other improvements include turn pockets and one traffic signal at the intersection of SR-74 (Riverside Drive) and Grand Avenue.	**Proposed.** The project is anticipated to be complete by 2028.
10	Slab Replacement	Caltrans	The $27.7 million pavement project will replace 54.6 miles of lanes along I-15 from Nichols Road in the City, to north of Temescal Canyon Road in the City of Corona in the County.	**Completed.** This project was completed in 2022.
11	Upgrade Facilities to American with Disabilities Act Standards	Caltrans	This project proposes to upgrade facilities to ADA standards in and near Lake Elsinore, Corona, Norco, Jurupa Valley, and Eastvale, at various locations from Bundy Canyon Road to Philadelphia Street (Riverside County line) (PM 16.3/52.270).	**Proposed.** This project is planned for Fiscal Year 2023/2024.

Table 2.28-1. Current Reasonably Foreseeable Projects Considered in Cumulative Impact Analysis

No.	Name	Jurisdiction	Descriptions of Projects	Status
12	Caltrans Maintenance Facility Extension	Caltrans	This project will construct an extension on the current Caltrans maintenance facility on the corner of Conard and SR-74. This project also includes ADA upgrades.	**Proposed.** PA&ED was completed in 2022. The Project is currently in the PS&E phase and is anticipated to begin construction in fall 2024.
13	I-15 Express Lanes Project Southern Extension	RCTC	This is an HOV project from PM 22.3 to 36.8. The proposed project would add capacity by extending the I-15 Express Lanes, by an additional 14.5 miles. The proposed new segment would extend from Cajalco Road in Corona, through Temescal Valley, to SR-74 (Central Avenue) in the City of Lake Elsinore. The project proposes adding two tolled express lanes in both directions within the I-15 median to accommodate increasing traffic volumes in Riverside County.	**Proposed.** Construction is anticipated to begin as early as 2025.
14	Golden Corral	City of Lake Elsinore	This restaurant is located along Dexter Avenue, near 3rd Street.	**Completed.** This property has been built.
15	Chick-fil-A	City of Lake Elsinore	This fast food restaurant is along Dexter Avenue, next to the Golden Corral.	**Completed.** This property has been built.
16	Super Walmart	City of Lake Elsinore	This retail store is located along Central Avenue at Cambern Avenue.	**Completed.** This property has been built.
17	La Quinta Hotel	City of Lake Elsinore	This hotel would be located at the northern corner of 3rd Street and Dexter Avenue. The project would construct a 36,664 square foot, four story, 64 room hotel on an approximately 1.05 acre site.	**Proposed.** This property is under construction.

Table 2.28-1. Current Reasonably Foreseeable Projects Considered in Cumulative Impact Analysis

No.	Name	Jurisdiction	Descriptions of Projects	Status

Source: City of Lake Elsinore 2023, 2019a, 2019b, 2020a; Caltrans 2021c, 2021d; RCTC 2023

Notes:

ADA=Americans with Disability Act; Caltrans=California Department of Transportation; HOV=high occupancy vehicle; I-15=Interstate 15; IS=Initial Study; MND=Mitigated Negative Declaration; No.=number; PA&ED= Project Approval/Environmental Document; PM=post mile; RV=recreational vehicle; SHOPP=State Highway Operation and Protection Program; SR-74=State Route 74

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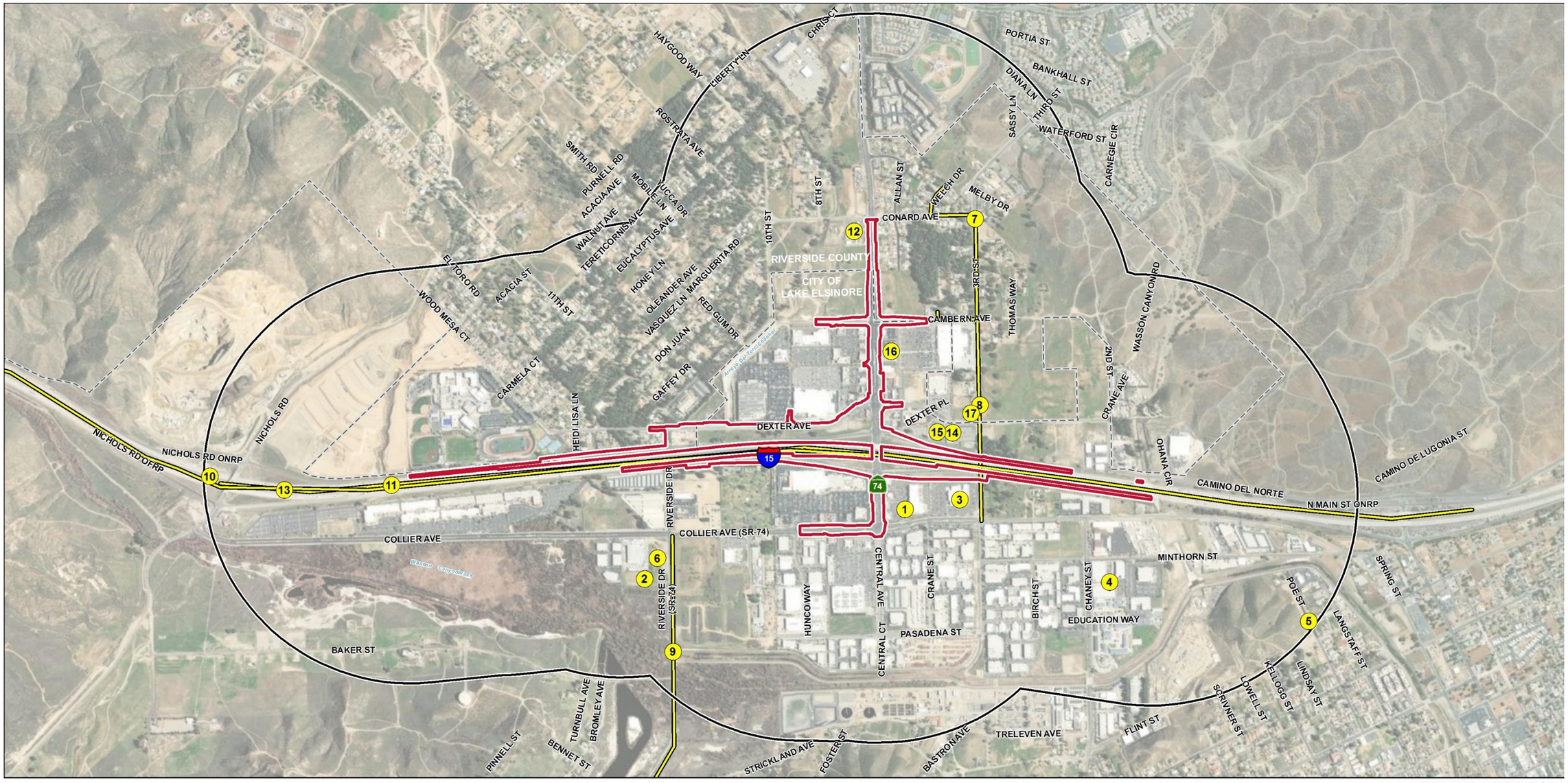

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LEGEND

- Project Limits
- City/County Boundary
- Community Impact Study Area (0.5 mile buffer)

Planned Projects

1 - Central Plaza
2 - Tigé Watersport
3 - Lake Elsinore Honda
4 - Pennington Industrial Project
5 - Downtown Curb, Gutter, and Sidewalk Replacement
6 - Kassab Travel Center
7 - 3rd Street Drainage Improvement Phase III
8 - 3rd Street Drainage Improvements Phase II
9 - SR-74 Widening
10 - Slab Replacement
11 - Upgrade Facilities to American with Disabilities Act Standards
12 - Caltrans Maintenance Facility Extension
13 - I-15 Express Lanes Southern Extension
14 - Golden Corral
15 - Chick-Fil-A
16 - Super Walmart
17 - La Quinta Hotel

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 2.28-1. Planned Projects

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Table 2.28-1 lists all resource areas included in the cumulative impact analysis that meet these criteria. Those identified as resulting in an individual impact, and, thus, included in the cumulative impact analysis are resources for which an adverse impact will occur after the incorporation of avoidance or minimization measures and before the implementation of any mitigation measures.

Table 2.28-2 identifies the resource study area that corresponds to the cumulative analysis for each included resource. A cumulative impact analysis reviews the resources in the Project vicinity as a whole, and, as a result, the resource study areas in the context of the cumulative analysis are often different than the study areas defined in the preceding sections of the IS/EA.

Table 2.28-2. Resource Study Areas Included in Cumulative Impact Analysis

Resource Area	Reason Included in Cumulative Analysis	Resource Study Area
Traffic and Transportation/ Pedestrian and Bicycle Facilities	Temporary impacts to traffic and circulation	Within 0.5 mile of the Project limits
Visual and Aesthetics	Temporary and permanent impacts to visual resources	VAU-1 through VAU-6
Water Quality	Temporary and permanent impacts to the watershed	Santa Ana River Hydrologic Unit and the Terra Colta Hydrologic Sub-Area
Paleontology	Potential for destruction or damage to paleontological resources	Properties within and immediately adjacent to the Project limits
Air Quality	SCAB is in nonattainment for federal and state criteria pollutants	The SCAB region is the resource study area for air quality
Noise	Temporary and permanent impacts from noise during construction and operation	Project limits and all short-term and long-term noise measurement locations and modeled noise receiver locations
Natural Communities	Temporary and permanent impacts to natural communities	BSA
Wetlands and Other Waters	Temporary and permanent impacts to federal and state jurisdictional waters	Jurisdictional delineated area

Table 2.28-2. Resource Study Areas Included in Cumulative Impact Analysis

Resource Area	Reason Included in Cumulative Analysis	Resource Study Area
Animal Species	Temporary and permanent impacts to animal species	BSA

Notes:
BSA=biological study area; SCAB=South Coast Air Basin; SR-74=State Route 74; TBD=to be determined; VAU=visual assessment unit

2.28.4 Human Environment

2.28.4.1 Traffic and Transportation/Pedestrian and Bicycle Facilities

The City of Lake Elsinore is one of the fastest growing cities in California, with the I-15/SR-74 interchange ranked as the second most congested freeway interchange in the City. The I-15/SR-74 interchange serves as the primary access for residents, visitors, businesses and industry in the area.

Sustained local growth and regional development have increased commuter traffic at the I-15/SR-74 interchange, resulting in severe peak hour traffic congestion and operational deficiencies. The increase in traffic volumes has resulted in inadequate queuing capacity at the interchange and local intersections and many of the collisions reported in these areas, as identified in Table 2.10-5 and Table 2.10-6, could be related to traffic congestion and low storage capacity.

Construction activities associated with either Build Alternative will temporarily affect traffic and circulation. Temporary lane closures will be needed to phase the Project construction. In addition, construction activities such as utility relocation, extending the Arroyo Del Toro Channel outlet structure, road widening, modification and installation of traffic signals, restriping, and construction of the NB hook on-ramp will temporarily affect traffic operations. With this Project's and the State Highway Operation and Protection Program's construction activities overlapping, the effects on traffic operations may not be limited to the Project limits. Additionally, construction activities of the other reasonably foreseeable projects in the surrounding communities may temporarily generate traffic during construction activities.

As discussed in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, vehicular (including school buses and emergency response vehicles), pedestrian, and bicyclist access along the road and to/from private properties will be maintained at all times during construction. In addition, potential construction-related traffic and circulation impacts will be minimized through implementation of a comprehensive TMP, included as Measure TR-1, in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, that will be designed to minimize traffic delays that

may result from lane restrictions or closures during construction operations and move motorists through the work zones quickly and safely. The TMP (Measure TR-1) will include public information, motorist information, incident management, construction strategies, demand management, and alternative route strategies. Similar to the Build Alternatives, other projects are required to minimize and reduce impacts to traffic and transportation facilities during construction activities. With the implementation of the TMP, the Project's temporary impact on traffic will not be adverse. Therefore, the Project, under either Build Alternative, will not have a considerable contribution to an adverse cumulative impact on traffic and transportation.

Operation of the Project, under either Build Alternative, will result in an overall beneficial impact on traffic and transportation; and, therefore, the Project, under either Build Alternative, is not anticipated to result in substantial cumulative impacts under NEPA or significant cumulative impacts under CEQA related to traffic and transportation.

2.28.4.2 Visual and Aesthetics

Several of the foreseeable projects listed in Table 2.28-1 appear to occur within the Project viewshed. Temporary visual impacts are anticipated during the construction period of the Project. Temporary impacts will include the presence of construction equipment and materials, construction staging areas, temporary roadside barriers, and construction and detour signage within the area of the Project limits, as well as construction activities, such as truck hauling, excavation activity, and the removal of existing mature landscape.

With this Project's and the State Highway Operation and Protection Program's construction activities overlapping, temporary visual impacts may not be limited to just the Project limits. Additionally, construction activities of the other reasonably foreseeable projects in the surrounding communities may also generate visual impacts during construction activities. Temporary impacts to visual resources under either Build Alternative will be minimized through implementation of Measures VIS-1 through VIS-4, identified in Section 2.11, Visual and Aesthetics, which will include implementation of a landscape plan and lighting plan, and ensuring design elements comply with the City and County's General Plan.

The Project, under either Build Alternative, will include the addition of new NB hook on- and off-ramps, the widening of the Dexter Avenue/SR-74 intersection and SR-74/Cambern Avenue intersection, traffic signal modifications, and restriping. Alternative 3 (Preferred Alternative) will also include implementation of a NB loop off-ramp. No scenic resources, vistas, or highways are visible or within the Project limits or Project corridor. Changes as a result of the Project, under either Build Alternative, will be consistent with the transportation nature and views for interchanges adjacent to highways and will not alter the existing visual character and quality of the Project limits. Distant

views of the neighboring hillsides will be preserved throughout the Project limits as no vertical elements will be constructed, with the exception of freeway signage. Vertical intrusions such as freeway signs are typical for the area and will not substantially alter the existing viewsheds within the Project corridor as existing structures and vegetation within the Project limits block most views of the surrounding areas from within the private and not-publicly-accessible community.

The Project, under either Build Alternative, will result in the permanent removal of trees and other vegetation in the ROW. Tree and vegetation removal on public lands will comply with City, County, and Caltrans landscaping policies, as specified in Measures VIS-1 through VIS-3, in Section 2.11, Visual and Aesthetics. In addition, the Project, under either Build Alternative, may include additional lighting or replace existing lighting after completion of road modifications throughout the Project limits; however, with the implementation of Measure VIS-4, in Section 2.11, Visual and Aesthetics, these permanent impacts as a result of either Build Alternative, will be minimized.

The overall visual impacts of the Project under either Build Alternative will be moderately low because the change to the visual resources and views are minor and consistent with the existing setting. Therefore, with the implementation of Measures VIS-1 through VIS-4, in Section 2.11, Visual and Aesthetics, the Project, under either Build Alternative, is not anticipated to result in substantial cumulative impacts under NEPA or significant cumulative impacts under CEQA related to visual and aesthetic resources.

2.28.5 Physical Environment

2.28.5.1 Water Quality

The cumulative resource study area for water quality includes the Santa Ana River Hydrologic Unit (801.0) and the Terra Colta Hydrologic Sub-Area (801.35). The Project, under either Build Alternative, will result in a permanent increase in impervious surface area. The increase in impervious area will result in increased pollutant build up and wash off. A greater volume and rate of stormwater runoff could cause or contribute to erosion and off-site pollutant transport. Runoff will be minimized by the implementation of post-construction water quality BMPs required by the Caltrans Municipal Separate Storm Sewer System Permit, as discussed in Section 2.14, Water Quality and Stormwater Runoff. These BMPs, which are designed to handle Project runoff, in addition to the implementation of Measures WQ-1 through WQ-5, in Section 2.14, Water Quality and Stormwater Runoff, will sufficiently address any off-site runoff that may occur and will remove the potential for adverse cumulative impacts related to surface runoff and water quality. The Project, under either Build Alternative, has a low potential to cause adverse water quality problems to surface waters or groundwater in the area.

The Project, under either Build Alternative, in conjunction with other projects listed in Table 2.28-1, will contribute to an increase in impervious surfaces within the cumulative resource study area for water quality, which will result in an increase in stormwater runoff. However, the listed projects are subject to water quality rules and regulations and will be required to be developed in compliance with water quality regulations to avoid any impacts to water resources. The Project, under either Build Alternative, is not anticipated to adversely affect receiving waters within the cumulative resource study area for water resources and will not have cumulative impacts to water resource characteristics or beneficial uses. Therefore, the Project, when combined with other projects, will not result in substantial adverse cumulative impacts related to water quality. Thus, the Project, under either Build Alternative, is not anticipated to result in substantial cumulative impacts under NEPA or significant cumulative impacts under CEQA related to water quality.

2.28.5.2 Paleontology

The cumulative resource study area for paleontological resources is located within the northern portion of the Peninsular Ranges Geomorphic Province. The geologic units mapped within the Project limits include the Silverado Formation (Paleocene)(Tsi), young alluvial-fan deposits (Holocene and late Pleistocene) (Qyf), and young axial-channel deposits (Holocene and late Pleistocene) (Qya). Pleistocene- and older Holocene-age deposits may potentially preserve significant fossils, but deposits less than 5,000 years old are unlikely to preserve them, as they are generally too young for the fossilization process to occur.

The paleontological sensitivity analysis conducted for this Project determined that there is a high potential for paleontological resources within the entire Project limits because of the presence of the fossiliferous Silverado Formation and late Pleistocene deposits from which significant fossils have been recovered 3 to 5 miles from the Project limits. Excavations associated with the Arroyo Del Toro Channel detention basin, noise barriers, and freeway signage for either Build Alternative will likely extend into the Silverado Formation and late Pleistocene deposits where excavation within these geologic units will increase the potential to discover and damage significant paleontological resources. Any impacts to paleontological resources are permanent and irreparable. Because of the extensive nature of geologic units with high paleontological sensitivity in the study area, potential impacts to paleontological resources will be reduced through the implementation of Measure PAL-1, in Section 2.16, Paleontology, which requires a PMP.

Other projects may contribute to cumulative impacts through possible further environmental degradation by requiring substantial subsurface excavation. Because paleontological resources are site-specific in nature, the City will implement a PMP, identified earlier as Measure PAL-1, in Section 2.16, Paleontology, that will require monitoring and collecting resources to minimize adverse impacts

in the event that construction activities uncover any paleontological resources. Therefore, with the implementation of Measure PAL-1, in Section 2.16, Paleontology, the Project, under either Build Alternative, is not anticipated to result in substantial cumulative impacts under NEPA or significant cumulative impacts under CEQA related to paleontological resources.

2.28.5.3 Air Quality

The cumulative resource study area for the purposes of air quality is the SCAB. SCAB is currently in federal extreme nonattainment for O_3 and serious nonattainment $PM_{2.5}$ standards. At the state level, SCAB is in nonattainment for O_3, $PM_{10,}$ and $PM_{2.5}$ standards.

Implementation of the Project, under either Build Alternative, may contribute criteria pollutant emissions to the area during Project construction and operation. However, the Project, under either Build Alternative will implement Measures AQ-1 through AQ-13, in Section 2.18, Air Quality, to minimize potential impacts to air quality during construction.

A number of the individual projects described in Table 2.28-1, as well as other projects located throughout the air basin, may be under construction simultaneously with the Project. Depending on construction schedules and actual implementation of projects in SCAB, generation of fugitive dust and pollutant emissions during construction and operations may result in substantial short-term increases in air pollutants. However, each project will be required to comply with SCAQMD's standard construction measures, similar to Measures AQ-1 through AQ-13, in Section 2.18, Air Quality.

The Project under either Build Alternative is listed in the 2020-2045 RTP/SCS, which was found to be conforming by the FHWA/FTA on June 5, 2020. The Project under either Build Alternative is also listed in the 2021 FTIP, which was found to be conforming by the FHWA/FTA on April 16, 2021 (Project ID: RIV060109). Project-level air quality analysis demonstrated that the Project will not result in any substantial air quality impacts once implemented. Cumulative projects listed in Table 2.28-1, which include commercial, transportation, and industrial development, and general growth, may also contribute to additional mobile and stationary emission sources and may further degrade the local air quality, as well as the SCAB air quality. However, because these projects will be discretionary actions and subject to CEQA, they will be required to incorporate measures to reduce air quality impacts.

Therefore, with the implementation of Measures AQ-1 through AQ-13, in Section 2.18 Air Quality, the Project, under either Build Alternative, is not anticipated to result in substantial cumulative impacts under NEPA or significant cumulative impacts under CEQA related to air quality.

2.28.5.4 Noise

The cumulative resource study area for the purposes of noise is based on the Noise Study Area. Noise within and surrounding the Project limits is primarily generated by vehicles traveling on the I-15 and on surface streets. These sources contribute to the ambient noise along the I-15 corridor. Existing land uses in the Project limits include residential uses, commercial uses, a high school, a cemetery, and vacant land. The freeway is likely the greatest contributor to the ambient noise in the area. Additional noises typical in this area may include emergency vehicle sirens and traffic. With the ongoing development and transportation infrastructure improvement trend in the City and on I-15, there may also be a temporary increase in noise from construction activities.

Construction activities will temporarily increase the ambient noise levels in the Project limits. A number of the individual projects described in Table 2.28-1, as well as other projects located within the Noise Study Area, may be under construction simultaneously with the Project. Depending on construction schedules and actual implementation of projects in the Noise Study Area, generation of noise impacts during construction may result in substantial short-term increases in noise.

Project construction noise will be short-term and intermittent and will comply with applicable noise-related local, state, and federal regulations. As discussed in Section 2.19, Noise, the implementation of Measure N-1, which stipulates adherence to Caltrans Standard Specifications Section 14-8.02 (Noise Control) and SSP 14-8.02 (which will be edited during the PS&E phase of the project), and N-2 which requires that all equipment be fitted with adequate mufflers according to the manufacturers' specifications, will ensure that noise impacts caused by construction will not be adverse. Other projects in the area are required to adopt similar noise-reduction measures either as directed by Caltrans or as a result of local noise ordinances. Consequently, the Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]) are not anticipated to result in a considerable contribution to a cumulative impact on noise during construction. Therefore, there will be no temporary adverse cumulative impacts under NEPA or CEQA.

Potential permanent noise impacts associated with Project operations under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]) are solely from traffic noise. Traffic noise was evaluated for the worst-case traffic condition. As discussed in Section 2.19, Noise, Project implementation will result in noise levels that approach or exceed the applicable NAC at 20 modeled receptors (13 Activity Category B, five Activity Category C, and two Activity Category E land uses) along I-15, which represent a total of 20 noise-sensitive receivers.

In the noise analysis Horizon Year (2050) Build Condition, receivers will experience up to a 9 dB increase in noise levels when comparing the Existing Year (2018) baseline condition to the noise analysis Horizon Year (2050) build condition. There will be up to an 8 dB increase in noise levels

when comparing the noise analysis Horizon Year (2050) No-Build condition compared with the noise analysis Horizon Year (2050) build condition, and noise levels at most receptors will remain the same or decrease. A 3 dB change is the lowest level that is perceptible by the average human ear in an outdoor environment. Because the Project setting is highly urbanized and because of the proximity of the receptors to the highway, the magnitude of the noise increase is not considered substantial.

Operation of foreseeable development projects will each be subject to comply with the City noise ordinances. Therefore, operation of either Build Alternative is not anticipated to have substantial adverse cumulative impacts related to noise under NEPA or significant cumulative impacts under CEQA.

2.28.6 Biological Environment

2.28.6.1 Natural Communities

The resource study area used for assessing cumulative impacts to natural communities is based on the BSA. There are multiple natural communities present within the resource study area including California buckwheat (*Eriogonum fasciulatum*) scrub and mulefat (*Baccharis salicifolia*) thickets, which are the only special-interest natural communities that occur in the BSA. Native vegetation in all areas of the BSA has been subject to disturbance and/or clearing at some point in the past.

The Project, under either Build Alternative, will not result in any direct or indirect temporary effects on California buckwheat scrub. However, the Project, under either Build Alternative, will result in direct temporary and permanent impacts to mulefat thickets in order to construct new off-ramps from I-15 onto Dexter Avenue.

All mulefat thickets within the BSA are located within areas identified as streambeds or riparian habitat subject to CDFW jurisdiction pursuant to Section 1602 of the California Fish and Game Code. In addition, the Project, under either Build Alternative, may result in indirect impacts associated with dust and the introduction of invasive species that could degrade habitat adjacent to the Project area. The Project will include implementation of Measures NC-1 through NC-5 in Section 2.21, Natural Communities and Measure WET-1 in Section 2.22, Wetlands and Other Waters to avoid, minimize, and/or mitigate potential direct and indirect impacts to these natural communities.

Construction and operation of either Build Alternative is not expected to further alter any existing linkages or habitat connectivity functions within the resource study area. However, removal and degradation of these natural communities may continue as future projects are constructed, which may further limit the use of this habitat by wildlife in the resource area.

There is a potential for other projects within the resource study area to contribute to indirect cumulative impacts, but these indirect effects will not change the existing conditions at the Project site and will not be anticipated to result in substantial cumulative impacts under NEPA or significant impacts under CEQA.

Therefore, with the implementation of Measures NC-1 through NC-5, in Section 2.21, Natural Communities, and Measure WET-1, in Section 2.22, Wetlands and Other Waters, the Project, under either Build Alternative, is not anticipated to result in substantial cumulative impacts under NEPA or significant cumulative impacts under CEQA related to natural communities.

2.28.6.2 Wetlands and Other Waters

Within the cumulative resource study area, which is the BSA, there is 1.29 acre of potential CWA Section 404/401 jurisdictional nonwetland waters of the U.S, and 1.80 acre of potential CDFW unvegetated streambed and 0.57 acre of riparian habitat.

As discussed in Section 2.22, Wetland and Other Waters, the Project, under either Build Alternative, will result in both temporary and permanent impacts of 0.40 acre or less of nonwetland waters of the U.S potentially subject to USACE and RWQCB jurisdiction pursuant to Sections 404 and 401 of the CWA, respectively. The Project, under either Build Alternative, will also result in both temporary and permanent impacts of 0.41 acre or less of unvegetated streambed and 0.52 acre or less of riparian habitat potentially subject to CDFW jurisdiction pursuant to Section 1602 of the California Fish and Game Code. Impacts to Western Riverside County MSHCP riparian/riverine resources will be consistent with impacts to CDFW jurisdictional streambed and associated riparian vegetation. Temporary and permanent Project impacts to nonwetland waters of the U.S., unvegetated streambed, and riparian habitat will be mitigated for with the implementation of Measure WET-1, in Section 2.22, Wetland and Other Waters. Measure WET-1 identifies anticipated habitat restoration and compensatory mitigation that will be required in order to obtain Clean Water Act Section 401 and 404 permits, CDFW Section 1602 Streambed Alteration Agreement and Western Riverside MSHCP DBESP approval. In addition, the Project will also implement Measures NC-4 and NC-5 in Section 2.21, Natural Communities and Measures WQ-1 and WQ-2 in Section 2.14, Water Quality and Stormwater Runoff, to prevent temporary and permanent adverse effects on wetland and other waters.

Several of the foreseeable projects listed in Table 2.28-1 appear to occur within the delineated jurisdictional area. However, all temporary and permanent impacts are regulated by the federal and state agencies and, as such, require impacts to be mitigated through an approved in-lieu program, mitigation bank, or restoration or enhancement. As such, the temporary and permanent impacts to

wetlands and waters under either Build Alternative will not have a considerable contribution to a substantially adverse cumulative impact on wetlands and other waters.

Therefore, with the implementation of Measure WET-1, in Section 2.22 Wetland and Other Waters, Measures NC-4 and NC-5 in Section 2.21, Natural Communities and Measures WQ-1 and WQ-2 in Section 2.14, Water Quality and Stormwater Runoff, the Project, under either Build Alternative, is not anticipated to result in substantial cumulative impacts under NEPA or significant cumulative impacts under CEQA related to wetland and other waters.

2.28.6.3 Animal Species

The resource study area used for assessing cumulative impacts to animal species is based on the BSA. Construction of the Project, under either Build Alternative, has the potential for direct and indirect permanent and temporary impacts to non-listed special-status animal species including BUOW, migratory birds, and bat species. Temporary indirect impacts may include habitat avoidance due to construction-related noise, vibration, dust, human encroachment in areas adjacent to suitable habitat, exhaust from construction equipment, lighting used during nighttime work, and removal of vegetation. Permanent direct impacts include vegetation/habitat removal that may impact BUOW and non-listed special-status animal species. Permanent indirect impacts for areas adjacent to the Project limits include the introduction or spread of invasive plant species, fire, human encroachment, and pollutants associated with vehicles once the Project is in operation.

Implementation of Measure AS-1, in Section 2.24 Animal Species, will require a pre-construction survey for BUOW. In addition, implementation of Measures AS-2 through AS-5, in the same section, will include pre-construction bat surveys and measures to reduce noise and lighting impacts, in order to avoid temporary impacts to bat species in the event they are present during construction activities. Implementation of Measures NC-1 through NC-5, in Section 2.21, Natural Communities, and Measures AS-1 through AS-6, will avoid and/or minimize impacts to special-status migratory bird species within and/or adjacent to Project work areas. Permanent impacts to non-listed special-status animal species are covered through participation in the Western Riverside County MSHCP.

Removal of potential habitat for these species is expected to continue as future projects are constructed in the region. However, through participation in various resource agency (e.g., CDFW, USFWS) and local resource regulations, along with implementation of Measures AS-1 through AS-6 in Section 2.24, Animal Species and NC-1 through NC-5, in Section 2.21, Natural Communities, no substantial cumulative impacts are anticipated to occur on present special-status animal species.

Therefore, with the implementation of NC-1 through NC-5, in Section 2.21, Natural Communities and Measures AS-1 through AS-6, in Section 2.24, Animal Species, the Project, under either Build

Alternative, is not anticipated to result in substantial cumulative impacts under NEPA or significant cumulative impacts under CEQA related to animal species.

2.28.7 Avoidance, Minimization, and/or Mitigation Measures

The Project includes avoidance, minimization, and mitigation measures for Project-specific impacts, which are summarized in Appendix F, Environmental Commitments Record. Because the avoidance, minimization, and/or mitigation measures included in Chapter 2 are expected to substantially avoid and/or minimize the adverse effects of the Project, and there are no existing resources in the area that have been substantially impacted by existing development, no substantial contribution to cumulative impacts is anticipated.

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3 California Environmental Quality Act Evaluation

3.1 Determining Significance under CEQA

The Project is subject to federal, state and local (City of Lake Elsinore) environmental review requirements because federal funds and approval from the Federal Highway Administration (FHWA) for Project implementation is required. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The City of Lake Elsinore is the project proponent and Caltrans is the lead agency under CEQA. FHWA's responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 United States Code Section 327 (23 USC 327) and the Memorandum of Understanding dated May 27, 2022, and executed by FHWA and Caltrans.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or a lower level of documentation, would be required. NEPA requires that an EIS be prepared when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require the Department to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A NO IMPACT answer in the last column reflects this determination. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices (BMPs) and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 in order to provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.2.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐

Except as provided in Public Resources Code Section 21099, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

3.2.1.1 CEQA Significance Determinations for Aesthetics

a) Less than Significant Impact

As discussed in Section 2.11, Visual and Aesthetics, the Riverside County General Plan does not identify any visual resources or scenic vistas within the Project limits. The Project is located within Landscape Unit 13, as defined by the City of Lake Elsinore General Plan and does not identify vantage points or visual resources within Landscape Unit 13. Therefore, impacts will be considered less than significant, and no mitigation is required.

b,c) Less than Significant Impact

The Project is located within an urbanized area of the City of Lake Elsinore and Riverside County. Within the Project limits, I-15 and SR-74 have been identified to contain sensitive user groups, motorists, as defined by the City of Lake Elsinore General Plan. The Project is not located within a designated state scenic highway as identified by the California Scenic Highway Mapping System (Caltrans 2011b), the *City of Lake Elsinore General Plan* (City of Lake Elsinore 2011a), or the *County of Riverside General Plan* (County of Riverside 2015). However, I-15 is identified as an eligible scenic highway by the County of Riverside General Plan; neither the County's nor the City's General Plan identify any scenic visual features within the Project limits.

Distant views of the Elsinore Mountain foothills can be seen from most of the Project limits, as described in Section 2.11, Visual and Aesthetics. Temporary visual impacts as a result of the Project will include construction activities, equipment staging, truck hauling, excavation activity, and detour

signage. However, these impacts are considered temporary and are anticipated to cease upon completion of construction after 14 to 18 months. Views to and from the Project limits as a result of the Project will not alter the views compared to the existing setting.

Approximately 28 mature trees will be removed as a part of the Project under both Build Alternatives. However, the Project will minimize these impacts through the implementation of Measure VIS-1, which will require the Project to prepare and implement a landscape plan to further determine a tree replacement ratio determined by the District Landscape Architect. Additionally, the Project will implement Measures VIS-2 and VIS-3 that ensure that the Project is consistent with the City of Lake Elsinore General Plan and County of Riverside General Plan during final design (PS&E), respectively.

It is anticipated that the elements of the Project under the Build Alternatives will be consistent with the existing setting and will not degrade the surrounding area. With the implementation of Measures VIS-1 through VIS-3, identified above, visual impacts as a result of the Project under the Build Alternatives will be considered less than significant, and no mitigation is required.

d) Less than Significant Impact

The area surrounding the Project limits is currently lit at night from passing vehicles, street lighting, traffic signals, freeway lighting, and the surrounding residential and commercial uses. The Project, under both Build Alternatives, as discussed in Section 1.0, Project Description, and 2.11, Visual and Aesthetics, may include lighting improvements along the existing local streets. The Project, under both Build Alternatives, will require the implementation of Measure VIS-4, which requires the Project under the Build Alternatives, to prepare a lighting plan that will be reviewed and approved by the City of Lake Elsinore, Caltrans, and Riverside County. The lighting plan will reduce any potential impacts related to an increase in light and glare during Project operation. Therefore, with the implementation of Measure VIS-4, the Project will not create a new source of substantial light or glare, which will significantly affect day or nighttime views in the area. Thus, light and glare impacts are considered less than significant, and no mitigation is required.

3.2.2 Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts to agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest

land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

3.2.2.1 CEQA Significance Determinations for Agriculture and Forest Resources

a) <u>No Impact</u>

Data from the California Department of Conservation's FMMP (California Department of Conservation 2018) was reviewed for farmland designations within the Project limits. As shown in Figure 2.4-2, in Section 2.4, Farmlands, the farmland designations within the Project limits are

identified as Urban and Built-Up Land (50.73 acres), Farmland of Local Importance (6.58 acres), and Other Land (4.28 acres). Therefore, the Project under both Build Alternatives will not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use. Thus, no impacts to designated farmland are anticipated.

b) Less than Significant

There are no Williamson Act contract lands within in the Project limits (California Department of Conservation 2018). Although there is zoning (residential estate [City] and Residential Agriculture [County]) adjacent to the Project limits that allows for agricultural and horticultural uses for commercial purposes, the use is subject to a conditional use permit within the City limits or limited in the scale within the County limits, and none are being actively used for agricultural uses. Further, none of these properties will be impacted by the Project under the Build Alternatives. As seen below in Figure 3-1, within the Project limits there is one property zoned as residential agriculture along Dexter Avenue, where the R&N Landscape Supply materials yard is currently located.

The R&N Landscape Supply materials yard currently provides outside storage of mechanical and electrical construction materials as an allowable use. Although this property will be fully acquired by both Build Alternatives, it is not currently being used for agricultural uses and the current zoning will not allow for large scale commercial agricultural uses. Additionally, with the implementation of Measure LU-1, which will require that an amendment to the City's General Plan be implemented during the final design (PS&E) phase and prior to construction, the Project under both Build Alternatives will not result in significant impacts or conflicts with an agricultural zoning designation. Therefore, impacts to land zoned for agricultural use, will be considered less than significant, and no mitigation is required.

c) No Impact

As seen in Figure 3-1, the zoning designations with the Project limits does not include designated forest land or timberland uses. Therefore, the Project under the Build Alternatives do not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. Thus, no impacts to land zoned for forest land or timberland uses are anticipated.

d) No Impact

As stated in 3.2.2.1 c), the Project limits does not contain land zoned for agricultural uses. Therefore, the Project under both Build Alternatives will not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production and no impacts are anticipated.

e) Less than Significant

As discussed in detail under Section 2.4, Farmlands, there is land designated as Farmland of Local Importance according to the California Department of Conservation's FMMP (California Department of Conservation 2018). The Project under both Build Alternatives will convert 1.02 acres of Farmland of Local Importance to a non-agricultural use as a result of the roadway and I-15 ramp improvements. However, the impacted land and surrounding area is urbanized or not actively used for farmland; and the land impacted is adjacent to roadways and I-15.

The Project is also located in the City's Business District; therefore, it is also not anticipated that this land will be used for active agricultural activity in the future. This conversion of 1.02 acres is not anticipated to be significant change to the existing conditions. Further, a Farmland Conversion Impact Rating Form AD-1006 (U.S. Department of Agriculture n.d.) was completed on July 13, 2021 and submitted to NRCS to assess the extent to which the affected Farmland of Local Importance is conducive to further agricultural use, and the level of direct impact sustained by the Project under both Build Alternatives. The completed Farmland Conversion Impact Rating Form AD-1006 was approved by NRCS on July 19, 2021 and is included in Appendix B of the CIA and in Appendix C of this DED. Therefore, impacts to farmland converted to non-agricultural use, will be considered less than significant, and no mitigation is required.

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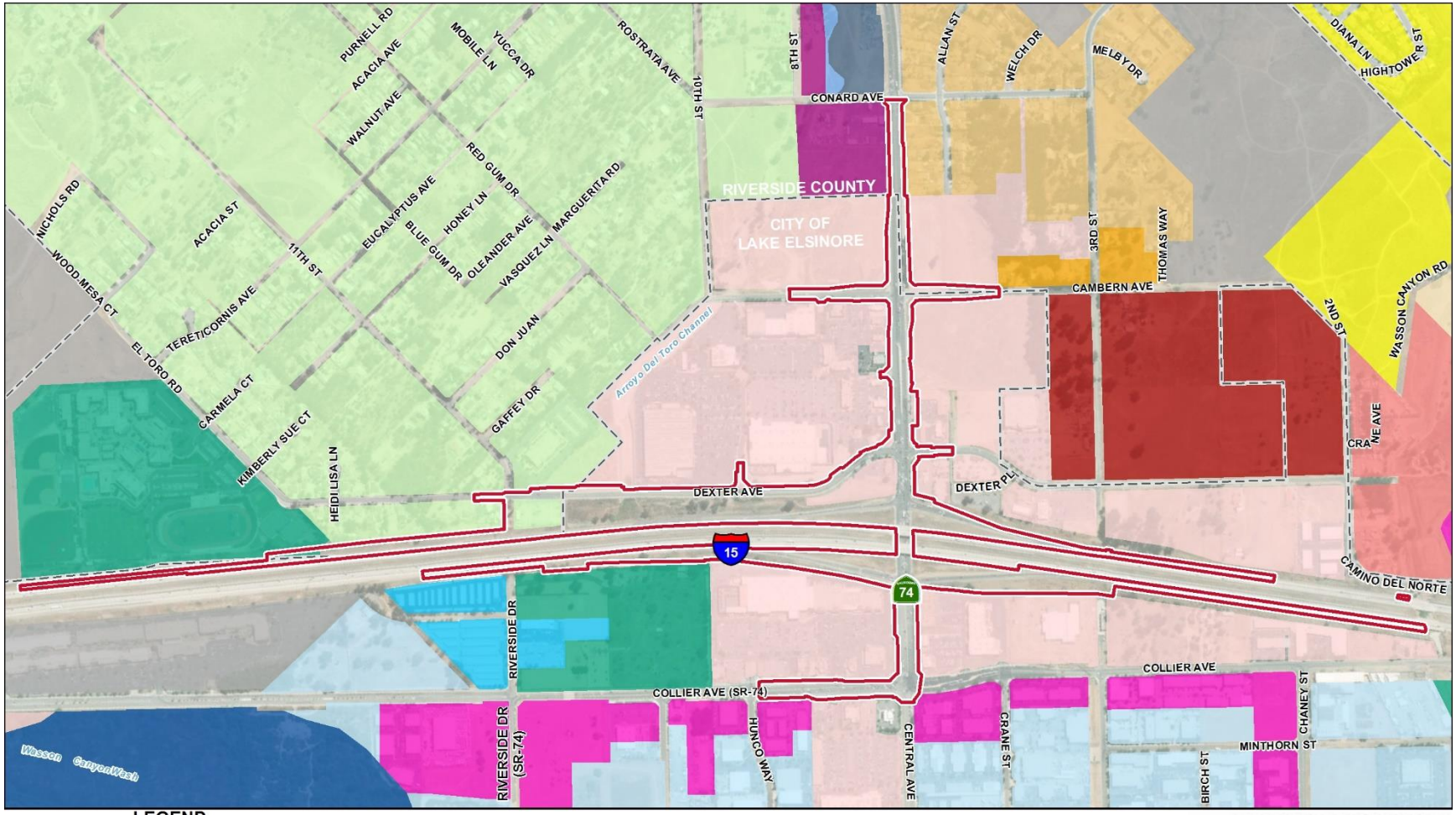

Figure 3-1. Zoning Designations

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3.2.3 Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

3.2.3.1 CEQA Significance Determinations for Air Quality

The Project is located within Riverside County in the City of Lake Elsinore. The Project is located in an area within SCAB, which includes Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. Air quality regulation in the SCAB is administered by SCAQMD, a regional agency created for the SCAB.

a) Less than Significant

A project would conflict with or obstruct implementation of a regional air quality plan if it would be inconsistent with the growth assumptions of the plan, in terms of population, employment, or regional growth in VMT. The Project is listed in the approved 2020-2045 RTP/SCS, which was found to conform by SCAG Regional Council on April 7, 2016, and FHWA and FTA made a regional conformity determination finding on June 1, 2016. The 2020 RTP was found to be conforming by FHWA on June 5, 2020. The Project is also included in Amendment 1 of the Final 2023 Adopted FTIP (Project ID: RIV060109). The 2023 FTIP was determined to conform by FHWA and FTA on

December 16, 2022. The Project design concept and scope is consistent with the Project description in the 2020 RTP, 2023 FTIP, and the "open to traffic" assumptions of the SCAG regional emissions analysis.

The 2016 AQMP adopted by SCAQMD provides policies and measures to guide local agencies in achieving federal and state air quality standards. To be consistent with the 2016 AQMP, the pollutants emitted from a project should not exceed the SCAQMD daily threshold or cause a significant impact on air quality. However, if feasible mitigation measures are implemented and shown to reduce the impact level from significant to less than significant, a project is deemed consistent with the AQMP. As discussed below, in Response 3.2.3.1(b), the Project's construction and operational emissions will not exceed the SCAQMD's significance thresholds. Thus, the Project will not result in a conflict with or obstruct implementation of the 2016 AQMP. Therefore, impacts are considered less than significant, and no mitigation is required.

b) Less than Significant

Temporary construction activities are anticipated to begin in 2024 and will take 14 to 18 months to complete. Daily pollutant emissions will vary based on the level of activity, specific operations, and prevailing weather operations. Short-term air quality degradation may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment also are anticipated and will include CO, NO_X, reactive organic gases (ROG) directly emitted particulate matter, which are broken down for regulatory purposes into PM_{10} and $PM_{2.5}$ and toxic air contaminants, such as DPM.

The Project's construction emissions were estimated using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, Version 9.0.1. While the model was developed for Sacramento conditions in terms of fleet emission factors, silt loading, and other modeling assumptions, it is considered adequate for estimating road construction emissions by SCAQMD in its CEQA guidance and is used for that purpose in this analysis. The Project's peak daily construction-related emissions are provided in Table 2.18-4, in Section 2.18, Air Quality.

As the construction of the Project under both Build Alternatives is expected to last less than 5 years, construction-related emissions were not considered in the conformity analysis. As shown in Table 2.18-4, in Section 2.18, Air Quality, Project construction emissions under either Build Alternative will not exceed the SCAQMD regional emissions daily significance thresholds. Furthermore, implementation of Measures AQ-1 through AQ-13, in Section 2.18, Air Quality, will reduce air quality impacts resulting from construction activities.

For roadway improvement projects, regional emissions are a function of regional VMT and travel speeds. As such, the operational emissions analysis takes into account long-term changes in VMT and travel speeds expected to occur under both Build Alternatives when compared to the No-Build (excluding the construction phase). Roadway capacity increases generally result in roadway network travel speed improvements and some trip redistributions.

As shown in Table 2.18-11, in Section 2.18, Air Quality, with the exception of PM_{10} and $PM_{2.5}$, all of the Horizon Year (2045) No-Build and Build condition emissions are lower than the existing baseline condition. The reductions from the Existing Baseline Conditions are due to the gradual replacement of older vehicles with those that meet stricter emission standards and efficiencies. When compared to the No-Build conditions, the Build Conditions will result in a minimal increase in emissions.

The Project is located within an attainment/maintenance area for CO and PM_{10} and a nonattainment area for federal $PM_{2.5}$ standards, local hot-spot screening analyses for CO, $PM_{2.5}$, and PM_{10} are required for conformity purposes. However, as discussed in Section 2.18, Air Quality, the Project, under both Build Alternatives, will not create a new, or worsen an existing, PM_{10} or $PM_{2.5}$ violation. Based on the discussion above, impacts are considered less than significant, and no mitigation is required.

c) Less than Significant

Sensitive land uses located immediately adjacent to the Project limits include residential areas, schools, hospitals, other health care facilities, child/day care facilities, parks, and playgrounds. Sensitive land uses within the area of the Project limits include residences and restaurants. Construction emissions that will be generated by the Project will not exceed the SCAQMD regional emissions daily significance thresholds. Furthermore, implementation of Measures AQ-1 through AQ-8, in Section 2.18, Air Quality, will minimize construction air quality impacts to nearby sensitive receptors. Project construction will not expose sensitive receptors to substantial pollutant concentrations.

As discussed in Section 2.18, Air Quality, the Project under both Build Alternatives is considered to have low potential MSAT effects, and a quantitative analysis of MSAT emissions is not required. The reductions from the Existing Baseline Conditions are due to the gradual replacement of older vehicles with those that meet stricter emission standards and efficiencies. The Project will not significantly increase the regional criteria pollutant emissions or affect the CO or particulate matter concentrations. Based on the discussion, above, impacts are considered less than significant, and no mitigation is required.

d) Less than Significant

The CARB Air Quality and Land Use Handbook identifies a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. During Project construction under either Build Alternative, odors could be generated from construction equipment exhaust and asphalt application. Compliance with SCAQMD Rule 402, which prohibits the discharge of air contaminants causing nuisance or annoyance, will ensure that odor emissions and their associated impacts will be minimized. Construction activities will be temporary, and any odors associated with construction equipment will be short term, intermittent in nature, and cease upon completion of the construction.

Project operation will not involve any odor-generating uses. Therefore, the Project will not result in other emissions, such as those leading to odors that will affect a substantial number of people. Based on the discussion above, impacts are considered less than significant, and no mitigation is required.

3.2.4 Biological Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☒	☐	☐

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐

3.2.4.1 CEQA Significance Determinations for Biological Resources

a) Less Than Significant

Special-Status Plant Species

Special-status plants include those listed by USFWS as threatened, endangered, or candidates for listing by USFWS and CDFW, as well as those considered sensitive by CNPS CRPR Lists 1B, 2, and 3. The literature review indicated known occurrences of 45 special status plant species within the nine USGS 7.5 minute quadrangles surrounding the BSA. Nine of these special status plant species are federally and/or state listed endangered, threatened, or candidate species.

As identified in Table 2.23-1, in Section 2.23, Plant Species, 34 non-listed special-status plant species have been recorded within the vicinity of the BSA. However, the BSA does not contain suitable habitat to support these or any of the special-status plant species identified for the region. No special-status plants were observed within the BSA during field surveys conducted in support of the NES(MI) and were determined to be absent from the BSA. Therefore, the Project under both

Build Alternatives, through habitat modifications, will not directly or indirectly result in impacts to any special-status plant species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Special-Status Wildlife Species

The results of the literature review identified 33 special-status animal species that are known to occur in the region and are listed in Table 2.24-1, in Section 2.24, Animal Species. The BSA supports suitable habitat for a variety of special-status animal species. Eleven federally and/or state-listed animal species are known to occur in the vicinity of the BSA and are identified in Section 2.24. No federally or state-listed endangered or threatened wildlife species were observed within the BSA during surveys, as discussed in the NES(MI). With the implementation of Measures NC-1 through NC-5, in Section 2.21, Natural Communities, and Measures AS-1 through AS-6, in Section 2.24, Animal Species, impacts to special-status wildlife species as a result of the Project, under either Build Alternative will be considered less than significant, and no mitigation is required.

b) Less Than Significant with Mitigation Incorporated

The BSA is located within an urban area associated with the I-15/SR-74 interchange. The majority of the BSA is developed and consists of the I-15 and SR-74 interchange infrastructure and adjacent commercial and residential development. Land uses immediately surrounding the Project limits consist of commercial and residential, with pockets of undeveloped, disturbed areas located adjacent to I-15.

As discussed in Section 2.21, Natural Communities, the BSA supports eight different natural communities or land cover types, with the predominant land cover identified as urban/developed. Undeveloped lands support a mix of native and nonnative plant species, and native vegetation in all areas of the BSA has been subject to disturbance and/or clearing at some point in the past. California buckwheat (*Eriogonum fasciulatum*) scrub and mulefat thickets (*Baccharis salicifolia*) are the only special-interest natural communities that occur in the BSA.

The Project under either Build Alternative will not result in any temporary impacts to California buckwheat scrub. However, Alternative 2 will result in 0.47 acre and Alternative 3 (Preferred Alternative) will result in 0.51 acre of temporary impacts to mulefat thickets due to equipment access and work areas needed to construct new off-ramps from I-15 onto Dexter Avenue. Potential impacts related to the spread of invasive species, threat of fire hazards, and spills from fueling or maintenance of equipment during construction could pose a substantial adverse effect on the preservation of existing vegetation. Temporary Project impacts to sensitive natural communities will

be avoided or reduced to the fullest extent possible in areas where California buckwheat scrub and mulefat thickets are present within the BSA with the implementation of Measures NC-1 through NC-5, in Section 2.21, Natural Communities, and mitigated under Measure WET-1, Section 2.22, Wetlands and Other Waters. Therefore, impacts will be considered less than significant with mitigation incorporated.

c) No Impact

As discussed in Section 2.22, Wetlands and Other Waters, the BSA contains five nonwetland, jurisdictional features that are potentially subject to regulation by USACE per Section 404 of the CWA, RWQCB per Section 401 of the CWA, and CDFW per Section 1602 of the California Fish and Game Code. These jurisdictional features include the Wasson Canyon Wash, Tributary A, Tributary B, and Tributary C.

Waters of the state, as defined by the SWRCB 2019 Wetland and Riparian Area Protection Policy, include jurisdictional waters of the U.S. as well as some isolated features not regulated by USACE. However, there are no isolated features within the BSA, and all features within the BSA subject to USACE jurisdiction pursuant to Section 404 of the CWA are also subject to RWQCB jurisdiction pursuant to Section 401 of the CWA. Wetland data sheets were completed at four locations in the BSA. There were no locations that met all three wetland indicators within the BSA; therefore, the BSA does not support any potential wetland waters of the U.S. As a result, no impacts are anticipated.

d) No Impact

As discussed in Section 2.21, Natural Communities, wildlife corridors along developed freeways generally occur as undercrossings associated with bridges or channels and culverts. Since much of the BSA is already developed, it provides very little habitat for wildlife movement. Most of the culverts within the BSA that cross under I-15 are too long and/or are too small of a diameter to support wildlife movement, and most of the areas under bridges within the BSA support busy roadways that are unsuitable for wildlife movement. Wasson Canyon Wash, at the south end of the BSA, provides a constrained wildlife crossing under I-15. While it has potential to connect wildlife habitat east of I-15 to Lake Elsinore, much of the potential corridor west of the BSA is within a confined concrete channel that is surrounded by development.

Portions of the BSA north of Riverside Drive, in the northern portion of the BSA, are located within Western Riverside County MSHCP-designated criteria cells identified for inclusion with Proposed Linkage 2, which is intended to be composed of wetland habitat associated with Collier Marsh in the City. However, the BSA is isolated from any habitat that meets conservation criteria associated with

Proposed Linkage 2 and the Project will not impact the Wasson Wash. The rest of the BSA is isolated from large open space areas and does not provide any direct linkage between open space areas east of I-15 and Lake Elsinore, approximately 1.25 mile southwest of the BSA. Therefore, no impacts are anticipated.

e) Less than Significant Impact

As discussed in Section 2.11, Visual and Aesthetics, approximately 28 mature trees will be removed during construction of the Project under both Build Alternatives. Tree and vegetation removal on public lands will comply with City, County, and Caltrans landscaping policies, as identified in Measures VIS-1 through VIS-3, in Section 2.11, Visual and Aesthetics. Additionally, as identified in Table 2.2-1, in Section 2.2, Consistency with State, Regional, and Local Plans and Programs, the Project will be consistent with Goal 2 and Policy 2.1 from Chapter 4 – Resource Protection and Preservation of the City's General Plan. Therefore, the Project will not conflict with any local policies or ordinances protecting biological resources. Impacts are considered less than significant, and no mitigation is required.

f) Less than Significant Impact with Mitigation Incorporated

The BSA is located within the Western Riverside County MSHCP BUOW survey area, NEPSSA and CASSA. Additionally, the BSA supports Western Riverside County MSHCP Riparian/Riverine areas as well as small depressions that were analyzed for their potential to support fairy shrimp.

The NES(MI) further details the Project's compliance with the requirements of the Western Riverside County MSHCP. The Project is a covered activity under Section 7.3.4 Covered Activities for Existing Roads within Existing Public/Quasi-Public Lands. It is within Criteria Cells 4166, 4169, and 4266. As a result, the Project must comply with Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, Section 6.1.3, Protection of Narrow Endemic Plant Species, Section 6.1.4, Guidelines Pertaining to the Urban/Wildlands Interface, Section 6.3.2, Additional Survey Needs and Procedures, Section 7.5.1, Guidelines for the Siting and Design of Planned Roads, Section 7.5.2, Guidelines for Construction of Wildlife Crossings Within Criteria Area and Public/Quasi-Public Lands, and Section 7.5.3, Construction Guidelines (Standard Best Management Practices in Appendix C) of the Western Riverside County MSHCP.

In addition, with the implementation of Measures NC-2 through NC-5, in Section 2.21, Natural Communities, Measure AS-1, in Section 2.24, Animal Species will further assist in minimizing impacts to Western Riverside County MSHCP covered species. The DBESP was submitted to CDFW and USFWS for approval through the Western Riverside County MSHCP's State Consistency Review Process on November 22, 2021. Concurrence of the DBESP was received on

June 14, 2024 (see Appendix L.2). Therefore, the Project under both Build Alternatives will maintain equivalent or superior preservation of Western Riverside County MSHCP covered resources within the BSA, and impacts are considered less than significant with the implementation of mitigation measures identified in the DBESP.

3.2.5 Cultural Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

3.2.5.1 CEQA Significance Determinations for Cultural Resources

a), b), and c) <u>Less than Significant Impact</u>

As discussed in Section 2.12, Cultural Resources, there is one recorded archaeological resource and one recorded historical-period property that are located within the APE, the historical refuse scatter and the Old Santa Fe Railroad Grade, respectively. However, remnants or any surface indications of these two resources were not encountered in their recorded locations during the pedestrian field survey that was conducted by a qualified archaeologist on May 28, 2020.

The Project has a moderate sensitivity to encounter buried archaeological deposits. The maximum depth of disturbance will be 35 feet bgs for the construction of freeway signage. Other Project ground disturbance activities will be approximately 6 to 10 feet bgs for the Arroyo Del Toro channel basin extensions, 5 feet bgs for the excavation of retaining walls, and 16 feet in depth for the reconstruction of existing noise barrier pile foundations. All excavations except the existing noise barrier pile foundations will have a moderate potential to extend into native sediments.

Although the Project is not anticipated to impact archaeological resources or historic properties, construction activities, such as excavating, have the potential to inadvertently uncover unknown

archaeological resources. While the potential to discover an unknown archaeological resource is moderate, the Project will implement Caltrans' standard practice for the discovery of cultural resources, as identified in Measure CR-1, and human remains, as identified in Measure CR-2, in Section 2.12, Cultural Resources.

The implementation of Measure CR-1, in Section 2.12, Cultural Resources, will reduce the likelihood of significant impacts to cultural resources discovered during construction under either Build Alternative. Therefore, impacts for this issue area are considered less than significant, and no mitigation is required.

3.2.6 Energy

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

3.2.6.1 CEQA Significance Determinations for Energy

a) Less than Significant

The Project is a transportation improvement project that will improve operations at the I-15/SR-74 interchange. As discussed in Section 2.2, Energy, the Project's potential demand for energy that will exceed the current supply or cause a substantial increase in the rate of energy use was evaluated by direct and indirect energy. Direct energy refers to transportation-related energy consumed in the actual propulsion (e.g., automobiles, trains, airplanes), such as fuel consumed by vehicles traveling within the Project limits. The one-time energy expenditure involved in constructing a project is also considered direct energy. Indirect energy is defined as all of the remaining energy consumed to run a transportation system, including construction energy, maintenance energy, and any substantial impacts to energy consumption related to project-induced land use changes and mode shifts, as well as any substantial changes in energy associated with vehicle operation, manufacturing, or maintenance due to increased automobile use.

Construction

Direct Energy

The Build Alternatives will involve temporary fuel usage associated with construction vehicles and equipment. The Project's construction emissions under the Build Alternatives were estimated using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, Version 9.0.0. Most default equipment assumptions for the road construction emissions model were used in developing the emissions estimates. The emissions assume that the schedule for all improvements is anticipated to begin in 2024 and will take 14 to 18 months.

As identified in Table 2.20-2, in Section 2.20, Energy, which identifies the peak daily and total diesel fuel consumption by Project phase, the grading and excavation phase will result in maximum daily fuel consumption and be the most energy intensive. Energy use associated with Project construction under the Build Alternatives is estimated to result in the short-term consumption of 78,327 gallons of diesel fuel from construction equipment. This represents a small demand on local and regional fuel supplies that will be easily accommodated, and this demand will cease once construction is complete. Moreover, construction-related energy consumption will be temporary, and demand for fuel will have no noticeable effect on peak or baseline demands for energy.

Additionally, during construction activities, Measure AQ-12, in Section 2.18, Air Quality, and Measure E-2, in Section 2.20, Energy, will be implemented to reduce construction-related vehicle and equipment energy consumption and reduce congestion caused by idling vehicles.

Therefore, the Project under Build Alternatives will not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction, and temporary direct energy impacts during construction are considered less than significant, and no mitigation is required.

Indirect Energy

Indirect energy consumption during construction will result from traffic delays due to construction of the Project under the Build Alternatives. The implementation of a TMP, identified as Measure TR-1, in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, will reduce construction-related traffic impacts by managing traffic congestion and providing signage to affected residents and businesses in the event temporary closures or detours are warranted during construction activities. Further, Measure AQ-12, in Section 2.18, Air Quality, and Measure E-2, in Section 2.20, Energy, will also be implemented to address indirect energy during construction to reduce construction-related vehicle and equipment energy consumption and reduce congestion caused by idling vehicles.

Operational

Direct Energy

The implementation of either Build Alternative will not generate new vehicular traffic trips, as either alternative will not trigger the need to construct new homes or businesses. Further, the Build Alternatives will provide better LOS when compared with Alternative 1 (No-Build).

As a result of improved traffic operations, energy savings are expected with the Build Alternatives compared with Alternative 1 (No-Build). Although there is a modeled slight increase in VMT and fuel consumption when comparing Alternative 2 to Alternative 1 (No-Build), during operation of the Project under the Build Alternatives over the long term, newer and more fuel-efficient vehicles will enter the fleet, resulting in an overall lower potential for an increase in energy consumption due to vehicle traffic.

Although there is a modeled slight decrease in VMT and fuel consumption with Alternative 3 (Preferred Alternative) when compared to Alternatives 1 (No-Build) and Alternative 2, overall the Project under the Build Alternatives will improve highway operations and reduce traffic delay within the Project limits. Therefore, vehicle delay and congestion within the Project limits will decrease compared with Alternative 1 (No-Build).

Additionally, SCE provides electricity service within the Project limits. Operational direct energy use will include electricity usage associated with highway and street lighting as part of Project improvements. LED lights consume 10 percent of the electricity of traditional lights. With the implementation of Measure E-1, in Section 2.20, Energy, which will include the incorporation of LED lights as part of the Project, electricity consumption associated with the Project's operational energy impacts will be minimized. Therefore, operational direct energy impacts are considered less than significant, and no mitigation is required.

Indirect Energy

Indirect energy use involving maintenance activities on roadways will result in long-term indirect energy consumption by equipment required to operate and maintain the roadway. However, this long-term indirect energy use will be minimal compared with the direct energy use by vehicles on roadways within the Project limits. Therefore, operational indirect energy impacts are considered less than significant, and no mitigation is required.

Based on the discussion above, with the implementation of Measures AQ-12, in Section 2.18, Air Quality, and Measures E-1 and E-2, in Section 2.20, Energy, direct or indirect energy will be considered less than significant, and no mitigation is required.

b) No Impact

State

The Project under either Build Alternative is consistent with state policies regarding transportation energy, including the Low Carbon Fuel Standard (LCFS) and the California Transportation Plan (CTP), as the Project will enhance efficiency within and around the interchange and the Project will not impact electricity generation and will consume minimal electricity during operation. Thus, the Project will not conflict with or obstruct the state's renewable energy policy.

Regional

The Project, under either Build Alternative, is consistent with Amendment 1 of the Final 2023 Adopted FTIP and the SCAG 2020-2045 RTP/SCS for Riverside County as Project ID: RIV060109. Therefore, the Project will not conflict with applicable regional plans regarding energy.

Local

The Project is located in an urban area of Riverside County with a fully built-out road and street network surrounded by mainly commercial uses, with some residential uses and light industrial buildings. The Riverside County Climate Action Plan (CAP) addresses GHGs in the Project area, as does the City of Lake Elsinore CAP. As discussed in further detail in Section 3.4.3.7, the goal of the City's CAP is to reduce future GHG emissions, in order to prepare the City for the impacts of climate change, and to ensure that the City continues on a trajectory that aligns with the short-term, interim, and long-term State GHG reduction goals.

The Project under the Build Alternatives will optimize the efficiency of the existing transportation network within the Project area by improving the congested I-15/SR-74 interchange and local intersections within the Project limits; thereby conserving energy as it relates to fuel consumption and reduced vehicle delay.

Further, the Project under both Build Alternatives will construct new sidewalks along the east side of Dexter Avenue between the Arroyo Del Toro Channel and the Church of Jesus Christ of LDS and on the south side of SR-74 (Central Avenue) between the SB on-ramp and Dexter Avenue, where currently no sidewalk exists; as well as consider the provision of signage and pavement markings for bicyclists along SR-74 (Central Avenue). Therefore, the Project is in compliance with the applicable measures of the City's CAP listed in Section 3.4.3.7. These project features under the Build Alternatives will also contribute to meeting the long-term goal of Assembly Bill 32 and Senate Bill 32. Therefore, the Project is consistent with the City's CAP.

Based on the findings above, the Project will not conflict with or obstruct state, regional, or local plans for renewable energy or energy efficiency. Therefore, no impacts are anticipated, and no mitigation is required.

3.2.7 Geology and Soils

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

3.2.7.1 CEQA Significance Determinations for Geology and Soils

a) (i) (ii) (iii) (iv) Less than Significant Impact

As discussed in Section 2.15, Geology/Soils/Seismic/Topography, the Project is not located within an Alquist-Priolo Earthquake Fault Zone. The Project is also not in a Riverside County Fault Zone. The nearest fault to the Project limits is the Elsinore Fault located approximately 1.36 miles southwest of the Project limits, which may have a maximum magnitude 7.7 earthquake per information from the Caltrans Fault Database.

The Project is located within a seismically active region subject to future seismic ground shaking from earthquakes occurring along regional and local faults. Although strong ground shaking is expected along the Project limits from nearby earthquake sources, the DPGR (Caltrans 2020h) determined the possibility that ground surface fault ruptures is negligible.

The potential for liquefaction to occur within the Project limits is considered to be high since it is located within a “Very High” liquefaction susceptibility zone per the Generalized Liquefaction Map in the Riverside County General Plan Safety Element Chapter (County of Riverside 2015), and due to the high groundwater associated with Temescal Creek which is located just west of the Project limits. The Project is also susceptible to lateral spreading since it is located within a liquefaction zone and due to the proximity of Lake Elsinore.

Landslides are not considered to be a potential hazard to the Project since the topography is relatively flat and since the Project limits is not located within any zones of earthquake-induced landslides and rockfalls per the Earthquake-Induced Slope Instability Map in the Riverside County General Plan Safety Element Chapter (County of Riverside 2015).

Requirements for a geotechnical investigation during final design (PS&E), as specified in Measure GEO-1, in Section 2.15, Geology/Soils/Seismic/Topography, and implementation of recommendations from the report and adherence to Caltrans' Seismic Design Criteria and the Uniform Building Code are sufficient to avoid and/or minimize impacts related to surface fault rupture and strong seismic ground shaking, including the settlement of dry soils if an earthquake event were to occur during construction; liquefaction and lateral spreading; and landslides. With the implementation of Measure GEO-1, in Section 2.15, Geology/Soils/Seismic/Topography, impacts are considered less than significant, and no mitigation is required.

b) Less than Significant Impact

Construction activities may temporarily disturb soil within the Project limits, primarily in work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts will include soil compaction and increased potential of soil erosion. The construction contractor will be required to adhere to the requirements of the NPDES General Construction Permit, which will include implementing erosion and sediment control BMPs specifically identified in the Project SWPPP to prevent sediment from moving into receiving waters and impacting water quality. Refer to Measures WQ-1 through WQ-5 in Section 2.14, Water Quality and Storm Water Runoff, for additional information regarding construction-related water quality issues, as well as additional standard BMP measures to minimize these impacts. With the implementation of Measures WQ-1 through WQ-5 in Section 2.14, Water Quality and Storm Water Runoff, impacts are considered less than significant, and no mitigation is required.

c) Less than Significant Impact

As stated previously in Response 3.7.2.1a, the potential for liquefaction to occur within the Project limits is considered high. The Project is also susceptible to lateral spreading. Landslides are not considered to be a potential hazard to the Project. The potential for liquefaction, lateral spreading, and landslides will be further investigated during final design (PS&E) under Measure GEO-1, in Section 2.15, Geology/Soils/Seismic/Topography, and findings and recommendations will be implemented as part of the Project to minimize any impacts as a result of liquefaction, lateral spreading, and landslides. Therefore, impacts are considered less than significant, and no mitigation is required.

d) Less than Significant Impact

Expansive soils generally result from specific clay minerals that have the capacity to undergo substantial volume change (shrink or swell) based on changes in moisture content. As such, sandy soils are not generally classified as expansive soils. The change in volume of expansive soil may cause excessive cracking and heaving of structures with shallow foundations, concrete slabs, or pavements supported on these materials. The Project limits consist of soils that are primarily gravelly loam and gravelly loam very fine sandy loam soils and are generally expected to have an expansivity potential varying from non-expansive to low. Measure GEO-1, in Section 2.15, Geology/Soils/Seismic/Topography, will be implemented during final design (PS&E) to further evaluate the potential for expansive soils and the Project will be designed and constructed based on the recommendations from the geotechnical report. Therefore, with the implementation of Measure GEO-1, in Section 2.15, Geology/Soils/Seismic/Topography, impacts are considered less than significant, and no mitigation is required.

e) No Impact

No septic or alternative waste treatment systems will be required as part of the Project because it is a transportation facility and will not generate sewer demand. Therefore, no impacts are anticipated, and no mitigation is required.

f) Less than Significant with Mitigation Incorporated

The Project limits consists of young alluvial-fan deposits and young alluvial-channel deposits of the Holocene and late Pleistocene, and a small portion of the Project limits consists of Silverado Formation from the Paleocene age. There is a high potential for paleontological resources within the entire Project limits because of the presence of the fossiliferous Silverado Formation and late Pleistocene deposits.

As discussed in Section 2.16, Paleontology, during Project construction, most ground disturbance activities will be limited to within presently developed roadways and their disturbed underlying surfaces, as well as surfaces already partially disturbed within Caltrans, City, and County ROW. However, excavations associated with the Arroyo Del Toro Channel detention basin, noise barriers, and freeway signage will likely extend into the Silverado Formation and late Pleistocene deposits where there is a greater potential for Project impacts to paleontological resources. The installation of the drainage culvert extensions at the Arroyo Del Toro Channel, located between Dexter Avenue and NB I-15 where the channel outflows, will require an excavation depth that varies from approximately 6 feet at the existing basin to 10 feet at the southernmost end of the extension. Replacement of an existing noise barrier located along the NB hook on-ramp will require an

excavation depth of 16 feet bgs. The installation of freeway signage in the area near the existing NB off-ramp (Exit A) and the NB hook off-ramp (Exit B) will require an excavation depth of 35 feet bgs.

Paleontological monitoring and mitigation will be required for the Project. A Paleontological Mitigation Plan will be prepared during final design (PS&E) to mitigate any potential impacts to paleontological resources, as identified in Measure PAL-1, in Section 2.16, Paleontology. With the implementation of Measure PAL-1, impacts are considered less than significant with mitigation incorporated.

3.2.8 Greenhouse Gas Emissions

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

3.2.8.1 Discussion of Environmental Evaluation Question 3.2.8 – Greenhouse Gas Emissions

a) Less than Significant Impact

Section 3.4, Climate Change, describes, calculates, and estimates the amount of GHG emissions that may occur related to the Project. While the Project will result in GHG emissions during construction, implementation of project-level construction GHG reduction measures identified in Section 3.4, Climate Change (Measures GHG-1 through GHG-8 for Alternative 2 and Alternative 3 (Preferred Alternative), and GHG-17 through GHG-20 for Alternative 2, only) will reduce construction-related GHG emissions. Even though GHG emissions in the Opening Year (2025) and Horizon Year (2045) are lower than the Existing Year (2018) baseline conditions, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. Implementation of project-level operational GHG-reduction measures (Measures GHG-9 through GHG-16 for Alternative 2 and Alternative 3 (Preferred Alternative), and GHG-21 and GHG-22 for Alternative 2, only) and project features (PF-1 through PF-5) identified in Section 3.4, Climate Change will reduce GHG emissions, although the reductions cannot be quantified at this time. With implementation of the avoidance and

minimization construction and operation GHG reduction measures identified above, the impact will be less than significant.

b) Less than Significant Impact

The Project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. However, the Project will result in temporary impacts during construction. The Project will incorporate project features (PF-1 through PF-5) and implement GHG reduction measures (GHG-9 through GHG-16 for Alternative 2 and Alternative 3 (Preferred Alternative), and GHG-21 and GHG-22 for Alternative 2, only). With implementation of these project features and GHG-reduction measures, the impact will be less than significant.

3.2.9 Hazards and Hazardous Materials

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	☐	☐	☒	☐

3.2.9.1 CEQA Significance Determinations for Hazards and Hazardous Materials

a) Less than Significant Impact

During Project construction, under either Build Alternative, hazardous materials will be used (e.g., lubricants, such as grease and oils, petroleum fuels, cleaning solvents, and paints), and hazardous wastes will be generated, such as construction debris, TWW, PTS, and potentially ACM and LBP associated with the Burger King building structure. Routine maintenance activities during Project operation will be required to follow applicable regulations with respect to the use, storage, handling, transport, and disposal of potentially hazardous materials. Therefore, impacts are considered less than significant, and no mitigation is required.

b) Less than Significant Impact

As discussed in Section 2.17, Hazardous Waste and Materials, eight hazardous waste/materials sites are associated with the Project limits, of which three are gas stations that have been identified as a REC due to the proximity of existing USTs to the Project limits. The three REC sites are Chevron (18451 Dexter Avenue), ARCO (29355 Central Avenue); and Circle K/ExxonMobil (29300 Central Avenue). In addition, there are 41 hazardous waste/material sites that are located adjacent to the Project limits. The risk of the hazardous waste/material sites to the Project is considered to be low because no open cases involving LUST or spills are associated with these properties. In

addition, no deed restrictions, environmental liens or activity use limitations were identified from the EDR database search and the agency records review.

Other potential hazardous waste/material concerns for the Project, under either Build Alternative, include PCB content in utility and pad-mounted electrical transformers, TWW, and PTS. In addition, under Alternative 2, permanent full acquisition of the Burger King property (18611 Dexter Avenue) will be needed to build a direct connection for right turn movements between SB Dexter Avenue and WB SR-74. As such, there is a potential for ACM and LBP to be present in the Burger King building structure and in the soil surrounding the structure, and PCB in the light ballasts within the Burger King building. Soil along the mainline of I-15 within the Project limits and along SR-74 on- and off-ramps do not represent significant environmental or health hazards and, according to the soil reuse agreement between the DTSC and Caltrans, the soil can be classified as unregulated soil and can be reused on site without restriction.

Hazardous wastes and materials that may be encountered during construction activities for the Project will be properly handled, contained, transported, and disposed of in compliance with applicable regulations and requirements, which may include the RCRA, the CCAA, the CWA, the California DTSC Environmental Health Standards for the Management of Hazardous Waste, the provisions of the Riverside County Department of Environmental Health (RCDEH) – Hazardous Materials Management Branch, and U.S. DOT hazardous materials regulations. Measures HAZ-1 through HAZ-9, in Section 2.17, Hazardous Waste and Materials, describe efforts that will be made to avoid or minimize impacts with known or suspected hazardous materials and wastes during construction.

Therefore, with the implementation of Measures HAZ-1 through HAZ-9, in Section 2.17, Hazardous Waste and Materials, the Project under either Build Alternative, will not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Thus, impacts are considered less than significant, and no mitigation is required.

c) Less than Significant Impact

There are two existing schools within 0.25 mile of the Project limits, Temescal Canyon High School (28755 El Toro Road) located adjacent to the northeast end of Project limits and, Keith McCarthy Academy (1405 Education Way) located 0.25 mile southwest of the Project limits. As discussed above in Response 3.2.9.1a, routine hazardous materials such as paint, solvents, and fuel will be used, handled, stored, disposed of, and transported during construction of the Project, under either Build Alternative, in accordance with applicable local, State, and federal regulations. In addition, as discussed above in Response 3.2.9.1b, other hazardous wastes and materials that may be

encountered during construction activities for the Project, such as ACM, LBP, PCB, TWW, and PTS, will be properly handled, contained, transported, and disposed of in compliance with applicable regulations and requirements. Measures HAZ-1 through HAZ-9, in Section 2.17, Hazardous Waste and Materials, describe efforts that will be made to avoid or minimize impacts with known or suspected hazardous materials and wastes during construction. Therefore, implementation of Measures HAZ-1 through HAZ-9, in Section 2.17, Hazardous Waste and Materials, impacts are considered less than significant, and no mitigation is required.

d) No Impact

The Project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, also known as the Hazardous Waste and Substances Sites (Cortese) List. As a result, the Project, under either Build Alternative, will not create a significant hazard to the public or the environment. Therefore, no impacts are anticipated, and no mitigation is required.

e) No Impact

The closest public airport or public use airport is the Perris Valley Airport, located approximately 8-miles northeast of the Project limits. The Perris Valley Airport is a privately owned and operated airport open to public use. Construction or operation of the Project will not result in an airport safety hazard in the Project limits. Therefore, no impacts are anticipated, and no mitigation is required.

f) Less than Significant Impact

Temporary lane closures during construction of the Project will be required and traffic delays are expected. As a result, some temporary impairment to emergency response times may occur during construction activities. However, the Project, under either Build Alternative, includes the implementation of a TMP, identified as Measure TR-1, in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities. In addition, the Project will comply with the County's Emergency Operations Plan. After the completion of construction, there will be an overall benefit to operations within the interchange. Therefore, with the implementation of Measure TR-1, in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, impacts are considered less than significant and no mitigation is required.

g) Less than Significant Impact

As seen in Figure 2.9-1, in Section 2.9, Utilities and Emergency Services, the Project limits contains small areas of both LRA and SRA FHSZ and is also adjacent to other LRA and SRA FHSZ. However, the Project is located in a relatively developed and urbanized area within the City's Business District, which contains industrial and commercial uses that will not be exposed to

significant risk involving wildland fires as all Project construction activities will occur within Caltrans, City and County ROW. The Project will not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, impacts are considered less than significant, and no mitigation is required.

3.2.10 Hydrology and Water Quality

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

3.2.10.1 CEQA Significance Determinations for Hydrology and Water Quality

a) Less than Significant Impact

The Project discharges to Wasson Canyon Wash and Temescal Wash/Temescal Creek, which are both located in the Santa Ana River Watershed. Water from Wasson Canyon Wash and Temescal Wash/Temescal Creek ultimately discharge to Santa Ana River Reach 3 and Prado Dam near the cities of Norco and Corona. The Basin Plan (California Water Board 2019) identifies beneficial uses and water quality objectives for surface waterbodies within the Santa Ana Region. The beneficial uses for Wasson Canyon Wash, Temescal Creek, Santa Ana River Reach 3, and Prado Basin consist of GWR, REC1, REC2, WARM, WILD, AGR, RARE, IND, COMM, and/or SPWN, and are further discussed in Section 2.13, Hydrology and Floodplain. Wasson Canyon Wash and Temescal Wash/Temescal Creek are not listed on the CWA 2016 303(d)/305(b) Integrated List as impaired, nor have TMDLs been established. Temescal Wash/Temescal Creek confluences with Santa Ana River Reach 3, which is listed for Copper and Lead, and TMDLs have been established for Indicator Bacteria and Nitrate, as discussed in Section 2.14, Water Quality and Storm Water Runoff.

The Basin Plan (California Water Board 2019) identifies beneficial uses for groundwater resources in the Warm Spring Valley, Lee Lake, Temescal, and Bedford Groundwater Management Zones, which is where the Project is located. The Basin Plan has the following designated beneficial uses for groundwater in the Warm Spring Valley, Lee Lake, Temescal, and Bedford Groundwater Management Zones: MUN, AGR, IND, and PROC. Additional information on these beneficial uses for groundwater resources is discussed in Section 2.13, Hydrology and Floodplain

The total DSA for the Project under Alternative 2 is approximately 35.4 acres, and approximately 34.9 acres under Alternative 3 (Preferred Alternative). The Project, under either Build Alternative, has the potential to result in temporary impacts to water quality during construction activities, such

as demolition and roadway construction. Grading and other earth-moving activities can cause an increase in soil erosion, sediments, and other pollutants from entering Wasson Canyon Wash and Temescal Wash/Temescal Creek. However, the Project will be required to comply with the Caltrans NPDES Statewide Storm Water Permit and NPDES Construction General Permit, specified in Measure WQ-1, in Section 2.14, Water Quality and Storm Water Runoff, which will include preparation of a SWPPP and implementation of erosion and sediment control BMPs during construction, as specified in Measure WQ-2, in Section 2.14, Water Quality and Storm Water Runoff, which will minimize temporary impacts to water quality.

Dewatering is anticipated during construction of the Project. In the event that groundwater and any other non-stormwater dewatering activities are necessary, implementation of Measure WQ-3, in Section 2.14, Water Quality and Storm Water Runoff, will require all non-stormwater dewatering activities to comply with the Santa Ana RWQCB, which will include a dewatering permit, waste discharge requirements, and dewatering BMPs.

The Project also has the potential to result in permanent impacts to water quality due to an increase in impervious surface areas of approximately 8 acres under Alternative 2, and 9-acres under Alternative 3 (Preferred Alternative), which will increase surface runoff and additional pollutants from entering water resources. However, design pollution prevention BMPs and treatment control BMPs will be implemented to address the increase in impervious surfaces by stabilizing soils and capturing and treating the additional runoff before it enters water channels, as specified in Measures WQ-4 and WQ-5, in Section 2.14, Water Quality and Storm Water Runoff. Design pollution prevention BMPs under consideration to minimize water quality impacts include preservation of existing vegetation and surface protection systems (permanent soil stabilization). Treatment BMPs may include DPPIA, infiltration devices, biofiltration strips and swales, detention devices, media filters, MCTT, wet basin, open graded friction course, and pervious pavement.

With the implementation of Measures WQ-1 through WQ-5, in Section 2.14, Water Quality and Storm Water Runoff, the Project is not anticipated to violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Therefore, impacts are considered less than significant, and no mitigation is required.

b) Less than Significant Impact

No aquifer recharge basins are within the Project limits. However, as discussed in Section 2.15, Geology/Soils/Seismic/Topography, groundwater depth within the Project limits is considered to be approximately 20 feet bgs, approximately between elevations of 1,255 and 1,300 feet. This high groundwater is associated with Temescal Creek which is located just west of the Project limits. Dewatering is anticipated during construction of the Project. If dewatering activities are required, the

Project will be required to obtain a dewatering permit, comply with all waste discharge requirements set by the Santa Ana RWQCB, and implement dewatering BMPs, specified in Measure WQ-3, in Section 2.14, Water Quality and Storm Water Runoff. The Project is not anticipated to substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project will impede substantial groundwater management of the basin. Therefore, impacts are considered less than significant, and no mitigation is required.

c) (i), (ii), (iii), (iv) Less than Significant Impact

The Project is located within 100-year floodplains that are associated with the Arroyo Del Toro Channel and Temescal Wash/Temescal Creek; however, the Project will only require encroachment within a 100-year floodplain associated with the Arroyo Del Toro Channel. The Project, under either Build Alternative, will require the extension of culverts by 16 feet between Dexter Avenue and NB I-15 where the channel outflows. In addition, retaining walls and safety barriers will also be installed along the Arroyo Del Toro Channel culvert headwalls to accommodate the widening of Dexter Avenue and the new NB hook off-ramp. The hook ramp configuration will also require adding fill in the floodplain. The Project will minimize floodplain impacts by excavating within the existing detention basin between Dexter Avenue and NB I-15 where a net fill of zero will be achieved.

No hydraulic studies were performed for the Project. The 16-feet culvert lengthening of Arroyo Del Toro will result in low impact to the hydraulics. Within the Project limits, the on-site storm drains will see a small increase in flow rates due to the addition of paved area; however, it is unlikely that any changes to the freeway hydrology will adversely impact the peak flows in the regional channels. During final design (PS&E), the incremental changes to the local hydrology will be re-evaluated and coordinated with RCFC&WCD to obtain concurrence for the methodology used for the evaluation. A detailed survey of the Arroyo Del Toro Channel and culvert configuration will be performed during the final design (PS&E) phase in order to verify the actual freeboard amount. The freeboard determination will not alter the floodplain analysis but will be required to be documented with the RCFC&WCD for the encroachment permit process (Measure HYD-1, in Section 2.13 Hydrology and Floodplain). In addition, during final design (PS&E), a CLOMR will be filed with FEMA to document the revised floodplain boundaries, certify no-rise in water surface, and to preserve the beneficial use of the floodplain for flood attenuation, as specified in Measure HYD-2, in Section 2.13 Hydrology and Floodplain.

The improvements to the Arroyo Del Toro Channel are minor and will have a minimal impact on floodplains, and the improvements are considered to be low risk, as discussed in Section 2.13, Hydrology and Floodplain. Improvements to the Arroyo Del Toro Channel will not alter the course of the water channel.

The existing drainage facilities within the Project limits will be protected in place and/or upgraded, where applicable, to accommodate the Project. In addition, as discussed above in Response 3.2.10.1a, the Project will result in approximately 8-acres of new impervious surface areas under Alternative 2, and approximately 9-acres of new impervious surface areas under Alternative 3 (Preferred Alternative); however, design pollution prevention BMPs and treatment control BMPs will be implemented to address the increase in impervious surface areas by stabilizing soils and capturing and treating the additional runoff before it enters water channels, as specified in Measures WQ-4 and WQ-5, in Section 2.14, Water Quality and Storm Water Runoff. Therefore, the increase in impervious surface areas will not result in alternating the course of a stream or river. Impacts are considered less than significant, and no mitigation is required.

d) No Impact

The Project is located 25-miles northeast of the Pacific Ocean. Thus, the Project is not located in a tsunami hazard zone. Seiches are standing waves that occur in enclosed water bodies, such as a lake or bay. There are no confined large bodies of water within the vicinity of the Project limits and as a result, the Project is not located in a hazard area for seiches.

The Project is located within 100-year floodplains that are associated with the Arroyo Del Toro Channel and Temescal Wash/Temescal Creek. However, the Project is not anticipated to result in any flood hazards that are different from existing conditions. The Project does not include the permanent storage of any hazardous waste and materials within the Project limits and, therefore, risk of release of pollutants due to Project inundation from flood hazards is not applicable to the Project. Therefore, no impacts are anticipated for this issue area, and no mitigation is required.

e) Less than Significant Impact

As previously discussed, the Project will result in a soil disturbance area of approximately 35.4 acres under Alternative 2 and 34.9 acres under Alternative 3 (Preferred Alternative). Project construction requires compliance with the RWQCB Santa Ana Basin Plan (California Water Board 2019) and the Caltrans NPDES Statewide Storm Water Permit and NPDES Construction General Permit, which requires compliance with state and federal water quality regulations regarding construction and operational water quality discharge. Complying with such water quality control plans and regulations will minimize the potential for the Project to conflict with or obstruct the implementation of any applicable water quality control plans or groundwater management plans. Impacts are considered less than significant, and no mitigation is required.

3.2.11 Land Use and Planning

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☒	☐
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

3.2.11.1 CEQA Significance Determinations for Land Use and Planning

a) Less than Significant Impact

The majority of Project improvements under the Build Alternatives will occur in existing public ROW and is mainly focused within an important interchange within a major commercial hub within the City. Construction activities will result in temporary impacts as a result of staging areas, TCEs, and temporary roadway closures that may cause traffic delays for local residents, businesses, and commuters within and adjacent to the Project limits. Although temporary lane closures during construction will be required, vehicular (including school buses and emergency response vehicles), pedestrian, and bicyclist access along the road and to/from private properties will be maintained at all times. Construction activities will be temporary and will cease after construction was complete, and alternative routes for any existing sidewalks will be provided during construction to maintain connectivity. Temporary effects on traffic and circulation will be reduced through the implementation of a TMP per Measure TR-1, in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities. The TMP will identify strategies to reduce impacts to access during construction. Therefore, substantial disruptions to local circulation on a temporary basis are not anticipated.

As discussed in Section 2.7, Relocations and Real Property Acquisitions, the Project will require some sliver partial property acquisitions and relocation of two businesses under Alternative 2, and one business under Alternative 3 (Preferred Alternative); however, a relocation site will be identified during final design (PS&E) and prior to construction so that a new location will be available prior to the ROW acquisition of the businesses requiring relocation. No residential or community resources will be impacted by the Project; therefore, the Project, under either Build Alternative, will not create a barrier that divides the neighborhood or limit access within the community, impact special groups, reduce social interaction, or remove or relocate community serving facilities. All property acquisitions

and relocations under both Build Alternatives will be handled in accordance with the Uniform Act Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as specified in Measure C-1, in Section 2.7, Relocations and Real Property Acquisitions, impacts are considered less than significant, and no mitigation is required.

b) Less than Significant Impact

As discussed further in Section 2.2, Consistency with State, Regional, and Local Plans and Programs, the Project under either Build Alternative will not conflict with any applicable land use plan, policy, or regulation. Additionally, the Project under either Build Alternative, is a planned and programmed Project in Amendment 1 of the Final 2023 Adopted FTIP (SCAG 2022) and SCAG 2020-2045 RTP/SCS (SCAG 2020). The Project under both Build Alternatives will require partial property acquisitions and relocation of one to two businesses depending on the build alternative which will require an update to the City's General. Therefore, with the implementation of Measure LU-1, in Section 2.1, Existing and Future Land Uses, which will require an amendment to the City's General Plan during the final design (PS&E) phase and prior to construction of the Project, the Project under either Build Alternative impacts to existing or planned land use patterns and development are considered less than significant, and no mitigation is required.

3.2.12 Mineral Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

3.2.12.1 CEQA Significance Determinations for Mineral Resources

a), b) No Impact

The City's General Plan (City of Lake Elsinore 2011a) and County's Elsinore Area Plan (County of Riverside 2019) identify that there are regionally significant areas of aggregate construction aggregate and clay deposits, as well as non-regionally important crushed stone with a mineral

resource zone 2 (MRZ-2) designation within the City. The construction aggregate resource areas are located in McVicker Canyon, Rice Canyon and Temescal Wash. The resources in Rice Canyon and Temescal Wash are currently being extracted or are being held in reserve for future extraction, and McVicker Canyon has been eliminated from consideration because the deposits are within lands subdivided and developed.

However, based on the review of the California Department of Conservation, Division of Mines and Geology, Special Report 143 – Plate 7.23 map (California Department of Conservation 2011) and the City's Land Use Plan (City of Lake Elsinore 2011a), the Project is located in area designated as MRZ-3 and not within the City's Extractive Overlay designation. Areas designated as MRZ-3 have undetermined mineral resource significance, and the significance of areas containing mineral deposits cannot be evaluated from available data. Although MRZ-3 zones have undetermined mineral resource significance, these areas are not identified as a local-important mineral resource and the potential for viable extraction of mineral resources within this zone is limited due to the City's urbanized character.

Construction of the Project under either Build Alternative will not result in the extraction of known mineral resources, additionally the Project is located in the Business District which is relatively built out in nature, and the improvements will be limited to existing transportation infrastructure. As a result, the majority of the Project construction activity will be retained within existing City and Caltrans ROW. Therefore, the Project under either Build Alternative will not result in a loss of availability of a locally important mineral resources during construction or operation and no impacts are anticipated.

3.2.13 Noise

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.2.13.1 CEQA Significance Determinations for Noise

a) Less than Significant Impact

Sensitive receivers will be temporarily exposed to noise during construction of the Project. The closest sensitive receptor, modeled receptor M3.10, is comprised of residential uses located approximately 50 feet north of the Project limits. Thus, receptor locations could be subject to short-term noise between approximately 80 and 89 dBA Lmax generated by construction activities along the Project alignment.

However, construction noise will be short-term and intermittent, and the Project will comply with applicable noise-related local, state, and federal regulations. Additionally, the Project will implement Measure N-1, which stipulates adherence to Caltrans Standard Specifications Section 14-8.02 (Noise Control) and SSP 14-8.02 (which will be edited during the PS&E phase of the project), and N-2 which requires that all equipment be fitted with adequate mufflers according to the manufacturers' specifications. With the implementation of Measures N-1 and N-2, no temporary impacts related to

noise will occur during construction of the Project under the Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]).

Potential permanent noise impacts associated with Project operations under both Build Alternatives (Alternative 2 and Alternative 3 [Preferred Alternative]) are solely from traffic noise. Traffic noise was evaluated for the worst-case traffic condition. As discussed in Section 2.19, Noise, Project implementation will result in noise levels that approach or exceed the applicable NAC at 20 modeled receptors (13 Activity Category B, five Activity Category C, and two Activity Category E land uses) along I-15, which represent a total of 20 noise-sensitive receivers.

In the noise analysis Horizon Year (2050) Build Condition, most receivers will experience up to a 3 dB increase in noise levels compared to Existing Year (2018) baseline conditions. A 3 dB change is the lowest level that is perceptible by the average human ear in an outdoor environment. To achieve this result with a minimum increase in noise levels, the Project's Build condition will replace an existing noise barrier located north of the NB Hook On-Ramp, which must be removed to construct the ramp. Under CEQA, comparison is made between the baseline noise level and the noise analysis Horizon Year (2050) Build condition noise level. Because the Project setting is urbanized and because of the proximity of the receptors to the highway, the magnitude of the noise increase is not considered substantial and will not result in a significant noise impact under CEQA. Therefore, with the existing barrier in the No-Build condition, or the recommended replacement barrier under the Build condition, permanent impacts related to operational noise levels are anticipated to be less than significant in the project study area. Impacts are considered less than significant, and no mitigation is required.

b) Less than Significant Impact

During construction, the Project could generate ground borne noise. This will be controlled by adherence to City and Caltrans noise standards. An increase in ground borne vibration is not anticipated as the Project will be constructed within existing Caltrans, City, and County ROW and will primarily occur within previously disturbed areas. Therefore, impacts are considered less than significant, and no mitigation is required.

c) No Impact

The Project is not located within the vicinity of a private airstrip or airport land use plan. As discussed in Section 3.2.9 (e), the closest public airport or public use airport is the Perris Valley Airport, located approximately 8-miles northeast of the Project limits. The Perris Valley Airport is a privately owned and operated airport open to public use. Therefore, no impacts are anticipated, and no mitigation is required.

3.2.14 Population and Housing

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.2.14.1 CEQA Significance Determinations for Population and Housing

a), b) No Impact

As discussed in Section 2.5, Growth, the Project under both Build Alternatives will not establish new homes, result in permanent employment opportunities, or provide any new access into areas that previously had no access. Instead, the Project under both Build Alternatives, will result in improvements to an existing transportation facility that will improve the traffic operations and reduce congestion at the I-15/SR-74 interchange and local intersections within the Project limits by implementing components such as providing additional ramp storage capacity, improvements to intersections (i.e., signalization, turns, and throughput volumes), and accessibility for users. Growth in the City is expected to occur with or without the Project under the Build Alternative, because the Project, on its own, cannot affect variables that contribute to growth. Therefore, the Project under either Build Alternative will not be expected to influence the amount, location, and/or distribution of growth in the community impact study area cities and the County, and no replacement housing will be required. Therefore, no impacts are anticipated.

3.2.15 Public Services

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☒	☐
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☐	☐	☐	☒

3.2.15.1 CEQA Significance Determinations for Public Services

a) i), ii) Less than Significant Impact

As discussed in Section 2.9, Utilities and Emergency Services, the City contracts fire services with the RCFD and CAL FIRE to provide a full range of fire protection services (fire prevention, suppression, and emergency medical response). Although there are four fire stations that serve the City, there are no fire stations within 0.5 mile of the Project limits. The closest fire station is the CAL FIRE Lake Elsinore Fire Station No.10 located at 410 West Graham Avenue, which services the central area of the City and is located approximately 1.0 mile from the most southern portion of the Project limits.

The City also contracts police services with the Riverside County Sheriff's Department to enforce local, state, and federal statutes; public safety; traffic enforcement; and maintain public order (City of Lake Elsinore n.d.). There is one sheriff's station located at 333 West Limited Avenue that is approximately 1.0 mile from the most southern portion of the Project limits that serves the City.

Additionally, the closest CHP office is located approximately 16.2 miles south of the Project limits, along I-15 at 27685 Commerce Center Drive in the City of Temecula.

The Project under either Build Alternative will add enforcement areas at the NB on- and SB on-ramps near the entrances to I-15 as there are currently no CHP enforcement areas along the I-15 mainline. The Project will not construct any new residential or non-residential structures that could induce population or employment growth. Therefore, there will be no increase in demand for fire protection services and no need for new or expanded fire protection services or facilities as a result of Project implementation under either Build Alternative.

During construction, a TMP, identified as Measure TR-1, in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, will be implemented to minimize any temporary disruptions to circulation as a result of temporary detours and temporary lane closures. The TMP will involve public notification of the upcoming construction work and traffic management during construction activities. Once construction is complete and the Project is operational, it is anticipated that congestion at the I-15/SR-74 interchange and surrounding area will be reduced. During operation of the Project under either Build Alternative, traffic conditions will improve within the interchange; therefore, the Project under either Build Alternative will provide an overall benefit in response times for fire protection services. Therefore, with the implementation of Measure TR-1, in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, impacts will be considered less than significant, and no mitigation is required.

a) iii) Less than Significant Impact

As discussed in Section 2.6, Community Character and Cohesion, there are two public schools within 0.5 mile of the Project limits. These include Temescal Canyon High School located at 28755 El Toro Road and Keith McCarthy Academy located at 1405 Education Way.

No direct physical impacts during construction or operation of the Project under either Build Alternatives will occur. During construction, temporary disruptions to traffic may occur on surrounding streets. However, a TMP, identified as Measure TR-1, in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, will be implemented during construction to minimize any temporary disruptions to circulation. The TMP will involve public notification of the upcoming construction work and traffic management during construction activities. Once construction is complete and the Project is operational, it is anticipated that congestion at the I-15/SR-74 interchange and surrounding area will be improved and will provide an overall benefit or those who utilize I-15 and adjacent local roadways to travel to these schools. Therefore, with the implementation of Measure TR-1, impacts are considered less than significant, and no mitigation is required.

a) iv) Less than Significant Impact

As discussed in Section 2.6, Community Character and Cohesion, the Rosetta Canyon Sports Park, located at 44419 Ardenwood Way is the only public park within 0.5 mile of the Project limits. No direct physical impacts during construction or operation of the Project under either Build Alternative will occur on these recreational facilities. However, during construction, temporary disruptions to traffic may occur as a result of temporary lane closures. However, with the implementation of a TMP, identified as Measure TR-1, in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, these temporary impacts to circulation will be minimized during construction. The TMP will involve public notification of the upcoming construction work and traffic management during construction activities. Once construction is complete and the Project is operational, it is anticipated that congestion at the I-15/SR-74 interchange and surrounding area will be improved and will provide an overall benefit to those who utilize I-15 and adjacent local roadways to travel to these recreational facilities.

Therefore, with the implementation of Measure TR-1, impacts are considered less than significant, and no mitigation is required.

a) v) No Impact

No additional government community facilities are present within 0.5 mile of the Project limits. Therefore, no impacts are anticipated, and no mitigation is required.

3.2.16 Recreation

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.2.16.1 CEQA Significance Determinations for Recreation

a) No Impact

As stated in Section 3.2.14.1 a) and described in Section 2.4, Growth, the Project under either Build Alternative will not establish new homes, result in permanent employment opportunities, or provide any new access into areas that previously had no access. Further, the Project is not a capacity enhancing project and will result in transportation facility improvements that will improve the traffic operations and reduce congestion of the existing I-15/SR-74 interchange and local intersections within the Project limits. Growth in the City is expected to occur with or without the Project because the Project, on its own, cannot affect variables that contribute to growth. Therefore, the Project under the Build Alternatives will not increase the use of an existing neighborhood and regional facility such that substantial physical deterioration of the facility will occur or be accelerated. Therefore, no impacts are anticipated, and no mitigation is required.

b) No Impact

The Project under both Build Alternatives will not include the construction of a new or expansion of an existing recreational facility. The Project under either Build Alternative is a transportation project within an urbanized transportation corridor that seeks to enhance safety and relieve congestion. Therefore, no impacts are anticipated, and no mitigation is required.

3.2.17 Transportation

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Result in inadequate emergency access?	☐	☐	☒	☐

3.2.17.1 CEQA Significance Determinations for Transportation

a) No Impact

As shown in Table 2.2-1 in Section 2.2, Consistency with State, Regional, and Local Plans and Programs, the Project's consistency with applicable local and regional land use plans, policies, and regulations with regard to the circulation system were reviewed. The Project under either Build Alternative does not conflict with any land use plan, policy, or regulation with regard to the transportation systems in the City. In addition to the improvements to the I-15/SR-74 interchange to reduce future traffic congestion and improve current operations, the Project will optimize the transportation system within the City by constructing 1,150 linear feet of new sidewalks, adding a 5- to 6-foot wide paved shoulder for 2,500 linear feet along Dexter Avenue which could be designed as a bike lane in the future, and considering the provision of signage and pavement markings for bicyclists along SR-74 (Central Avenue) during final design (PS&E). The Project is also included in Amendment 1 of the Final 2023 Adopted FTIP and the SCAG 2020 RTP for Riverside County as Project ID: RIV060109. As the 2020-2045 RTP/SCS seeks to improve mobility and accessibility in the region, the Project will be consistent with this regional plan as it will improve operational efficiency and safety within the Project limits.

As discussed in Section 2.3, Parks and Recreation, there are two existing trails, an existing park, a proposed community trail, and two proposed regional trails adjacent to the Project limits; however, there are no existing or planned parks or recreational trails within the Project limits. These existing and planned recreational resources will not be impacted by the Project under either Build Alternative and the Project under either Build Alternative will not acquire any land dedicated to these future facilities. Based on the considerations above, no impact is identified for this issue area, and no mitigation is required.

b) Less than Significant

Senate Bill 743 was signed into law in 2013 with the intent to better align CEQA practices with statewide sustainability goals related to efficient land use, greater multimodal transportation choices, and GHG and traffic-related air pollution reductions while balancing the needs of congestion management and safety. Senate Bill 743 changes the metric of consideration for transportation

impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on VMT to analyze transportation impacts. Under Senate Bill 743, any increase of VMT would be considered a significant and unavoidable impact if it cannot be mitigated. Caltrans, as the CEQA lead agency, is required to implement Senate Bill 743 for transportation projects.

A VMT Analysis Screening Form was prepared for the Project and approved by Caltrans in August 2020. Based on the VMT Analysis Screening Form, the project began the environmental phase prior to September 15, 2020; and therefore, qualified to be screened out of VMT analysis.

c) No Impact

Sustained local growth and regional development have increased commuter traffic at the I-15/SR-74 interchange, resulting in severe peak hour traffic congestion and operational deficiencies. The increase in traffic volumes has resulted in inadequate queuing capacity at the interchange and local intersections. The amount of traffic utilizing the I-15/SR-74 interchange is expected to greatly increase by Opening Year (2025) and efficiency of the interchange to degrade without implementation of improvements. Additionally, based on Table 1-1 (see Chapter 1, Project Description), many of the reported collisions within the Project limits could be related to traffic congestion and low storage capacity, which is likely to worsen if no improvements are implemented at the interchange.

The Project is a transportation project that will provide improvements to the existing I-15/SR-74 interchange to enhance traffic operations and reduce congestion at the I-15/SR-74 interchange and local intersections within the Project limits; as well as to accommodate current and Horizon Year (2045) traffic volumes on the I-15 and SR-74 corridors. Improvements will provide additional ramp storage capacity and improvements to the directional connectivity between I-15 and SR-74 corridors, signalization, and throughput volumes. Therefore, the Project improvements under both Build Alternatives will improve mobility and accessibility for all users within the region. Thus, the Project design will not substantially increase hazards due to a geometric design feature, such as a dangerous intersection or incompatible use, no impacts are anticipated, and no mitigation is required.

d) Less than Significant Impact

As mentioned in Section 2.9, Utilities Emergency Services, and 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, under the Build Alternatives, a TMP identified as Measure TR-1, Traffic and Transportation/Pedestrian and Bicycle Facilities, will be prepared for the Project to minimize potential traffic delays during construction activities. Preparation and implementation of the TMP will include coordination with local jurisdictions to ensure detour routes

are appropriate and that local access via on- and off- ramps to residences and businesses are maintained at all times.

During construction, appropriate signage and advanced warning will be developed and displayed to alert commuters of upcoming construction activities and direct vehicular traffic alternate routes. During Project operation, improvements to traffic operation and safety along the I-15 and SR-74 corridors are anticipated to result in improvements to emergency access and response times to the area surrounding the Project limits that may have been directly or indirectly limited due to existing operational deficiencies. Therefore, impacts are considered less than significant, and no mitigation is required.

3.2.18 Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

3.2.18.1 CEQA Significance Determinations for Tribal Cultural Resources

a) and b) <u>Less than Significant Impact</u>

As discussed in Section 2.12, Cultural Resources, a qualified archeologist consulted with the NAHC to elicit pertinent cultural resource information available in the Sacred Lands File. The NAHC responded May 23, 2019, stating the Sacred Lands File search for the Project was completed, and

the results were negative, but the area is sensitive for cultural resources. As a result, the NAHC provided a list of Native American contacts within the region for follow-up and letters dated July 18, 2019, were sent to the following individuals:

- Travis Armstrong, Tribal Historic Preservation Officer, Morongo Band of Mission Indians (MBMI)
- Connie Colocho, Tribal Historic Preservation Officer, Rincon Band of Luiseño Indians (RBLI)
- Joseph Ontiveros, Tribal Historic Preservation Officer, Soboba Band of Luiseño Indians (SBLI)
- Gary DuBois, Tribal Historic Preservation Officer, Pechanga Band of Luiseño Indians (PBLI)
- Robert Smith, Chairperson, Pala Band of Mission Indians (PBMI)

These letters also serve as formal notification of the Project as required under CEQA, specifically PRC 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). The letters provided a Project description and location and discussed upcoming cultural resources studies of the Project area.

The first round of follow-up emails was conducted April 2, 2020. A second round of follow-up emails was completed June 5, 2020. A third round of follow-up emails was conducted December 2, 2020, and a final round of follow-up emails was conducted December 16, 2020.

Based on the Native American consultation conducted to date, the City of Lake Elsinore is considered a Traditional Cultural Place and Landscape by the RBLI. The RBLI requested government-to-government consultation and to review relevant cultural documents. RBLI recommended archaeological and tribal monitoring for all ground disturbing activities, a monitoring report, and protocols for discovery of cultural material and human remains. RBLI also requested to be notified of any changes in Project plans, in addition to the final monitoring report, when available. On December 16, 2020, a monitoring denial letter from Caltrans was issued to RBLI stating that due to lack of historic properties within or immediately adjacent to the Project, as well as a low probability of encountering intact, buried cultural deposits. On January 4, 2021, Ms. Cheryl Madrigal, Tribal Historic Preservation Officer, sent a letter noting RBLI has been informed that the Project will not be conditioned with tribal monitoring and had no further comments at this time.

The Project is also located within the SBLI Traditional Use areas. The SBLI requested government-to-government consultation and Native American Monitor(s) from the SBLI Cultural Resource Department to be present during any Project-related ground disturbance proceedings including surveys and archaeological testing. Follow up emails were sent on April 2, 2020 and June

5, 2020, and a copy of the Draft HPSR was sent to Mr. Joseph Ontiveros, Tribal Historic Preservation Officer, for tribal review and comments. No comments beyond the request for monitoring have been received to date.

Caltrans has determined that with the implementation of CR-1 and CR-2, in Section 2.12, Cultural Resources, which are considered standard actions if cultural resources are discovered, no further provisions are required for this undertaking, impacts are considered less than significant, and no mitigation is required.

3.2.19 Utilities and Service Systems

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater, or storm water drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

3.2.19.1 CEQA Significance Determinations for Utilities and Service Systems

a) Less Than Significant Impact

The Project under either Build Alternative will not construct any new residential or non-residential structures that could induce population or employment growth and increase the demand or exceed the current capacity of existing utility systems. It is anticipated that both Build Alternatives will require a small amount of utility relocations, which included relocation of a wooden pole that supports overhead SCE electric lines and adjacent pad mounted electrical transformer located in the northeast quadrant of the I-15/SR-74 interchange, between the existing NB on-ramp and Burger King. Other utility impacts created by the Build Alternatives may include the relocation and adjustment of SCE and EVMWD streetlight poles, fire hydrants, water air release and blow-off valves, adjustment of manhole covers, and relocation of pull boxes.

No interruption to utility services on a temporary basis will occur during or after construction of the Project with the implementation of Measure UES-1, in Section 2.9, Utilities and Emergency Services. Additionally, the relocation of utilities will require inspections in accordance with City requirements. The City will coordinate with the affected service provider in each instance to ensure work is conducted in accordance with the appropriate requirements. Prior to any ground-disturbance activities, Measure UES-2, in Section 2.9, Utilities and Emergency Services, will also be implemented to ensure the locations of all underground utilities are identified. Therefore, with the implementation of Measures UES-1 and UES-2, impacts will be considered less than significant, and no mitigation is required.

b) No Impact

The Project is a transportation improvement project. The Project under either Build Alternative will not construct any new residential or non-residential structures that could induce population or employment growth and will not require any water or sewer service during operation that will increase the need for new infrastructure. Therefore, no impacts are anticipated.

c) No Impact

The Project is a transportation improvement project. The Project under either Build Alternative will not construct any new residential or non-residential structures that could induce population or employment growth. Thus, the Project, under both Build Alternatives will not increase the demand for wastewater treatment or affect capacity of wastewater treatment facilities. Therefore, no impacts are anticipated.

d) Less Than Significant Impact

The Project construction activities under both Build Alternatives will not involve demolition, reconstruction, and improvements of existing ramp alignments. All solid waste generated by construction activities will be disposed of properly using locally licensed waste hauling services to a certified landfill and/or construction waste recycling facility. There are no landfills within the City; therefore, trash is taken to either a land fill within Riverside County or the Materials Recovery Facility. The City typically uses three landfills which include El Sobrante, Badlands, and Lamb Canyon Landfills (City of Lake Elsinore 2011a). The nearest landfill site is the El Sobrante Landfill (33-AA-0217) in the City of Corona. This landfill site, operated by the County of Riverside Department of Environmental Health, is located at 10910 Dawson Canyon Road approximately 10 miles northwest of the Project limits. The remaining capacity at this facility is approximately 143,977,170 cubic yards with an estimated closure year of 2051 (California Department of Resources Recycling and Recovery [CalRecycle] 2018). Solid waste generated from Project construction activities will not exceed the remaining capacity at the El Sobrante Landfill (33-AA-0217) or state and local standards for solid waste. Therefore, impacts are considered less than significant, and no mitigation is required.

e) No Impact

The Project under both Build Alternatives is a transportation project that will not generate a significant amount of solid waste during construction activities or maintenance during Project operation. Maintenance within the Project limits will involve roadway maintenance including pavement, roadside litter/sweeping, and signs and markers. Solid waste generated during the construction and operational phases of the Project under both Build Alternatives will be disposed of in accordance with federal, State, and local regulations related to construction waste and recycling, which will minimize the amount of waste material entering local landfills. Therefore, no impacts are anticipated.

3.2.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

3.2.20.1 CEQA Significance Determinations for Wildfire

Based on information from the California FHSZ viewer (CAL FIRE 2020) and as shown in Figure 2.9-1, the Project limits along NB I-15 is near and contains small areas that are within SRA or lands classified as very high FHSZ. The southern portion of the Project limits along NB I-15 is within a LRA very high FHSZ, and the northern portion of the Project limits along NB I-15 is within a SRA moderate FHSZ.

a) <u>Less Than Significant</u>

The City has developed a Local Hazard Mitigation Plan (City of Lake Elsinore 2017) which identifies City hazards, reviews and assesses past disasters, estimates the probability of future occurrences, and identifies goals to mitigate potential or reduce potential risks to the City from natural and man-made hazards. The City is also subject to the County's Emergency Operations Plan (County of Riverside Emergency Management Department 2019) which serves as a reference tool and foundation for coordinating emergencies response and recovery strategies for the County and its operation area which consists of a combination of a County, all unincorporated areas, all cities and all political subdivisions within a County's geographic boundaries.

The I-15/SR-74 interchange is a major access point to the Business District. The purpose of the Project under both Build Alternatives is to improve traffic operations and reduce congestion at the I-15/SR-74 interchange and local intersections within the Project limits by implementing components such as providing additional ramp storage capacity, improvements to intersections (i.e., signalization, turns, and throughput volumes), and accessibility for users. Therefore, during construction of the Project, under either Alternative, impacts to circulation for emergency access along I-15, SR-74, and adjacent roadways may occur. However, with the implementation of a TMP identified in Measure TR-1, in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, temporary impacts to access and circulation along these identified evacuation routes will be minimized. Once the Project is in operation there will be no impact to access and circulation that could affect the implementation of the applicable emergency response plan or emergency evacuation plan. Therefore, impacts are considered less than significant impact, and no mitigation is required.

b) No Impact

The City's General Plan (City of Lake Elsinore 2011a) and Local Hazard Mitigation Plan (City of Lake Elsinore 2017), state that the wildfire susceptibility in the City is moderately high. The City and its sphere of influence experiences periodic high-velocity wind conditions which are largely due to the area's topography which forms a natural wind tunnel along the valley and through the canyons. As shown in Figure 2.9-1, in Section 2.9, Utilities and Emergency Services, the Project limits contains small areas of both LRA and SRA FHSZ and is also adjacent to other LRA and SRA FHSZ. However, the Project is located in a relatively developed and urbanized area within the City's Business District, which contains the strongest concentration of industrial and commercial uses within the City and is a generally flat level area (City of Lake Elsinore 2011b). The Project under either Build Alternative will implement components such as providing additional ramp storage capacity, improvements to intersections (i.e., signalization, turns, and throughput volumes), and accessibility for users. Therefore, it is not anticipated that the Project under either Build Alternative will exacerbate wildfire risks, thereby exposing Project occupants (businesses or residential uses) within or adjacent to the Project limits to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Therefore, no impacts are anticipated.

c) Less Than Significant Impact

The Project under both Build Alternatives is a transportation project within an urbanized transportation corridor that seeks to improve traffic operations and reduce congestion at the I-15/SR-74 interchange and local intersections within the Project limits. Further, the Project under either Build Alternative is not proposing additional development that will result in the need for the

installation of new infrastructure, such as roads, fuel breaks, emergency water sources, power lines or other utilities that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

As described in Section 2.14, Water Quality and Storm Water Runoff, both Build Alternatives will extend the drainage culverts of the Arroyo Del Toro Channel located between Dexter Avenue and NB I-15 and implement other drainage system modifications required by the widening of existing ramps and the new NB hook/loop ramps. Implementation of these Project on-site improvements within the roadbed will not change the existing drainage patterns, will not permanently interrupt or alter the demand on existing service utilities, nor will these improvements exacerbate fire risk during operation. Additionally, as discussed in the previous section, Section 2.9, Utilities and Emergency Services, the Project will require utility relocations. However, the implementation of Measure UES-1, in Section 2.9, will ensure that disruptions to businesses and residents will be avoided or limited to the extent practicable during construction, and any relocation of utilities will require inspections in accordance with City requirements. Prior to any ground-disturbance activities, Measure UES-2, in Section 2.9, Utilities and Emergency Services will be implemented to ensure the location of all underground utilities are identified.

Construction will involve the use of grinding, welding, and other spark inducing activities adjacent to areas with vegetation which could increase the potential for a wildfire event. However, with the implementation of Measure UES-3, in Section 2.9, Utilities and Emergency Services, which will require coordination with CAL FIRE and local fire departments to identify and maintain defensible areas around construction work, and include firefighting equipment, and post emergency service numbers in all active construction areas, temporary impacts from wildfire will be minimized. Therefore, with the implementation of Measures UES-1 through UES-3, impacts will be considered less than significant impact, and no mitigation is required.

d) Less Than Significant Impact

As discussed in Section 2.13, Hydrology and Water Quality, the Project under both Build Alternatives will include a new roadway hardscape area, which will result in a permanent increase in impervious surfaces and a permanent increase in runoff and pollutant loading. The Project will increase the impervious area by approximately 8 acres under Alternative 2 and 9 acres under Alternative 3 (Preferred Alternative), both of which are less than 0.00002 percent of the Temescal Wash/Temescal Creek Watershed. This increase in impervious area which will increase peak flows and runoff volumes, increasing the potential for erosion, sediment, and pollution in surface waters. However, the Project will include upgrading existing drainage facilities and incorporating on-site treatment areas to manage the increase in runoff.

During construction, a SWPPP will be prepared to implement BMPs such as temporary sediment control and temporary soil stabilization practices during construction per Measure WQ-2, in Section 2.14, Water Quality and Stormwater Runoff, and design pollution prevention BMPs such as preservation of existing vegetation and surface protection systems (permanent soil stabilization) will be implemented per Measure WQ-4, in the same section. Furthermore, as discussed in Section 2.15, Geology/Soils/Seismic/Topography, although the Project is located within a seismically active region, the Project is not located in any zones of earthquake-induced landslides and rockfalls, and area within and surrounding the Project limits is relatively developed and an urbanized area within the City that is generally flat (City of Lake Elsinore 2011b). Additionally, implementation of Measure GEO-1, in Section 2.15, Geology/Soils/Seismic/Topography, will require the preparation of a geotechnical report, that will include geotechnical exploratory boring activities to confirm soil types and geologic conditions to address any potential effects related to soils, liquefaction, and seismic activity during final design (PS&E). Thus, exposure of people or structures to significant risks related to downslope, flooding, or landslides as a result of runoff, post-fire slope instability, or drainage changes are not anticipated. Given the existing topography and implementation of Measures WQ-2 and WQ-4, in Section 2.14, Water Quality and Stormwater Runoff, and Measure GEO-1, in 2.15, Geology/Soils/Seismic/Topography, impacts are considered less than significant, and no mitigation is required.

3.2.21 Mandatory Findings of Significance

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

3.2.21.1 CEQA Significance Determinations for Mandatory Findings of Significance

a) <u>Less than Significant with Mitigation Incorporated</u>

Biological Resources

As discussed earlier under 3.2.4, Biological resources, the BSA does not contain suitable habitat to support any of the special-status plant species identified for the region and no special-status plants were observed within the BSA during field surveys conducted in support of the NES(MI). However, the BSA supports suitable habitat for a variety of special-status animal species. Although none were observed within the BSA during surveys, 11 federally and/or state-listed animal species are known to occur in the vicinity of the BSA. These species include vernal pool fairy shrimp, BUOW, loggerhead shrike, western mastiff bat, western yellow bat, pocketed free tailed bat, San Diego black-tailed jackrabbit, California legless lizard, California glossy snake, coast horned lizard, and southern grasshopper mouse.

The Project under both Build Alternatives will cause a temporary reduction in the quality of BUOW foraging habitat and temporary indirect impacts to roosting bats during construction activities. These temporary impacts are a result of indirect impacts from construction related noise, vibration, dust, and human encroachment in areas adjacent to suitable BUOW habitat, and exhaust from construction equipment or lighting used during nighttime work adjacent to eucalyptus trees that provide suitable roosting habitat. However, the implementation of Measure AS-1 through AS-5, in Section 2.24, Animal Species, will minimize temporary impacts during construction to potentially

suitable habitat for BUOW and roosting bats. The Project will also result in permanent impacts to suitable BUOW habitat comprised of Mediterranean California Naturalized Annual and Perennial Grassland. However, because BUOW were determined to be absent from the BSA during the focused survey the Project, under either Build Alternative, will not result in loss of any occupied BUOW habitat.

The Build Alternatives will also result in temporary and permanent impacts to habitat for other special-status species such as the coast horned lizard, loggerhead shrike and San Diego black-tailed jackrabbit. These species are Western Riverside County MSHCP-covered species. Therefore, with the implementation of requirements from the Western Riverside County MSHCP, California Fish and Game Code, MBTA, Measures NC-1 through NC-5, in Section 2.21, Natural Communities, and Measures AS-1 through AS-6, in Section 2.24, Animal Species, temporary construction and permanent impacts to other animal species will be minimized under both Build Alternatives, impacts will be considered less than significant, and no mitigation measures are required.

Historical/Cultural/Archaeological/Paleontological Resources

As discussed previously under 3.2.5, Cultural Resources, there is one recorded archaeological resource and one recorded historical-period property that are located within the APE; however, remnants or any surface indications of these two resources were not encountered in their recorded locations during the pedestrian field survey. The Project has a moderate sensitivity to encounter buried archaeological deposits and all excavations except the existing noise barrier pile foundations will have a moderate potential to extend into native sediments. Although unlikely, if ground disturbance during construction inadvertently uncovers unknown archaeological resources implementation of Measure CR-1, from Section 2.12, Cultural Resources, will reduce the likelihood of significant effects related to permanent impacts associated with nonrenewable cultural resources discovered during Project construction. Additionally, implementation of Measure CR-2, under the same section, will minimize any potential of permanent disturbance to human remains that may be discovered during Project construction. Therefore, with the implementation of Measures CR-1 and CR-2, in Section 2.12, Cultural Resources, impacts under either Build Alternative will be considered less than significant, and no mitigation will be required.

Much of the ground surface has been disturbed previously for development of the I-15 and SR-74 transportation corridors. The extent of previous disturbance suggests intact and significant fossils are unlikely to be preserved within the top few feet. However, the approximate 35 feet bgs excavations for the freeway signage foundations are more likely to impact intact and paleontological significant resources. Therefore, monitoring and mitigation, as outlined in Measure PAL-1, in Section

2.16, Paleontology, are required under both Build Alternatives. With the implementation of Measure PAL-1, impacts are considered less than significant with mitigation incorporated.

b) Less than Significant with Mitigation Incorporated

As discussed in Section 2.28, Cumulative Impacts, topics pertaining to the human environment are not anticipated to result in significant cumulative impacts; therefore, cumulative impacts to the human environment are less than significant. Cumulative impacts relating to the physical environment may result in significant cumulative impacts. Within the Project limits and surrounding area are geologic units with a high potential to contain significant non-renewable paleontological resources. Excavation activities within these geologic units with high potential for paleontological resources will increase the potential to discover and damage significant paleontological resources. However, as discussed under 3.2.7 (f), implementation of Measure PAL-1, in Section 2.16, Paleontology, will reduce the impact on sensitive paleontological resources to less than significant. Therefore, cumulative impacts to the physical environment are less than significant with mitigation incorporated.

In addition, impacts to the biological environment are anticipated to be less than significant and not result in cumulative impacts. No cumulative impacts are anticipated with regards to the biological environment as a result of the Project. With the inclusion of avoidance, minimization, and/or mitigation measures referenced in Section 2.28, Cumulative Impacts, the Project will not have impacts that are individually limited but cumulatively considerable. Therefore, impacts are considered less than significant with mitigation incorporated.

c) Less than Significant

Typical of roadway projects, construction impacts related to aesthetics, noise, detours, and dust will occur; however, these impacts will be minimized through the implementation of Measures V-1 through V-4, in Section 2.11 Visual and Aesthetics; Measure TR-1, in Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities; Measures HW-1 and HW-10, in Section 2.17, Hazardous Waste and Materials; Measures AQ-1 through AQ-13, in Section 2.18, Air Quality; and Measures N-1 through N-2 in Section 2.19, Noise. Incorporation of these measures will avoid and minimize indirect impacts to the community during construction. Therefore, impacts are considered less than significant, and no mitigation is required.

3.3 Wildfire

3.3.1 Regulatory Setting

Senate Bill 1241 required the Office of Planning and Research, the Natural Resources Agency, and the California Department of Forestry and Fire Protection to develop amendments to the "CEQA Checklist" for the inclusion of questions related to fire hazard impacts for projects located on lands classified as very high fire hazard severity zones. The 2018 updates to the CEQA Guidelines expanded this to include projects "near" these very high fire hazard severity zones.

3.3.2 Affected Environment

As discussed in Section 2.9, Utilities and Emergency Services, and 3.2.20, Wildfire, based on information from the California FHSZ viewer (CAL FIRE 2020) and as shown in Figure 2.9-1, in Section 2.9, Utilities and Emergency Services, the Project limits is located near and contains small areas along NB I-15 that are within SRA or lands classified as very high FHSZ. The southern portion of the Project limits along NB I-15 is within a LRA very high FHSZ, and the northern portion of the Project limits along NB I-15 is within a SRA moderate FHSZ.

The City's wildfire susceptibility has been identified as being moderately high. The City and its SOI experiences periodic high-velocity wind conditions which are largely due to the City's topography which forms a natural wind tunnel along the valley and through the canyons (City of Lake Elsinore 2011a, 2017). However, the Project is located in a relatively developed and urbanized area within the City's Business District which contains the strongest concentration of industrial and commercial uses within the City and is a generally flat level area (City of Lake Elsinore 2011b).

3.3.3 Environmental Consequences

As identified, the Project limits is located near and contains small areas along NB I-15 that are within SRA or lands classified as very high FHSZ. However, the Project under either Build Alternative will not expose people or buildings to any new fire hazard areas. Additionally, the Project is located in an already urbanized area that is relatively flat; therefore, the Project will not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. During construction activities, Measure UES-3 will be implemented to protect the public and the environment from the potential risk of fires and worker health and safety. Measure UES-3 includes creating defensible spaces around active construction sites.

Fire protection services may experience temporary indirect impacts as a result of construction activities that may impact access and circulation. A TMP, identified as Measure TR-1, in Section

2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, will be implemented to minimize impacts to traffic and circulation within the community impact study area and to maintain continuous access and connectivity throughout construction activities. Therefore, the Project, under either Build Alternative, will not significantly or adversely impact emergency service response times within or surrounding the Project limits on a temporary basis.

Once the Project is in operation, traffic conditions at the I-15/SR-74 interchange and local intersections within the Project limits will be improved. The Project under both Build Alternatives will provide additional ramp storage capacity, improvements to intersections (i.e., signalization, turns, and throughput volumes), and greater accessibility for all users; and accommodate Existing Year (2018) and Horizon Year (2045) traffic volumes on the I-15 and SR-74 corridors resulting from projected growth in the area. Therefore, overall travel time will be improved and may decrease emergency response times given the improvement to traffic operations and congestion. Therefore, with the implementation of Measure UES-3, in Section 2.9, Utilities and Emergency Services, and Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities, impacts will be considered less than significant impact, and no mitigation is required.

3.3.4 Avoidance, Minimization, and/or Mitigation Measures

Refer to Section 2.9, Utilities and Emergency Services, for Measure UES-1 and Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities for Measure TR-1.

3.4 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the Earth's climate system. The Intergovernmental Panel on Climate Change, established by the United Nations and World Meteorological Organization in 1988, is devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy. Climate change in the past has generally occurred gradually over millennia, or more suddenly in response to cataclysmic natural disruptions. The research of the Intergovernmental Panel on Climate Change and other scientists over recent decades, however, has unequivocally attributed an accelerated rate of climatological changes over the past 150 years to GHG emissions generated from the production and use of fossil fuels.

Human activities generate GHGs consisting primarily of carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), and various hydrofluorocarbons (HFCs). CO_2 is the most abundant GHG; while it is a naturally occurring and necessary component of Earth’s atmosphere, fossil-fuel combustion is the main source of additional,

human-generated CO_2 that is the main driver of climate change. In the U.S. and in California, transportation is the largest source of GHG emissions, mostly CO_2.

The impacts of climate change are already being observed in the form of sea level rise, drought, more intense heat, extended and severe fire seasons, and historic flooding from changing storm patterns. Both mitigation and adaptation strategies are necessary to address these impacts. The most important mitigation strategy is to reduce GHG emissions. In the context of climate change (as distinct from CEQA and NEPA), "mitigation" involves actions to reduce GHG emissions or to enhance the "sinks" that store them (such as forests and soils) to lessen adverse impacts. "Adaptation" is planning for and responding to impacts to reduce vulnerability to harm, such as by adjusting transportation design standards to withstand more intense storms, heat, and higher sea levels. This analysis will include a discussion of both in the context of this transportation project.

3.4.1 Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce GHG emissions from transportation sources.

3.4.1.1 Federal

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices (FHWA 2022). This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values— "the triple bottom line of sustainability" (FHWA n.d.). Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

The federal government has taken steps to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) as amended by the Energy Independence and Security Act (EISA) of 2007; and Corporate Average Fuel Economy (CAFE) Standards. This act established fuel economy standards for on-road motor vehicles sold in the United States. The U.S. Department of Transportation's National Highway Traffic and Safety Administration (NHTSA) sets and enforces the CAFE standards based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States. The Environmental Protection Agency (U.S. EPA) calculates average fuel economy levels for manufacturers, and also sets related GHG emissions standards under the Clean Air Act. Raising CAFE standards leads automakers to create a more fuel-efficient fleet, which improves our nation's energy security, saves consumers money at the pump, and reduces GHG emissions (U.S. DOT 2014).

U.S. EPA published a final rulemaking on December 30, 2021, that raised federal GHG emissions standards for passenger cars and light trucks for model years 2023 through 2026, increasing in stringency each year. The updated GHG emissions standards will avoid more than 3 billion tons of GHG emissions through 2050. In April 2022, NHTSA announced corresponding new fuel economy standards for model years 2024 through 2026, which will reduce fuel use by more than 200 billion gallons through 2050 compared to the old standards and reduce fuel costs for drivers (U.S. EPA 2022b; NHTSA 2022)

3.4.1.2 State

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and executive orders (EOs) including, but not limited to, the following:

EO S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and Senate Bill 32 in 2016.

Assembly Bill 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: Assembly Bill 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the CARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code [H&SC] Section 38551(b)).

The law requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

Senate Bill 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires CARB to set regional emissions reduction targets for passenger vehicles. The MPO for each region must then develop an SCS that integrates transportation, land-use, and housing policies to plan how it would achieve the emissions target for its region.

EO B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons (MMT) of CO2e.[1] Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, Safeguarding California, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32, Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

Senate Bill 1386, Chapter 545, 2016, declared "it to be the policy of the state that the protection and management of natural and working lands … is an important strategy in meeting the state's greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands."

Senate Bill 743, Chapter 386 (September 2013), changes the metric of consideration for transportation impacts pursuant to the CEQA from a focus on automobile delay to alternative methods focused on vehicle miles traveled (VMT) to promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

[1] Greenhouse gases (GHG) differ in how much heat each trap in the atmosphere (global warming potential, or GWP). Carbon dioxide (CO_2) is the most important GHG, so amounts of other gases are expressed relative to CO_2, using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of CO_2 is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO_2.

Senate Bill 150, Chapter 150, 2017, Regional Transportation Plans: This bill requires CARB to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.

EO B-55-18 (September 2018) sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing GHG emissions.

AB 1279, Chapter 337, 2022, The California Climate Crisis Act: This bill mandates carbon neutrality by 2045 and establishes an emissions reduction target of 85% below 1990 level as part of that goal. This bill solidifies a goal included in EO B-55-18. It requires CARB to work with relevant state agencies to ensure that updates to the scoping plan identify and recommend measures to achieve these policy goals and to identify and implement a variety of policies and strategies that enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies in California, as specified.

3.4.2 Environmental Setting

The Project is in an urban area of Riverside County with a fully built-out road and street network. The Project area is mainly commercial, with some residential and light industrial buildings. I-15 and SR-74 are important regional transportation routes. The I-15/SR-74 interchange experiences severe peak-hour traffic congestion under current conditions. An RTP/SCS by SCAG guides transportation development in the Project area. The Riverside County Climate Action Plan addresses GHGs in the Project area, as does the City of Lake Elsinore Climate Action Plan.

3.4.2.1 GHG Inventories

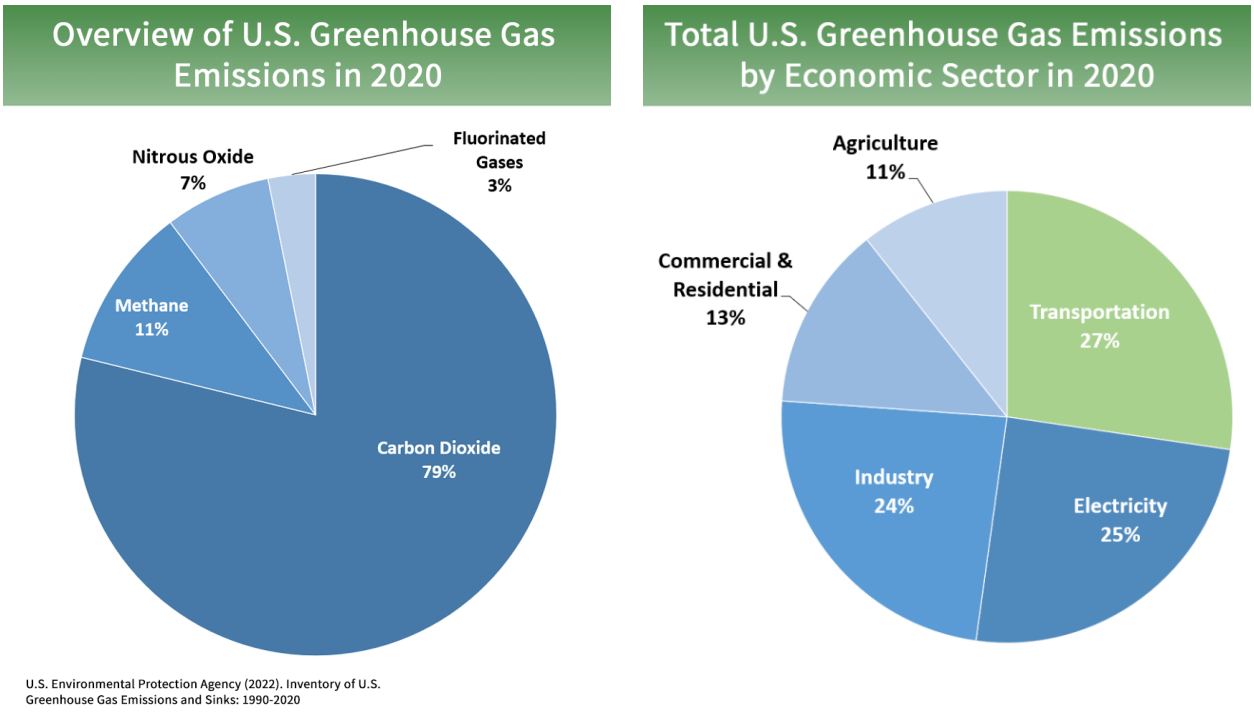
A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. U.S. EPA is responsible for documenting GHG emissions nationwide, and the CARB does so for the state, as required by H&SC Section 39607.4. Cities and other local jurisdictions may also conduct local GHG inventories to inform their GHG reduction or climate action plans.

3.4.2.2 National GHG Inventory

The annual GHG inventory submitted by the U.S. EPA to the United Nations provides a comprehensive accounting of all human-produced sources of GHGs in the United States. Total GHG emissions from all sectors in 2020 were 5,222 million metric tons (MMT), factoring in deductions for carbon sequestration in the land sector. Of these, 79 percent were CO_2, 11 percent were CH_4, and 7

percent were N_2O; the balance consisted of fluorinated gases. Total GHGs in 2020 decreased by 21% from 2005 levels and 11% from 2019. The change from 2019 resulted primarily from less demand in the transportation sector during the COVID-19 pandemic. The transportation sector was responsible for 27 percent of total U.S. GHG emissions in 2020, more than any other sector (Figure 3-2), and for 36% of all CO_2 emissions from fossil fuel combustion. Transportation CO_2 emissions for 2020 decreased 13 percent from 2019 to 2020, but were 7 percent higher than transportation CO_2 emissions in 1990 (Figure 3-2) (U.S. EPA 2022c).

Figure 3-2. United States 2020 Greenhouse Gas Overview and Emission Sources (Source: U.S. EPA 2022b)



U.S. Environmental Protection Agency (2022). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2020

3.4.2.3 State GHG Inventory

CARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals. The 2022 edition of the GHG emissions inventory reported emissions trends from 2000 to 2020. Total California GHG emissions in 2020 were 369.2 $MMTCO_2e$, a reduction of 35.3 $MMTCO_2e$ from 2019 and 61.8 $MMTCO_2e$ below the 2020 statewide limit of 431 MMTCO2e. Much of the decrease from 2019 to 2020, however, is likely due to the effects of the COVID-19 pandemic on the transportation sector, during which vehicle miles traveled declined under stay-at-home orders and reductions in goods movement. Nevertheless, transportation remained the largest source of GHG emissions, accounting for 37 percent of statewide emissions (Figure 3-3). (Including upstream

emissions from oil extraction, petroleum refining, and oil pipelines in California, transportation was responsible for about 47 percent of statewide emissions in 2020; however, those emissions are accounted for in the industrial sector.) California's gross domestic product (GDP) and GHG intensity (GHG emissions per unit of GDP) both declined from 2019 to 2020 (Figure 3-4). It is expected that total GHG emissions will increase as the economy recovers over the next few years (CARB 2022a).

Figure 3-3. California 2020 Greenhouse Gas Emissions by Scoping Plan Category (Source: CARB 2022a)

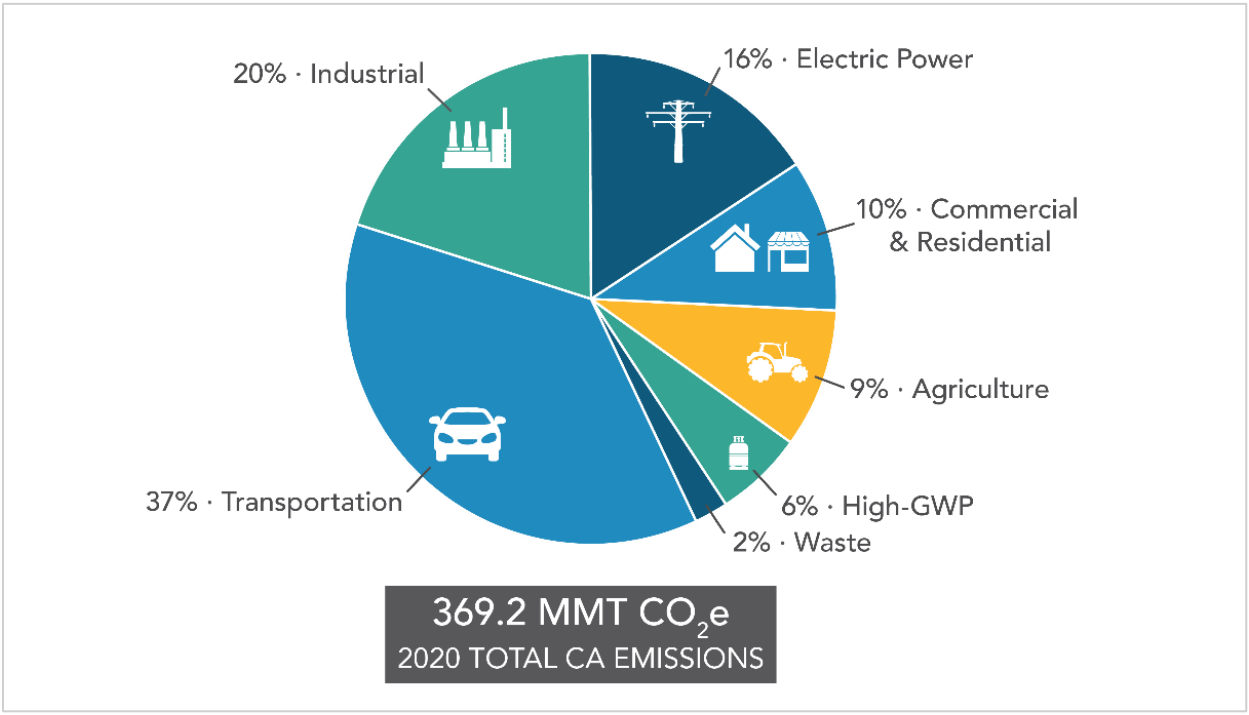
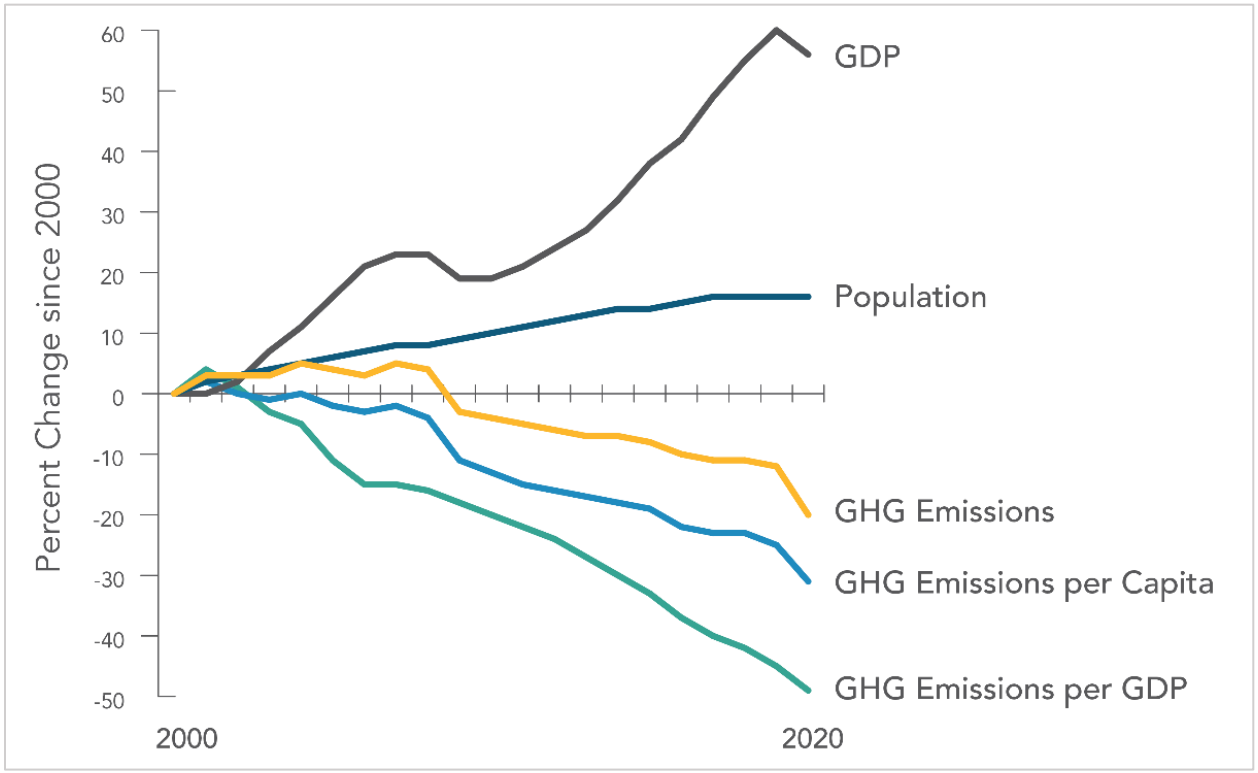


Figure 3-4. Change in California GDP, Population, and GHG Emissions since 2000 (Source: CARB 2022a)



AB 32 required CARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020, and to update it every 5 years. CARB adopted the first scoping plan in 2008. The second updated plan, California's 2017 Climate Change Scoping Plan, adopted on December 14, 2017, reflects the 2030 target established in EO B-30-15 and SB 32. The draft 2022 Scoping Plan Update additionally lays out a path to achieving carbon neutrality by 2045 (CARB 2022b).

3.4.2.4 Regional Plans

CARB sets regional GHG reduction targets for California's 18 metropolitan planning organizations (MPOs) to achieve through planning future projects that will cumulatively achieve those goals, and reporting how they will be met in the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The Project is included in the 2020 SCAG RTP/SCS. The regional reduction target for the SCAG region is 19 percent by 2035 (CARB 2022c).

Table 3-1. Applicable Local and Regional Greenhouse Gas Reduction or Climate Action Plans, Policies, and Strategies

GHG Reduction or Climate Action Plan	GHG Reduction Policies or Strategies
SCAG 2020-2045 RTP/SCS	The RTP/SCS includes the following strategies: • Improve mobility, accessibility, reliability, and travel safety for people and goods • Enhance the preservation, security, and resilience of the regional transportation system • Increase person and goods movement and travel choices within the transportation system • Reduce greenhouse gas emissions and improve air quality • Adapt to a changing climate and support an integrated regional development pattern and transportation network • Leverage new transportation technologies and data-driven solutions that result in more efficient travel • Encourage development of diverse housing types in areas that are supported by multiple transportation options
County of Riverside Climate Action Plan Update (November 2019)	• R2-T1: Alternative Transportation Options • R2-T2: Adopt and Implement a Bicycle Master Plan to expand Bike Routes around the County • R2-T3: Ride Sharing and Bike to Work Programs within Businesses • R2-T4: Electrify the Fleet
County of Riverside General Plan (2018, 2020)	• AQ 20.1- Reduce VMT by requiring expanded multi-modal facilities and services that provide transportation alternatives, such as transit, bicycle and pedestrian modes. Improve connectivity of the multi-modal facilities by providing linkages between various uses in the developments. • AQ 20.2 - Reduce VMT by facilitating an increase in transit options. In particular, coordinate with adjacent municipalities, transit providers and regional transportation planning agencies to develop mutual policies and funding mechanisms to increase the use of alternative transportation. • AQ 20.3 - Reduce VMT and GHG emissions by improving circulation network efficiency. • AQ 20.4 - Reduce VMT and traffic through programs that increase carpooling and public transit use, decrease trips and commute times, and increase use of alternative-fuel vehicles. • AQ 20.5 - Reduce emissions from standard gasoline vehicles, through VMT, by requiring all new residential units to install circuits and provide capacity for electric vehicle charging stations • AQ 20.6 - Reduce emissions from commercial vehicles, through VMT, by requiring all new commercial buildings, in excess of 162,000 square feet, to install circuits and provide capacity for electric vehicle charging stations.
City of Lake Elsinore Climate Action Plan (December 2011)	• Strategy T-1: Increase bicycle, pedestrian, and public transit travel • Strategy T-2: Manage Vehicle Parking • Strategy T-3: Increase in efficiency of land use patterns • Strategy T-4: Reduce trips • Strategy T-5: Increase the use of low- and zero-emissions vehicles

Sources: SCAG 2020, County of Riverside 2018, County of Riverside 2019, County of Riverside 2020, City of Lake Elsinore 2011

Notes:

GHG=greenhouse gas; $MMTCO_2e$=million metric tons of carbon dioxide equivalent; RTP=Regional Transportation Plan; SB=Senate Bill; SCS=Sustainable Communities Strategy

3.4.3 Project Analysis

GHG emissions from transportation projects can be divided into those produced during operation and use of the State Highway System (SHS) (operational emissions) and those produced during construction. The primary GHGs produced by the transportation sector are CO_2, CH_4, N_2O, and HFCs. CO_2 emissions are a product of the of burning gasoline or diesel fuel in internal combustion engines, along with relatively small amounts of CH_4 and N_2O. A small amount of HFC emissions related to refrigeration is also included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code, § 21083(b)(2)). As the California Supreme Court explained, “because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself.” (Cleveland National Forest Foundation *v.* San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512.). In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (CEQA Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

3.4.3.1 Operational Emissions

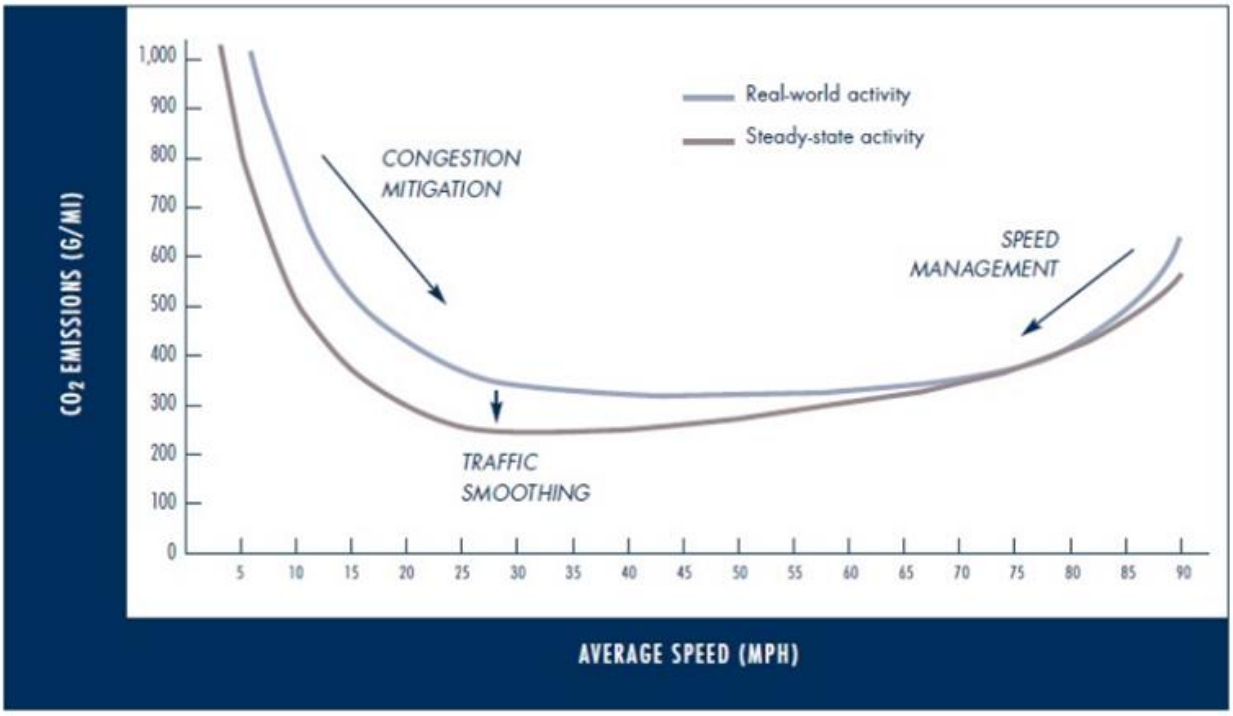
CO_2 from fossil fuel combustion is the largest component of U.S. GHG emissions, and transportation is the largest contributor of CO_2. The largest emitters of transportation CO_2 emissions in 2020 were passenger cars (38.5 percent), freight trucks (26.3 percent), and light-duty trucks (18.9 percent). The remainder came from other modes of transportation, including aircraft, ships, boats, and trains, as well as pipelines and lubricants (U.S. EPA 2022b). Because CO_2 emissions represent the greatest percentage of GHG emissions, it has been selected as a proxy for the following analysis of potential climate change impacts.

The highest levels of CO_2 from mobile sources such as automobiles occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (see Figure 3-5). To the extent that a project enhances operational efficiency and improves travel times in high-congestion travel corridors, GHG emissions, particularly CO_2, may be reduced, provided that improved travel times do not induce additional VMT.

Four primary strategies can reduce GHG emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity (e.g. vehicle miles

traveled), (3) transitioning to lower GHG emitting fuels, and (4) improving vehicle technologies and efficiency. To be most effective, all four strategies should be pursued concurrently.

Figure 3-5. Possible Use of Traffic Operation Strategies in Reducing On-Road Carbon Monoxide Emissions (Source: Barth and Boriboonsomsin 2010)



The SCAG 2020-2045 RTP/SCS (SCAG 2020) identifies and analyzes transportation needs for the region and creates a framework for project priorities. The SCS, which is incorporated into the RTP/SCS per Senate Bill 375, demonstrates how the region would meet its GHG reduction targets. The Project is included in the 2020-2045 RTP/SCS adopted by the SCAG Regional Council on September 3, 2020, and is listed as FTIP Project ID # RIV060109. The Project under the Build Alternatives will result in a more efficient transportation system within the Project limits by providing additional ramp storage capacity and improvements to the directional connectivity between the I-15 and SR-74 corridors, signalization, and throughput volumes. In addition, the Project will install new sidewalks along the east side of Dexter Avenue, between the Arroyo Del Toro Channel and the Latter Day Saints Church, and on the south side of SR-74 (Central Avenue), between the SB on-ramp and Dexter Avenue, where currently no sidewalk exists. Therefore, the Project under the Build Alternatives will maximize mobility and accessibility for all users within the region and reduce greenhouse gas emissions.

3.4.3.2 Quantitative Analysis

The regional VMT data for the existing, No-Build, and build alternatives, along with the CT-EMFAC2017 GHG emission rates, were used to calculate the CO_2e emissions for the Existing Year (2018), Opening Year (2025), and Horizon Year (2045) conditions. The results of the modeling are summarized in Table 3-2.

Table 3-2. Modeled Annual CO_2e Emissions and Vehicle Miles Traveled, by Alternative

Alternative	CO_2e Emissions (metric tons/year)	Annual VMT[a]
Existing Year (2018)/Baseline	394,098	984,853,491
Opening Year (2025)		
Alternative 1 (No-Build)	362,222	1,112,149,467
Alternative 2	362,596	1,113,299,069
Alternative 3 (Preferred Alternative)	362,196	1,112,071,425
Horizon (2045)		
Alternative 1 (No-Build)	368,974	1,475,852,258
Alternative 2	369,409	1,477,592,679
Alternative 3 (Preferred Alternative)	368,958	1,475,790,645

Source: CT-EMFAC2017

Notes:

[a] Annual VMT values derived from Daily VMT values multiplied by 347, per ARB methodology (CARB 2008).

CO_2e=carbon dioxide equivalent[2]; VMT=vehicle miles traveled

As shown in Table 3-2, the future No-Build and build condition GHG emissions in the Opening Year (2025) and Horizon Year (2045) are lower than the Existing Year (2018) baseline conditions. In Opening Year (2025), under Alternative 1 (No Build) GHG emissions will decrease below Existing Year (2018) baseline conditions by 31,876 metric tons of CO_2e. Under Alternative 2, GHG emissions will decrease by 31,502 MT CO_2e below Existing Year (2018) baseline conditions. Alternative 3

[2] CO_2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential. This is 1, 25, and 298 for CO_2, CH_4, and N_2O, respectively. Total CO_2e is then estimated by summing CO_2e estimates over all GHGs.

(Preferred Alternative) will decrease emissions below existing by 31,902 MT CO_2e, the largest reduction of all the alternatives.

When compared to Alternative 1 (No-Build) conditions, Alternative 2 will increase the GHG emissions by 374 MT of CO_2e per year in Opening Year (2025) and by 435 MT of CO_2e per year in Horizon Year (2045). When compared to Alternative 1 (No-Build) conditions, Alternative 3 (Preferred Alternative) will decrease the GHG emissions by 26 MT of CO_2e per year in Opening Year (2025) and by 16 MT of CO_2e per year in Horizon Year (2045) compared to Alternative 1 (No-Build) conditions.

CARB developed the EMission FACtors (EMFAC) model to facilitate preparation of statewide and regional mobile source emissions inventories. The model generates emissions rates that can be multiplied by vehicle activity data from all motor vehicles, including passenger cars to heavy-duty trucks, operating on highways, freeways, and local roads in California. EMFAC has a rigorous scientific foundation, has been approved by U.S. EPA, and has been vetted through multiple stakeholder reviews. Caltrans developed CT-EMFAC to apply project-specific factors to CARB's model.

EMFAC's GHG emission rates are based on tailpipe emissions test data and the model does not account for factors such as the rate of acceleration and vehicle aerodynamics, which influence the amount of emissions generated by a vehicle. GHG emissions quantified using CT-EMFAC are therefore estimates and may not reflect actual on-road emissions. Furthermore, the model does not account for induced travel. Modeling GHG estimates with EMFAC or CT-EMFAC nevertheless remains the most precise means of estimating future greenhouse gas emissions. While CT-EMFAC is currently the best available tool for use in calculating GHG emissions from mobile sources, it is important to note that the GHG results are only useful for a comparison of alternatives. Federal CAFE and GHG emissions standards continue to evolve, and models will be updated to account for regulatory changes.

3.4.3.3 Construction Emissions

Construction GHG emissions will result from material processing and transportation, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

Use of long-life pavement, improved traffic management plans, and changes in materials, can also help offset GHG emissions produced during construction by allowing longer intervals between maintenance and rehabilitation activities.

While there are minor variations between the two build alternatives, the construction duration and footprint for Alternative 2 and Alternative 3 (Preferred Alternative) are similar. Therefore, a single emissions analysis was conducted for both build alternatives. The construction emissions were estimated for the Project under Alternative 2 and Alternative 3 (Preferred Alternative) using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, Version 9.0.1. While the model was developed for Sacramento conditions in terms of fleet emission factors, silt loading, and other modeling assumptions, it is considered adequate for estimating road construction emissions by the South Coast Air Quality Management District (SCAQMD) in its CEQA guidance and is used for that purpose in this analysis. Construction-related emissions for Alternative 2 and 3 were prepared based on the best information available at the time of calculations and assume that the schedule for all improvements is anticipated to begin in 2024 and end in 2025. Default equipment assumptions for the Road Construction Emissions Model were used in developing the emissions estimates. Based on the calculations performed, construction activities will generate 2,496.9 MT of CO_2e over the maximum 18-month duration.

All construction contracts include Caltrans Standard Specifications related to air quality. Section 7-1.02A and 7 1.02C, Emissions Reduction, requires contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all CARB emission reduction regulations. Section 14-9.02, Air Pollution Control, requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

3.4.3.4 CEQA Conclusion

The Project is consistent with the long-term goal of AB32 and SB32 and will not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions. As discussed above, Build Alternative 2 and Alternative 3 (Preferred Alternative) will both result in a reduction of GHG emissions below existing (2018) conditions; impacts are considered less than significant.

Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

3.4.4 Greenhouse Gas Reduction Strategies

3.4.4.1 Statewide Efforts

In response to AB 32, California is implementing measures to achieve emission reductions of GHGs that cause climate change. Climate change programs in California are effectively reducing GHG emissions from all sectors of the economy. These programs include regulations, market programs, and incentives that will transform transportation, industry, fuels, and other sectors, to take California into a sustainable, low-carbon and cleaner future, while maintaining a robust economy (CARB 2022d).

Major sectors of the California economy, including transportation, will need to reduce emissions to meet 2030 and 2050 GHG emissions targets. The Governor's Office of Planning and Research identified five sustainability pillars in a 2015 report: (1) increasing the share of renewable energy in the State's energy mix to at least 50 percent by 2030; (2) reducing petroleum use by up to 50 percent by 2030; (3) increasing the energy efficiency of existing buildings by 50 percent by 2030; (4) reducing emissions of short-lived climate pollutants; and (5) stewarding natural resources, including forests, working lands, and wetlands, to ensure that they store carbon, are resilient, and enhance other environmental benefits (OPR 2015). OPR later added strategies related to achieving statewide carbon neutrality by 2045 in accordance with EO B-55-18 and AB 1279 (OPR 2022).

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled (VMT). Reducing today's petroleum use in cars and trucks by 50 percent is a key state goal for reducing greenhouse gas emissions by 2030 (California Environmental Protection Agency 2015).

In addition, SB 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

Subsequently, Governor Gavin Newsom issued Executive Order N-82-20 to combat the crises in climate change and biodiversity. It instructs state agencies to use existing authorities and resources to identify and implement near- and long-term actions to accelerate natural removal of carbon and build climate resilience in our forests, wetlands, urban greenspaces, agricultural soils, and land conservation activities in ways that serve all communities and in particular low-income,

disadvantaged, and vulnerable communities. To support this order, the California Natural Resources Agency (California Natural Resources Agency 2022a) released *Natural and Working Lands Climate Smart Strategy*, with a focus on nature-based solutions.

3.4.4.2 Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the CARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set an interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

Climate Action Plan for Transportation Infrastructure

The *California Action Plan for Transportation Infrastructure* (CAPTI) builds on executive orders signed by Governor Newsom in 2019 and 2020 targeted at reducing GHG emissions in transportation, which account for more than 40 percent of all polluting emissions, to reach the state's climate goals. Under CAPTI, where feasible and within existing funding program structures, the state will invest discretionary transportation funds in sustainable infrastructure projects that align with its climate, health, and social equity goals (California State Transportation Agency 2021).

California Transportation Plan

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. It serves as an umbrella document for all the other statewide transportation planning documents. The CTP 2050 presents a vision of a safe, resilient, and universally accessible transportation system that supports vibrant communities, advances racial and economic justice, and improves public and environmental health. The plan's climate goal is to achieve statewide GHG emissions reduction targets and increase resilience to climate change. It demonstrates how GHG emissions from the transportation sector can be reduced through advancements in clean fuel technologies; continued shifts toward active travel, transit, and shared mobility; more efficient land use and development practices; and continued shifts to telework (Caltrans 2021e).

Caltrans Strategic Plan

The Caltrans 2020–2024 Strategic Plan includes goals of stewardship, climate action, and equity. Climate action strategies include developing and implementing a Caltrans Climate Action Plan; a robust program of climate action education, training, and outreach; partnership and collaboration; a

VMT monitoring and reduction program; and engaging with the most vulnerable communities in developing and implementing Caltrans climate action activities (Caltrans 2021f).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) established a Department policy to ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. *Caltrans Greenhouse Gas Emissions and Mitigation Report* (Caltrans 2020n) provides a comprehensive overview of Caltrans' emissions. The report documents and evaluates current Caltrans procedures and activities that track and reduce GHG emissions and identifies additional opportunities for further reducing GHG emissions from Department-controlled emission sources, in support of Departmental and State goals.

3.4.4.3 Project-Level GHG Reduction Strategies

The Project includes the following project features (PF) that will help to improve existing pedestrian and bicycle connections, as well as provide new pedestrian and bicycle connections within the Project area:

PF-1 The Project will include the continuation of newly constructed sidewalk and direct ADA compliant sidewalk through the I-15/SR-74 interchange from the SB on-ramp to Dexter Avenue.

PF-2 The Project will include connections for the Business District on the east and west sides of I-15, and from Arroyo Del Toro Channel to 11th Street.

PF-3 The Project will include connections for the Business District to the established residential neighborhoods, north of 11th Street.

PF-4 The Project will include the construction of new ADA walkways totaling nearly 1,150 linear feet and eliminating indirect routes for pedestrian traffic that currently require multiple crossings of SR-74.

PF-5 The Project will include the addition of a 5 to 6-foot paved shoulder on the west side of Dexter Avenue between 11th Street and Central Ave, that could potentially serve as a bike lane, and will equate to 2,500 linear feet of new bike lane.

These project features will encourage bicycling and walking to help reduce GHG emissions under Alternative 2 and Alternative 3 (Preferred Alternative).

The following measures will be implemented in the project to reduce project-level GHG emissions and potential climate change impacts during construction and operation under Alternative 2 and Alternative 3 (Preferred Alternative).

GHG-1 During construction, the City's Resident Engineer will ensure that idling will be limited to 5 minutes for delivery and dump tracks and other diesel-powered equipment.

GHG-2 During construction, the City's Resident Engineer will ensure that truck trips are scheduled outside of peak morning and evening commute hours.

GHG-3 During construction, the City's Resident Engineer will ensure that on-site recycling of existing project features will be implemented, which will include the reuse of excavated fill for new roadway and ramp embankments within the Project limits.

GHG-4 During construction, the City's Resident Engineer will ensure that Project improvements along the I-15 mainline auxiliary lanes will occur on concrete pavement, which will improve fuel mileage and lower the rolling resistance of the existing highway surface, while still maintaining design and safety standards.

GHG-5 During construction, the City's Resident Engineer will ensure that lighting needs will be replaced with ultra-reflective sign materials that will be illuminated by headlights.

GHG-6 During construction, the City's Resident Engineer will ensure that lane closures will be lengthened to reduce necessary mobilization efforts.

GHG-7 During construction, the City's Resident Engineer will ensure the maximized use of recycled materials (tire rubber for example).

GHG-8 During construction, the City's Resident Engineer will ensure that the need for the transport of earthen materials is reduced by balancing cut and fill quantities on-site.

GHG-9 During final design (PS&E), the City's Resident Engineer will ensure that measures to improve water efficiency will be incorporated, as feasible, within the Project design.

GHG-10 During final design (PS&E), the City's Resident Engineer will ensure the Complete Streets Components identified within the project features will be implemented as part of the Project design.

GHG-11 During final design (PS&E), the City's Resident Engineer will ensure that drought tolerant vegetation and grasses will be planted in order to reduce "heat island" effects as part of the Project design.

GHG-12 During final design (PS&E), the City's Resident Engineer will ensure that green infrastructure, such as planted areas will be incorporated in place of gray, or concrete, storm water facilities. Best Management Practices will require bio strips and bio swales to serve as stormwater treatment areas for surface runoff into Project design.

GHG-13 During final design (PS&E), the City's Resident Engineer will ensure that life-cycle costs will be minimized through the incorporation of long-life pavement, which will include a 40-year pavement structure design and installation will be evaluated and incorporated into Project design.

GHG-14 During final design (PS&E), the City's Resident Engineer will ensure that local infiltration will be incorporated into design, in order to reduce energy costs to convey and treating stormwater through municipal systems, as part of the Project design.

GHG-15 During final design (PS&E), the City's Resident Engineer will ensure that project features that minimize the need for irrigation and nonnative plants will be incorporated into the Project design.

GHG-16 During final design (PS&E), the City's Resident Engineer will ensure that any ultimate net loss of tree canopy within the Project limits will be avoided through the combination of preservation and new planting at a minimum of 1:1 replacement of trees lost. In addition, if overall available planting area has been reduced, then all trees lost will be compensated to the extent possible with new trees planted either on- or off-site.

AQ-4 During construction, the City's Resident Engineer will ensure that the contractor will adhere to Caltrans Standard Specifications for Construction (Sections 14.9). Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

The following measures will be implemented to reduce project-level GHG emissions and potential climate change impacts during construction and operation under Alternative 2, only.

GHG-17 During construction, the City's Resident Engineer will ensure construction waste will be reduced through the re-use or recycling of construction and demolition waste.

GHG-18 During construction, the City's Resident Engineer will ensure large trees removed will be salvaged for lumber or similar on-site beneficial uses other than standard wood-chipping.

GHG-19 During construction, the City's Resident Engineer will ensure cold in-place recycling will be implemented. This pavement rehabilitation treatment will be utilized on low traffic-

volume, hot mix asphalt pavements to extend the pavement service life and to recycle natural resources.

GHG-20 During construction, the City's Resident Engineer will ensure that compost and native hydroseed mix to promote revegetation success and provide erosion control will be used in disturbed areas within the Project limits. Vegetation will help sequester carbon dioxide.

GHG-21 During final design (PS&E), the City's Resident Engineer will ensure that the Project design will incorporate native plants and vegetation, replacing more vegetation than was removed. Landscaping components such as mulch and compost application around new and existing plants will be incorporated to retain soil moisture, improve carbon sequestration rates in soils, and reduce organic waste.

GHG-22 During final design (PS&E), the City's Resident Engineer will ensure that the Project will include features to support multi-modal transportation and infrastructure electrification including, but not limited to, additional park and ride lots, bike lockers, electric vehicle charging, and charging for electric bicycles.

3.4.5 Adaptation

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

3.4.5.1 Federal Efforts

Under NEPA Assignment, Caltrans is obligated to comply with all applicable federal environmental laws and FHWA NEPA regulations, policies, and guidance.

The *Fourth National Climate Assessment*, published in 2018, presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10

regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways."

The U.S. DOT Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions" (U.S. DOT 2011). The U.S. DOT Climate Action Plan of August 2021 followed up with a statement of policy to "accelerate reductions in greenhouse gas emissions from the transportation sector and make our transportation infrastructure more climate change resilient now and in the future," following this set of guiding principles (U.S. DOT 2021):

- Use best-available science
- Prioritize the most vulnerable
- Preserve ecosystems
- Build community relationships
- Engage globally

U.S. DOT developed its climate action plan pursuant to the federal EO 14008, *Tackling the Climate Crisis at Home and Abroad* (January 27, 2021). EO 14008 recognized the threats of climate change to national security and ordered federal government agencies to prioritize actions on climate adaptation and resilience in their programs and investments (White House 2021).

FHWA order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*, December 15, 2014) established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels (FHWA 2019).

3.4.5.2 State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. A number of state policies and tools have been developed to guide adaptation efforts.

California's Fourth Climate Change Assessment (Fourth Assessment) (2018) is the state's effort to "translate the state of climate science into useful information for action." It provides information that will help decision makers across sectors and at state, regional, and local scales protect and build the resilience of the state's people, infrastructure, natural systems, working lands, and waters. The

State's approach recognizes that the consequences of climate change occur at the intersections of people, nature, and infrastructure. The Fourth Assessment reports that if no measures are taken to reduce GHG emissions by 2021 or sooner, the state is projected to experience a 2.7 to 8.8 degrees Fahrenheit increase in average annual maximum daily temperatures, with impacts on agriculture, energy demand, natural systems, and public health; a two-thirds decline in water supply from snowpack and water shortages that will impact agricultural production; a 77 percent increase in average area burned by wildfire, with consequences for forest health and communities; and large-scale erosion of up to 67 percent of Southern California beaches and inundation of billions of dollars' worth of residential and commercial buildings due to sea level rise (State of California 2018).

Sea level rise is a particular concern for transportation infrastructure in the coastal zone. Major urban airports will be at risk of flooding from sea level rise combined with storm surge as early as 2040; San Francisco airport is already at risk. Miles of coastal highways vulnerable to flooding in a 100-year storm event will triple to 370 by 2100, and 3,750 miles will be exposed to temporary flooding. The Fourth Assessment's findings highlight the need for proactive action to address these current and future impacts of climate change.

In 2008, then-governor Arnold Schwarzenegger recognized the need when he issued EO S-13-08, focused on sea level rise. Technical reports on the latest sea level rise science were first published in 2010 and updated in 2013 and 2017. The 2017 projections of sea level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018. This EO also gave rise to the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan), which addressed the full range of climate change impacts and recommended adaptation strategies. The Safeguarding California Plan was updated in 2018 and again in 2021 as the *California Climate Adaptation Strategy*, incorporating key elements of the latest sector-specific plans such as the *Natural and Working Lands Climate Smart Strategy, Wildfire and Forest Resilience Action Plan, Water Resilience Portfolio*, and the CAPTI (described above). Priorities in the 2021 California Climate Adaptation Strategy include acting in partnership with California Native American Tribes, strengthening protections for climate-vulnerable communities that lack capacity and resources, nature-based climate solutions, use of best available climate science, and partnering and collaboration to best leverage resources (California Natural Resources Agency 2022b).

EO B 30 15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change in addition to sea level rise also threaten California's infrastructure. At the direction of EO B-30-15, the Office of Planning

and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach.

AB 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group to help actors throughout the state address the findings of California's Fourth Climate Change Assessment. It released its report, Pa*ying it Forward: The Path Toward Climate-Safe Infrastructure in California*, in 2018. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts (Climate Change Infrastructure Working Group 2018).

3.4.5.3 Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans completed climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects of precipitation, temperature, wildfire, storm surge, and sea level rise.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments guide analysis of at-risk assets and development of Adaptation Priority Reports as a method to make capital programming decisions to address identified risks.

Project Adaptation Analysis

Sea Level Rise

The Project is outside the coastal zone and not in an area subject to sea-level rise. Accordingly, direct impacts to transportation facilities due to projected sea-level rise are not expected.

Precipitation and Flooding

With climate change, California is expected to experience less precipitation overall, but would experience heavier individual precipitation events with more falling as rain than as snow. The District 8 Climate Change Vulnerability Assessment (Caltrans 2019c) mapped projected changes in 100-year storm precipitation under future climate change conditions. The 100-year storm metric is used in the design of transportation assets. Mapping indicates an increase in 100-year storm precipitation depths of about 4.7 percent or less in the Project area by 2025 and 2085. Average annual rainfall

measured at the closest climatological station is about 12 inches, with most rain falling between November and April.

The Project is within the City of Lake Elsinore in Western Riverside County. Project work on the I-15 NB hook off-ramp to Dexter Avenue will cause a modification to the existing Arroyo Del Toro Channel that provides flood control functions within a FEMA Flood Zone A (area subject to the 1 percent annual chance [100-year] flood event). Alternative 2 will increase impervious surfaces by approximately 8 acres and Alternative 3 (Preferred Alternative) will increase impervious surfaces by approximately 9 acres. Increases in impervious surfaces will increase peak flows and stormwater runoff volumes. Stormwater runoff within Project limits will occur either by sheet flows or collected by curbs and directed to existing biofiltration strips and regional drainage systems. A portion of drainage from NB I-15 drains directly to Wasson Canyon Wash, and the rest the of Project runoff flows indirectly into Temescal Wash/Temescal Creek via the existing City and Caltrans storm drain system.

However, as discussed in Section 2.13, Hydrology and Floodplain, the improvements to the Arroyo Del Toro Channel are minor and will have a minimal impact on floodplains. The Project improvements can be classified as low risk. The Project does not support incompatible floodplain development. The potential risk to life and property remains unchanged as a result of these improvements. There is no increase in the base flood elevation and the Project does not alter the existing flooding source. The Project will result in minimal increases in water surface elevation and will continue to be contained in the channel. The improvements will not adversely impact the floodplains, and flood conveyance will be maintained. Therefore, Project facilities are not expected to be at risk from effects of future changes in storm precipitation.

Wildfire

District 8 Climate Change Vulnerability Assessment (Caltrans 2019) mapping of roadway exposed to wildfire concern shows the intersection of I-15 and SR-74 is within the area of moderate concern for future wildfire projections in 2025, 2055, and 2085. Fire hazard severity mapping by the California Department of Forestry and Fire Prevention (CAL-FIRE) shows the Project location outside a State Responsibility Area, although portions of the Project limits on I-15 are adjacent to moderate or very high fire hazard severity zones (CAL-FIRE 2020). Given the built-up character of the location, the Project is not likely to be any more vulnerable to wildfire than under existing conditions. In addition, Caltrans 2018 revised Standard Specification 7-1.02M(2) mandates fire prevention procedures during construction, including a fire prevention plan. Accordingly, the Project is not anticipated to exacerbate the impacts of wildfires intensified by climate change.

Temperature

As shown in the District 8 Climate Change Vulnerability Assessment (Caltrans 2019) mapping, the area within and surrounding the intersection of I-15 and SR-74 is projected to experience a 1.9, 4.4, and 7.5 degrees Fahrenheit increase in average minimum air temperature in 2025, 2055, and 2085, respectively. The area within and surrounding the intersection of I-15 and SR-74 is projected to experience a 2.8, 6.5, and 10.5 degrees Fahrenheit increase in average 7-day maximum air temperature in 2025, 2055, and 2085, respectively. Roadways may experience extreme temperatures that can affect pavement integrity under both extreme cold conditions (which leads to contraction) and high heat (which leads to expansion). The Project will include implementation of Measures GHG-13, as discussed in Section 3.4.4.3, which entails incorporating long-life pavement with a 40-year pavement structure design, to minimize life-cycle costs and in consideration of future climate conditions (e.g., areas that are expected to experience increased temperatures and heat days may have different pavement needs than areas expecting more frequent freezing temperatures).

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4 Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and level of analysis required, as well as identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for this Project have been accomplished through a variety of formal and informal methods, a planned public meeting, the issuance of a public notice, and monthly Project Development Team (PDT) meetings. This chapter summarizes the results of Caltrans; and efforts to fully identify, address, and resolve Project-related issues through early and continuing coordination.

4.1 Consultation and Coordination with Public Agencies and Tribal Governments

4.1.1 Native American Consultation

Table 4-1 documents the current status of the coordination and consultation that has occurred as part of the Project with Native American tribes, groups, and individuals per AB 52 and Section 106.

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Table 4-1. Native American Consultation and Coordination

Consulting Party	Timing	Activity
Native American tribes, groups, and individuals	May 7, 2019 July 18, 2019 April 2, 2020 June 5, 2020 December 2, 2020 December 16, 2020	On May 7, 2019, the NAHC was consulted to elicit pertinent cultural resource information available in the Sacred Lands File. NAHC responded May 23, 2019, stating the Sacred Lands File search for the Project was completed, and the results were negative, but the area is sensitive for cultural resources. The NAHC provided a list of recommended Native American contacts within the region for follow-up. After review of the list of Native American contacts provided by NAHC, Caltrans' District 8 Native American Coordinator initiated Section 106 contact with the following individuals through a letter dated July 18, 2019: • Travis Armstrong, Tribal Historic Preservation Officer, Morongo Band of Mission Indians (MBMI) • Connie Colocho, Tribal Historic Preservation Officer, Rincon Band of Luiseño Indians (RBLI) • Joseph Ontiveros, Tribal Historic Preservation Officer, Soboba Band of Luiseño Indians (SBLI) • Gary DuBois, Tribal Historic Preservation Officer, Pechanga Band of Luiseño Indians (PBLI) • Robert Smith, Chairperson, Pala Band of Mission Indians (PBMI) These letters also served as formal notification of the Project as required under CEQA, specifically PRC 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). The letters provided a Project description and location and discussed upcoming cultural resources studies of the Project area. The first round of follow-up emails was conducted April 2, 2020. A second round of follow-up emails was completed June 5, 2020. A third round of follow-up emails was conducted May 7, 2021, and a final round of follow-up emails was conducted June 6, 2021. A summary of the responses received as a result of this correspondence is provided below. • RBLI: Ms. Cheryl Madrigal, Tribal Historic Preservation Officer, replied on August 9, 2019, noting that the City of Lake Elsinore is considered a Traditional Cultural Place and Landscape by the RBLI. The tribe has knowledge of several Luiseño Place Names within 0.50-mile radius of the APE and along SR-74. The tribe requested government-to-government consultation. On December 7, 2020, Ms. Madrigal sent a letter via email, noting the Band has reviewed the provided documents and believe that the potential to impact TCRs is moderate. Per field survey, ground-surface visibility was very poor in parts of the APE and RBLI believes

Table 4-1. Native American Consultation and Coordination

Consulting Party	Timing	Activity
		the potential exists for subsurface deposits. RBLI recommended archaeological and tribal monitoring for all ground disturbing activities, a monitoring report, and protocols for discovery of cultural material and human remains. RBLI also requested to be notified of any changes in Project plans, in addition to the final monitoring report, when available. On December 16, 2020, a monitoring denial letter from Caltrans was issued to RBLI stating that due to lack of historic properties within or immediately adjacent to the Project, as well as a low probability of encountering intact, buried cultural deposits. On January 4, 2021, Ms. Madrigal sent a letter noting RBLI has been informed that the Project will not be conditioned with tribal monitoring and had no further comments at this time. • SBLI. Mr. Joseph Ontiveros, Tribal Historic Preservation Officer, replied on August 5, 2019, noting the Project falls within the boundaries of their Tribal Traditional Use Areas. The tribe requested government-to-government consultation and Native American Monitor(s) from the SBLI Cultural Resource Department to be present during any ground-disturbing proceedings including surveys and archaeological testing. Follow-up emails were sent on April 2, 2020, and June 5, 2020, and a copy of the Draft HPSR was sent to Mr. Ontiveros for tribal review and comments. No comments beyond the request for monitoring have been received to date. • PBLI, Mr. Gary DuBois, Tribal Historic Preservation Officer. No response received to date. Follow-up emails were sent on April 2, 2020, and June 5, 2020, and a copy of the Draft HPSR was sent to Mr. DuBois for tribal review and comments. No comments have been received to date. • PBMI, Mr. Robert Smith, Chairperson. No response received to date after the initial Section 106 initiation letter sent July 18, 2019, and follow-up emails sent on April 2, 2020, and June 5, 2020. • MBMI, Mr. Travis Armstrong, Tribal Historic Preservation Officer. No response received to date after the initial Section 106 initiation letter sent July 18, 2019, and follow-up emails sent on April 2, 2020, and June 5, 2020.

APE=Area of Potential Effects; Caltrans=California Department of Transportation; CEQA=California Environmental Quality Act; HPSR=Historic Property Survey Report; MBMI=Morongo Band of Mission Indians; NAHC=Native American Heritage Commission; PBLI=Pechanga Band of Luiseño Indians; PBMI=Pala Band of Mission Indians; PRC=Public Resources Code; RBLI=Rincon Band of Luiseño Indians; SBLI=Soboba Band of Luiseño Indians; SR-74=State Route 74; TCR=Tribal Cultural Resources

4.1.2 Resource Agencies

On December 9, 2020, representatives from Caltrans District 8 and the City of Lake Elsinore met with representatives from the RCA, USFWS, RWQCB, and CDFW. The purpose of the meeting was to discuss coordination efforts related to the WRCMSHCP and regulatory permitting required for the Project.

Discussions resulting from this meeting contributed to updates to the DBESP report approved by Caltrans in May 2021 (Caltrans 2021g), which discusses the Project's compliance with WRCMSHCP requirements for *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools* as identified in Section 6.2 of the WRCMSHCP and was submitted to the Western Riverside RCA and wildlife agencies for review and approval through the Western Riverside County MSHCP's JPR Process on November 22, 2021. Concurrence of the DBESP, and mitigation included in the DBESP, was received on June 14, 2024.

Table 1-4 includes permits, reviews, and approvals that will be required prior to the construction of the Project.

4.1.3 Community Outreach and Public Involvement

4.1.3.1 Project Development Team Meetings

A PDT was identified to ensure collaborative communication among the stakeholders, which includes representatives from Caltrans and the City of Lake Elsinore. PDT meetings have occurred on a monthly basis at Caltrans District 8 offices and virtually, and are attended by the engineering and environmental consultant teams from the City and Caltrans. The larger PDT consists of engineers, environmental generalists, biologists, archaeologists, paleontologists, and air quality and noise specialists. Monthly PDT meetings are still ongoing.

4.1.3.2 Public Participation

The PDT has developed a public outreach plan to develop an effective engagement strategy to inform the public of Project milestones, updates, and receive feedback throughout the Project. The City and its consultants have developed a stakeholder database including local businesses, community organizations, key stakeholders, and members of the public. This database will be utilized for notification purposes prior to and throughout the public comment period, public meeting, and for Project updates. The public outreach plan outlines various ways to communicate and notify the public about the Project and the public review period such as: website postings, social media advertisements and posts, geo fencing advertisements, short message service (SMS) text

messaging, email notifications, local newspaper advertisements, door-to-door distribution for targeted businesses, and joint public notice and Notice of Intent (NOI) mailing.

As discussed above, PDT meetings between representatives from Caltrans and the City of Lake Elsinore have been held to discuss the status of the Project. The Draft IS/EA and a NOI/public notice, as shown on the following page, were distributed to local agencies, regional agencies, and utility providers affected by the Project. In addition, property owners within a 1,000-foot buffer of the Project limits were provided with a NOI/public notice. The NOI/public notice was submitted and posted on the State Clearinghouse CEQAnet website on November 9, 2023. The Draft IS/EA was circulated for a 33-day public review period between November 10, 2023, and December 12, 2023. Hardcopies of the Draft IS/EA were made available for public review at the following locations:

- City of Lake Elsinore, 130 South Main Street, Lake Elsinore, California 92530
- Lake Elsinore Library, 600 West Graham, Lake Elsinore, California 92530

The Draft IS/EA was also made available electronically on the Project Website (https://www.lake-elsinore.org/CentralAveInterchange). Chapter 6, Distribution List, provides additional information about where the document was distributed and who received a copy of the NOI/public notice, notifying them of the release of the document for public review and comment.

During the public review period, Caltrans also hosted an in-person public meeting on November 29, 2023, from 4:00 to 7:00 p.m. at the City of Lake Elsinore Cultural Arts Center located at 183 North Main Street, Lake Elsinore, CA 92530. A total of 12 public attendees were present at the public meeting. Upon arrival, attendees were asked to sign in and were provided an overview of how to participate in the open house format. The in-person meeting consisted of an open room flow, where attendees could view the three project alternatives on display boards at each station and ask Project team members questions. English and Spanish exhibits were displayed to accommodate the Spanish-speaking community, and Spanish interpretation services were available. As community members visited each open house station, Project team members answered questions and encouraged attendees to leave written comments on bilingual comment cards. A total of four comment cards were completed and collected. The comment cards as well as the responses to these comments are provided on the following pages as Comments 3 through 6. Comments received were mostly in support of the Project.

4.1.4 Southern California Association of Governments

Caltrans initiated consultation with SCAG's Transportation Conformity Working Group (TCWG) by submitting a PM Hot Spot Interagency Review Form. At the TCWG's consultation meeting on August 25, 2020, the TCWG found that neither Alternatives 2 nor 3 are a project of air quality concern

(POAQC). The TCWG reaffirmed the finding that neither Alternatives 2 nor 3 are a POAQC on June 25, 2024.

Public comment was requested regarding the information in the PM Hot Spot Interagency Review Form and the TCWG's determination (see Appendix L, Required Consultation/Consultation Documentation). Public comment regarding the conformity analysis was requested as part of the Draft IS/EA circulation between November 10, 2023, and December 12, 2023, and as part of a separate air quality conformity public review period between May 18, 2024, and June 3, 2024. No comments were received on the air quality conformity determination, which was included in an air quality conformity report that was submitted to FHWA on July 17, 2024. FHWA made the final determination on project-level conformity on August 9, 2024.

4.2 Comments and Responses

The NOI/public notice and public comments received during the public review period are provided on the following pages along with responses to the comments. All of the public comments were received from local community members. Comments 1 and 2 were received via email. Comments 3 through 6 were received as comments cards during the public meeting. None of the comments received requested or required substantive changes to the IS/EA.

PUBLIC NOTICE

Interstate 15 (I-15)/State Route 74 (SR-74) (Central Avenue) Interchange Improvement Project

Notice of Intent to Adopt a Mitigated Negative Declaration
Announcement of Public Meeting

WHAT'S BEING PLANNED The City of Lake Elsinore (City), in cooperation with the California Department of Transportation (Caltrans), is proposing to improve the Interstate 15 (I-15)/State Route 74 (SR-74) (Central Avenue) interchange, in the City of Lake Elsinore, Riverside County, California. The I-15/SR-74 (Central Avenue) Interchange Improvement Project (Project) proposes to improve traffic operations, reduce congestion, and accommodate current and future traffic volumes on the I-15 and SR-74 corridors, and support anticipated growth and local development projects. The Project will also improve mobility and access for all users consistent with current Caltrans and City design standards. Alternative 1 (No-Build) and two Build Alternatives, Alternative 2 (northbound [NB] hook ramps) and Alternative 3 (NB hook ramps with NB loop off-ramp to west bound SR-74) are being evaluated for the Project. The Project is located approximately 1.6 mile south of the existing I-15/Nichols Road interchange and 1.3 mile north of the existing I-15/Main Street interchange.

WHY THIS AD? Caltrans has studied the effects this Project may have on the environment. Our studies show the Project will not significantly affect the quality of the environment. The report that explains this is called *Initial Study/Environmental Assessment*. This notice is to tell you about the preparation of the *Proposed Mitigated Negative Declaration and Initial Study/Environmental Assessment* and of its availability for you to read and offer you the opportunity to attend a public meeting, or to provide comments.

WHAT'S AVAILABLE? The *Proposed Mitigated Negative Declaration and Initial Study/Environmental Assessment* and other Project information is available in hard copy format at the following locations (document available during normal business hours; please call to confirm as hours may be subject to change):

City of Lake Elsinore
130 South Main Street
Lake Elsinore, CA 92530
Phone: (951) 674-3124

Lake Elsinore Library
600 West Graham
Lake Elsinore, CA 92530
Phone: (951) 674-4517

In addition, the documents will be available for review electronically on the City's website via the Project web page:

- Interstate 15/State Route 74 (Central Avenue) Interchange Improvement Project Website: www.lake-elsinore.org/I15-SR74interchange

WHERE YOU COME IN: Do you have any comments about processing the Project with a *Mitigated Negative Declaration and Initial Study/Environmental Assessment*? Do you disagree with the findings of our study as set forth in the *Proposed Mitigated Negative Declaration*? Would you care to make any other comments on the Project?
The public comment period will commence on Friday, November 10, 2023. All comments must be received no later than Tuesday, December 12, 2023.

Comments may be submitted via email to D8.0F310.Comments@dot.ca.gov with the subject line **"Comments on I-15/SR-74 Interchange Improvement Project IS(MND)/EA"** or mailed in writing to the address below:

Antonia Toledo, Branch Chief
California Department of Transportation, District 8
Environmental Studies D
464 West 4th Street, 6th Floor, MS 820
San Bernardino, CA 92401–1400

If there are no major comments, Caltrans will proceed with the Project's design.

WHEN AND WHERE: The public meeting will be held on **Wednesday, November 29, 2023** from **4:00 to 7:00 p.m.** at the **City of Lake Elsinore Cultural Arts Center** located at **183 North Main Street, Lake Elsinore, CA 92530.**

Individuals who require special accommodation (American Sign Language interpreter, documentation in alternate formats, etc.) are requested to call or write to City of Lake Elsinore, Attention: Remon Habib, City Engineer 130 South Main Street Lake Elsinore, CA 92530; (951) 674-3124, ext. 213 (Voice); or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

Caltrans ensures that no person in the state of California is excluded from participation in, denied the benefits of, or otherwise subjected to discrimination in Caltrans programs, policies, procedures, activities, and services on the grounds of race, color, national origin, sex, age, or disability.

CONTACT: For more information about the Project, please contact Remon Habib at (951) 674-3124, ext. 213 or at pio@lake-elsinore.org
Thank you for your interest in this Project.

EA 08-0F310

Comment 1:

Rice, Kevin James

From: Kevin.Rice[redacted]
To: Delu, Nina
Subject: RE: Interstate 15 (I-15)/State Route 74 (SR-74) (Central Avenue) interchange in City of Lake Elsinore

From: John[redacted]
Sent: Monday, December 4, 2023 12:45 PM
To: D8.0F310.Comments@dot.ca.gov; Hager, Mark[redacted]; Tom Carr[redacted]; Tac Vong[redacted]
Subject: Interstate 15 (I-15)/State Route 74 (SR-74) (Central Avenue) interchange in City of Lake Elsinore

You don't often get email from johnwang89@gmail.com. Learn why this is important

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Attn: Antonia Toledo, Branch Chief

Good morning.

I'm the owner of the property located on Dexter Avenue, APN 377-040-009. See the attached Assessor's map. This property is in front of the proposed relocation of

Interstate 15 (I-15)/State Route 74 (SR-74) (Central Avenue) Interchange in City of Lake Elsinore

We have been working with the County of Riverside these past 3 years while they were designing a public sidewalk on our property frontage. Today, the existing 40' driveway approach was built based on our project access needs. (See attachment, below.)

Currently, Caltrans is designing on/off ramps with traffic lights in front of our property. We ask that the engineering department consider our proposed 152,000 SF self-storage project so we may retain access to Dexter Avenue.

Please respond by email that you have received our email. If you have any questions, please don't hesitate to call or email me. I appreciate your consideration.

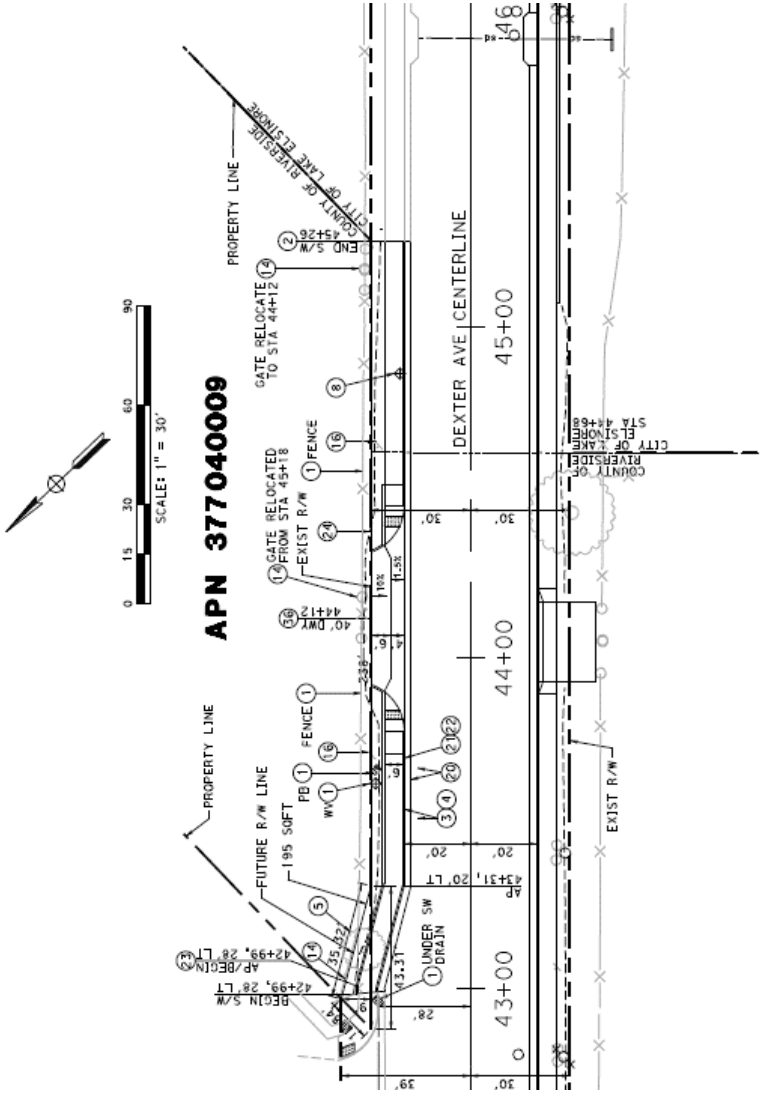
Mighty Development Inc
John[redacted]
President
[redacted]

1.1

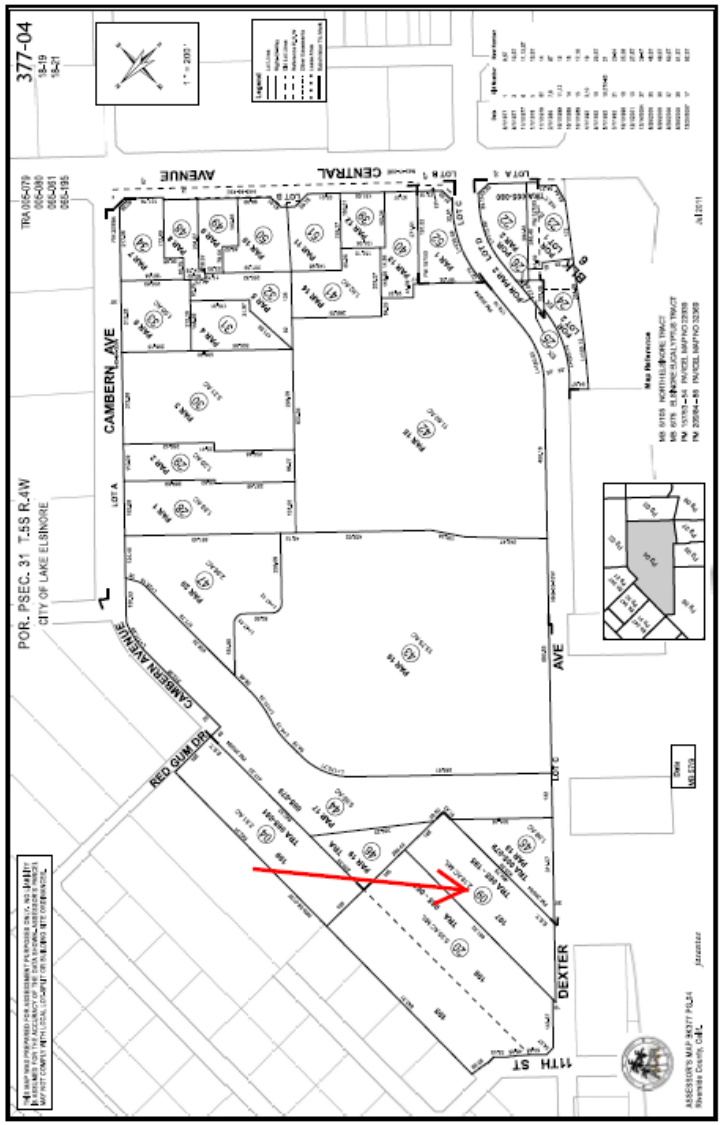
Response to Comment 1:

1.1 Thank you for your comment. Access to this property will not be allowed to occur with the defined Access Control Limits of the ramp terminal intersection related to State right-of-way. Adjustment of the property access to the south along Dexter Avenue will be considered in final design as part of the right-of-way process with the owner to provide acceptable access control limits and develop acceptable access to the existing adjacent undeveloped parcel(s). Caltrans considered your feedback.

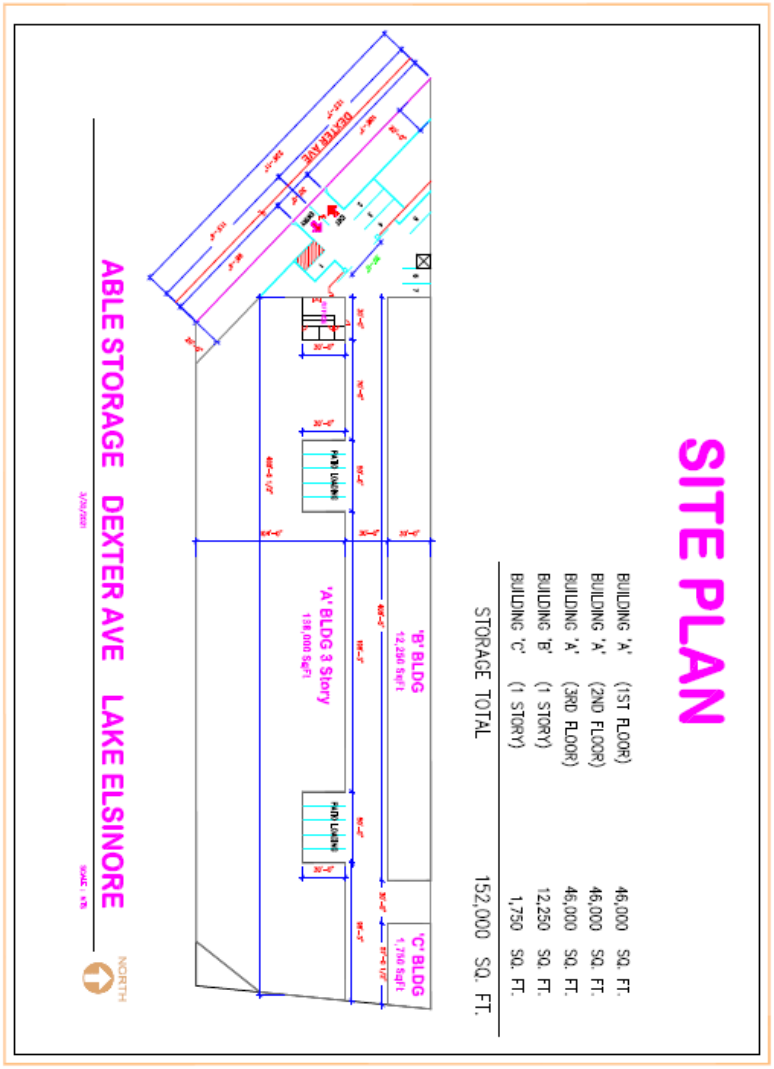
Comment 1 continued:



Comment 1 continued:



Comment 1 continued:



Comment 2:

Rice, Kevin James

From: Kevin.Rice[redacted]
To: Delu, Nina
Subject: RE: Comments on I-15/SR-74 Interchange Improvement Project IS - FROM L. WALKER

From: Porter, Jeanine E@DOT <jeanine.porter@dot.ca.gov> **On Behalf Of** D8 0F310 Comments@DOT
Sent: Wednesday, January 3, 2024 10:17 AM
To: Delu, Nina[redacted]
Subject: FW: Comments on I-15/SR-74 Interchange Improvement Project IS - FROM L.[redacted]

You don't often get email from d8.0f310.comments@dot.ca.gov. Learn why this is important

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Per your request, please see below...

From: Liddy[redacted]
Sent: Tuesday, December 5, 2023 7:33 PM
To: D8 0F310 Comments@DOT <D8.0F310.Comments@dot.ca.gov>
Subject: Comments on I-15/SR-74 Interchange Improvement Project IS

EXTERNAL EMAIL. Links/attachments may not be safe.

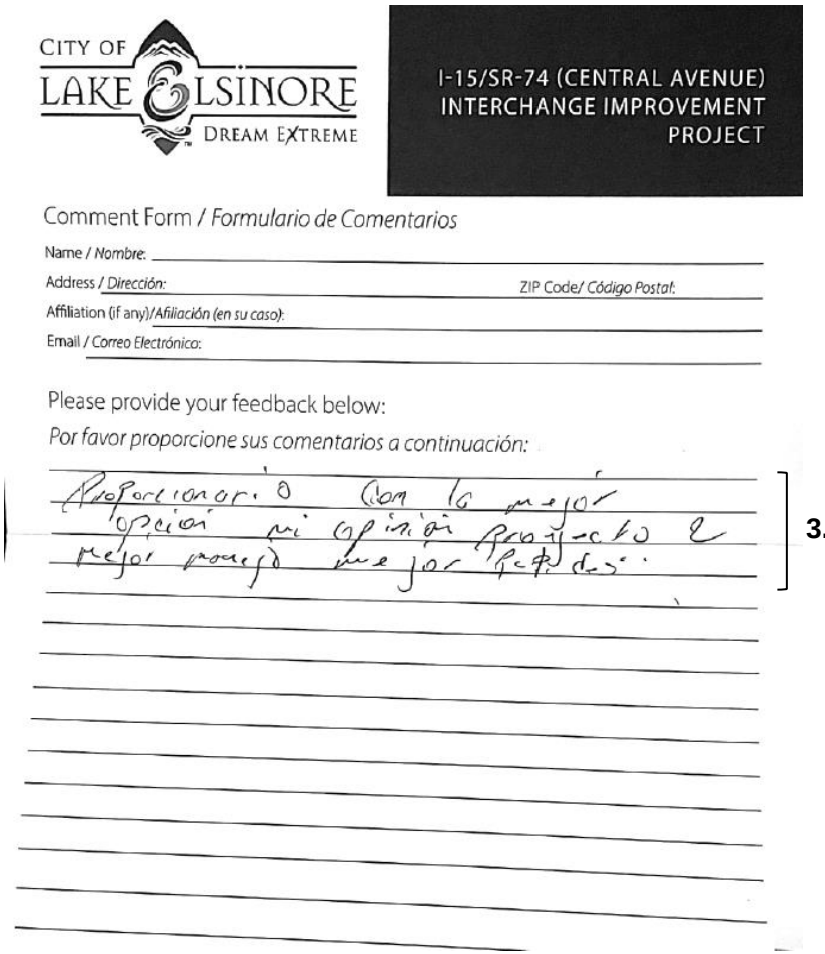
Hi, I have lived across from Temescal Canyon high school for over 20 years and have seen a lot of growth. I feel that option B will offer the most traffic relief for now and in the future. People having 3 options on freeway exits will put them on the correct path to be at the location they need to be without sitting through congestion and traffic lights. I urge the county to make the best choice and not the cheapest choice. I know that option B is more expensive but in the long run it will save money.
Thank you, Long time Riverside County Resident
Liddy[redacted]

2.1

Response to Comment 2:

2.1 Thank you for your comment. Caltrans has interpreted "Option B" in this comment as Alternative 2. Traffic operations and congestion reductions were analyzed for all alternatives in the Draft Initial Study/Environmental Assessment and were considered in the selection of the preferred alternative. Alternative 3 was selected as the Preferred Alternative because it best meets the Project's Purpose and Need, as described in Section 1.2, Purpose and Need. Caltrans considered your feedback.

Comment 3:



CITY OF LAKE ELSINORE DREAM EXTREME

I-15/SR-74 (CENTRAL AVENUE) INTERCHANGE IMPROVEMENT PROJECT

Comment Form / *Formulario de Comentarios*

Name / *Nombre:*

Address / *Dirección:* ZIP Code/ *Código Postal:*

Affiliation (if any)/*Afiliación (en su caso):*

Email / *Correo Electrónico:*

Please provide your feedback below:

Por favor proporcione sus comentarios a continuación:

Proporcionar. O Con la mejor opción mi opinión Proyecto 2 mejor proyecto mejor Rapido.

3.1

Translation:

The best, in my opinion, is project 2. Better drive. **3.1**

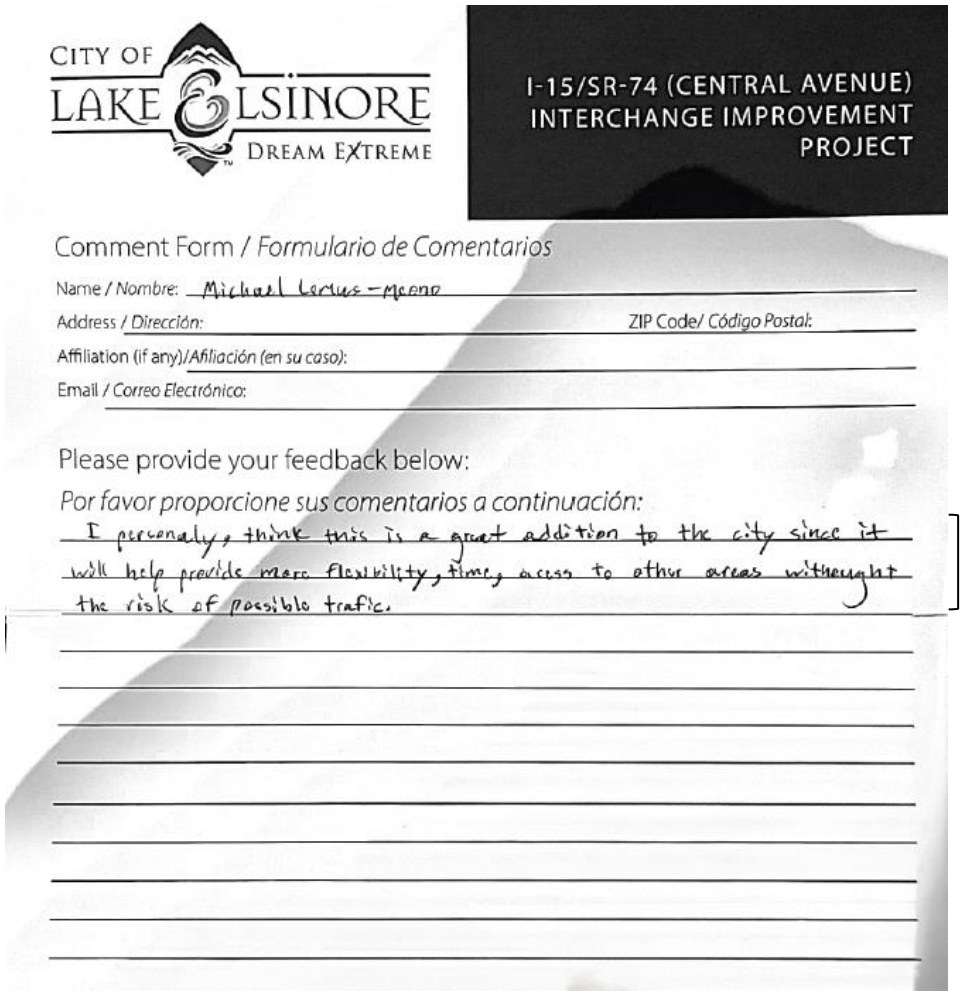
Response to Comment 3:

3.1 Gracias por su comentario. La Alternativa numero 3 fue seleccionada como la alternativa preferida porque satisface mejor el propósito y la necesidad del proyecto, descritos en la Sección 1.2, Propósito y Necesidad. Caltrans ha considerado su comentario.

Translation:

3.1 Thank you for your comment. Alternative 3 was selected as the Preferred Alternative because it best meets the Project's Purpose and Need, as described in Section 1.2, Purpose and Need. Caltrans considered your comment.

Comment 4:



CITY OF LAKE ELSINORE
DREAM EXTREME

I-15/SR-74 (CENTRAL AVENUE) INTERCHANGE IMPROVEMENT PROJECT

Comment Form / *Formulario de Comentarios*

Name / *Nombre:* Michael Lertus-Moore

Address / *Dirección:* ZIP Code/ *Código Postal:*

Affiliation (if any)/*Afiliación (en su caso):*

Email / *Correo Electrónico:*

Please provide your feedback below:

Por favor proporcione sus comentarios a continuación:

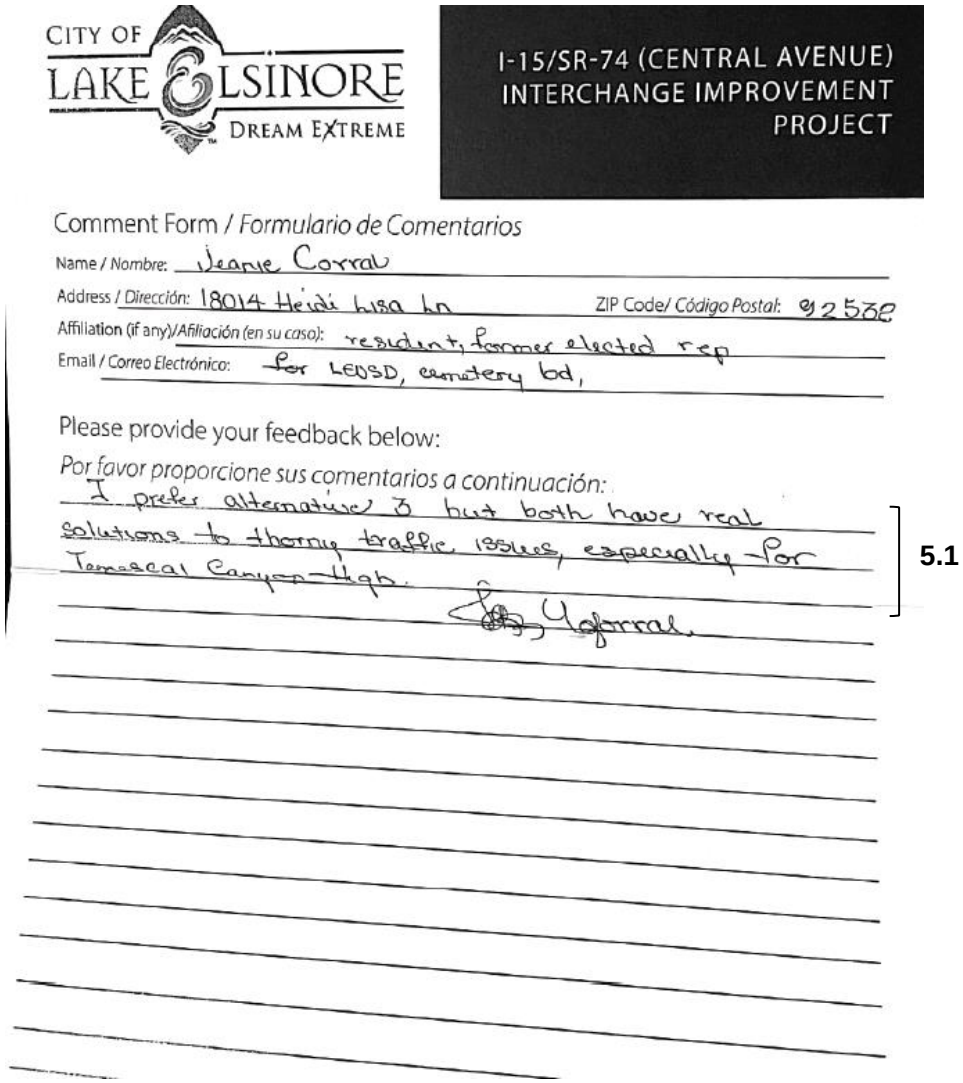
I personally, think this is a great addition to the city since it will help provide more flexibility, time, access to other areas without the risk of possible traffic.

4.1

Response to Comment 4:

4.1 Thank you for your comment. Caltrans appreciates your feedback.

Comment 5:



CITY OF LAKE ELSINORE
DREAM EXTREME

I-15/SR-74 (CENTRAL AVENUE) INTERCHANGE IMPROVEMENT PROJECT

Comment Form / *Formulario de Comentarios*

Name / *Nombre:* Jeanie Corral

Address / *Dirección:* 18014 Heidi Lisa Ln ZIP Code/ *Código Postal:* 92532

Affiliation (if any)/*Afiliación (en su caso):* resident, former elected rep

Email / *Correo Electrónico:* for LEUSD, cemetery bd,

Please provide your feedback below:

Por favor proporcione sus comentarios a continuación:

I prefer alternative 3 but both have real solutions to thorny traffic issues, especially for Temescal Canyon High.

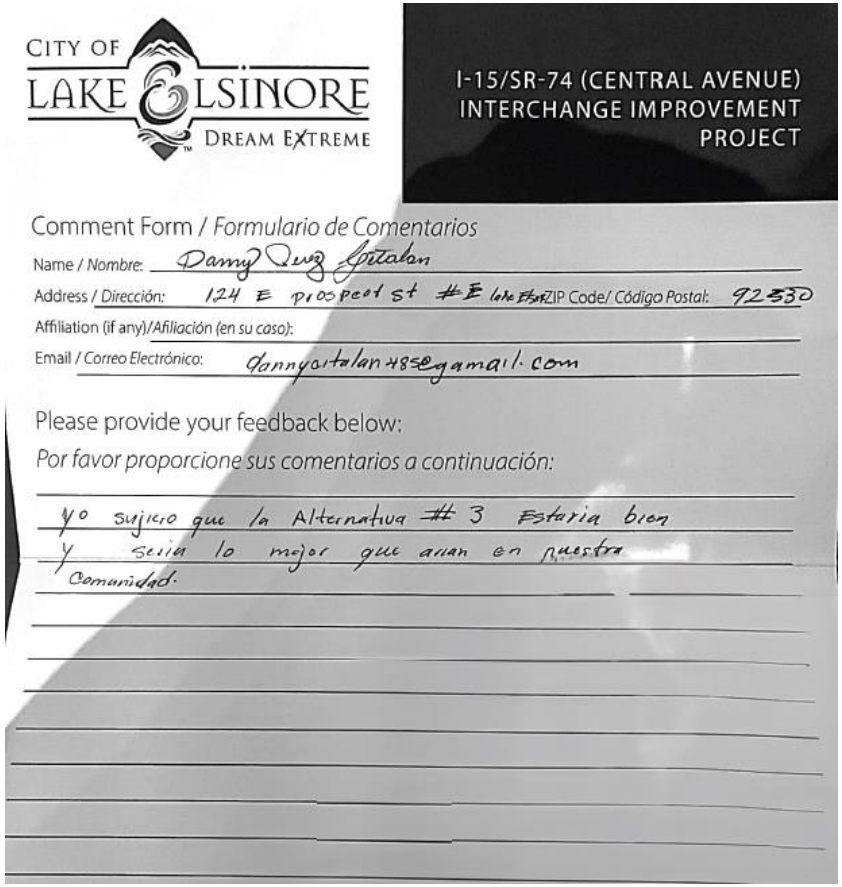
Jeanie Corral.

5.1

Response to Comment 5:

5.1 Thank you for your comment. Alternative 3 was selected as the Preferred Alternative because it best meets the Project's Purpose and Need, as described in Section 1.2, Purpose and Need. Caltrans considered your comment.

Comment 6:


CITY OF LAKE ELSINORE
DREAM EXTREME

I-15/SR-74 (CENTRAL AVENUE) INTERCHANGE IMPROVEMENT PROJECT

Comment Form / *Formulario de Comentarios*

Name / *Nombre:* Danny Ruiz Catalan

Address / *Dirección:* 124 E prospect st #E Lake Elsinore ZIP Code/ *Código Postal:* 92530

Affiliation (if any)/*Afiliación (en su caso):*

Email / *Correo Electrónico:* dannycatalan485@gamail.com

Please provide your feedback below:

Por favor proporcione sus comentarios a continuación:

Yo sujiero que la Alternativa # 3 Estaria bien y seria lo mejor que avian en nuestra Comunidad.

6.1

Translation:

I suggest that Alternative #3 would be fine and would be the best thing you can do for our community.

6.1

Response to Comment 6:

Gracias por su comentario. La Alternativa numero 3 fue seleccionada como la alternativa preferida porque satisface mejor el propósito y la necesidad del proyecto, descritos en la Sección 1.2, Propósito y Necesidad. Caltrans ha considerado su comentario.

Translation:

Thank you for your comment. Alternative 3 was selected as the Preferred Alternative because it best meets the Project's Purpose and Need, as described in Section 1.2, Purpose and Need. Caltrans considered your comment.

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5 List of Preparers

This IS/EA was prepared by Caltrans District 8 and City of Lake Elsinore with assistance from the consultant team. The following individuals were involved in the preparation of this IS/EA.

5.1 California Department of Transportation, District 8

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Jeanine Porter, Associate Environmental Planner, Environmental Studies Branch D

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Aysha Habib, Design Oversight

Haissam Yahya, Traffic Operations

Milele Robertson, Right of Way Local Programs

Kimberly Cherry, Public Information Officer

Sergio E. Avila, District Design/FHWA Liaison/ADA

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Daniel To, Transportation Engineer, Noise Branch

Donald Cheng, Transportation Engineer, Environmental Engineering Unit B

Andrew Walters, Senior Environmental Planner, Environmental Support/Cultural Studies

Gary Jones, M.A., Associate Environmental Planner, Archaeologist

Dicken Everson, Principal Investigator, Prehistoric and Historical Archaeology

Craig Wentworth, Supervising Environmental Planner, Biological Studies and Surveys

Maggi Elgeziry, Environmental Scientist (Natural Sciences)

Bahram Karimi, Associate Environmental Planner/Paleontology Coordinator

Almabeth Anderson, Landscape Architect, Landscape Architecture

5.2 City of Lake Elsinore

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Yu Tagai, Associate Engineer

5.3 HDR Engineering, Inc.

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Julian Hernandez, Deputy Project Manager/Engineering Lead

Antonina Delu, Senior Environmental Project Manager/Environmental Lead

George Gorman, Environmental Planning Section Manager - Highways

Kelly Czechowski, Senior Environmental Project Manager

Kevin Rice, Senior Environmental Planner

Serena Lin, Environmental Planner

Andrew Keller, Biological Resources Project Manager

April Cottini, Senior Landscape Architect

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Katherine Turner, Lead Editor/Document Specialist

Steven Dong, Editor/Document Specialist

5.4 Fehr & Peers

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Paul Herrmann, Associate

5.5 A/E Tech

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5.6 Applied Earthworks

Amy L. Ollendorf, Principal Investigator, Prehistoric Archaeology

Kholood Abdo, Co-Principal Investigator, Historical Archaeology

Melissa Macias, Senior Paleontologist

Chris Shi, Associate Paleontologist – Paleontology Supervisor

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6 Distribution List

The Draft IS/EA or a Notice of Availability was distributed to local and regional agencies, as well as utility providers affected by the Project. In addition, property owners directly affected by the Project were provided with Notice of Availability of the document.

6.1 Federal Agencies

US Fish and Wildlife Service 2800 Cottage Way Room W-2605 Sacramento, CA 95825	US Fish and Wildlife Service Attn: John Taylor 777 E. Tahquitz Canyon Way Suite 208 Palm Springs, CA 92262	US Army Corps of Engineers Los Angeles District P.O. Box 532711 Los Angeles, CA 90053-2325
Cleveland National Forest Attn: Scott Tangenberg, Forest Supervisor 10845 Rancho Bernardo Road, Suite 200 San Diego, CA 92127		

6.2 State Agencies

California Air Resources Board 1001 “I” Street P.O. Box 2815 Sacramento, CA 95812	Office of Planning and Research (OPR) State Clearinghouse Attn: Kate Gordon, Director Office of Planning and Research 1400 Tenth Street Sacramento, CA 95814	California Energy Commission Attn: Shawn Pittard, Deputy Director Siting, Transmission, and Env. Division 1516 Ninth Street, MS-39 Sacramento, CA 95814
Office of Historic Preservation Julianne Polanco, Pres. Officer 1725 23rd Street, Ste. 100 Sacramento, CA 95816	Native American Heritage Commission Attn: Christina Snider, Ex. Secretary 1550 Harbor Boulevard, Suite 100 West Sacramento, CA 95691	California Public Utilities Commission Attn: Alice Stebbins, Executive Director 505 Van Ness Avenue San Francisco, CA 94102
California Department of Conservation Attn: David Bunn, Director 801 “K” Street, MS 24-01 Sacramento, CA 95814	State Water Resources Control Board Attn: Eileen Sobeck, Executive Director 1001 “I” Street Sacramento, CA 95814	California Resources Agency Attn: Wade Crowfoot, California Secretary 1416 Ninth Street, Ste. 1311 Sacramento, CA 95814

California Department of Fish and Wildlife Attn: Carly Beck Inland Deserts Region (Region 6) 3602 Inland Empire Boulevard, Suite C-220 Ontario, CA 91764	California Department of Forestry and Fire Protection Southern Region Operations 2524 Mulberry Street Riverside, California 92501	California Highway Patrol Temecula Division (685) 27685 Commerce Center Drive Temecula, CA 92590

6.3 Regional/County/Local Agencies

Southern California Association of Governments 3403 10th Street, Suite 805 Riverside, CA 92501	Southern California Association of Governments 1170 West 3rd Street, Suite 140 San Bernardino, CA 92410	Water Quality Control Board Santa Ana Region 3737 Main Street, #500 Riverside, CA 92501
South Coast Air Quality Management District IGR Coordinator 21865 East Copley Drive Diamond Bar, CA 91765	Riverside County Sheriff Department 4095 Lemon Street Riverside, CA 92501	Riverside County Fire Department 210 W. San Jacinto Avenue Perris, CA 92570
Department of Public Works Attn: Chris Erickson City of Lake Elsinore 521 N Langstaff Street Lake Elsinore, CA 92530	City of Lake Elsinore Attn: Richard MacHott, Planning Manager Planning Division 130 South Main Street Lake Elsinore, California 92530	City of Lake Elsinore Maintenance and Operations Division 521 North Langstaff Street Lake Elsinore, CA 92530
Nicole Dailey City Manager's Office Public Information City of Lake Elsinore 130 South Main St. Lake Elsinore, CA 92530	Brooke Federico Public Information Officer Riverside County 4080 Lemon Street - 4th Floor Riverside, California 92501	Riverside County Flood Control and Water Conservation District 1995 Market Street Riverside, CA 92501
Office of the County Fire Marshal 2300 Market Street, Suite 150 Riverside, CA 92501	Erin Gettis Bureau Chief, Planning and Development Riverside County Regional Park and Open-Space District 4600 Crestmore Road Jurupa Valley, CA 92509	Emergency Management Department County of Riverside 4210 Riverwalk Parkway, Suite 300 Riverside, CA 92505
Sheriff Chad Bianco Sheriff-Coroner, Riverside County 4095 Lemon Street Riverside, CA 92501	Riverside County Transportation Commission 4080 Lemon Street Riverside, CA 92501	Lake Elsinore Unified School District 545 Chaney Street Lake Elsinore, CA 92530
City of Lake Elsinore Fire Department 130 South Main Street Lake Elsinore, CA 92530	City of Lake Elsinore Police Department (Captain) 333 Limited Avenue Lake Elsinore, CA 92530	

6.4 Elected Officials

Riverside County Board of Supervisors, District 1 Honorable Kevin Jeffries 4080 Lemon Street Riverside, CA 9250	Office of United States Senator Senator Laphonza Butler 880 Front Street, Suite 4236 San Diego, CA 92101	Office of United States Senator Senator Alex Padilla 600 B Street, Suite 2240 San Diego, CA 92101
California State Assembly, District 67 Assembly Member Kelly Seyarto 41391 Kalmia Street, Suite #220 Murrieta, CA 92562	Office of California Assembly District 42 Assemblyman Chad Mayes 41608 Indian Trail, Suite 1 Rancho Mirage, CA 92270	Office of California State Senate District 28 Senator Melissa A. Melendez 25186 Hancock Ave, Suite 320 Murrieta, CA 92562
Supervisor Kevin Jeffries District 1 Riverside County Board of Supervisors Lake Elsinore Office 16275 Grand Ave. Building D Lake Elsinore, CA 92530	Steve Manos, Council Member Council District 2 City of Lake Elsinore 130 South Main Street Lake Elsinore, CA 92530	City of Lake Elsinore Mayor Steve Manos 130 South Main Street Lake Elsinore, CA 92530

6.5 Utilities

Southern California Gas 1981 W Lugonia Ave Redlands, CA 92374	Southern California Edison P.O. Box 800 Rosemead, CA 91770	Elsinore Valley Municipal Water District 31315 Chaney Street Lake Elsinore, CA 92530
CR&R Incorporated 1706 Goetz Road Perris, CA 92570	Verizon Los Angeles Corporate Office 13031 West Jefferson Boulevard Los Angeles, CA 90094	Southern California Edison 31315 Chaney Street Lake Elsinore, CA 92530
Frontier 15322 Central Avenue Chino, CA 91710	Crown Castle 226 N Lincoln Avenue Corona, CA 92882	Charter Communications 400 Atlantic Street Stamford, CT 06901

6.6 Interested Groups, Organizations, and Individuals

Travis Armstrong Tribal Historic Preservation Officer Morongo Band of Mission Indians 12700 Pumarra Road Banning, CA, 92220	Connie Colocho Tribal Historic Preservation Office Rincon Band of Luiseño Indians One Government Center Lane Valley Center, CA, 92082	Joseph Ontiveros Tribal Historic Preservation Officer Soboba Band of Luiseño Indians P.O. Box 487 San Jacinto, CA 92581

Gary Dubois Tribal Historic Preservation Officer Pechanga Band Of Luiseño Indians P.O. Box 1477 Temecula, CA, 92593	Robert Smith Chairperson Pala Band Of Mission Indians 35008 Pala Temecula Road Pala, CA, 92059	Circle K Stores Inc P O Box 52085 Dc17 Phoenix, AZ 85072
Pope Athanasius 4030 Birch St Ste 100 Newport Beach, CA 92660	Church Of Jesus Christ Latter-day Saints C/O Tax Division 50 E North Temple St 22fl Salt Lake City, UT 84150	Lowes HIW Inc C/O Tax Department 1000 Lowes Blvd Mooresville, NC 28117
Rodney & Elaine Nielsen 23458 Moccasin Dr Canyon Lake, CA 92587	Bradley McCall C/O Mighty Dev Inc 3296 E Guasti Rd Ste 120 Ontario, CA 91761	SAF OIL INC 29355 CENTRAL AVE Lake Elsinore, CA 95232
Billie & Josephine Boyle 4337 N Deserts Gate Cir Mesa, AZ 85207	Waterstone Support Foundation Inc. 10807 New Allegiance Dr Ste 240 Colorado Springs, CO 80921-3803	Lake Elsinore Marketplace C/O Sr Commercial 315 S Coast Hwy 101, No U12 Encinitas, CA 92024
Jack & Claudia Lagreca 26830 Hostettler Rd Corona, CA 92883	Costco Wholesale Corp Property Tax Dept 432 999 Lake Dr Issaquah, WA 98027	Jun & Ayoung Kim 109 Bridle Path Irvine, CA 92602
Una Luna Bianca 5074 Scholarship Irvine, CA 92612	Chevron 6001 Bollinger Canyon Road San Ramon, CA 94583	Kevin Johnston 2288 Buena Vista Avenue Livermore, CA 94550

Appendix A. Resources Evaluated Relative to the Requirements of Section 4(f): No–Use Determinations

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Acronyms and Abbreviations

Caltrans	California Department of Transportation
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
City	City of Lake Elsinore
County	County of Riverside
DOI	Department of Interior
EA	Environmental Assessment
FHWA	Federal Highway Administration
I-15	Interstate 15
IS	Initial Study
LWCF	Land and Water Conservation Fund
NB	northbound
NEPA	National Environmental Policy Act
O3	Ozone
Project	I-15/SR-74 Interchange Improvement Project
PS&E	plans, specifications, and estimates
ROW	right of way
SCAQMD	South Coast Air Quality Management District
SR-74	State Route 74
TMP	transportation management plan
USC	United States Code

1 Introduction

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (USC) 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

This section of the document discusses parks, recreational facilities, wildlife refuges, and historic properties found within or next to the project area that do not trigger Section 4(f) protection because: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not eligible historic properties, or 4) the project does not permanently use the property and does not hinder the preservation of the property.

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2 Project Description

The California Department of Transportation (Caltrans) plans to improve the existing roadway of Interstate 15 (I-15)/State Route 74 (SR-74), in the County of Riverside (County), within the City of Lake Elsinore (City), California. The I-15/ SR-74 Interchange Improvement Project (Project) is bounded by Riverside Drive to the north, Conard Avenue to the east, Wasson Canyon Wash to the south, and Collier Avenue to the west.

The City, in cooperation with Caltrans, plans to improve the I-15/SR-74 interchange to reduce traffic congestion, improve operations, and comply with current Caltrans and local agency design standards. The Project is subject to state and federal environmental review requirements because the use of federal funds from the Federal Highway Administration (FHWA) is anticipated for the Project. Project documentation is being prepared in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Caltrans is the lead agency under both the CEQA and the NEPA.

A detailed description of the alternatives considered is provided in Chapter 1, Project Description, of the Draft Initial Study (IS)/Environmental Assessment (EA).

2.1 Project Purpose

The Project's purpose is to maximize mobility and accessibility in the region by improving traffic operations of the I-15/SR-74 interchange and local intersections within the Project limits. The Project objectives are to:

- Improve traffic operations and address increased travel associated with existing and planned development anticipated in the surrounding area.
- Provide safer access through the interchange by improving the operational efficiency of signalized intersections, queuing, throughput volumes, and limiting cross-traffic movements.
- Improve existing interchange geometry and provide complete streets improvements to improve connectivity and offer additional options for multi-modal connections within the interchange and in the surrounding community.

2.2 Project Need

The I-15/SR-74 interchange serves as the primary access for residents, visitors, businesses and industry in the area. The increase in traffic volumes has resulted in inadequate queuing capacity at the interchange and local intersections. The amount of traffic utilizing the I-15/SR-74 interchange is expected to increase greatly by Opening Year (2025) and efficiency of the interchange will continue to degrade without the implementation of improvements. The safety, mobility, and access within the interchange will be improved by encouraging additional multi-modal options through the construction of new pedestrian and bicycle facilities, and the improvements of those existing facilities. Additionally, the I-15/SR-74 interchange requires improvements that will enhance its operational efficiency.

Complete street improvements include providing new and/or improved connections in existing gaps of pedestrian and bicycle infrastructure that improve access through the existing interchange, which separates existing communities in the City to the major Business District. These planned Project

improvements will help meet the Project need, as well as help the City meet its Climate Action Plan (CAP) greenhouse gas (GHG) reduction goals.

The existing ramp intersection configuration at I-15/SR-74 interchange contains existing nonstandard features which include the lack of standard corner sight distance, limited intersection spacing, limited pedestrian pathways, and non-standard lane and shoulder widths which compound the congestion and vehicle delay.

3 Constructive Use

The FHWA must comply with 23 Code of Federal Regulations 774.15 to determine whether or not there is a constructive use of Section 4(f) property. Constructive use of Section 4(f) property is only possible in the absence of a permanent incorporation of land or a temporary occupancy of the type that constitutes a Section 4(f) use (FHWA 2012).

A constructive use involves an indirect impact where no actual physical use of the Section 4(f) property, via permanent incorporation of land or a temporary occupancy, occurs. A constructive use occurs when the proximity impacts of a project adjacent to, or nearby, a Section 4(f) property result in substantial impairment to the property's activities, features, or attributes that qualify the property for protection under Section 4(f). Therefore, the value of the resource, in terms of its Section 4(f) purpose and significance, will be meaningfully reduced or lost. However, a project's proximity to a Section 4(f) property is not in itself an impact that results in constructive use.

The indirect, proximity impacts to properties nearby the Project limits are evaluated relative to the requirements of Section 4(f) and discussed below. Based on the findings below, the Project does not substantially impair any of these properties' activities, features, or attributes that qualify them for protection under Section 4(f); therefore, there is no constructive use of any Section 4(f) property.

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4 Resources Evaluated Relative to the Requirements of Section 4(f): No-Use Determinations

A 500-foot Section 4(f) study area was used for this evaluation to document properties that are adjacent to the Project. Table 4-1 and Figure 4-1 identify the Section 4(f) properties within the Section 4(f) study area. These Section 4(f) properties were evaluated to determine whether they are protected under Section 4(f) and whether the Project will "use" the properties under Section 4(f).

Table 4-1. Potential Section 4(f) Properties within the Section 4(f) Study Area

Official with Jurisdiction	Name	Location	Type	Amenities
City of Lake Elsinore	Planned Regional Trail	The trailhead is located southeast of the Chaney Street and West Minthorn Street intersection	Recreational Facility (Trail)	This is a planned county regional trail for the City of Lake Elsinore, surrounding sphere of influence areas, and nearby regional areas. The trail intersects with I-15.
Lake Elsinore Unified School District	Temescal Canyon High School	28755 El Toro Road, Lake Elsinore, California 92532	Recreational Facility (School)	The school includes facilities such as tennis courts, baseball and softball fields, basketball courts, a gymnasium, and open field, and a swimming pool.

Source: City of Lake Elsinore 2011; City of Lake Elsinore n.d.; Lake Elsinore Unified School District n.d.
Notes:
I-15=Interstate 15

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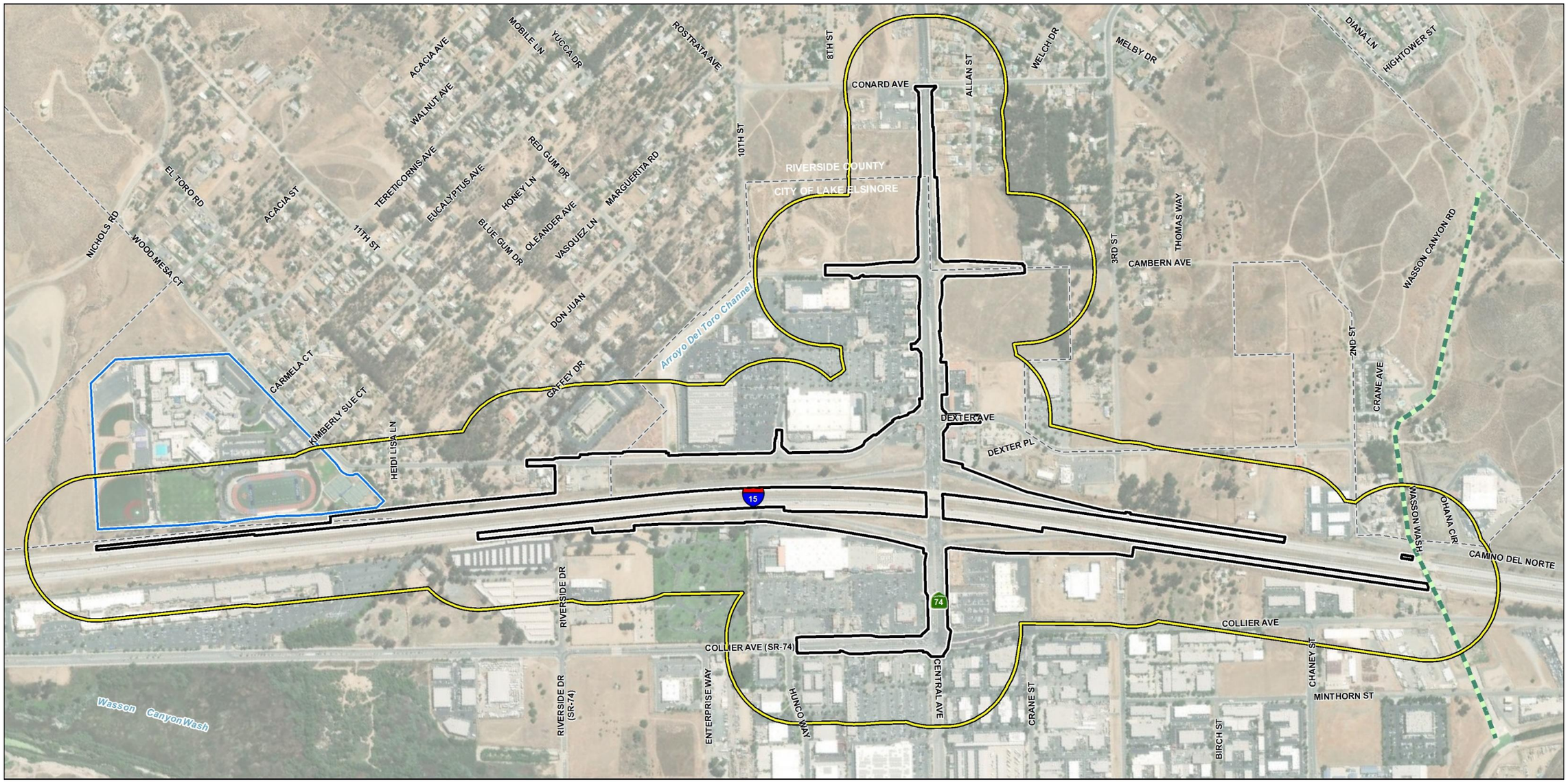

I-15 RIV PM 21.6/23.5
SR-74 RIV PM R16.0/17.8
EA 08-0F3100
I-15/SR-74 Interchange Improvement Project

Figure 4-1. Potential Section 4(f) Properties within the Section 4(f) Study Area

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5 No-Use Determination

As described below, the properties identified in Table 4-1 will not be directly or indirectly impacted in a manner that will adversely impact the features, activities, or attributes that qualify the properties for protection under Section 4(f). As further described below, although the properties are Section 4(f) properties, no "use" will occur. Therefore, the provisions of Section 4(f) do not apply.

5.1 Planned Regional Trail

The planned Regional Trail is a proposed City trail according to the City's General Plan (City of Lake Elsinore 2011) and located directly adjacent to the southern terminus of the Project limits. This trail will eventually provide connectivity to the City's Riverwalk Regional Trail and Butterfield Trail.

Based on review of the Riverside County Comprehensive Trails Plan (Riverside County Regional Park and Open Space District 2018) the planned Regional Trail is not shown, and within the County's Elsinore Area Plan (County of Riverside 2019) only a portion of the planned Regional Trail is depicted on the figures compared to extent depicted in the City's General Plan. Additionally, the City's Fiscal Year 2020-2025 Capital Improvement Budget (City of Lake Elsinore 2020) does not identify any plans for trail implementation in the near future. On January 26, 2021, the City verified by email the status of the planned Regional Trail. Currently no dedicated easements have been obtained for the trail, and there are no plans in the near future to construct this planned Regional Trail.

Based on the various documents reviewed and the City's verification by email (Tagai, Yu, personal communication, 2021) regarding the status of the planned Regional Trail, the trail is not considered to be presently significant or noted as a City project that will be implemented in the near future. However, if the planned Regional Trail were to be constructed, the implementation of the Project under the Build Alternatives will not preclude or inhibit the implementation of the planned Regional Trail. Although the planned Regional Trail will likely not be constructed at the same time as the Project, if it were, noise and air quality impacts will be relatively minor as trails are considered to be transient activity areas, rather than stationary or passive activity areas in which users will be more susceptible to impacts related to noise and emissions. Therefore, the provisions of Section 4(f) are not triggered, and no avoidance, minimization, and/or mitigation measures are recommended.

5.2 Temescal Canyon High School

Temescal Canyon High School is located adjacent to the northern terminus of the Project limits, alongside northbound (NB) I-15. The school serves approximately 2,157 students (California Education Department n.d.) and includes facilities such as tennis courts, baseball and softball fields, basketball courts, a gymnasium, an open field, and a swimming pool. Temescal Canyon High School is under the Lake Elsinore Unified School District which recognizes that public school facilities and grounds are community resources (Lake Elsinore Unified School District n.d.). Public use of school facilities is available through the submission of a use of facilities application and fee. Therefore, it is determined that Temescal Canyon High School qualifies as a Section 4(f) property.

The Project will not require permanent or temporary roadway closures that will affect access and operation of the school. Additionally, the Project will not result in increases to traffic, noise, or air quality emissions that will adversely affect Temescal Canyon High School as the Project is not considered a capacity enhancing project. Construction activity will mostly be conducted within existing

Caltrans right of way (ROW). Thus, no direct use of the property that could result in a permanent incorporation or temporary occupancy will occur. The I-15 is an already existing transportation facility adjacent to the school; however, construction activities will result in temporary increases in noise and emissions from equipment and traffic. To minimize potential short-term impacts, compliance with City noise regulations and implementation of Measures AQ-1 through AQ-10 (Section 2.18, Air Quality, of this IS/EA) and Measure TR-1 (Section 2.10, Traffic and Transportation/Pedestrian and Bicycle Facilities of the Draft IS/EA) will be implemented during construction of the Build Alternatives to reduce any temporary construction adverse effects on noise, air quality, and circulation. Therefore, there will be no constructive use of this property under Section 4(f). These measures are also listed below in Section 6.

6 Avoidance, Minimization and/or Mitigation Measures

The following measure will be implemented during construction to minimize effects on air quality:

AQ-1 During construction, the City's Resident Engineer will ensure that any clearing, grading, earthmoving, and excavation operations, fugitive dust emissions be controlled by regular watering or other dust preventive measures using the following procedures, as specified in South Coast Air Quality Management District (SCAQMD) Rule 403. All material excavated or graded will be sufficiently watered to prevent excessive amounts of dust. Watering will occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day. All material transported on site or off site will be either sufficiently watered or securely covered to prevent excessive amounts of dust. The areas disturbed by clearing, grading, earthmoving, or excavation operations will be minimized so as to prevent excessive amounts of dust. These control techniques will be indicated in Project specifications. Visible dust beyond the property line emanating from the Project will be prevented to the maximum extent feasible.

AQ-2 During the final design (PS&E) phase, the City's Resident Engineer will ensure that Project grading plans will show the duration of construction. Ozone (O_3) precursor emissions from construction equipment vehicles will be controlled by maintaining equipment engines in good condition and in proper tune per manufacturers' specifications. All construction equipment will use low sulfur fuel as required by CCR Title 17, Section 93114.

AQ-3 During construction, the City's Resident Engineer will ensure that all trucks that are used to haul excavated or graded material on site will comply with State Vehicle Code Section 23114, with special attention to Sections 23114(b)(F), (e)(2), and (e)(4), as amended, regarding the prevention of such material spilling onto public streets and roads.

AQ-4 During construction, the City's Resident Engineer will ensure that the contractor will adhere to Caltrans Standard Specifications for Construction (Sections 14.9). Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

AQ-5 During construction, the City's Resident Engineer will ensure that water or a dust palliative be applied to the site and equipment as often as necessary to control fugitive dust emissions.

AQ-6 During construction, the City's Resident Engineer will ensure that soil binder be spread on any unpaved roads used for construction purposes, and on all project construction parking areas.

AQ-7 During construction, the City's Resident Engineer will ensure that trucks be washed as they leave the ROW as necessary to control fugitive dust emissions.

AQ-8 During construction, the City's Resident Engineer will ensure that construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by CCR Title 17, Section 93114.

AQ-9 Prior to construction, the City's Resident Engineer will ensure that a dust control plan be developed documenting sprinkling, temporary paving, speed limits, and timely revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.

AQ-10 During construction, the City's Resident Engineer will ensure that equipment and materials storage sites be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.

The following measure will be implemented during construction to minimize effects on traffic and circulation:

TR-1 During the final design (PS&E) phase, the City's Resident Engineer will ensure that a detailed transportation management plan (TMP) will be developed for implementation prior to and during construction. The TMP will be a specialized program tailored to accommodate major traffic movements during construction and to mitigate construction impacts by applying a variety of traffic management techniques including but not limited to the following:

- Traffic controls
- Transportation demand management
- Public awareness measures (including signing, mailers, brochures, newspaper articles, and internet resources)
- Motorist information strategies
- Incident management
- Construction strategies
- Transportation demand management
- Alternative route strategies

7 Section 6(f)

The Land and Water Conservation Fund (LWCF) Act was established by Congress in 1964 to fulfill a bipartisan commitment to safeguard natural areas, water resources and cultural heritage, and to provide recreation opportunities to all Americans. The LWCF program provides matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities. Section 6(f) of this Act prohibits the conversion of property acquired or developed with these grants to a non-recreational purpose without the approval of the Department of Interior's (DOI) National Park Service.

7.1 Section 6(f): Property Conversion

Parklands receiving LWCF grants are considered Section 6(f) properties. Projects that result in private and/or non-recreational activities on Section 6(f) property, or impacts on its public recreation use, will trigger a "conversion." If a conversion of parkland developed with LWCF assistance occurs, the project sponsor is required to provide replacement recreational property. The following guidelines were used to determine impacts on Section 6(f) properties for the project:

- Section 6(f) conversion occurs if property will be acquired from the 6(f) site
- Section 6(f) exceptions are projects involving underground utilities and temporary nonconforming uses
- If a Section 6(f) property will be used for less than 6 months (for construction), identify this as a temporary non-conforming use
- If a Section 6(f) conversion will result from the project, procedures as per the LWCF's Federal Financial Assistance Manual will be followed (LWCF 2008)

7.2 Data Sources

The following data sources were reviewed to identify any Section 6(f) properties within the Section 4(f) study area of the Project:

- LWCF grant projects list from 1964 to 2019 (LWCF 2019)

7.3 Summary of 6(f) Properties

No Section 6(f) properties have been identified within the Section 4(f) study area; therefore, no Section 6(f) properties will be impacted by the Project or converted as part of the Project.

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8 References

California Department of Education. n.d. California School Directory. Accessed July 2020. https://www.cde.ca.gov/schooldirectory/.

City of Lake Elsinore. 2011. General Plan. http://www.lake-elsinore.org/city-hall/city-departments/community-development/planning/lake-elsinore-general-plan. Accessed July 2021.

——— 2020. Fiscal Year 2020-25 Capital Improvement Budget Plan. Accessed June 2020. http://www.lake-elsinore.org/home/showdocument?id=27047.

County of Riverside. 2019. Elsinore Area Plan. Accessed July 2021. https://planning.rctlma.org/Portals/14/genplan/2019/ap/ELAP_041619.pdf.

Federal Highway Administration (FHWA). 2012. *Section 4(f) Policy Paper.* https://www.environment.fhwa.dot.gov/legislation/section4f/4fpolicy.pdf.

Lake Elsinore Unified School District. n.d. Use of Facilities Requests and Permits. Accessed July 2021. https://www.leusd.k12.ca.us/apps/pages/index.jsp?uREC_ID=324516&type=d&pREC_ID=732532.

Land and Water Conservation Fund (LWCF). 2008. *Federal Financial Assistance Manual.* https://www.nps.gov/subjects/lwcf/upload/lwcf_manual.pdf.

——— 2019. LWCF Projects 1964 – 2019. Accessed July 2021. https://www.parks.ca.gov/?page_id=21360

Riverside County Regional Park and Open Space District. 2018. Riverside County Comprehensive Trails Plan Final. Accessed July 2021. https://documentcloud.adobe.com/link/track?uri=urn%3Aaaid%3Ascds%3AUS%3A17ec701b-1afd-45cd-a584-c5f937f0bcc0#pageNum=1.

Tagai, Yu. 2021. Email conversation with Angie Kung. January 1 2021.

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Appendix B. Title VI Policy Statement

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CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, GOVERNOR

California Department of Transportation

OFFICE OF THE DIRECTOR
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September 2023

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures *"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."*

Caltrans will make every effort to ensure nondiscrimination in all of its services, programs and activities, whether they are federally funded or not, and that services and benefits are fairly distributed to all people, regardless of race, color, or national origin. In addition, Caltrans will facilitate meaningful participation in the transportation planning process in a non-discriminatory manner.

Related federal statutes, remedies, and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 639-6392 or visit the following web page: https://dot.ca.gov/programs/civil-rights/title-vi.

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Civil Rights, at PO Box 942874, MS-79, Sacramento, CA 94274-0001; (916) 879-6768 (TTY 711); or at Title.VI@dot.ca.gov.

TONY TAVARES
Director

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Appendix C. Farmland Conversion Impact Rating (Form AD-1006)

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U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 6/23/2021
Name of Project I-15/SR-74 Interchange Project	Federal Agency Involved Caltrans District 8
Proposed Land Use Public Institutional (Transportation)	County and State Riverside County, California
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 7/06/21 — Person Completing Form: Kaitlyn Valverde

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☒	NO ☐	Acres Irrigated: 126,217 — Average Farm Size: 99
Major Crop(s): Vegetables, melons, misc. Tree/Vineyard	Farmable Land In Govt. Jurisdiction Acres: 937530 % 19.9		Amount of Farmland As Defined in FPPA Acres: 713559 % 15.1
Name of Land Evaluation System Used: NONE	Name of State or Local Site Assessment System: Storie Index		Date Land Evaluation Returned by NRCS: 7.13.21

PART III *(To be completed by Federal Agency)*	Alternative Site Rating: Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	0	1.02	1.02	
B. Total Acres To Be Converted Indirectly	0	0	0	
C. Total Acres In Site	61.59	61.59	61.59	
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0	1.02	1.02	
B. Total Acres Statewide Important or Local Important Farmland	0	—	—	
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0	$1.1E^{-6}$	$1.1E^{-6}$	
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	0	$2.8E^{-6}$	$3.7E^{-5}$	
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	—	65	93	

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	0	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form: Antonia Toledo — Date: 7/19/2021

(See Instructions on reverse side) — Form AD-1006 (03-02)

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Appendix D. Summary of Relocation Benefits

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D.1 California Department of Transportation Relocation Assistance Program

D.1.1 Relocation Assistance Advisory Services

D.1.1.1 Declaration of Policy

"The purpose of this title is to establish a ***uniform policy for fair and equitable treatment*** of persons displaced as a result of federal and federally assisted programs in order that such persons ***shall not suffer disproportionate injuries*** as a result of programs designed for the benefit of the public as a whole."

The Fifth Amendment to the U.S. Constitution states, "No Person shall…be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation." The Uniform Act sets forth in statute the due process that must be followed in Real Property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide single rule for all agencies to follow, set forth in 49 Code of Federal Regulations (CFR) Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and financial benefits, as discussed below.

D.1.1.2 Fair Housing

The Fair Housing Law (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, within constitutional limitations, for fair housing. This act, and as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are decent, safe, and sanitary and are within their financial means. This policy, however, does not require the Department to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations and also are given a detailed explanation of the Caltrans Relocation Assistance Program. To avoid loss of

possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Department relocation advisor.

D.1.1.3 Relocation Assistance Advisory Services

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, the Department will provide relocation advisory assistance to any person, business, farm, or nonprofit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. The Department will assist eligible displacees in obtaining comparable replacement housing by providing current and continuing information on the availability and prices of both houses for sale and rental units that are "decent, safe, and sanitary." Nonresidential displacees will receive information on comparable properties for lease or purchase (for business, farm, and nonprofit organization relocation services, see below).

Residential replacement dwellings will be in a location generally not less desirable than the displacement neighborhood at prices or rents within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning federal and state assisted housing programs and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable "decent, safe, and sanitary" replacement dwelling, available on the market, is offered to them by the Department.

D.1.1.4 Residential Relocation Financial Benefits

The Relocation Assistance Program will help eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for or incidental to the purchase or rental of a replacement dwelling and actual reasonable moving expenses to a new location within 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Assistance Program can be summarized as follows:

Moving Costs

Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed payment based on a fixed moving cost schedule. Lawful occupants who move into the displacement property after the initiation of negotiations must wait until the Department obtains control of the property in order to be eligible for relocation payments.

Purchase Differential

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 90 days or more prior to the date of the initiation of negotiations (usually the first written offer to purchase the property), may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate.

Rent Differential

Tenants and certain owner-occupants (based on length of ownership) who have occupied the property to be acquired by the Department prior to the date of the initiation of negotiations may qualify to receive a rent differential payment. This payment is made when the Department determines that the cost to rent a comparable “decent, safe, and sanitary” replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted under the *Down Payment* section below. To receive any relocation benefits, the displaced person must buy or rent and occupy a “decent, safe and sanitary” replacement dwelling within one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

Down Payment

The down payment option has been designed to aid owner-occupants of less than 90 days and tenants in legal occupancy prior to the Department’s initiation of negotiations. The one-year eligibility

period in which to purchase and occupy a “decent, safe and sanitary” replacement dwelling will apply.

Last Resort Housing

Federal regulations (49 CFR 24) contain the policy and procedure for implementing the Last Resort Housing Program on Federal-aid projects. Last Resort Housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been designed primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing, or when the anticipated replacement housing payments exceed the limits of the standard relocation procedure, because either the displacee lacks the financial ability or other valid circumstances.

After the initiation of negotiations, the Department will within a reasonable length of time, personally contact the displacees to gather important information, including the following:

- Number of people to be displaced.
- Specific arrangements needed to accommodate any family member(s) with special needs.
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family.
- Preferences in area of relocation.
- Location of employment or school.

D.1.1.5 Nonresidential Relocation Assistance

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent, suitable for a particular business’s specific relocation needs. The types of payments available to eligible businesses, farms, and nonprofit organizations are: searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching and reestablishment expenses. The payment types can be summarized as follows:

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment and similar business-related property, including dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items identified as real property may not be moved under the Relocation Assistance Program. If the displacee buys an Item Pertaining to the Realty back at salvage value, the cost to move that item is borne by the displacee.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is permitted not to move.
- Expenses related to searching for a new business site, up to $2,500, for reasonable expenses actually incurred.

Re-establishment Expenses

Reestablishment expenses related to the operation of the business at the new location, up to $25,000 for reasonable expenses actually incurred.

Fixed In Lieu Payment

A fixed payment in lieu of moving, searching, and reestablishment payments may be available to businesses that meet certain eligibility requirements. This payment is an amount equal to half the average annual net earnings for the last two taxable years prior to the relocation and may not be less than $1,000 nor more than $40,000.

D.1.1.6 Additional Information

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, or any other law, *except* for any federal law providing local “Section 8” Housing Programs.

Any person, business, farm or nonprofit organization that has been refused a relocation payment by the Department relocation advisor or believes that the payment(s) offered by the agency are inadequate may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment that arises from the displacement for a public project. A list of ineligible expenses can be obtained from the Department’s Division of Right of Way and Land

Surveys. California's law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

Appendix E. Glossary of Technical Terms

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Term	Note
A	
100-year floodplain	The area within a floodplain that statistically has a 1% chance of flooding in any given year.
500-year floodplain	The area within a floodplain that statistically has a 0.2% chance of flooding in any given year.
A-Weighted Decibel Sound Level (dBA)	The sound level measured on an instrument containing an A filter, which electronically simulates the frequency response of the human ear under an average intensity of sound.
Action	A National Environmental Policy Act (NEPA) term; construction or reconstruction, including associated activities of a transportation facility. An action may be categorized as a "categorical exclusion" or a "major federal action."
Action (1)	Any highway construction, reconstruction, rehabilitation, repair, or improvement undertaken with Federal-aid highway funds or FHWA approval.
Action (2)	A highway or transit project proposed for FHWA or FTA funding. It also includes activities such as joint and multiple use permits, changes in access control, etc., which may or may not involve a commitment of federal funds (23 CFR 771.107(b)).
Active Fault	A fault that has moved within late Quaternary time (the last 750,000 years). Note that this definition is broader than that used by the California Department of Conservation, California Geological Survey (CGS), which defines an active fault as one that has moved within Holocene time (the last 11,000 years).
Adaptive Management	A long-term repeated process of gradually modifying management techniques based on the results of modeling and research.
Adverse	A term used to describe unfavorable, harmful, or detrimental changes in environmental conditions.

Term	Note
Aerially deposited lead (ADL)	Lead deposited within unpaved areas or formerly unpaved areas, primarily due to vehicle emissions. Aerially deposited lead is typically found within the top 0.6 meters (2 feet) of material in unpaved areas within the highway right of way.
Air Contaminant	Any particulate matter, gas, or combination thereof, other than water vapor.
Air Pollutant	Any substance in air that could, in a high enough concentration, harm humans, other animals, vegetation, or material. Pollutants may include almost any natural or artificial composition of airborne matter capable of being airborne. They may be in the form of solid particles, liquid droplets, gases, or in combination thereof. Generally, they fall into two main groups: (1) those emitted directly from identifiable sources, and (2) those produced in the air by interaction between two or more primary pollutants, or by reaction with normal atmospheric constituents, with or without photoactivation. Exclusive of pollen, fog, and dust, which are of natural origin, approximately 100 contaminants have been identified. Air pollutants are often grouped in categories for ease in classification; some of the categories are: solids, sulfur compounds, volatile organic chemicals, particulate matter, nitrogen compounds, oxygen compounds, halogen compounds, radioactive compound, and odors.
Air Quality Management District (AQMD)	A regional agency that adopts and enforces rules to achieve and maintain state and federal air quality standards.
Alluvial Fan	A fan-shaped area of soil deposited where a mountain stream first enters a valley or plain.
Alluvial Soils	Soil developing from recent alluvium (see below); typical of floodplains.
Alluvium	Material developed by running water.

Term	Note
Alquist-Priolo Zones	Active fault zones, identified pursuant to the Alquist-Priolo Earthquake Fault Zone Act. This Act is intended to prevent the construction of new buildings for human occupancy over active faults. It requires identification of active fault zones and regulation of development within these zones. General Plan Safety Elements typically incorporate the Act's requirements. The Act does not apply to publicly owned facilities, critical facilities and lifelines, or industrial facilities.
Alternatives	Solutions to the project's need. A "reasonable range" of alternatives must be considered as part of the Interstate 15/State Route 74 Interchange Improvement Project Draft Initial Study/Environmental Assessment (IS/EA) process. One of those alternatives must be a "no project" or No Build Alternative.
Ambient	Refers to surrounding, external, or unconfined conditions.
Ambient Noise	Exterior sound (the surrounding sound from all sources near and far).
Americans With Disabilities Act (ADA)	Federal civil rights legislation for disabled persons passed in 1990; calls on public transit systems to make their services more fully accessible as well as to underwrite a parallel network of paratransit service.
Anadromous	Refers to fish that typically inhabit seas or lakes but ascend streams to spawn; for example, salmon.
Annual Average Daily Traffic (AADT)	The average 24-hour volume, being the total number during a stated period divided by the number of days in that period. Unless otherwise stated, the period is a year. The term is commonly abbreviated as ADT or AADT.
ARB - California Air Resources Board	Part of the California Environmental Protection Agency, the California Air Resources Board is charged with promoting and protecting public health, welfare, and ecological resources through the effective and efficient reduction of air pollutants while recognizing and considering the effects on the economy of the state.

Term	Note
Archaeological Survey Report (ASR)	Caltrans uses the Archaeological Survey Report (ASR) to present results of identification efforts conducted for a project. The ASR is an attachment to the Historic Property Survey Report (HPSR).
Area of Potential Effect (APE)	A term used in Section 106 of the National Historic Preservation Act to describe the area in which historic resources may be affected by a federal undertaking.
Arid	Dry.
Arterial	A highway or local road that primarily serves through traffic.
Arterial Street	A major thoroughfare, used primarily for through traffic rather than for access to adjacent land, that is characterized by high vehicular capacity and continuity of movement.
Asbestos	An incombustible mineral fiber used for fireproofing, electrical insulation, building materials, brake linings, and chemical filters. The fibers can pollute air or water and are a human health concern.
As-Builts	The final plans of a project after the project is constructed. These plans show the original design, as well as changes that occurred during construction.
Attainment area	A geographic area in which levels of a criteria air pollutant meet the health-based primary standard (national ambient air quality standard, or NAAQS) for the pollutant. An area may have an acceptable level for one criteria air pollutant, but may have unacceptable levels for others. Thus an area could be both attainment and nonattainment at the same time. Attainment areas are defined using federal pollutant limits set by the U.S. EPA.
Attenuation	The reduction of noise.
Average Daily Traffic (ADT)	The average traffic volume of 24-hour counts collected over a number of days greater than one but less than a year.

Term	Note
B	
Backwater	The rise in water surface elevation due to encroachment.
Base Flood	The flood having a one percent (1%) chance of being equaled or exceeded in any given year (100-year flood).
Base Flood Elevation (BFE)	The water surface elevation of the base flood.
Basin Plan	A specific plan for control of water quality within one of the nine hydrologic basins of the State under the regulation of a Water Quality Control Board.
Beneficial Use	A use of a natural water resource that enhances the social, economic, and environmental well-being of the user. Twenty-one beneficial uses are defined for the waters of California, ranging from municipal and domestic supply to fisheries and wildlife habitat.
Best Management Practices (BMP)	Any program, technology, process, operating method, measure, or device that controls, prevents, removes, or reduces pollution.
Biofiltration swales/strips	Biofiltration strips are vegetated land areas over which stormwater flows as sheet flow. Biofiltration swales are vegetated channels, typically configured as trapezoidal or v-shaped channels that receive and convey stormwater flows while meeting water quality criteria and other flow criteria.
C	
California Department of Fish and Game (CDFG)	A public agency within the Resources Agency of the State of California. This agency is responsible for managing California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. CDFG also is responsible for the administration of the provisions of the State Endangered Species Act and for operating the California Natural Diversity Database.
California Department of Transportation (Caltrans)	Owner and operator of I-15, and Lead Agency under CEQA and NEPA for the I-15/SR-74 Interchange Improvement Project Initial Study/Environmental Assessment (IS/EA).

Term	Note
California Environmental Quality Act (CEQA)	State legislation enacted in 1970 and subsequently amended. It requires public agencies to regulate activities which may affect the quality of the environment so that major consideration is given to preventing damage to the environment.
California Transportation Commission (CTC)	A State Commission, established by State Assembly Bill 402 (AB 402) with nine appointed member and two ex-officio members, responsible for the programming and allocating of funds for the construction of highway, passenger rail, and transit improvements throughout California. The CTC also provides guidance and recommendations on transportation policies.
California Transportation Plan (CTP)	The CTP is a long-range transportation policy plan that is submitted to the Governor. The CTP is developed in collaboration with partners, presents a vision for California's future transportation system, and defines goals, policies, and strategies to reach the vision. It is developed in consultation with the State's regional transportation planning agencies, is influenced by the regional planning process, and provides guidance for developing future RTPs. RTPs should be consistent with and implement the vision and goals of the CTP. As defined by State statute, the CTP is not project specific.
CEQA Guidelines	Regulations adopted by the State of California to implement California Environmental Quality Act (CEQA).
California Native Plant Society (CNPS)	The California Native Plant Society is a statewide nonprofit organization dedicated to increasing understanding of California's native plants and to preserve them in their natural habitats through scientific activities, education, and conservation. The Society works primarily through its local chapters.
California Natural Diversity Database (CNDDB)	The California Natural Diversity Database is part of the Wildlife and Habitat Data Analysis Branch, Habitat Conservation Division, California Department of Fish and Game. It is a statewide inventory of the locations and conditions of the state's rarest species and natural communities. Data in the CNDDB are stored in geographic information system (GIS) format and can be retrieved as reports, maps, or overlays.

Term	Note
California Public Utility Commission (CPUC)	Regulates privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. The CPUC is responsible for ensuring that California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud; and promoting the health of California's economy.
California Register of Historical Resources (California Register)	The California Register is the authoritative guide to the state's significant historical and archeological resources.
Capacity	The maximum amount of traffic that can be accommodated by a uniform segment of freeway under prevailing conditions.
Categorical Exemption (CE)	"Categorical Exemption," under CEQA, means an exemption for a class of projects that have been determined by the Secretary of the Resources Agency not to have a significant effect on the quality of the environment. Article 19 of the CEQA Guidelines describes and gives examples for each class of categorical exemption. There are several exceptions which preclude a project from being considered a Categorical Exemption under CEQA: projects located on a site included on a list of designated hazardous waste sites (the Cortese List); projects that may result in damage to scenic resources on officially designated state scenic highways; or projects that may cause substantial adverse change to a historic resource.
Channelization	The use of traffic markings or islands to direct traffic into certain paths, for instance, a "channelized" intersection directs portions of traffic into a left-turn lane through the use of roadway islands or striping that separates the turn lane from traffic going straight.
Clean Air Act (CAA)	Federal legislation that sets national air quality standards; requires each state with areas that have not met federal air quality standards to prepare a State Implementation Plan (SIP). The sweeping 1990 amendments to the CAA, sometimes referred to as CAAA, established new air quality requirements for the development of metropolitan transportation plans and programs.

Term	Note
Clean Air Act Amendments of 1990 (CAAA)	The comprehensive federal legislation that establishes criteria for attaining and maintaining the federal standards for allowable concentrations and exposure limits for various air pollutants; the act also provides emission standards for specific vehicles and fuels.
Clean Water Act	Legislation that provides statutory authority for the National Pollutant Discharge Elimination System (NPDES) program; Public law 92-500; 33 U.S.C. 1251 et seq. Also known as the Federal Water Pollution Control Act.
Clear Recovery Zone	Unobstructed, relatively flat or gently sloping area beyond the edge of the traffic lane, which affords the drivers of errant vehicles the opportunity to regain control.
Community Noise Equivalent Level (CNEL)	The CNEL represents the average continuous noise level over a 24-hour period, with special weighting factors applied to noise events occurring in the nighttime (10:00 p.m. to 7:00a.m.), the evening (7:00p.m. to 10:00 p.m.), and the daytime (7:00a.m. to 7:00p.m.).
Conformity	The ongoing process that ensures the planning for highway and transit systems, as a whole and over the long term, is consistent with the state air quality plans for attaining and maintaining health- based air quality standards; conformity is determined by metropolitan planning organizations (MPOs) and the U.S. Department of Transportation (U.S. DOT) and is based on whether transportation plans and programs meet the provisions of a State Implementation Plan (SIP).
Congestion	Defined by Caltrans as highway operating speeds reduced to less than 35 miles per hour for longer than 15 minutes.
Conventional Highway	A highway without control of access that may or may not be divided.

Term	Note
Cooperating Agency	"Cooperating Agency," under NEPA, means any agency other than the lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal for any action significantly affecting the human environment.
Corridor	A strip of land between two termini within which traffic, topography, environment, and other characteristics are evaluated for transportation purposes.
Criteria Pollutants	Criteria pollutants include ozone, carbon monoxide, nitrogen dioxide, inhalable particulates (particulate matter less than 10 microns), and lead, as defined by the California Air Resources Board.
cubic foot per second	A rate of flow equal to approximately 7.5 gallons.
Cumulative effects	Project effects that are related to other actions with individually insignificant but cumulatively significant impacts.
Cumulative Impact (CEQA)	The CEQA definition of cumulative impact comes from the Office of Planning and Research (OPR). Section 15355 of OPR's CEQA Guidelines provides the following context: Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. a) The individual effects may be changes resulting from a single project or a number of separate projects. b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Term	Note
Cumulative Impact (NEPA)	The NEPA definition of a cumulative impact comes from the Council on Environmental Quality (CEQ), which defines a cumulative impact as: …the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR §1508.7.)
D	
dba	A-weighted decibels are adjusted to approximate the way the average person hears sound.
Decibel	With respect to sound, decibels measure a scale from the threshold of human hearing, 0 decibels, upwards towards the threshold of pain, about 120-140 decibels. Because decibels are such a small measure, they are computed logarithmically and cannot be added arithmetically. An increase of 10 decibels is perceived by the human ear as a doubling of noise.
Deciduous	(of leaves), shed during a certain season (winter in temperate regions, dry seasons in the tropics); (of trees), having deciduous parts.
Demand	The transportation need at a point in time, e.g., traffic volume on a segment of road at a point in time, projected traffic volume on a segment of road in a future year, current peak period ridership on a bus route, children crossing at a signed intersection on school days.
Demography, Demographic	The study of populations with reference to birth and death rates, size and density, distribution, migration, and other vital statistics.
Design Capacity	The maximum number of vehicles that can pass over a lane or a roadway during one hour without operating conditions falling below a pre-selected design level.

Term	Note
Design Concept	The type of facility identified by the project, e.g., freeway, expressway, arterial highway, grade-separated highway, reserved right of way rail transit, mixed-traffic rail transit, exclusive busway, etc.
Design Flood	The peak discharge, volume if appropriate, stage or wave crest elevation of the flood associated with the flood frequency selected for the design of a project. (In other words, the project will not be inundated at the design flood frequency.)
Design Life	The length of time that a transportation facility or improvement is intended to remain serviceable, frequently expressed in years.
Design Scope	The design aspects which would affect the proposed facility's impact on regional emissions, usually as they relate to vehicle or person carrying capacity and control, e.g., number of lanes or tracks to be constructed or added, length of project, signalization, access control including approximate number and location of interchanges, preferential treatment for high-occupancy vehicles, etc.
Design speed	A speed determined for design and correlation of the physical features of a highway that influence vehicle operation. It is the maximum safe speed that can be maintained over a specified section of highway when conditions are so favorable that the design features of the highway govern.
Design Volume	A volume determined for use in design, representing traffic expected to use the highway. Unless otherwise stated, it is an hourly volume.
Designated Floodway	A floodway designated by a state or local agency. California State Reclamation Board (Board) definition: A designated floodway means either: (1) the channel of the stream and that portion of the adjoining floodplain reasonably required to provide passage of a base flood or (2) the floodway between existing levees as adopted by the Board or the Legislature.

Term	Note
Deterministic Seismic Hazard Analysis	Seismic parameters are estimated based on the size of the maximum credible (magnitude) earthquake expected. The value obtained is essentially time-independent. This method is used by Caltrans to assess the seismic hazard at most structures. See also probabilistic seismic hazard analysis, below.
Diameter at Breast Height (DBH)	Diameter of tree measured 4 feet, 6 inches (1.4 meters) from ground level.
Differential Settlement	The uneven lowering of different parts of an engineered structure, often resulting in damage to the structure.
Direct Effects	Effects that are caused by and action and occur at the same time and place as the action.
E	
Ecosystem	The biotic community and its abiotic environment functioning on a system.
Encroachment (FEMA definition)	Construction, placement of fill, or similar alteration of topography in the floodplain that reduces the area available to convey floodwaters. FHWA definition: An action within the limits of the base floodplain.
Encroachment (FHWA)	An action within the limits of the base floodplain.
Endangered	Plant or animal species that are in danger of extinction throughout all or a significant portion of its range.
Endemic, Endemism	Restricted to a given region (e.g., endemic to California).
Environmental Assessment (EA)	Defined by Caltrans as an assessment of the environmental consequences (positive and negative) of a plan, policy, program, or actual projects prior to the decision to move forward with the proposed action.

Term	Note
Environmental Document	"Environmental Document" means draft or final Environmental Impact Statement (EIS) or Environmental Impact Report (EIR), Finding of No Significant Impact (FONSI), Environmental Assessment (EA) or Negative Declaration (ND)/Mitigated Negative Declaration (MND). A categorical exemption or exclusion is not considered an environmental document; it is rather the determination that the project is exempt/excluded from the requirement to prepare an environmental document.
Environmental Justice (EJ)	Federal Executive Order 12898 requiring analysis of the impact of a facility or project on disadvantaged populations. (i.e., low-income, minority)
Environmental Protection Agency [United States] (U.S. EPA)	An agency of the executive branch of the federal government charged with establishing and enforcing environmental regulations.
Ephemeral	Lasting for only a short time; transitory; short-lived.
Erosion	The wearing away of the land surface by running water, wind, ice, or other geological agents.
Estuary	Partially enclosed embayment where fresh water and sea water meet and mix.
Ethnographic	Relating to the study of human cultures.
Expansive Soils	Soil deposits that have the capacity or a tendency to expand during weather or seismic events.
Expressway	An arterial highway with at least partial control of access, which may or may not be divided or have grade separations at intersections.
Extant	Still in existence.
F	
Falsework	A temporary frame to support a structure during construction.

Term	Note
Fault Creep	Slow ground displacement occurring without accompanying earthquakes.
Federal Highway Administration (FHWA)	The Federal agency within the U.S. Department of Transportation responsible for administering the Federal-aid Highway Program and the Motor Carrier Safety Program.
Federal Register (FR)	The *Federal Register* is the official daily publication for agency rules, proposed rules, and notices of federal agencies and organizations, as well as for Executive Orders and other presidential documents.
Federal Transit Administration (FTA)	An agency within the U.S. Department of Transportation responsible for administering federal funds for public transportation planning, programming, and projects.
Federal State Transportation Improvement Program (FSTIP)	A multiyear statewide, financially constrained, intermodal program of projects that is consistent with the statewide transportation plan (CTP) and regional transportation plans (RTPs). The FSTIP is developed by the California Department of Transportation and incorporates all of the MPOs *and* RTPAs FTIPs by reference. Caltrans then submits the FSTIP to FHWA.
Federal Transportation Improvement Program (FTIP)	A constrained 4-year prioritized list of all transportation projects that are proposed for federal and local funding. The FTIP is developed and adopted by the MPO/RTPA and is updated every 2 years. It is consistent with the RTP and it is required as a prerequisite for federal funding.
Finding Of No Significant Impact (FONSI)	A document by a federal agency briefly presenting the reasons why an action, not otherwise categorically excluded, would not have a significant effect on the human environment and therefore does not require the preparation of an EIS.
Flood Boundary And Floodway Map (FBFM)	The floodplain management map issued by FEMA that depicts, on the basis of detailed analyses, the boundaries of the 100- and 500-year floodplain and the regulatory floodway.

Term	Note
Flood Frequency	The statistical number of years that takes place before the recurrence of a flood of the same magnitude. (10-year flood, 50-year flood, 100-year flood, etc.)
Flood Insurance Rate Map (FIRM)	The insurance and floodplain management map issued by FEMA that identifies, on the basis of detailed or approximate analyses, the areas of 100-year flood hazard in a community.
Flood Insurance Study (FIS)	It is a report that describes and delineates the Special Flood Hazard Areas and the elevations of the community.
Floodplain	Any land area subject to inundation by floodwaters from any source.
Floodplain Evaluation Report	A technical report which evaluates effects of the floodplain encroachment concerning the six key items identified in 23 CFR 650.111(b)(c)(d) verified by results of the Location Hydraulic Study (same as Figure 804.7A Technical Information for Location Hydraulic Study located in chapter 804 of the Highway Design Manual), but in greater detail. This report is required in situations where it is uncertain or clear that a project may involve a significant encroachment. This report is to be used as a backup for the Environmental Assessment/Finding of No Significant Impact (EA/FONSI) or an Environmental Impact Statement (EIS). The risks, impacts, and mitigation measures must be summarized in the NEPA document.
Floodplain Values	Fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aqua culture, forestry, natural moderation of floods, water quality maintenance, groundwater discharge, etc.
Floodway	The channel of a river or other watercourse, plus any adjacent floodplain areas, which is designated a floodway by a public agency, that must be kept free of encroachment so that the 100-year flood discharge can be conveyed without cumulatively increasing the water-surface elevation more than one foot above the BFE. (Since the one foot is already accounted for, no increase of any amount in the BFE is allowed in the floodway.)

Term	Note
Floodway Fringe	The portion of the 100-year floodplain that is not within the floodway and in which development and other forms of encroachment may be permitted under certain circumstances.
Fossil	Any remains, trace, or imprint of a plant or animal that has been preserved in the earth's crust since some past geologic time (Bates and Jackson 1980:243).
Fragmentation	Reduction of a large habitat area into small, scattered remnants; reduction of leaves and other organic matter into smaller particles.
Friable	Easily crumbled (as in friable soil).
Freeway	A divided arterial highway with full control of access and with grade separations at intersections.
G	
Geometric Design	The design of the physical features of a road, such as alignment, grades, sight distances, widths, slopes, etc., many of which are dictated by the design speed.
Goods Movement	The transportation of commodities by any or all of the following commercial means; aircraft, railroad, ship, or truck.
Greenhouse Gas (GHG)	Greenhouse gases can be naturally occurring or man-made. Greenhouse gases include, but are not limited to, the following gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafloride.
H	
Habitat	Place where a plant or animal lives.
Habitat Protection	Ensuring appropriate uses of land to maintain and optimize species habitat values.
High Occupancy Toll (HOT) Lanes	New HOV lanes that allow single occupant vehicles access for a fee.

Term	Note
High Occupancy Vehicle (HOV) Lanes	A lane of freeway reserved for the use of vehicles with set minimum number of occupants. Buses, taxis, carpools (which satisfy the occupancy minimum), and motorcycles generally may use HOV lanes.
Holocene	The second epoch of the Quaternary Period characterized by man and modern animals.
Hydric Soil	Soil subject to saturation or inundation.
I	
Igneous Rocks	Formed when magma (liquid rock material) cools below the earth's surface or when lava cools above ground.
Impacts	Reasonably predictable changes in the environment resulting from a project. Impacts can be adverse or beneficial, and can be classified as direct, indirect, or cumulative.
Indirect Effects	Effects that are caused by an action and occur later in time, or at another location, yet are reasonably foreseeable.
Initial Study (IS)	Under CEQA, the Initial Study is prepared to determine whether there may be significant environmental effects resulting from a project. The Initial Study is attached to the Negative Declaration or Mitigated Negative Declaration. It can become the basis of an EIR if it concludes that the project may cause significant environmental effects that cannot be mitigated below the level of significance.
Initial Study/Environmental Assessment (IS/EA)	An assessment of a project's environmental impacts and recommended methods for avoiding or mitigating any significant adverse impacts. A Draft IS/EA is circulated for public review and comment. A Final IS/EA includes responses to public and agency comments and revisions to the Draft IS/EA.
Interchange	A system of interconnecting roadways in conjunction with one or more grade separations providing for the routing of traffic between two or more roadways on different levels.

Term	Note
Intermodal Surface Transportation Efficiency Act (ISTEA)	Federal transportation legislation adopted in 1991. It provided increased funding and program flexibility for multimodal transportation programs. Upon its expiration, ISTEA was succeeded by TEA-21.
Interregional Improvement Program (IIP)	One of two component funding source programs that ultimately make up the State Transportation Improvement Program (STIP). The IIP receives 25% of the funds from the State Highway account. The IIP is the source of funding for the ITIP.
Interregional Transportation Improvement Program (ITIP)	A statewide program of projects, developed by Caltrans for interregional projects that are primarily located outside of urbanized areas. The ITIP has a 4-year planning horizon and is updated every two years. It is submitted to the CTC along with the FTIP and taken together they are known as the STIP.
Interregional Transportation Strategic Plan (ITSP)	A plan that describes and communicates the framework in which the state will carry out its responsibilities for the Interregional Transportation Improvement Program (ITIP).
L	
Lane Numbering	On a multilane roadway, the lanes available for through travel in the same direction are numbered from left to right when facing in the direction of travel.
ldn	Average noise over one day and night.
Lead Agency (CEQA)	“Lead Agency” means the public agency which has primary responsibility for carrying out or approving a project which may have a significant effect on the environment and preparing the environmental document.
Lead Agency (NEPA)	The agency or agencies preparing or having taken primary responsibility for preparing the environmental impact statement.
leq	A measure of the average noise level during a specified period of time.
leq(h)	Equivalent or average noise level for the noisiest hour.

Term	Note
Level of Service (LOS)	A measure describing operational conditions within a traffic stream. It measures such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The six defined levels of services use letter designations from A to F, with Level of Service A representing the best operating conditions and Level of Service F representing the worst. Each Level of Service represents a range of operating conditions.
Liquefaction	The loss in the shearing resistance of a cohesionless soil, caused by an earthquake wave. The soil is turned into a fluid mass.
Lithic	Consisting of or relating to stone or rock.
Littoral	Shallow water of a lake in which light penetrates to the bottom, permitting submerged, floating, and emergent vegetative growth; also shore zone of tidal water between high-water and low-water marks.
Load Limits	Weight restrictions used to prohibit vehicles that exceed a specified weight from using a transportation facility.
Location Hydraulic Study (same as Figure 804.7a Technical Information for Location Hydraulic Study Located in Chapter 804 of the Highway Design Manual)	The preliminary investigative study to be made of base floodplain encroachments by a proposed highway action. (This study must be performed by a registered engineer with hydraulic expertise.)
M	
Magnitude	A measure of the strength of an earthquake or the strain energy released by it.
Maintenance Area	A federal term to describe any geographic region of the United States designated non-attainment pursuant to the Clean Air Act Amendments of 1990 (CAAA) and subsequently re-designated to attainment subject to the requirement to develop a maintenance plan under Section 175A of the CAAA.

Term	Note
Major Federal Action	Section 1508.18 of the CEQ Regulations states that "Major Federal action" includes actions with effects that may be major and which are potentially subject to Federal control and responsibility. Major reinforces but does not have a meaning independent of significantly (Sec. 1508.27).” An EIS must be prepared for any major federal action significantly affecting the quality of the human environment.
Major Investment	Federal regulations define a “major metropolitan transportation investment” as “a high-type highway or transit improvement of substantial cost that is expected to have a significant effect on capacity, traffic flow, level of service, or mode share at the transportation corridor or subarea scale” (23 CFR 450.104).
Marsh	Wetland dominated by grassy vegetation, such as cattails and sedges.
Maximum Credible Earthquake (MCE)	The maximum intensity earthquake that is assumed to occur closest to the site. This earthquake is also described as the maximum magnitude earthquake, or maximum earthquake.
Median	The portion of a divided highway separating the traveled ways in opposite directions.
Migration	Intentional, directional, and usually seasonal movement of animals between two regions or habitats; involves departure and return of the same individual.
Mitigated Negative Declaration (MND)	The CEQA document that is used when the Initial Study concludes that a project's potential significant effect on the environment can be reduced below the level of significance with the incorporation of mitigation measures.
Mitigation Measure	Action that avoids, minimizes, or compensates for the significant impacts of a project.

Term	Note
Mitigation Monitoring and Reporting Program (MMRP)	A plan for ensuring that measures to mitigate adverse project impacts are implemented. The plan is a documentation of the commitments made by the Lead Agency to avoid, minimize, and mitigate project impacts and is used as a tool to track their implementation.
Mixed-Flow Lane	A standard traffic lane for all types of vehicles, including single-occupant cars, carpools, vans, buses, and trucks.
Monitoring Well	A well drilled at a hazardous waste management site or Superfund site to collect groundwater samples for the purpose of physical, chemical, or biological analysis to determine the amounts, types, and distribution of contaminants in the groundwater beneath the site.
Moving Ahead For Progress In The 21st Century Act (MAP-21)	MAP-21 was signed into law by President Barack Obama on July 6, 2012. Funding surface transportation programs at over $105 billion for fiscal years (FY) 2013 and 2014, MAP-21 is the first long-term highway authorization enacted since 2005.
Multimodal	Pertaining to more than one method of traveling.
N	
National Environmental Policy Act (NEPA)	Enacted in 1969, NEPA requires all federal agencies to consider environmental factors through a systematic interdisciplinary approach before committing to a course of action. The NEPA process is an overall framework for the environmental evaluation of federal actions.
National Highway System (NHS)	Consists of 155,000 miles (plus or minus 15 percent) of the major roads in the U.S. Included will be all interstate routes, a large percentage of urban and rural principal arterials, the defense strategic highway network, and strategic highway connectors.
National Pollutant Discharge Elimination System Permit (NPDES)	"…is required for facilities and activities that discharge waste into surface waters from a confined pipe or channel."

Term	Note
Nonattainment Area	"Nonattainment Area" means any geographic region of the United States that the U.S. Environmental Protection Agency (U.S. EPA) has designated as a nonattainment area for a transportation related pollutant(s) for which a National Ambient Air Quality Standard (NAAQS) exists.
Nonpoint Source	A "nonpoint source" is a dispersed source of pollution that is not identifiable as to specific location, but may be identified as contributing to water quality degradation from a tributary drainage area, e.g., pesticide residues distributed over an agricultural area.
Notice of Availability (NOA)	"Notice of Availability" means a formal public notice under NEPA announcing the availability of a completed EA, DEIS, or FEIS. For EISs, publication of such notice in the Federal Register is required.
Notice of Completion (NOC)	The CEQA notice submitted to the State Clearinghouse when an EIR, MND, or ND is completed.
Notice of Determination (NOD)	A "Notice of Determination" is a formal written notice under CEQA filed by a lead state agency when approving any project subject to the preparation of an EIR, MND, or ND.
Notice of Exemption (NOE)	"Notice of Exemption" means a brief notice which may be filed by a public agency after it has decided to carry out or approve a project and has determined that the project is exempt from CEQA.
Notice of Intent (NOI)	Under NEPA, the "Notice of Intent" is a notice that an Environmental Impact Statement will be prepared and considered. The Notice of Intent is published in the Federal Register by the lead federal agency. Under CEQA, a lead agency must also provide a "Notice of Intent to Adopt" an ND or MND to the public, responsible agencies, trustee agencies, and the county clerk of each county in which the project is located. Under the California SWRCB, a "Notice of Intent" is prepared as a part of the draft SWPPP submittal to obtain a waste discharger identification (WDID) number prior to project construction.

Term	Note
Notice of Preparation (NOP)	"Notice of Preparation" is the CEQA notice that an EIR will be prepared for a project.
O	
Overcrossing (O.C.)	A local road structure that bridges over a state highway.
Oxygen Demand	Materials such as food waste and dead plant or animal tissue that use up dissolved oxygen in the water when they are degraded through chemical or biological processes. Chemical and biochemical oxygen demand (COD and BOD) are measures of the amount of oxygen consumed when a substance degrades.
P	
Palaeontologic Species	A morphologic species based on fossil specimens. It may include specimens that would be considered specifically distinct if living individuals could be observed (Bates and Jackson 1980:451).
Paleontological Resource	A locality containing vertebrate, invertebrate, or plant fossils (i.e., fossil location, fossil bearing formation, or a formation with the potential to bear fossils).
Paleontology	The study of life in past geologic time based on fossil plants and animals and including phylogeny, their relationships to existing plants, animals, and environments, and the chronology of the earth's history (Bates and Jackson 1980:451).
Participating Agency	Under 23 USC 139, a participating agency is any federal or non-federal agency (state, tribal, regional, or local government agency) that may have an interest in the project. Nongovernmental organizations and private entities cannot serve as participating agencies.
Pleistocene	The first epoch of the Quaternary Period characterized by the first indications of social life in man.
Pliocene	The first epoch of the Tertiary Period characterized by the transition from hominids to early humans.

Term	Note
Point Source	Distinct location from which wastes are discharged (e.g., pipes and sewers).
Practicable	The term *practicable* means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.
Probabilistic Seismic Hazard Analysis	Seismic parameters are estimated using several significant seismic sources, the likelihood of occurrence within a given time frame, and the uncertainty of the estimate. Caltrans uses probabilistic methods for important bridges and certain seismic retrofit projects.
Project (CEQA)	California Public Resources Code §21065 defines a "project" as an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and which is any of the following: a) An activity directly undertaken by any public agency. b) An activity undertaken by a person which is supported, in whole or in part, throughout contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies. c) An activity that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.
Project (FHWA)	23 Code of Federal Regulations §1.2 defines a project as an undertaking by a State highway department for highway construction, including preliminary engineering, acquisition of rights of way and actual construction, or for highway planning and research, or for any other work or activity to carry out the provisions of the Federal laws for the administration of Federal-aid for highways.
Purpose and Need Statement	The section of the Draft Initial Study/Environmental Assessment is (IS/EA) dedicated to defining the problems to be solved (need) and what the project will accomplish (purpose).

Term	Note
Q	
Quaternary Period	A geologic period, which includes both the Pleistocene and Holocene Periods, comprising the second portion of the Cenozoic era; characterized by the rise of man and modern animals.
R	
Receptors	Term used in air quality and noise studies that refers to houses or businesses that could be affected by a project.
Record of Decision (ROD)	The “Record of Decision” is a formal written statement, required under NEPA, wherein a federal lead agency must present the basis for its decision to approve a selected project alternative, summarize mitigation measures incorporated into the project, and document any required Section 4(f) approval.
Recurrence Interval	The average time interval between earthquake occurrences of equal magnitude on the same fault.
Regulatory Agency	An agency that has jurisdiction by law.
Regional Improvement Program (RIP)	One of two component funding source programs that ultimately make up the STIP. The RIP receives 75% of the funds from the State Highway account. This 75% is then distributed to the MPOs and RTPAs by a formula. The RIP is the source of funding for the FTIP.
Regional Transportation Improvement Program (RTIP)	RTIP is a synonym for the FTIP and it refers to the programming done by the MPO/RTPA as part of the development of the RTP.
Regional Transportation Plan (RTP)	A federal and state mandated planning document prepared by MPOs and RTPAs. The plan describes existing and projected transportation needs, conditions, and financing affecting all modes within a 20-year horizon.
Regional Transportation Planning Agency (RTPA)	A State designated single or multi-county agency responsible for regional transportation planning. RTPAs are also known as Local Transportation Commissions or Councils of Governments and are usually located in rural or exurban areas.

Term	Note
Regulatory Earthquake Fault Zones	Areas along faults defined as active by the California Geological Survey, typically one-quarter mile or less in width, where special studies are required to determine if there is a surface rupture hazard. Caltrans' broader definition of active faults results in other areas that also need to be addressed for surface rupture. A site near a fault defined as active by Caltrans criterion also requires a review of surface rupture potential.
Regulatory Floodway	A floodplain area that is reserved in an open manner by federal, state, or local requirements, i.e., unconfined or unobstructed either horizontally or vertically, to provide for the discharge of the base flood so that the cumulative increase in water surface elevation is no more than a one-foot increase. (Since the one foot is already accounted for, no increase more than 0.00 feet is allowed)
Responsible Agency	A "public agency, other than the lead agency which has responsibility for carrying out or approving a project" (PRC 21069). The CEQA Guidelines further explains the statutory definition by stating that a "responsible agency" includes "all public agencies other than the Lead Agency which have discretionary approval power over the project" (14 CCR 15381). State and local public agencies that have discretionary authority to issue permits, for example, fall into this category.
Revegetation	Planting of indigenous plants to replace natural vegetation that is damaged or removed as a result of highway construction projects or permit requirements.
Right of Way	A general term denoting land, property, or interest therein, usually in a strip acquired for or devoted to transportation purposes.
Riparian	Along banks of rivers and streams; riverbank forests are often called gallery forests.
Riprap	Randomly placed rock or concrete used to strengthen an embankment or protect it from erosion.

Term	Note
Risk Assessment	An economic and/or non-economic assessment of the impacts associated with the floodplain encroachment(s). It is meant to be more general in detail than a risk analysis. The format and content of the Summary Floodplain Encroachment Report form is the minimum required for a risk assessment.
Rotational Slide or Slump	Landslide movement due to forces that cause a concave upwards surface in the mass.
Ruderal	Disturbed area with a prevalence of introduced weedy species. Ruderal habitats are associated with unpaved highway shoulders and weedy areas around and between dwellings and other structures.
S	
The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy For Users (SAFETEA-LU)	SAFETEA-LU authorized the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005 to 2009.
Scenic Highway System	A list of the highways that are eligible to become, or are designated as, official scenic highways. Many state highways are located in areas of outstanding natural beauty. California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change that will diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, §260 et seq.
Scoping	NEPA defines scoping as an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action (40 CFR §1501.7). Under CEQA, scoping is designed to examine a project early in the EIR environmental analysis/review process, and is intended to identify the range of issues pertinent to the project and feasible alternatives or mitigation measures to avoid potentially significant environmental effects.
Scour	Erosion caused by moving water.

Term	Note
Seiche	A wave oscillation of the surface of water in an enclosed basin initiated by an earthquake.
Senate Bill 45	California State Senate Bill 45, passed in 1997, revised transportation funding priorities at the State level, allocating 75% of capital outlay dollars to regional agencies, and 25% to the State.
Setbacks	The minimum horizontal distance slopes shall be set back from site boundaries according to Chapter 70 of the Uniform Building Code. Also applies to the minimum horizontal distance required from faults to structures (see California Geological Survey Special Publication 42, pp. 27 and 29).
Settlement	The gradual downward movement of an engineered structure due to compression of the soil below the structure foundation.
Significance (CEQA)	CEQA defines a "significant effect on the environment" as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant” (15382). CEQA requires that the lead agency identify each “significant effect on the environment” resulting from the project and avoid or mitigate it. The CEQA Guidelines include mandatory findings of significance for certain effects, thus requiring the preparation of an EIR.

Term	Note
Significant Encroachment	A highway encroachment and any direct support of likely base floodplain development that would involve one or more of the following construction or flood related impacts: a) A significant potential for interruption or termination of a transportation facility, which is needed for emergency vehicles or provides a community's only evacuation route. b) A significant risk *(to life or property)*, or c) A significant adverse impact on natural and beneficial floodplain values.
Soil Creep	The gradual, steady downhill movement of soil and loose rock material.
Southern California Association of Governments (SCAG)	Southern California Association of Governments is a federally designated Metropolitan Planning Organization for the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura and is a Project partner agency.
Special Flood Hazard Areas (SFHAS)	The areas delineated on an NFIP map as being subject to inundation by the base (100-year) flood.
Special-Status Species	Plant or animal species that are either (1) federally listed, proposed for or a candidate for listing as threatened or endangered; (2) bird species protected under the federal Migratory Bird Treaty Act; (3) protected under state endangered species laws and regulations, plant protection laws and regulations, Fish and Game codes, or species of special concern listings and policies; or (4) recognized by national, state, or local environmental organizations (e.g., California Native Plant Society).
State Clearinghouse Review	The Draft Initial Study/Environmental Assessment (IS/EA) is published in the State Clearinghouse Review for public review and comment.

Term	Note
State Highway Operations and Protection Program (SHOPP)	A legislatively created program to maintain the integrity of the State Highway System. It is tapped for safety and rehabilitation projects. SHOPP is a multi-year program of projects approved by the Legislature and Governor. It is separate from the STIP.
State Implementation Plan (SIP)	The state's plan for attaining the National Ambient Air Quality Standards. Per federal law, transportation plans and programs in air quality non-attainment areas must conform to the SIP.
State Transportation Improvement Program (STIP)	A statewide or bundled prioritized list of transportation projects covering a period of four years that is consistent with the long-range statewide transportation plan, MTPs, and FTIPs, and required for projects to be eligible for funding under Title 23 USC and title 49 USC. Chapter 53.
State Water Resources Control Board	The principal authority of California for regulation of the quantity and quality of waters of the State, established by act of the legislature in 1967. It assumed responsibility for administration of the Porter-Cologne Water Quality Control Act of 1969.
Statement of Overriding Consideration	Pursuant to CEQA, a written explanation prepared by a public agency that explains why it approved a project, despite the presence of significant, unavoidable environmental impacts.
Statewide Transportation Plan	The official statewide, intermodal transportation plan that is developed through the statewide transportation planning process.
Storm Water Pollution Prevention Plan (SWPPP)	An SWPPP is prepared to evaluate sources of discharges and activities that may affect storm water runoff, and implement measures or practices to reduce or prevent such discharges.
Stratum	A layer of sedimentary rock; plural is strata.
Stratigraphy	The study of rock layers, especially their formation, distribution, composition, and age.
Subsidence	A localized mass movement that involves the gradual downward settling or sinking of the earth's surface.

Term	Note
Swale	A wide shallow depression in the ground to form a channel for storm water drainage. Bio-swales or biofiltration swales are densely vegetated to filter runoff.
T	
Technical Studies	A detailed study examining a specific environmental category (i.e., air quality, noise).
Threatened	A species that is likely to become endangered in the foreseeable future in the absence of special protection.
Tiering	The process of preparing multiple levels of an environmental review, typically including general matter in broad environmental documents with subsequent narrower environmental documents.
Total Dissolved Solids	Concentration of all substances dissolved in water (solids remaining after evaporation of a water sample).
Tract	A standard geographical unit of measurement defined by the U.S. Census Bureau.
Traffic Accident Surveillance and Analysis System (TASAS)	A system that provides a detailed list and/or summary of accidents that have occurred on highways, ramps, or intersections that are part of the State Highway System. Accidents can be selected by location, highway characteristics, accident data codes, and combinations of the above.
Traffic Forecast	A best estimate of future roadway travel conditions, demand, and resulting volumes.
Traffic Operations	The safe and efficient movements of vehicles, people, and goods. The typical measures of effectiveness are travel times, delay, accidents per vehicles miles, and level of service.
Translational Slide	Landslide movement that occurs predominantly along planar or gently undulating surfaces.

Term	Note
Transportation Control Measure (TCM)	"... is any measure that is specifically identified and committed to in the applicable implementation plan that is either one of the types listed in §108 of the Clean Air Act or any other measure for the purpose of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions. Notwithstanding the above, vehicle technology-based, fuel-base, and maintenance-based measures which control the emissions from vehicles under fixed traffic conditions are not TCMs for the purposes of project-level conformity.
Transportation Demand Management (TDM)	"Demand-based" techniques for reducing traffic congestion, such as ridesharing programs and flexible work schedules enabling employees to commute to and from work outside of the peak hours.
Transportation Equity Act For The 21st Century (TEA-21)	Federal legislation signed into law in 1998, authorizing highway, highway safety, transit and other surface transportation programs for the following six years. TEA 21 built on the initiatives established in the 1991 ISTEA.
Transportation Improvement Plan (TIP)	A staged, multiyear, intermodal program of transportation projects which is consistent with the metropolitan transportation plan. It is a federal term.
Transportation System Management (TSM)	TSM is 1) a process oriented approach to solving transportation problems considering both long and short range implications; and 2) a services and operations process oriented in which low capital, environmentally-responsive, efficiency-maximizing improvements are implemented on existing facilities.

Term	Note
Trustee Agency	"…a state agency having jurisdiction by law over natural resources affected by project which are held in trust for the people of the State of California. Trustee agencies include: a) the California Department of Fish and Game [Wildlife] with regard to the fish and wildlife of the state, to designated rare or endangered native plants, and to game refuges, ecological preserves, and other areas administered by the department; b) the State Lands Commission with regard to state owned "sovereign" lands such as the beds of navigable waters and state school lands; c) the State Department of Parks and Recreation with regard to units of the State Park System; and d) the University of California with regard to sites within the Natural Land and Water Reserves System" (14 CCR 15386).
Tsunami	A water wave of local or distant origin that results from large-scale displacements associated with large earthquakes, major submarine slides, or volcanic eruption.
Turbidity	Cloudiness (or a measure of the cloudiness in water due to the presence of suspended particulates).
Type I Projects	A proposed federal or federal-aid highway project for the construction of a highway on new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes. Other specific activities that qualify as a Type I project are defined in 23 CFR 772.
Type Ii Projects	Usually called a retrofit project, a proposed federal or federal-aid highway project for noise abatement on an existing highway.
Type III Projects	A federal or Federal-aid highway project that does not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis.
U	
Undercrossing (U.C.)	A state highway structure that bridges over a local road.

Term	Note
Unusual Circumstances (NEPA)	For any action which would normally be classified as a CE but could involve unusual circumstances, Caltrans is required to conduct appropriate environmental studies to determine whether a categorical exclusion is proper (23 CFR 771.117(b)). Unusual circumstances include actions that involve: 1. Significant environmental impacts; 2. Substantial controversy on environmental grounds; 3. Significant impact to properties protected under 4(f) of the USDOT Act or Section 106 of the National Historic Preservation Act ; 4. Inconsistencies with any federal, state or local law relating to environmental impacts.
V	
Vertical Clearance	The unobstructed distance above the roadway surface; the height at which a vehicle may pass beneath a structure, such as a bridge, without any physical contact.
Viewshed	View; total visible area from the position of a single observer or the total visible area from observers in multiple positions.
Visual Resources	The natural and artificial features of a landscape that characterize its form, line, texture, and color.
Visual Unity	The visual coherence and compositional harmony of a landscape when considered as a whole.
Volume to Capacity Ratio (V/C)	The relationship between the demand for trips and the number of trips that can be accommodated.
W	
Watershed	The area of land that drains into a specific waterbody.

Term	Note
Waters of the United States	As defined by the United States Army Corps of Engineers (USACE) in 33 CFR 328.3(a): 1. All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; 2. All interstate waters including interstate wetlands; 3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce, including any such waters: i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or ii. (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or iii. (iii) Which are used or could be used for industrial purposes by industries in interstate commerce; 4. All impoundment of waters otherwise defined as waters of the United States under this definition; 5. Tributaries of waters identified in paragraphs 1-4; 6. The territorial seas; 7. Wetlands adjacent to waters (waters that are not wetlands themselves) identified in paragraphs 1-6.
Weir	A dam in a stream to raise the water level or divert its flow.
Wetland	Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Sources: U.S. EPA n.d.

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Appendix F. List of Acronyms

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Acronyms and Abbreviations

A	
AADT	average annual daily traffic
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ACS	American Community Survey
ADA	Americans with Disabilities Act
ADL	aerially deposited lead
ADT	average daily traffic
AGR	Agricultural Supply
APE	Area of Potential Effects
APN	assessor's parcel number
AQMP	Air Quality Management Plan
ARB	Air Resources Board
ASR	Archaeological Survey Report
AST	aboveground storage tank
ASTM	ASTM International, Inc.
B	
BFE	base flood elevation
bgs	below ground surface
BMP	best management practice
BSA	biological study area
BUOW	burrowing owl
C	
C-D	collector-distributor
CAA	Clean Air Act
CAAP	Clean Air Action Plan
CAAQS	California Ambient Air Quality Standards
CAFÉ	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
Cal-OSHA	California Division of Occupational Safety and Health Administration

CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAP	Climate Action Plan
CASSA	Criteria Area Species Survey Areas
CCAA	California Clean Air Act
CCP	Construction Contingency Plan
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH4	Methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CIA	Community Impact Assessment
CIP	Corridor Improvement Plan
City	City of Lake Elsinore
CLOMR	Conditional Letter of Map Revision
CMMP	Contaminated Media Management Plan
CMP	corrugated metal pipe
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COMM	Commercial and Sportfishing

County	County of Riverside
CPUC	California Public Utilities Commission
CREC	controlled recognized environmental condition
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CTC	California Transportation Commission
CTP	California Transportation Plan
CWA	Clean Water Act
D	
DBESP	Determination of Biologically Equivalent or Superior Preservation
DDI	Diverging Diamond Interchange
DHHS	Department of Health and Human Services
DOC	Department of Conservation
DPGR	Draft Preliminary Geotechnical Report
DPM	diesel particulate matter
DPPIA	design pollution prevention infiltration areas
DSA	disturbed soil area
DTSC	Department of Toxic Substances Control
E	
EA	Environmental Assessment
EB	eastbound
EBL	eastbound left
EBR	eastbound right
EBT	eastbound through
EDR	Environmental Data Resources
EIC	Eastern Information Center
EIR	environmental impact report
EIS	environmental impact statement
EJ	environmental justice
ELPSE	Express Lanes Project Southern Extension
EO	Executive Order
EPA	Environmental Protection Agency

ESA	environmentally sensitive area
EVMWD	Elsinore Valley Municipal Water District
F	
°F	degrees Fahrenheit
FCAA	Federal Clean Air Act
FE	Federally Endangered
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FHSZ	Fire Hazard Severity Zone
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FP	Fully Protected
FPPA	Farmland Protection Policy Act
FT	Federally Threatened
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
G	
GDP	gross domestic product
GHG	greenhouse gas
GWP	global warming potential
GWR	groundwater recharge
H	
H&SC	Health and Safety Code
H2S	hydrogen sulfide
HASP	Health and Safety Plan
HSG	hydrologic soil groups
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
HDM	Highway Design Manual
HOV	high-occupancy vehicle

HPSR	Historic Property Survey Report
HREC	historical recognized environmental condition
I	
I-15	Interstate 15
ICF	ICF International
ID	Identification
IND	Industrial Service Supply
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
ISA	Initial Site Assessment
J	
JPCP	jointed plain concrete pavement
JD	jurisdictional delineation
JPR	Joint Project Review
K	
kV	Kilovolt
KV	Key Viewpoint
L	
LBP	lead-based paint
LCFS	Low Carbon Fuel Standard
LCP	Lead Compliance Plan
LDS	Latter-day Saints
LED	light-emitting diode
LEDPA	least environmentally damaging practicable alternative
LETAM	City of Lake Elsinore's Transportation Analysis Model
LOS	level of service
LRA	local responsibility areas
LUST	leaking underground storage tank
M	
MBTA	Migratory Bird Treaty Act
MTBE	methyl tert butyl ether
MCTT	multi-chamber treatment train

mg/L	milligram per liter
mg/kg	milligrams per kilogram
MGP	manufactured gas plant
MLD	most likely descendant
MMT	million metric tons
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
MND	Mitigated Negative Declaration
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer Systems
MSAT	mobile source air toxic
MSHCP	Multiple Species Habitat Conservation Plan
MT	metric tons
MUN	Municipal and Domestic Supply
MV	Million Vehicles
MVM	Million Vehicle Miles
N	
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NB	northbound
NBL	northbound left
NBR	northbound right
NCCP	Natural Communities Conservation Plan
NEPA	National Environmental Policy Act
NEPSSA	Narrow Endemic Plant Species Survey Areas
NES(MI)	Natural Environment Study (Minimal Impacts)
NHMLAC	Natural History Museum of Los Angeles County
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
No.	Number

NO_2	nitrogen dioxide
NO_x	nitrogen oxide
NOA	natural occurring asbestos
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	Noise Study Report
O	
O_3	ozone
OC	Overcrossing
OHWM	ordinary high water mark
OSHA	Occupational Safety and Health Act
P	
PA	Programmatic Agreement
PA/ED	Project Approval/Environmental Document
PAH	polynuclear aromatic hydrocarbons
Pb	lead
PCB	polychlorinated biphenyl
PDS	Project Development Support
PDT	Project Development Team
PF	project features
pH	potential of hydrogen
Pilot Program	Surface Transportation Project Delivery Pilot Program
PM	postmile
PM	Particulate matter
PM_{10}	particles of 10 micrometers or smaller
$PM_{2.5}$	particles of 2.5 micrometers or smaller
PMP	Pavement Management Program
POAQC	Project of Air Quality Concern
POU	publicly owned utilities

ppb	parts per billion
ppm	parts per million
PRC	Public Resources Code
PROC	Industrial Process Supply
Project	Interstate 15/State Route 74 Interchange Improvement Project
PRC	Public Resources Code
PS&E	plans, specifications, and estimates
psig	pounds per square inch
PSR	Project Study Report
PTS	paint and thermoplastic striping
Q	
R	
RARE	Rare, Threatened, or Endangered Species
RAP	Relocation Assistance Program
RBMI	Rincon Band of Luiseño Indians
RCA	Regional Conservation Authority
RCB	reinforced concrete box
RCFC&WCD	Riverside County Flood Control and Water Conservation District
RCDEH	Riverside County Department of Environmental Health
RCDEH LOP	Riverside County Department of Environmental Health Local Oversight Program
RCFD	Riverside County Fire Department
RCRA	Resource Conservation and Recovery Act
RCTC	Riverside County Transportation Commission
RCWM	Riverside County Waste Management
REC	recognized environmental condition
REC1	Water Contact Recreation
REC2	Non-contact Water Recreation
RIVTAM	Riverside Traffic Analysis Model
ROG	reactive organic gas
ROW	right of way
RPS	Renewables Portfolio Standard
RTE	Route

RTP	Regional Transportation Plan
RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
S	
SB	southbound
SBL	southbound left
SBR	southbound right
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCGC	Southern California Gas Company
SCS	Sustainable Communities Strategy
SDC	Seismic Design Criteria
SE	State Endangered
SER	Standard Environmental Reference
SF_6	sulfur hexafluoride
SHOPP	State Highway Operation and Protection Program
SHPO	State Historic Preservation Officer
SHS	State Highway System
SLR	sea-level rise
SO_2	sulfur dioxide
SO_x	sulfur oxide
SOI	sphere of influence
SPWN	Spawning, Reproduction, and Development
SR	State Route
SRA	state responsibility area
SSC	species of special concern
SSP	Standard Special Provisions
ST	State Endangered
SWMP	Storm Water Management Plan
SWPPP	Stormwater Pollution Prevention Plan

SWRCB	State Water Resources Control Board
T	
TAC	toxic air contaminant
TASAS	Traffic Accident Surveillance and Analysis System
TBA	tert butanol
TBD	to be determined
TCE	temporary construction easement
TCWG	Transportation Conformity Working Group
TDM	transportation demand management
TIP	Transportation Improvement Program
TMDL	total maximum daily loads
TMP	transportation management plan
TOAR	Traffic Operational Analysis Report
TPH-g	total petroleum hydrocarbon gasoline
TSCA	Toxic Substances Control Act
TSM	transportation system management
TSS	total suspended solid
TWW	treated wood waste
U	
U.S.	United States
USA	Underground Service Alert
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGCRP	United States Global Change Research Program
USGS	United States Geological Survey
UST	underground storage tank
V	
VAU	visual assessment unit
VCP	Voluntary Cleanup Program

VHD	vehicle-hours of delay
VIA	Visual Impact Assessment
VMT	vehicle miles traveled
VOC	volatile organic compound
VPLPM	vehicles per lane per mile
VRP	visibility reducing particle
W	
WARM	Warm Freshwater Habitat
WB	westbound
WBL	westbound left
WBR	westbound right
WBT	westbound through
WDR	waste discharge requirements
WEAP	Worker's Environmental Awareness Program
WILD	Wildlife Habitat
WRCOG	Western Riverside Council of Governments
WRCMSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
WPCP	Water Pollution Control Program
WQAR	Water Quality Assessment Report
µg/m^3	micrograms per cubic meter

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Appendix G. Environmental Commitments Record

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G.1 Introduction

In order to be sure that all of the environmental measures identified in this document are executed at the appropriate times, the following program (as articulated on the proposed Environmental Commitments Record [ECR] which follows) would be implemented. During Project design, avoidance, minimization, and /or mitigation measures will be incorporated into the Project's final plans, specifications, and cost estimates, as appropriate. All permits will be obtained prior to implementation of the Project. During construction, environmental and construction/engineering staff will ensure that the commitments contained in this ECR are fulfilled. Following construction and appropriate phases of Project delivery, long-term mitigation maintenance and monitoring will take place, as applicable. As the following ECR is a draft, some fields have not been completed, and will be filled out as each of the measures is implemented. Note: Some measures may apply to more than one resource area. Duplicative or redundant measures have not been included in this ECR.

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ENVIRONMENTAL COMMITMENTS RECORD (ECR)

DIST-CO-RTE: 08-RIV-15, 08-RIV-74 **PM/PM:** I-15 PM 21.6/23.5; SR-74 PM R16.0/17.8 **EA/Project ID.:** 08-0F3100/0800000124

Project Description: The I-15/SR-74 Interchange Project (Project) will improve traffic operations and reduce congestion at the I-15/SR-74 interchange and local intersections within the Project limits by removing and replacing the existing northbound (NB) on-ramp with a NB hook on- and off- ramps at Dexter Avenue north of SR-74 (Central Avenue) and add a NB loop off-ramp at SR-74 (Central Avenue). The Project will also add auxiliary lane segments at the on- and off-ramps, widen the southbound on- and off-ramps, as well as widen segments of SR-74 (Central Avenue) and Dexter Avenue.

Date (Last modification): August 2024

Environmental Planner: Jeanine Porter **Phone No.:** (909) 472-1301

Construction Liaison: TBD **Phone No.:** TBD

Resident Engineer: TBD **Phone No.:** TBD

PERMITS

Permit Type	Agency	Date Submitted	Date Received	Expiration	Fee	Notes	Permit Requirement Completed	
							Name	Date
1602	California Department of Fish and Wildlife	TBD	TBD	TBD	TBD	TBD	TBD	TBD
401	Regional Water Quality Control Board	TBD	TBD	TBD	TBD	TBD	TBD	TBD
404	United States Army Corps of Engineers	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Encroachment	Riverside County Flood Control District	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Caltrans NPDES	State Water Resources Control Board	TBD	TBD	TBD	TBD	TBD	TBD	TBD
CGP	Santa Ana Regional Water Quality Control Board	TBD	TBD	TBD	TBD	TBD	TBD	TBD

Environmental Commitments

PS&E/BEFORE RTL

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
Community Impact Assessment	**LU-1** During the final design (PS&E) phase and prior to construction, the City's Resident Engineer, in coordination with the City's Planning Director, will ensure that the City's General Plan is amended to reflect the land use designations consistent with what has been identified by the Project.	Initial Study/ Environmental Assessment (IS/EA) Community Impact Analysis (CIA)	Yes	City of Lake Elsinore Resident Engineer and City of Lake Elsinore Planning Director						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
Other	**TR-1** During the final design (PS&E) phase, the City's Resident Engineer will ensure that a detailed TMP will be developed for implementation prior to and during construction. The TMP will be a specialized program tailored to accommodate major traffic movements during construction and to mitigate construction impacts by applying a variety of traffic management techniques including but not limited to the following: • Traffic controls • Transportation demand management • Public awareness measures (including signing, mailers, brochures, newspaper articles, and internet resources) • Motorist information strategies • Incident management • Construction strategies • Transportation demand management • Alternative route strategies • Continuous access for pedestrians and businesses	IS/EA Traffic Operational Analysis Report (TOAR)	Yes	City of Lake Elsinore Resident Engineer						No
Other	**TR-2** During the final design (PS&E) phase, the City's Resident Engineer will ensure that provisions of signage and pavement markings for bicyclists along SR 74 (Central Avenue) will be evaluated and incorporated, as feasible.	IS/EA TOAR	Yes	City of Lake Elsinore Resident Engineer						No
Visual Resources	**VIS-1** **Landscape Plan.** During final design (PS&E), the City's Resident Engineer will ensure that a highway landscape plan be prepared that will identify all opportunities to use areas within the state ROW for full landscaping consistent with the Caltrans Highway Design Manual. This will include planting for graded areas with plant species consistent with adjacent vegetation and enhancement of new Project structures such as ramps and tunnels to the extent feasible. This plan will incorporate all applicable procedures and requirements detailed in the Caltrans Highway Design Manual Chapter 900 – Landscape Architecture-Roadside (July 2020) and policies of the City of Lake Elsinore's General Plan Municipal Code as applicable. During final design (PS&E), the Caltrans District 8 Landscape Architect will verify that the design minimizes removal of existing mature trees. If removal of mature trees cannot be avoided, additional landscape	IS/EA Visual Impact Assessment (VIA)	Yes	City of Lake Elsinore Resident Engineer/Caltrans District 8 Landscape Architect						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
	improvements will be incorporated into the final design (PS&E) for these areas. Tree replacement ratio will be determined by the District Landscape Architect. During final design (PS&E), the Project team will evaluate the aesthetic enhancements to be incorporated into the hardscape and vegetation to the extent feasible. The Project team will also follow the Project Development Procedure Manual during final design (PS&E). If needed, maintenance agreements will be established during the final design (PS&E) phase.									
Visual Resources	**VIS-2** **City of Lake Elsinore General Plan**. During final design (PS&E), the City's Resident Engineer will verify that design elements are consistent with the vision for the City of Lake Elsinore regarding aesthetic enhancements, scenic corridors, landscaping, streetscapes, materials, and colors. During final design (PS&E), the Project team will evaluate the aesthetic enhancements to be incorporated into the hardscape and vegetation to the extent feasible consistent with the City of Lake Elsinore General Plan. If needed, maintenance agreements will be established during the final design (PS&E) phase.	IS/EA VIA	Yes	City of Lake Elsinore Resident Engineer						No
Visual Resources	**VIS-3** **County of Riverside General Plan.** During final design (PS&E), the City's Resident Engineer will work with the Riverside County Resident Engineer in order to verify that design elements are consistent with the vision for the County of Riverside regarding aesthetic enhancements, scenic corridors, landscaping, and tree removal and plantings policies. During final design (PS&E), the Project team will evaluate the aesthetic enhancements to be incorporated into the hardscape and vegetation to the extent feasible consistent with the County of Riverside General Plan. If needed, maintenance agreements will be established during final design (PS&E) phase.	IS/EA VIA	Yes	City of Lake Elsinore Resident Engineer						No
Visual Resources	**VIS-4** **Lighting Plan.** During final design (PS&E), the City's Resident Engineer will ensure that lighting fixtures be selected to minimize glare on adjacent properties and into the night sky. Lighting will be shielded with non-glare hoods and focused within the Project ROW. The lighting plan will be reviewed and approved by the City of Lake Elsinore Resident Engineer and the Caltrans District 8 Landscape Architect prior to construction to ensure compliance with these criteria.	IS/EA VIA	Yes	City of Lake Elsinore Resident Engineer/Caltrans District 8 Landscape Architect						No
Other	**HYD-1** During final design (PS&E), the City's Resident Engineer will ensure the completion of a detailed survey of the Arroyo Del Toro Channel detention basin, culvert configuration, and hydraulics to verify the actual freeboard amount. The freeboard determination will not alter the	IS/EA Location Hydraulic Study (LHS)	Yes	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
	floodplain analysis but will be required to be documented with the RCFC&WCD for the encroachment permit process. Flood protection freeboard requirements for the crossing shall be based on the Caltrans Highway Design Manual and the RCFC&WCD Hydrology Manual.									
Other	**HYD-2** During final design (PS&E), the City's Resident Engineer will ensure that a CLOMR is filed with FEMA to document the revised floodplain boundaries, certify no-rise in water surface, and to preserve the beneficial use of the floodplain for flood attenuation.	IS/EA LHS	Yes	City of Lake Elsinore Resident Engineer						No
Water Quality	**WQ-5** During the final design (PS&E) phase, the City's Resident Engineer will ensure Caltrans-approved treatment BMPs will be implemented consistent with the requirements of NPDES Permit and Waste Discharge Requirements for the State of California, Department of Transportation, Order No. 2022-0033-DWQ, NPDES No. CAS000003, and any subsequent permits in effect at the time of construction. Treatment BMPs may include DPPIA, infiltration devices, biofiltration strips and swales, detention devices, open graded friction course, and pervious pavement.	IS/EA Water Quality Assessment Report (WQAR)	Yes	City of Lake Elsinore Resident Engineer						No
Other	**GEO-1** Prior to completion of final design (PS&E), the City's Resident Engineer will ensure a final design (PS&E)-level geotechnical report is prepared. Recommendations from the final design (PS&E)-level geotechnical report will be incorporated into the final Project plans and specifications during the final design (PS&E) phase to ensure the geotechnical stability of the Project. This report will document soil-related constraints and hazards, such as slope instability, settlement liquefaction, or related secondary seismic impacts, which may be present. The report will also include: • Evaluation of seismic-induced (dry) settlement, expansive and potentially corrosive soils and recommendations regarding construction procedures and/or design criteria to reduce the impact of these soils on Project development. • Identification of potential liquefiable and lateral spreading areas within the Project limits and recommendations for mitigation measures. • Demonstration that the design of all retaining walls and sound walls are geotechnically suitable for soils within the Project limits.	IS/EA Preliminary Geotechnical Report	Yes	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
	• Geotechnical recommendations for the specific foundation design and earthwork construction considered for this Project									
Paleontology	**PAL-1** The City's Resident Engineer will ensure a Paleontological Mitigation Plan is prepared by a qualified Project Paleontologist/Principal Investigator prior to completion of the final design (PS&E) phase of this Project for all Project-related ground disturbance, such as grading, excavation, and other surface and subsurface excavation, in areas of paleontological sensitivity. All elements of the paleontological mitigation plan will follow the format published in the Caltrans SER (Caltrans 2003). The paleontological mitigation plan will detail the measures to be implemented, include a requirement for Worker's Environmental Awareness Program (WEAP) training to address the required interfacing of paleontological and construction personnel, as well as the following elements: • Required preconstruction paleontological sensitivity training for earthmoving personnel to include documentation of training (i.e. sign-in sheets, hardhat stickers) • A signed repository agreement • Field and laboratory methods, consistent with the repository requirements • Require the preparation of a Paleontological Mitigation Report upon completion of ground disturbance activities	IS/EA Paleontological Identification/ Evaluation Report (PIR/PER)	Yes	City of Lake Elsinore Resident Engineer						Yes
Hazardous Waste	**HW-2** **Asbestos Containing Materials.** Under Alternative 2 (Northbound Hook Ramps), the City's Resident Engineer will ensure that the Burger King building structure (18611 Dexter Avenue) be sampled and analyzed for ACM content during the final design (PS&E) phase and prior to any demolition or disturbance activities. Soils surrounding the building structure that will be disturbed by the Project, shall also be sampled and analyzed for ACM content.	IS/EA Initial Site Assessment (ISA)	Yes	City of Lake Elsinore Resident Engineer						No
Hazardous Waste	**HW-3** **Lead Based Paint.** Under Alternative 2 (Northbound Hook Ramps), the City's Resident Engineer will ensure that the Burger King building structure (18611 Dexter Avenue) be sampled and analyzed for LBP content during the final design (PS&E) phase and prior to any demolition or disturbance activities.	IS/EA ISA	Yes	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
Hazardous Waste	**HW-4** **Polychlorinated Biphenyls.** During the final design (PS&E) phase and prior to construction activities, the City's Resident Engineer will ensure that any affected electrical transformers and soil in unpaved locations surrounding the transformers that will be disturbed by the Project be sampled for PCBs. In addition, under Alternative 2 (Northbound NB Hook Ramps), the City will ensure that any light ballasts located within the Burger King building structure (18611 Dexter Avenue) that will be renovated or demolished as part of construction, be sampled and analyzed for PCB content during the final design (PS&E) phase.	IS/EA ISA	Yes	City of Lake Elsinore Resident Engineer						No
Air Quality	**AQ-2** During the PS&E phase, the City's Resident Engineer will ensure that project grading plans will show the duration of construction. O_3 precursor emissions from construction equipment vehicles will be controlled by maintaining equipment engines in good condition and in proper tune per manufacturers' specifications.	IS/EA Air Quality Assessment Report (AQAR)	Yes	City of Lake Elsinore Resident Engineer						No
Other	**E-1** During final design (PS&E), the City's Resident Engineer will ensure that any lighting used as part of the roadway improvements are energy-efficient, which will include LED lighting, to the extent feasible.	IS/EA	Yes	City of Lake Elsinore Resident Engineer						No
Other	**E-2** During final design (PS&E), the City's Resident Engineer will ensure that a construction efficiency plan be prepared, which may include the following: • Reuse of existing guard rail, steel, and lumber, wherever possible, such as for falsework, shoring, and other applications during the construction process. • Recycling of asphalt and concrete taken up from existing median shoulders, where practicable and cost-effective. • Use of newer, more energy-efficient equipment, where feasible, and maintenance of older construction equipment to keep in good working order. • Promoting of scheduling of construction operations to efficiently use construction equipment (i.e., only haul waste when haul trucks are full and combine smaller dozer operations into a single comprehensive operation, where possible). • Promotion of construction employee carpooling.	IS/EA	Yes	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
	• Reuse of existing sign panels with the implementation of overlays rather than full replacement sign panels.									
Biology	**NC-5** During final design (PS&E), the City's Resident Engineer will ensure that a SWPPP and soil erosion and sedimentation plan be developed to minimize erosion and identify specific pollution prevention measures that will eliminate or control potential point and nonpoint pollution sources on site during construction and operation. The SWPPP will identify specific best management practices to be implemented during construction so as not to cause or contribute to an exceedance of any water quality standard. In addition, the SWPPP will contain provisions for changes to the plan, such as alternative mechanisms, if necessary, during Project design and/or construction to achieve the stated goals and performance standards.	IS/EA Natural Environment Study Minimal Impact (NESMI)	Yes	City of Lake Elsinore Resident Engineer						No
Biology	**WET-1** During final design (PS&E), the City's Resident Engineer will ensure that compensatory mitigation for Project impacts to wetlands and other waters will be determined and any temporary impacts will be restored to pre Project contours, or mitigation credits will be purchased from a mitigation bank in the Santa Ana River watershed (i.e., Riverside Corona Resource Conservation District) at a 1:1 ratio. Based on the low function of waters of the U.S., unvegetated streambeds, and riparian habitat within the BSA, a compensatory mitigation ratio of 1:1 for permanent loss of waters of the U.S. and CDFW jurisdictional streambed will be used for the Project. A compensatory mitigation ratio of 2:1 for permanent loss of riparian habitat subject to CDFW jurisdiction will be used for the Project.	IS/EA NESMI	Yes	City of Lake Elsinore Resident Engineer						Yes
Other	**GHG-9** During final design (PS&E), the City's Resident Engineer will ensure that measures to improve water efficiency will be incorporated, as feasible, within the Project design.	IS/EA	Yes	City of Lake Elsinore Resident Engineer						No
Other	**GHG-10** During final design (PS&E), the City's Resident Engineer will ensure the Complete Streets Components identified within the project features will be implemented as part of the Project design.	IS/EA	Yes	City of Lake Elsinore Resident Engineer						Yes
Other	**GHG-11** During final design (PS&E), the City's Resident Engineer will ensure that drought tolerant vegetation and grasses will be planted in order to reduce "heat island" effects as part of the Project design.	IS/EA	Yes	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
Other	**GHG-12** During final design (PS&E), the City's Resident Engineer will ensure that green infrastructure, such as planted areas will be incorporated in place of gray, or concrete, storm water facilities. Best Management Practices will require bio strips and bio swales to serve as stormwater treatment areas for surface runoff into Project design.	IS/EA	Yes	City of Lake Elsinore Resident Engineer						No
Other	**GHG-13** During final design (PS&E), the City's Resident Engineer will ensure that life-cycle costs will be minimized through the incorporation of long-life pavement, which will include a 40-year pavement structure design and installation will be evaluated and incorporated into Project design.	IS/EA	Yes	City of Lake Elsinore Resident Engineer						No
Other	**GHG-14** During final design (PS&E), the City's Resident Engineer will ensure that local infiltration will be incorporated into design, in order to reduce energy costs to convey and treating stormwater through municipal systems, as part of the Project design.	IS/EA	Yes	City of Lake Elsinore Resident Engineer						No
Other	**GHG-15** During final design (PS&E), the City's Resident Engineer will ensure that project features that minimize the need for irrigation and nonnative plants will be incorporated into the Project design.	IS/EA	Yes	City of Lake Elsinore Resident Engineer						No
Other	**GHG-16** During final design (PS&E), the City's Resident Engineer will ensure that any ultimate net loss of tree canopy within the Project limits will be avoided through the combination of preservation and new planting at a minimum of 1:1 replacement of trees lost. In addition, if overall available planting area has been reduced, then all trees lost will be compensated to the extent possible with new trees planted either on- or off-site.	IS/EA	Yes	City of Lake Elsinore Resident Engineer						No
The following measures would be implemented to reduce project-level GHG emissions and potential climate change impacts during operation under Alternative 2, only.										
Other	**GHG-21** During final design (PS&E), the City's Resident Engineer will ensure that the Project design will incorporate native plants and vegetation, replacing more vegetation than was removed. Landscaping components such as mulch and compost application around new and existing plants will be incorporated to retain soil moisture, improve carbon sequestration rates in soils, and reduce organic waste.	IS/EA	Yes	City of Lake Elsinore Resident Engineer						No
Other	**GHG-22** During final design (PS&E), the City's Resident Engineer will ensure that the Project will include features to support multi-modal transportation and infrastructure electrification including, but not	IS/EA	Yes	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
	limited to, additional park and ride lots, bike lockers, electric vehicle charging, and charging for electric bicycles.									

ROW/PURCHASING

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
Community Impact Assessment	**REL-1** Where acquisition and relocation are unavoidable, the City's Resident Engineer will ensure that the provisions of the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970 (49 CFR Part 24), as amended, and the Caltrans ROW Manual will be followed.	IS/EA CIA	Yes	City of Lake Elsinore Resident Engineer						No

PRE-CONSTRUCTION

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
Water Quality	**WQ-2** Prior to construction, the City's Resident Engineer will ensure a SWPPP is prepared and implemented to address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP will identify the sources of pollutants that may affect the quality of stormwater and include the construction site BMPs to control pollutants such as sediment control, catch basin inlet protection, construction materials management, and non-stormwater BMPs. Additional BMP reference material is contained within the Project Planning and Design Guide (Caltrans 2023e) and Construction Manual (Caltrans 2023f). These include, but are not limited to, temporary sediment control, temporary soil stabilization, temporary wind erosion, temporary tracking controls, non-storm water management, waste management, materials handling, and other non-stormwater BMPs.	IS/EA WQAR	No	City of Lake Elsinore Resident Engineer						No
Hazardous Waste	**HW-7** **Construction Health and Safety Plan.** Prior to construction, the City's Resident Engineer will ensure the development of a Health and Safety Plan (HASP) to guide all construction activities. A Certified Industrial Hygienist will review this plan, based on evaluations of construction activities, the potential hazards identified in this report, and any future assessment prepared for the Project. This plan will contain specific procedures for encountering expected and unexpected contaminants. It will prescribe safe work practices, contaminant monitoring, personal	IS/EA ISA	No	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
	protective equipment, emergency response procedures, and safety training requirements to protect construction workers and third parties. The plan will meet the requirements of 29 CFR 1910 and 1926, and all other applicable Federal, State, and local regulations and requirements. The designated contractor will be responsible for preparing the HASP before the start of construction.									
Hazardous Waste	**HW-8** **Contaminated Media Management Plan.** Prior to construction, the City's Resident Engineer will ensure the preparation of a Contaminated Media Management Plan (CMMP). This plan will include procedures for contaminant monitoring and identification, temporary storage, handling, treatment, and disposal of waste and materials (including soil), in accordance with applicable Federal, State, and local regulations and requirements. The designated contractor will be responsible for preparing the CMMP before the start of construction.	IS/EA ISA	No	City of Lake Elsinore Resident Engineer						No
Hazardous Waste	**HW-9** **Construction Contingency Plan.** Prior to construction, the City's Resident Engineer will ensure the preparation of a Construction Contingency Plan (CCP), in accordance with the guidance provided in Chapter 7 107 of the Caltrans Construction Manual for handling and dealing with unknown hazards. This plan will include provisions for responding to events such as the discovery of unidentified USTs, hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes during construction. This plan will address UST decommissioning, field screening, and material testing methods; mitigation and contaminant management requirements; and health and safety requirements for construction workers. If an unexpected release of hazardous substances is found in reportable quantities, the National Response Center must be notified by calling 1-800-424-8802, and cleanup must be coordinated with environmental agencies. The designated contractor will be responsible for preparing the CCP before the start of construction.	IS/EA ISA	No	City of Lake Elsinore Resident Engineer						No
Hazardous Waste	**HW-10** **Lead Compliance Plan.** Prior to construction, the City's Resident Engineer will ensure that a Lead Compliance Plan (LCP) is developed by a Certified Industrial Hygienist, to protect workers from exposure to lead associated with ADL, LBP, and traffic stripe and pavement makings. The LCP will include procedures for the handling, management, sampling, and disposal of material containing lead. ADL and LBP investigations and traffic striping removal are separate tasks usually conducted by separate contractors, which each require a separate LCP.	IS/EA ISA	No	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
Biology	**NC-1** Prior to construction, the City's Resident Engineer will ensure that California buckwheat scrub and mulefat thickets located outside of the Project limits, and that are not to be impacted by the Project, will be demarcated as environmentally sensitive areas. Exclusionary fencing will be installed around all environmentally sensitive areas under supervision of a biologist familiar with the biological resources in the BSA, to prevent accidental encroachment into these areas.	IS/EA NESMI	No	City of Lake Elsinore Resident Engineer						No
Biology	**NC-2** In accordance with Caltrans Non-Standard Specification 14-6.05, prior to construction, the City's Resident Engineer will ensure that a weed abatement program be developed and implemented to minimize the importation and spread of nonnative plant material during and after construction. Eradication strategies from the weed abatement program will be employed during construction activities, should an invasion occur. The weed abatement program will include measures to address retention of all fill material onsite to prevent the spread of invasive plants to uninfected areas, use of weed-free sources for project materials, appropriate staging and storage of equipment in areas free of invasive species, and cleaning of off-road construction equipment before entering the Project area and before moving from an area with invasive species to another area.	IS/EA NESMI	No	City of Lake Elsinore Resident Engineer						No
Biology	**AS-1** Prior to construction, the City's Resident Engineer will ensure that a preconstruction survey for BUOW be conducted by a contractor-supplied, qualified biologist within 30 days prior to vegetation clearing/grading. If BUOW are found within 500 feet (150 meters) of the Project limits during the preconstruction survey, a Burrowing Owl Management Plan will be prepared and submitted to CDFW and USFWS for review and approval. The Burrowing Owl Management Plan will include appropriate measures necessary to ensure that there is no take of active BUOW nests and that WRMSHCP requirements with regard to BUOW are met.	IS/EA NESMI	No	City of Lake Elsinore/ Qualified Biologist						No
Biology	**AS-2** Prior to construction, the City's Resident Engineer will ensure that direct mortality of bats that could roost in trees within the BSA is avoided with a preconstruction survey conducted prior to removal of any trees. Should the preconstruction bat survey determine that trees slated for removal are suitable for bat roosting, a contractor-supplied, qualified bat biologist will monitor the tree removal activities. To minimize the potential for direct impacts to tree roosting bats, trees that must be removed will be pushed down using heavy machinery rather than felling the tree with a chainsaw, where feasible, under the	IS/EA NESMI	No	City of Lake Elsinore/Qualified Biologist						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
	supervision of a contractor-supplied, qualified bat biologist. To ensure the optimum warning for any roosting bats that may still be present, the tree will be pushed lightly two to three times, with a pause of approximately 30 seconds between each nudge to allow bats to become active. The tree will then be pushed to the ground slowly. The contractor-supplied, qualified bat specialist will determine the optimal time to disturb occupied bat habitat to maximize bats escaping during low light levels. Downed trees will remain in place until they are inspected by a bat specialist. Trees that are known to be bat roosts will not be sawn-up or mulched immediately. A period of at least 24 hours (preferably 48 hours) will elapse prior to such operations to allow bats to escape.									
Biology	**AS-5** Prior to construction, the City's Resident Engineer will ensure that a contractor-supplied, qualified bat biologist evaluate the need for temporary exclusion measures, which will be implemented to avoid indirect disturbance of bats and birds while roosting in areas that will be adjacent to construction activities. These areas will include any portion of the structure that is deemed by the contractor-supplied, qualified bat biologist to have potential bat roosting habitat and may be affected by the Project. Such an area will have temporary bat eviction and exclusion devices installed under the supervision of a contractor-supplied, qualified and permitted bat biologist. Eviction and subsequent exclusion will be conducted during the fall (September or October) to avoid trapping flightless young bats inside during the summer months or hibernating/overwintering individuals during the winter. Such exclusion efforts are dependent on weather conditions, take a minimum of 2 weeks to implement, and must be continued to keep the structures free of bats until the completion of construction. All eviction and/or exclusion techniques will be coordinated between the qualified bat biologist and the appropriate resource agencies (e.g., CDFW) if the structure is occupied by bats.	IS/EA NESMI	No	City of Lake Elsinore Resident Engineer/Qualified Biologist						No
Biology	**AS-6** Prior to construction, the City's Resident Engineer will ensure that impacts on nesting birds are avoided, and any native vegetation removal or tree (native or exotic) trimming activities will occur outside of the nesting bird season. In the event that vegetation clearing is necessary during the nesting season (i.e., February 1 through September 30), a contractor-supplied, qualified biologist will conduct a preconstruction survey to determine whether any active bird nests are present and, if so, identify their locations. Should nesting birds be found, an exclusionary buffer will be established by a contractor-supplied, qualified biologist, in coordination with Caltrans and the	IS/EA NESMI	No	City of Lake Elsinore Resident Engineer/Qualified Biologist						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
	appropriate wildlife agencies (i.e., CDFW and USFWS). This buffer should be clearly marked in the field under guidance of the contractor-supplied, qualified biologist. Project activities within 50 feet of the buffer will be monitored daily by the qualified biologist to ensure that nesting activity is not disturbed by construction. Should nesting birds show signs of being disturbed, the qualified biologist will stop work and expand the buffer prior to approving restart of construction activities. The buffer will not be removed, and construction or clearing will not be conducted within the buffer zone until the contractor-supplied, qualified biologist determines that the young have fledged or the nest is no longer active.									
Air Quality	**AQ-9** Prior to construction, the City's Resident Engineer will ensure that a dust control plan be developed documenting sprinkling, temporary paving, speed limits, and timely revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.	IS/EA AQAR	No	City of Lake Elsinore Resident Engineer						No

CONSTRUCTION

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
Community Impact Assessment	**UES-1** During construction, the City's Resident Engineer will ensure that all public utility lines, pipes, and cables disturbed or removed to accommodate the Project must be replaced or relocated within the Project limits to continue to meet the needs of residents and businesses in the community. In addition, arrangements must be made to avoid disruption of utility services. If interruption in service is unavoidable, notice must be given and proper arrangements will be made with residents and businesses.	IS/EA CIA	No	City of Lake Elsinore Resident Engineer						No
Community Impact Assessment	**UES-2** Prior to grading activities, the City's Resident Engineer will require the designated contractor to notify Underground Service Alert (USA), at least 2 days prior to excavation, by calling 811 to require that all utility owners within the Project disturbance limit identify the locations of underground transmission lines and other utility facilities**.**	IS/EA CIA	No	City of Lake Elsinore Resident Engineer						No
Community Impact Assessment	**UES-3** To minimize risk of fires during construction activities, the City's Resident Engineer will ensure the City will implement of the following minimization measures:	IS/EA CIA	No	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
	a. Coordinate with CALFIRE and local fire departments to identify and maintain defensible spaces around active construction areas. b. Coordinate with CALFIRE and local fire departments to identify and maintain firefighting equipment (e.g., extinguishers, shovels, water tankers) in active construction areas. c. Post emergency services phone numbers (i.e., fire, emergency medical, police) in visible locations in all active construction areas.									
Cultural Resources	**CR-1** **Discovery of Cultural Resources.** If cultural materials are discovered during construction, the City's Resident Engineer will ensure that all earth-moving activity within sixty feet (60') around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.	IS/EA Historic Property Survey Report (HPSR) Archaeological Survey Report (ASR)	No	City of Lake Elsinore Resident Engineer						No
Cultural Resources	**CR-2** **Discovery of Human Remains.** During construction, the City's Resident Engineer will ensure that if human remains are discovered, there will be compliance with the California Health and Safety Code (H&SC) Section 7050.5, which states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), who, pursuant to PRC Section 5097.98, will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Gabrielle Duff, Cultural Studies Branch Chief, [(909) 501-5142], so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.	IS/EA HPSR ASR	No	City of Lake Elsinore Resident Engineer/Caltrans						No
Water Quality	**WQ-1** During construction, the City's Resident Engineer will ensure the Project complies with the provisions of the Caltrans NPDES Statewide Storm Water Permit (Order No. 2022-0033-DWQ, NPDES No. CAS000003) and the NPDES General Permit for Storm Water Discharges of Stormwater Runoff Associated with Construction Activities (Order No. 2022-0057-DWQ, NPDES No. CAS000002), and any subsequent permit in effect at the time of construction.	IS/EA WQAR	No	City of Lake Elsinore Resident Engineer						No
Water Quality	**WQ-3** If dewatering is required during construction, the City's Resident Engineer will ensure the Project's construction site dewatering complies with the General Waste Discharge Requirements for	IS/EA WQAR	No	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
	Discharges to Surface Waters That Pose an Insignificant (De minimis) Threat to Water Quality (Order No. R8-2020-0006, NPDES No. CAG998001) and any subsequent updates to the permit at the time of construction. This permit addresses temporary dewatering operations during construction. Dewatering BMPs must be used to control sediment and pollutants, and the discharges must comply with the WDR issued by the Santa Ana RWQCB.									
Water Quality	**WQ-4** During construction, the City's Resident Engineer will ensure the Project's design pollution prevention BMPs will be implemented, such as preservation of existing vegetation, slope/surface protection systems (benching/terracing, slope rounding, reducing gradients [incorporate 4:1 slopes or flatter]).	IS/EA WQAR	No	City of Lake Elsinore Resident Engineer						No
Hazardous Waste	**HW-1** **Aerially Deposited Lead.** During construction, the City's Resident Engineer will ensure that soil containing lead must be managed in accordance with the latest Caltrans Standard Specifications for Aerially Deposited Lead and under the July 1, 2016, ADL Agreement between Caltrans and DTSC.	IS/EA ISA	No	City of Lake Elsinore Resident Engineer						No
Hazardous Waste	**HW-5** **Treated Wood Waste.** During construction, the City's Resident Engineer will ensure that treated wood objects are handled as TWW and managed per Chapter 34, Title 22 California Code of Regulations Sections 67386.1 through 67386.12, "Alternative Management Standards for Treated Wood Waste." All TWW shall be properly disposed at a landfill permitted to accept TWW.	IS/EA ISA	No	City of Lake Elsinore Resident Engineer						No
Hazardous Waste	**HW-6** **Paint and Thermoplastic Striping**. During construction, the City's Resident Engineer will ensure that sampling, analysis, removal, and disposal of any traffic striping and pavement materials will be completed in accordance with Construction Program Procedure Bulletin 99 2, and the latest Caltrans Standard Specifications, Section 14 11.12. Removal of Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue and Section 36 4 Residue Containing Lead from Paint and Thermoplastic (2018), and be consistent with the requirements within Caltrans Construction Manual, Chapter 7 107E Removing Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue (2019). Before disposal, the contractor is required to sample the removed material for proper waste classification. Yellow traffic stripe and pavement marking that is characterized as hazardous waste requires disposal to a DTSC permitted Class I disposal facility.	IS/EA ISA	No	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
Air Quality	**AQ-1** During construction, the City's Resident Engineer will ensure that any clearing, grading, earthmoving, and excavation operations, fugitive dust emissions be controlled by regular watering or other dust preventive measures using the following procedures, as specified in SCAQMD Rule 403. All material excavated or graded will be sufficiently watered to prevent excessive amounts of dust. Watering will occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day. All material transported on site or off site will be either sufficiently watered or securely covered to prevent excessive amounts of dust. The areas disturbed by clearing, grading, earthmoving, or excavation operations will be minimized so as to prevent excessive amounts of dust. These control techniques will be indicated in Project specifications. Visible dust beyond the property line emanating from the Project will be prevented to the maximum extent feasible.	IS/EA AQAR	No	City of Lake Elsinore Resident Engineer						No
Air Quality	**AQ-3** During construction, the City's Resident Engineer will ensure that all trucks that are used to haul excavated or graded material on site will comply with State Vehicle Code Section 23114, with special attention to Sections 23114(b)(F), (e)(2), and (e)(4), as amended, regarding the prevention of such material spilling onto public streets and roads.	IS/EA AQAR	No	City of Lake Elsinore Resident Engineer						No
Air Quality	**AQ-4** During construction, the City's Resident Engineer will ensure that the contractor will adhere to Caltrans Standard Specifications for Construction (Section 14.9). Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.	IS/EA AQAR	No	City of Lake Elsinore Resident Engineer						No
Air Quality	**AQ-5** During construction, the City's Resident Engineer will ensure that water or a dust palliative be applied to the site and equipment as often as necessary to control fugitive dust emissions.	IS/EA AQAR	No	City of Lake Elsinore Resident Engineer						
Air Quality	**AQ-6** During construction, the City's Resident Engineer will ensure that soil binder be spread on any unpaved roads used for construction purposes, and on all Project construction parking areas.	IS/EA AQAR	No	City of Lake Elsinore Resident Engineer						No
Air Quality	**AQ-7** During construction, the City's Resident Engineer will ensure that trucks be washed as they leave the ROW as necessary to control fugitive dust emissions.	IS/EA AQAR	No	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
Air Quality	**AQ-8** During construction, the City's Resident Engineer will ensure that construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by CCR Title 17, Section 93114.	IS/EA AQAR	No	City of Lake Elsinore Resident Engineer						No
Air Quality	**AQ-10** During construction, the City's Resident Engineer will ensure that equipment and materials storage sites be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.	IS/EA AQAR	No	City of Lake Elsinore Resident Engineer						No
Noise	**N-1** During Project construction, the City's Resident Engineer will ensure that appropriate noise reduction measures to minimize temporary noise impacts are implemented, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources. To further minimize construction noise impacts on sensitive receptors adjacent to the Project site, the City's Resident Engineer will ensure that noise levels from construction operations between the hours 9 p.m. to 6 a.m. will not exceed 86 dBA Lmax at a distance of 50 feet from the job site, in accordance with Caltrans Standard Specification in section 14-8.02, Noise Control, and also SSP 14-8.02 which will be edited during the PS&E phase of the Project.	IS/EA Noise Study Report (NSR)	No	City of Lake Elsinore Resident Engineer						No
Noise	**N-2** During Project construction, the City's Resident Engineer will ensure all construction equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.	IS/EA NSR	No	City of Lake Elsinore Resident Engineer						No
Biology	**NC-3** During construction, the City's Resident Engineer will ensure that when work is conducted during the fire season (as identified by the Riverside County Fire Authority) adjacent to any vegetation, the appropriate firefighting equipment (e.g., extinguishers, shovels, and water tankers) will be made available on site during all phases of Project construction to minimize the potential for human caused wildfires. Shields, protective mats, and/or other fire preventive methods will be used during grinding, welding, and other spark inducing activities. Personnel trained in fire hazards, preventive actions, and responses to fires will advise the construction contractors regarding fire risk from all construction-related activities.	IS/EA NESMI	No	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
Biology	**NC-4** During construction, the City's Resident Engineer will ensure that all equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities will occur in developed or designated non-sensitive upland habitat areas. The designated upland areas will be located so as to prevent runoff from any spills from entering USACE/RWQCB-regulated waters of the U.S., RWQCB-regulated waters of the State, or CDFW regulated streambed.	IS/EA NESMI	No	City of Lake Elsinore Resident Engineer						No
Biology	**AS-3** If bats are found to be present during construction, the City's Resident Engineer will ensure that all work conducted on bridges or around trees will take place during the day to the best extent feasible. If this is not feasible, impacts will be minimized by directing lighting and noise away from potential night roosting areas as much as possible.	IS/EA NESMI	No	City of Lake Elsinore Resident Engineer						No
Biology	**AS-4** During construction, the City's Resident Engineer will ensure that all work conducted adjacent to suitable roosting habitat will take place during the day. If this is not feasible, lighting and noise will be directed away from night roosting and foraging areas.	IS/EA NESMI	No	City of Lake Elsinore Resident Engineer						No
Biology	**IS-1** During and after construction, the City's Resident Engineer will ensure compliance with EO 13112, which requires weed control to be performed to minimize the importation of non-native plant material during and after construction.	IS/EA NESMI	No	City of Lake Elsinore Resident Engineer						No
Biology	**IS-2** During and after construction, the City's Resident Engineer will ensure compliance with Caltrans SSP 14.6-05, Invasive Species Control, which includes specifications for preventing the introduction and spread of invasive species to and from the job site.	IS/EA NESMI	No	City of Lake Elsinore Resident Engineer						No
Other	**GHG-1** During construction, the City's Resident Engineer will ensure that idling will be limited to 5 minutes for delivery and dump tracks and other diesel-powered equipment.	IS/EA	No	City of Lake Elsinore Resident Engineer						No
Other	**GHG-2** During construction, the City's Resident Engineer will ensure that truck trips are scheduled outside of peak morning and evening commute hours.	IS/EA	No	City of Lake Elsinore Resident Engineer						No
Other	**GHG-3** During construction, the City's Resident Engineer will ensure that on-site recycling of existing project features will be implemented, which will	IS/EA	No	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
	include the reuse of excavated fill for new roadway and ramp embankments within the Project limits.									
Other	**GHG-4** During construction, the City's Resident Engineer will ensure that Project improvements along the I-15 mainline auxiliary lanes will occur on concrete pavement, which will improve fuel mileage and lower the rolling resistance of the existing highway surface, while still maintaining design and safety standards.	IS/EA	No	City of Lake Elsinore Resident Engineer						No
Other	**GHG-5** During construction, the City's Resident Engineer will ensure that lighting needs will be replaced with ultra-reflective sign materials that will be illuminated by headlights.	IS/EA	No	City of Lake Elsinore Resident Engineer						No
Other	**GHG-6** During construction, the City's Resident Engineer will ensure that lane closures will be lengthened to reduce necessary mobilization efforts.	IS/EA	No	City of Lake Elsinore Resident Engineer						No
Other	**GHG-7** During construction, the City's Resident Engineer will ensure the maximized use of recycled materials (tire rubber for example).	IS/EA	No	City of Lake Elsinore Resident Engineer						No
Other	**GHG-8** During construction, the City's Resident Engineer will ensure that the need for the transport of earthen materials is reduced by balancing cut and fill quantities on-site.	IS/EA	No	City of Lake Elsinore Resident Engineer						No
Other	**GHG-17** During construction, the City's Resident Engineer will ensure construction waste will be reduced through the re-use or recycling of construction and demolition waste.	IS/EA	No	City of Lake Elsinore Resident Engineer						No
Other	**GHG-18** During construction, the City's Resident Engineer will ensure large trees removed will be salvaged for lumber or similar on-site beneficial uses other than standard wood-chipping.	IS/EA	No	City of Lake Elsinore Resident Engineer						No
Other	**GHG-19** During construction, the City's Resident Engineer will ensure cold in-place recycling will be implemented. This pavement rehabilitation treatment will be utilized on low traffic-volume, hot mix asphalt pavements to extend the pavement service life and to recycle natural resources.	IS/EA	No	City of Lake Elsinore Resident Engineer						No
Other	**GHG-20** During construction, the City's Resident Engineer will ensure that compost and native hydroseed mix to promote revegetation success	IS/EA	No	City of Lake Elsinore Resident Engineer						No

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
	and provide erosion control will be used in disturbed areas within the Project limits. Vegetation will help sequester carbon dioxide.									

POST-CONSTRUCTION

Category	Task and Brief Description	Source	Included in PS&E package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA?
Biology	**IS-1** During and after construction, the City's Resident Engineer will ensure compliance with EO 13112, which requires weed control to be performed to minimize the importation of non-native plant material during and after construction.	IS/EA NESMI	No	City of Lake Elsinore Resident Engineer						No
Biology	**IS-2** During and after construction, the City's Resident Engineer will ensure compliance with Caltrans SSP 14.6 05, Invasive Species Control, which includes specifications for preventing the introduction and spread of invasive species to and from the job site.	IS/EA NESMI	No	City of Lake Elsinore Resident Engineer						No

Appendix H. Regional Transportation Plan/Federal Transportation Improvement Program

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2023 Federal Transportation Improvement Program
Riverside County
State Highway - Project Listing
Including Amendments 1 - 2 and 4 - 7
(In $000`s)

FTIP ID	LEAD AGENCY	COUNTY	CONFORM CATEGORY	AIR BASIN	PROJECT COST	RTP ID	SYSTEM
RIV060109	LAKE ELSINORE	Riverside	NON-EXEMPT	SCAB	$40,050	RIV060109	State

PRIMARY PROGRAM CODE	PROJECT LIMITS	MODELING	FTIP AMENDMENT
CARH3 - INTERCHANGE-MOD/REP/REC-LN ADD'S	From Collier Ave to Conard Ave Post Miles: Begin 21.60 End 23.50	YES	23-01

DESCRIPTION

AT I-15/SR-74 (CENTRAL AVE) IC JCT BTWN 1,000 FT W/O COLLIER AVE TO CONARD AVE: REMOVE/REPLACE EXIST NB ON-RAMP WITH NB HOOK ON- AND OFF- RAMPS AT DEXTER AVE NORTH OF CENTRAL AVE, ADD NB LOOP OFF-RAMP AT CENTRAL AVE, ADD AUX LANE SEGMENTS AT ON-/OFF-RAMPS, WIDEN SB ON-/OFF-RAMPS AND SEGMENTS OF CENTRAL AVE AND DEXTER AVE. PM LIMITS FOR SR-74: R15.97 to 17.82 (EA: 0F3100).

PHASE	FUND SOURCE	PRIOR	22/23	23/24	24/25	25/26	26/27	27/28	FUTURE	TOTAL
PE	CITY FUNDS	$300	$0	$0	$0	$0	$0	$0	$0	$300
PE	WESTERN RIV TUMF	$5,350	$0	$0	$0	$0	$0	$0	$0	$5,350
ROW	WESTERN RIV TUMF	$0	$3,400	$0	$0	$0	$0	$0	$0	$3,400
CON	CITY FUNDS	$0	$0	$31,000	$0	$0	$0	$0	$0	$31,000
TOTAL	TOTAL	$5,650	$3,400	$31,000	$0	$0	$0	$0	$0	$40,050

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TABLE 2 Financially-Constrained RTP/SCS Projects – Continued

System	Lead Agency	RTP ID	Route #	Route Name	From	To	Description	Completion Year	Project Cost ($1,000's)
County: Riverside									
STATE HIGHWAY	LAKE ELSINORE	RIV010206-RIV010206B	15				AT I-15/FRANKLIN ST IC: CONS AUX LN SOUTH TO RR CYN RD, CONS AUX LN NORTH TO MAIN ST, WIDEN SB ON RAMP FROM MAIN ST FROM 1 TO 2 LNS, INSTALL NEW TRAFFIC SIGNALS AT THE MAIN ST RAMP INTERSECTION, CONS AUTO CENTER DR EXTENSION FROM OLD FRANKLIN ST OC TO FLINT ST AND EXTEND CANYON VIEW ESTATE-CAMINO DEL NORTE FROM OLD FRANKLIN ST TO EXISTING CAMINO DEL NORTE ABOUT 1800 FT S/O MAIN ST.	2032	$67,999
STATE HIGHWAY	LAKE ELSINORE	RIV060109-RIV060109	15		1,000' W/O COLLIER AVE	RIVERSIDE ST.	AT I-15/SR74 (CENTRAL AVE) IC JCT MOD. BTWN 1,000 FT W/O COLLIER AVE TO RIVERSIDE ST: ADD NB LOOP ENTRY RAMP WITH ACCEL LN, REALIGN NB ENTRY & EXIT RAMPS, ADD SB ACCEL/DECEL LNS, ADD NB DECEL LN, WIDEN SR 74 FROM RIVERSIDE DR. TO CENTRAL AVE 2 TO 4 THROUGH LANES AND FROM COLLIER AVE TO CAMBERN AVE FROM 6 TO 8 THRU LNS, CONST NEW RIVERSIDE AVE OC & SR74 PM 15.5 TO 18.5 (EA: 0F3100).	2026	$58,250
STATE HIGHWAY	LAKE ELSINORE	RIV180144-RIV180144	15				IN THE CITY OF LAKE ELSINORE - MAIN ST/I-15 IC IMPROVEMENTS: WIDENING OF NB MAIN ST UNDER THE FREEWAY FROM 1 TO 2 LNS, ADD AN ADDITIONAL LN TO THE NB ENTRANCE AND EXIT RAMPS. WIDEN SB OFF RAMP TO ACCOMODATE 1 RT LN, 1 LT LN, AND 1 THRU LT LN AT MAIN ST INTERSECTION. INSTALL RAMP METERS & TRAFFIC SIGNALS AT THE ON & OFF RAMPS INTERSECTIONS, AND CAMINO DEL NORTE/MAIN ST INTERSECTION.	2026	$4,200
STATE HIGHWAY	MENIFEE	3A04A27	215	I-215 (PM 15.95 TO 16.95)	AT GARBANI RD	BTWN HAUN RD & ANTELOPE RD	CONSTRUCT NEW 4 LANE (2 LNS EAC DIR) AND RAMPS	2030	$60,573
STATE HIGHWAY	MENIFEE	3M0719-RIV151218	215		SUN CITY BLVD.	EASTERLY OF ENCANTO DR.	IN WESTERN RIVERSIDE COUNTY IN MENIFEE: RECONSTRUCT/WIDEN I-215 IC AT MC CALL BLVD. - WIDEN IC FROM 4 TO 6 LANES (SUN CITY BLVD TO EASTERLY OF ENCANTO DR), WIDEN ENTRY RAMPS (RAMP METERED / NON HOV PREFERENTIAL LANE), WIDEN EXIT RAMPS (DUAL LEFT @ SB & DUAL RIGHT @ NB WITH MCCALL), ADD DUAL LEFT-TURN AND DEDICATED RIGHT-TURN LANES (EA 1F700).	2030	$32,300
STATE HIGHWAY	MENIFEE	REG0701-RIV151219	215		HAUN	HANOVER	IN WESTERN RIVERSIDE COUNTY IN MENIFEE: CONSTRUCT NEW HOLLAND AVE 4-LANE OC (2 LNS IN EA DIR) OVER I-215 AND ANTELOPE RD. PROJECT INCLUDES REALIGNMENT OF WILLOWOOD WAY, RESTRIPING OF HANOVER LANE AND ALBION LANE, AND CONSTRUCTION OF AN ACCESS ROAD FOR BUSINESS ON THE WEST SIDE OF I-215 (EA 1F980).	2030	$27,000
STATE HIGHWAY	MORENO VALLEY	3A07045-RIV071242	60		SUNNYMEAD BLVD	HEMLOCK AVE	IN THE CITY OF MORENO VALLEY - RECONSTRUCT INDIAN ST X-ING SR 60 FROM 150' S/O SUNNYMEAD BLVD., TO HEMLOCK AVE: COMPLETE RECONSTRUCT. OF THE BRIDGE TO PROVIDE 16'6" CLEARANCE & 4 THROUGH LANES (2 LNS IN EA DIR) & ASSOC. ST IMP. WITHIN THE PROJECT LIMITS (LEFT TURN POCKETS AT SUNNYMEAD AND HEMLOCK INTERSECT., RIGHT-TURN ONLY SB AT SUNNYMEAD, NEW TS AT HEMLOCK/INDIAN ST., & INTERCONNECT MOD).	2030	$14,120

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Appendix I. United States Fish and Wildlife Service Regional Species List

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901

In Reply Refer To: 05/22/2024 18:08:21 UTC
Project Code: 2024-0094337
Project Name: I-15 / SR-74 Interchange Improvement Project - FWS-WRIV-2022-0025084 - City of Lake Elsinore (EA: 0F

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A biological assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a biological assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a biological assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at the Fish and Wildlife Service's Endangered Species Consultation website at:

https://www.fws.gov/service/esa-section-7-consultation

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

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Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

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PROJECT SUMMARY

Project Code: 2024-0094337

Project Name: I-15 / SR-74 Interchange Improvement Project - FWS-WRIV-2022-0025084 - City of Lake Elsinore (EA: 0F

Project Type: Bridge - Replacement

Project Description: The Project is generally located approximately 1.6 mile south of the existing I-15/Nichols Road interchange and 1.3 mile north of the existing I-15/Main Street interchange (Figure 1-1). Improvements proposed along SR-74 (also known within the Project limits as Central Avenue) would extend to portions of Collier Avenue and Riverside Drive within the City. The Project is bounded by Riverside Drive to the north, Conard Avenue to the east, Wasson Canyon Wash to the south, and Collier Avenue to the west (Figure 1-2). The Project is located within existing Caltrans, City, and the County of Riverside (County) right-of-way (ROW). The City of Lake Elsinore General Plan has adopted specific plan land uses and existing neighborhoods within the City as District Plans. According to the City of Lake Elsinore General Plan, Chapter 2 Community Form adopted December 13, 2011 (City of Lake Elsinore 2011), the Project is located primarily within the Business District and small portions extend into the North Central Sphere District. The land uses within the Project limits primarily consist of commercial and industrial land uses, interspersed with low density residential and public institutional uses. Alternative 3 (NB Hook Ramps with NB Loop Off-Ramp to WB SR-74) has been selected and would provide three consecutive NB off-ramps. The existing NB off-ramp (Exit A) would remain, followed by a loop off-ramp (Exit B) diverging from I-15, just past the existing I-15/SR-74 interchange bridge overcrossing, as well as a hook off-ramp (Exit C).

The BSA is located within the Western Riverside Multiple Species Habitat Conservation Plan planning area and has submitted needed documents for consistency to the Wildlife Agencies.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.6935032,-117.33776753079272,14z

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Counties: Riverside County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 20 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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MAMMALS

NAME	STATUS
San Bernardino Merriam's Kangaroo Rat *Dipodomys merriami parvus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2060	Endangered
Stephens' Kangaroo Rat *Dipodomys stephensi (incl. D. cascus)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3495	Threatened

BIRDS

NAME	STATUS
Coastal California Gnatcatcher *Polioptila californica californica* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened

REPTILES

NAME	STATUS
Southwestern Pond Turtle *Actinemys pallida* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4768	Proposed Threatened

AMPHIBIANS

NAME	STATUS
Western Spadefoot *Spea hammondii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

INSECTS

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NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Quino Checkerspot Butterfly *Euphydryas editha quino (=E. e. wrighti)* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5900	Endangered

CRUSTACEANS

NAME	STATUS
Riverside Fairy Shrimp *Streptocephalus woottoni* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8148	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

FLOWERING PLANTS

NAME	STATUS
California Orcutt Grass *Orcuttia californica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4923	Endangered
Lassics Lupine *Lupinus constancei* Population: There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7976	Endangered
Munz's Onion *Allium munzii* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2951	Endangered
San Diego Ambrosia *Ambrosia pumila* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8287	Endangered
San Jacinto Valley Crownscale *Atriplex coronata var. notatior* There is **final** critical habitat for this species. However, no *actual* acres or miles were designated due to exemptions or exclusions. See Federal Register publication for details. Species profile: https://ecos.fws.gov/ecp/species/4353	Endangered
Slender-horned Spineflower *Dodecahema leptoceras* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4007	Endangered
Spreading Navarretia *Navarretia fossalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1334	Threatened

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NAME	STATUS
Thread-leaved Brodiaea *Brodiaea filifolia*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/6087

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

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IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Kathleen Pollett
Address: 591 Camino De La Reina Ste 300
City: San Diego
State: CA
Zip: 92108
Email kathleen.pollett@hdrinc.com
Phone: 6199077208

Appendix J. List of Technical Studies

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The technical studies prepared to support the analysis and conclusions contained in this IS/EA are listed below. These studies were bound separately, and copies were available for public review from **Friday, November 10, 2023**, to **Tuesday, December 12, 2023**, at the following locations:

- City of Lake Elsinore, 130 South Main Street, Lake Elsinore, California 92530 (Available for review Monday through Thursday from 8:00 a.m. to 5:00 p.m. and Friday from 8 a.m. to 4 p.m. Closed on holidays.).
- Lake Elsinore Library, 600 West Graham, Lake Elsinore, California 92530 (Available for review Monday, Wednesday, and Thursday from 10:00 a.m. to 6:00 p.m., Tuesday from 11:00 a.m. to 7:00 pm, Friday from 10:00 a.m. to 5:00 p.m., and Saturday 10:00 a.m. to 2:00 p.m. Closed on holidays.).

I-15/SR-74 Interchange Improvement Project Aerially Deposited Lead Survey. 2020.

I-15/SR-74 Interchange Improvement Project Air Quality Report. 2020.

I-15/SR-74 Interchange Improvement Project Archaeological Survey Report. 2020.

I-15/SR-74 Interchange Improvement Project Community Impact Assessment. 2021.

I-15/SR-74 Interchange Improvement Project Determination of Biologically Equivalent or Superior Preservation Report. 2021.

I-15/SR-74 Interchange Improvement Project Historic Property Survey Report. 2020.

I-15/SR-74 Interchange Improvement Project Initial Site Assessment. 2020.

I-15/SR-74 Interchange Improvement Project Initial Site Assessment Update Memorandum. 2023.

I-15/SR-74 Interchange Improvement Project Location Hydraulic Study. 2020.

I-15/SR-74 Interchange Improvement Project Mini Value Analysis Study. 2019

I-15/SR-74 Interchange Improvement Project Natural Environment Study Minimal Impacts. 2020.

I-15/SR-74 Interchange Improvement Project Errata for Changes to Natural Environment Study Minimal Impacts. 2023.

I-15/SR-74 Interchange Improvement Project Noise Study Report. 2023.

I-15/SR-74 Interchange Improvement Project Noise Abatement Decision Report. 2023.

I-15/SR-74 Interchange Improvement Project Paleontological Identification Report and Paleontological Evaluation Report. 2020.

I-15/SR-74 Interchange Improvement Project District Preliminary Geotechnical Report. 2020.

I-15/SR-74 Interchange Improvement Project Relocation Impact Memorandum. 2020.

I-15/SR-74 Interchange Improvement Project Traffic Operations Analysis Report. 2020.

I-15/SR-74 Interchange Improvement Project Visual Impact Assessment. 2020.

I-15/SR-74 Interchange Improvement Project Water Quality Assessment Report. 2020.

Appendix K. References

The following references were used in the preparation of this environmental document.

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Applied EarthWorks. 2021a. *I-15/SR-74 Interchange Improvement Project Historic Property Survey Report.*

——— 2021b. *I-15/SR-74 Interchange Improvement Project Archaeological Survey Report.*

Barth, Matthew and Kanok Boriboonsomsin. 2010. Real-World Carbon Dioxide Impacts of Traffic Congestion. Berkeley, CA: University of California Transportation Center. UCTC-FR-2010-11. Available: https://www.researchgate.net/publication/46438207.

California Air Resources Board (CARB). 2008. *Climate Change Scoping Plan Appendices. Volume II: Analysis and Documentation*. Appendix I, p. I-19. December. Accessed: October 31, 2019. https://ww3.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm.

——— 2016. Ambient Air Quality Standards. https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf.

——— 2018. *California Greenhouse Gas Emissions for 2000 to 2019: Trends of Emissions and Other Indicators.* https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf.

——— 2019. *SB 375 Regional Plan Climate Targets*. Accessed: November 30, 2020. https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets.

——— 2020a. *California Greenhouse Gas Emissions Inventory–2020 Edition*. https://ww2.arb.ca.gov/ghg-inventory-data. Accessed: November 30, 2020.

——— 2020b. *California Greenhouse Gas Emission Inventory Graphs.* Accessed: November 30, 2020. https://ww2.arb.ca.gov/ghg-inventory-graphs.

——— 2022a. *Greenhouse Gas Emissions and Trends for 2000 to 2020.* Available: https://ww2.arb.ca.gov/our-work/programs/ghg-inventory-program. Accessed: November 2, 2022.

——— 2022b. *AB 32 Climate Change Scoping Plan.* Available: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan. Accessed: November 2, 2022.

——— 2022c. *SB 375 Regional Plan Climate Targets.* https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets. Accessed: November 2, 2022.

——— 2022d. *Climate Change.* https://ww2.arb.ca.gov/our-work/topics/climate-change. Accessed: November 2, 2022.

——— 2023. iADAM: Air Quality Data Statistics. Accessed: May 2023. https://www.arb.ca.gov/adam/.

California Department of Forestry and Fire Protection (CAL FIRE). 2020. Fire Hazard Severity Zone (FHSZ) Viewer. Accessed June 2020. https://egis.fire.ca.gov/FHSZ/.

California Department of Transportation (Caltrans). 2002. *Guide for the Preparation of Traffic Impact Studies.* https://nacto.org/docs/usdg/guide_preparation_traffic_impact_studies_caltrans.pdf.

——— 2005. *Guidance for Preparers of Cumulative Analysis.* Accessed October 2020. https://dot.ca.gov/programs/environmental-analysis/standard-environmental-reference-ser/cumulative-impact-analysis.

——— 2006. *Guidance for Preparers of Growth-Related, Indirect Impact Analyses*. Accessed July 2020.

——— 2011a. Standard Environmental Reference (SER) – Volume 4 – Community Impact Assessment. http://www.dot.ca.gov/ser/vol4/downloads/vol4_entire.pdf. Accessed July 2020.

——— 2011b. Scenic Highways. California State Scenic Highways. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.

——— 2017a. Online (Version2.3.09) Caltrans Fault Database. Updated April 27, 2017.

——— 2017b. *Construction Site Best Management Practices (BMP) Manual*. Sacramento, CA. Available online at https://dot.ca.gov/-/media/dot-media/programs/construction/documents/environmental-compliance/csbmp-may-2017-final.pdf.

——— 2018. Division of Engineering Services, Materials Engineering and Testing Services, Corrosion Branch, *Corrosion Guidelines Version 3.0*. March 2018.

——— 2019. *Caltrans Climate Change Vulnerability Assessments. District 8 Technical Report*. June. Prepared by WSP. https://dot.ca.gov/programs/transportation-planning/2019-climate-change-vulnerability-assessments.

——— 2020a. *I-15/SR-74 Interchange Improvement Project Relocation Impact Memorandum*. Prepared by HDR Engineering, Inc.

——— 2020b. *I-15/SR-74 Interchange Improvement Project Visual Impact Assessment.* Prepared by HDR Engineering, Inc.

——— 2020c. *I-15/SR-74 Interchange Improvement Project Air Quality Report*. Prepared by HDR Engineering, Inc.

——— 2020d. *I-15/SR-74 Interchange Improvement Project Traffic Operations Analysis Report*. Prepared by HDR Engineering, Inc.

——— 2020e. *Encroachment Permits Manual – Chapter 600 Utility Permits*. Accessed September 2020.https://dot.ca.gov/-/media/dot-media/programs/traffic-operations/documents/encroachment-permits/chapter-6-ada.pdf.

——— 2020f. *I-15/SR-74 Interchange Improvement Project Water Quality Assessment Report.* Prepared by HDR Engineering, Inc.

——— 2020g. *I-15/SR-74 Interchange Improvement Project Location Hydrologic Study*. Prepared by HDR Engineering, Inc.

——— 2020h. *I-15/SR-74 Interchange Improvement Project Preliminary Geotechnical Design Report.* Prepared by HDR Engineering, Inc.

——— 2020i. *I-15/SR-74 Interchange Improvement Project Paleontological Identification Report and Paleontological Evaluation Report.* Prepared by HDR Engineering, Inc.

——— 2020j. *I-15/SR-74 Interchange Improvement Project Initial Site Assessment*. Prepared by HDR Engineering, Inc.

——— 2020k. *I-15/SR-74 Interchange Improvement Project Aerially Deposited Lead Survey.* Prepared by HDR Engineering, Inc.

——— 2020l. *I-15/SR-74 Interchange Improvement Project Natural Environment Study (Minimal Impacts*. Prepared by HDR Engineering, Inc.

——— 2020m. *Jurisdictional Delineation for the Interstate 15/State Route 74 Interchange Improvement Project.* Prepared by HDR Engineering, Inc.

——— 2020n. *Caltrans Greenhouse Gas Emissions and Mitigation Report.* Prepared by ICF. https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/office-of-smart-mobility-and-climate-change/ghg-emissions-and-mitigation-report-final-august-2-2020-revision9-9-2020-a11y.pdf.

——— 2021a. I-*15/SR-74 Interchange Improvement Project Community Impact Assessment*. Prepared by HDR Engineering, Inc.

——— 2021b. Rebuilding California Project Map. http://www.rebuildingca.ca.gov/map.html. Accessed June 2021.

——— 2021c. Construction Map. Accessed June 2021. https://consmap.dot.ca.gov/.

——— 2021d. *Right of Way Manual*. Accessed September 2021. https://dot.ca.gov/programs/right-of-way/right-of-way-manual.

——— 2021e. *California Transportation Plan 2050*. February. Accessed: March 3, 2021. https://dot.ca.gov/programs/transportation-planning/state-planning/california-transportation-plan.

——— 2021f. *Caltrans 2020-2024 Strategic Plan.* https://dot.ca.gov/-/media/dot-media/programs/risk-strategic-management/documents/sp-2020-16p-web-a11y.pdf. Accessed: November 2, 2022.

——— 2021g. *Determination of Biologically Equivalent or Superior Preservation for the Interstate 15/State Route 74 Interchange Improvement Project*. Prepared by HDR Engineering, Inc.

——— 2022. *Highway Design Manual.* https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm. Accessed May 2023.

——— 2023a. *I-15/SR-74 Interchange Improvement Project Noise Study Report.* Prepared by HDR Engineering, Inc.

——— 2023b. *I-15/SR-74 Interchange Improvement Project Noise Abatement Decision Report.* Prepared by HDR Engineering, Inc.

——— 2023c. *I-15/SR-74 Interchange Improvement Project Addendum to the Noise Study Report.* Prepared by HDR Engineering, Inc.

——— 2023d. *Initial Site Assessment Update Memorandum.* Prepared by HDR Engineering, Inc.

——— 2023e. *Project Planning and Design Guide.* Accessed August 2019. https://dot.ca.gov/-/media/dot-media/programs/design/documents/final-ppdgjuly-2017-rev4292019.pdf.

——— 2023f. *Construction Manual.* Accessed August 2019. https://dot.ca.gov/-/media/dot-media/programs/construction/documents/policies-procedures-publications/construction-manual/construction-manual2019.pdf.

California Department of Conservation. 2004. *A Guide to the Farmland Mapping and Monitoring Program*. Accessed June 2020. https://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/Archive/fmmp_guide_2004.pdf

——— 2011. Division of Mines and Geology - Special Report 143- Plate 7.23. Accessed August 2020. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/SR_143/PartVII/.

——— 2016. Farmland Important Farmland Finder. Accessed May 2024. https://maps.conservation.ca.gov/DLRP/CIFF/.

——— 2018. Farmland Mapping and Monitoring Program – Riverside County. Accessed June 2020. https://gis.conservation.ca.gov/server/rest/services/DLRP.

——— 2022. Earthquake Zones of Required Investigation. Accessed May 2023. https://maps.conservation.ca.gov/cgs/EQZApp/app/

California Department of Education. n.d. California School Directory. Accessed July 2020. https://www.cde.ca.gov/schooldirectory/.

California Department of Fish and Wildlife (CDFW). 2024. RareFind 5 – California Natural Diversity Database Online Search. Accessed May 22, 2024. https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

California Department of Resources Recycling and Recover (CalRecycle). 2018. Solid Waste Information System/Site Search. Accessed July 2021. https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/2280?siteID=2402.

California Environmental Protection Agency. 2015. *California Climate Strategy*. Accessed: April 28, 2021. https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/Climate-Documents-2015yr-CAStrategy.pdf.

California Governor's Office of Planning and Research (OPR). 2015. *A Strategy for California @ 50 Million.* November. https://opr.ca.gov/docs/EGPR_Nov_2015.pdf. Accessed: November 2, 2022.

——— 2022. *Carbon Neutrality by 2045.* https://opr.ca.gov/climate/carbon-neutrality.html. Accessed: November 2, 2022.

California Invasive Plant Council (Cal-IPC). 2024. *The Cal-IPC Inventory*. Accessed May 22, 2022. https://www.cal-ipc.org/plants/inventory/.

California Native Plant Society (CNPS). 2024. *Inventory of Rare and Endangered Plants* (online edition, v8-02). California Native Plant Society, Sacramento, CA. Accessed May 22, 2024. http://www.rareplants.cnps.org.

California Natural Resources Agency. 2022a. Natural and Working Lands Climate Smart Strategy. https://resources.ca.gov/Initiatives/Expanding-Nature-Based-Solutions. Accessed: November 2, 2022.

——— 2022b. California Climate Adaptation Strategy. https://climateresilience.ca.gov/. Accessed: November 2, 2022.

California Regional Water Quality Control Board. 1995. Santa Ana Region. (1995, January 24). (revised 2019, June). Water Quality Control Plan Santa Ana River Basin Region. California State Transportation Agency. 2021.

Climate Action Plan for Transportation Infrastructure (CAPTI). Adopted July 2021. https://calsta.ca.gov/subject-areas/climate-action-plan. Accessed: November 2, 2022.

California Water Board. 2019. *Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin.* Region 8. Updated June 2019. https://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/.

City of Lake Elsinore. 2011a. *Lake Elsinore General Plan*. Accessed July 2020. http://www.lake-elsinore.org/city-hall/city-departments/community-development/planning/lake-elsinore-general-plan.

——— 2011b. *Business District Plan*. Accessed July 2020. http://www.lake-elsinore.org/home/showdocument?id=7291.

——— 2011c. *North Central Sphere District Plan*. Accessed July 2020. http://www.lake-elsinore.org/home/showdocument?id=7279.

——— 2011d. *City of Lake Elsinore General Plan Update– Certified Final Recirculated Program Environmental Impact Report*. Accessed July 2020. http://www.lake-elsinore.org/city-hall/city-departments/community-development/planning/lake-elsinore-general-plan/general-plan-certified-eir.

——— 2011e. Climate Action Plan. Accessed: November 30, 2020. http://www.lake-elsinore.org/city-hall/city-departments/community-development/planning/lake-elsinore-climate-action-plan.

——— 2017. Local Hazard Mitigation Plan. Accessed August 2020. http://www.lake-elsinore.org/city-hall/city-departments/public-works/maintenance-operations/local-hazard-mitigation-plan.

——— 2019a. City Construction Projects. Accessed June 2020. http://www.lake-elsinore.org/city-hall/engineering/city-construction-projects.

——— 2019b. Fiscal Year 2019-24 Capital Improvement Budget Plan. Accessed June 2020. http://www.lake-elsinore.org/home/showdocument?id=24916.

——— 2019c. July 2019 City Council Update. Accessed June 2020. http://www.lake-elsinore.org/home/showdocument?id=24805.

——— 2020a. Fiscal Year 2020-25 Capital Improvement Budget Plan. Accessed June 2020. http://www.lake-elsinore.org/home/showdocument?id=27047.

——— 2020b. CEQA Documents Available for Public Review. Accessed July 2020. http://www.lake-elsinore.org/city-hall/city-departments/community-development/planning/ceqa-documents-available-for-public-review.

——— 2023. City of Lake Elsinore Capital Improvement Program Budget FY 2022-27. Accessed May 2023. https://cleargov-prod.s3.amazonaws.com/budget-book/pdf/2023_dbb_city_of_lake_elsinore_2010256373.pdf.

——— n.d.a. Parks and Facilities. Accessed July 2020. http://www.lake-elsinore.org/city-hall/city-departments/community-services/facilities.

——— n.d.b. Public Safety. Accessed July 2020. http://www.lake-elsinore.org/city-hall/public-safety.

Climate Change Infrastructure Working Group. 2018. Paying it Forward: The Path Toward Climate-Safe Infrastructure in California. September. https://files.resources.ca.gov/climate/climate-safe-infrastructure-working-group/. Accessed: December 13, 2021.

County of Riverside. 2015. *Riverside County General Plan.* https://planning.rctlma.org/General-Plan-Zoning/General-Plan.

——— 2019. Elsinore Area Plan. Accessed August 2020. https://planning.rctlma.org/Portals/14/genplan/2019/ap/ELAP_041619.pdf.

——— 2020. *Elsinore Area Plan*. Accessed October 2020. https://planning.rctlma.org/Portals/14/genplan/2020/ap/ELAP_08042020.pdf.

——— n.d. Assessor-County Clerk-Recorder: Property Search. Accessed July 2020. https://ca-riverside-acr.publicaccessnow.com/Search.aspx.

County of Riverside Emergency Management Department. 2019. Riverside County Emergency Operations Plan. Accessed May 2024. http://riversidecountyca.iqm2.com/Citizens/Detail_LegiFile.aspx?Frame=&MeetingID=2048&MediaPosition=3715.315&ID=10490&CssClass=.

Dickson, C. 2020. Email conversation with Ingrid Eich. October 5, 2020.

Federal Highway Administration (FHWA). n.d. *Sustainable Highways Initiative*. Accessed: November 2, 2022. https://www.sustainablehighways.dot.gov/overview.aspx.

——— 1997. Federal Aid Policy Guide – Subchapter H Part Accessed July 2020. 771.https://www.fhwa.dot.gov/legsregs/directives/fapg/cfr0771.htm.

——— 2011. *Guidance on Environmental Justice and NEPA*. Accessed July 2020. https://www.environment.fhwa.dot.gov/env_topics/ej/guidance_ejustice-nepa.aspx.

——— 2016. Updated Interim guidance update on mobile source air toxic analysis in NEPA documents. https://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/.

——— 2022. Sustainability. https://www.fhwa.dot.gov/environment/sustainability/resilience/. Last updated July 29, 2022. Accessed: November 2, 2022.

Hathaway, S. and M. Simovich. 1996*. Factors Affecting the Distribution and Co-Occurrence of Two southern California Anostracans (Branchiopoda) Branchinecta sandiegoensis and Streptocephalus woottoni* Journal of Crustacean Biology 16(4) 669-677.

Keeley, B.W. and Tuttle, M.D. 1999. *Bats in American Bridges*. Bat Conservation International. https://www.batcon.org/pdfs/bridges/BatsBridges2.pd.

Lake Elsinore Unified School District. n.d. *Facility Use Requests*. https://www.leusd.k12.ca.us/apps/pages/index.jsp?uREC_ID=1526308&type=d&pREC_ID=2572059. Accessed June 2024.

National Highway Traffic Safety Administration (NHTSA). 2022. *USDOT Announces New Vehicle Fuel Economy Standards for Model Year 2024–2026.* Press release. April 21. https://www.nhtsa.gov/press-releases/usdot-announces-new-vehicle-fuel-economy-standards-model-year-2024-2026. Accessed: November 2, 2022.

Regents of the University of California. 2020. The Jepson Online Interchange California Floristics. http://ucjeps.berkeley.edu/eflora/. Website last updated March 10, 2020.

Riverside County of Economic Development Agency. 2017. *Taxable sales Riverside County Annual Report 2017*. Accessed June 2020. https://www.rivcoeda.org/Portals/0/demographicReports/Taxable%20sales/2017tax.pdf.

——— 2018. *Riverside County First Quarter 2018 Taxable Sales*. Accessed June 2020. https://www.rivcoeda.org/Portals/0/demographicReports/Taxable%20sales/1qtax18.pdf.

Riverside County Regional Park and Open Space District. 2018. *Riverside County Comprehensive Trails Plan*. Accessed June 2020. https://altago.com/wp-content/uploads/Riverside_County_Comprehensive_Trails_Plan.pdf.

Riverside County Transportation Commission (RCTC). 2017. Measure A: At a Glance. Accessed June 2020. https://www.rctc.org/wp-content/uploads/2018/01/Measure-A-Bro_092517.pdf.

——— 2023. RCTC Projects. Accessed June 2021. https://www.rctc.org/projects/.

Roberts, Fred M. Jr., S.D. White, A.C. Sanders, D.E. Bramlet, and S. Boyd. 2004. *The Vascular Plants of Western Riverside County, California: An Annotated Checklist*. F.M. Roberts Publishing 2004.

Southern California Association of Governments (SCAG). 2017. *SCAG Scenario Planning Model - Data Management System User Guide: Appendix D – SCAG Land Use Codes Description*. Accessed July 2020.

——— 2019a. *Profile of the City of Lake Elsinore*. Accessed June 2020. https://scag.ca.gov/sites/main/files/file-attachments/lakeelsinore_localprofile.pdf?1606013535.

——— 2019b. *Profile of Riverside County*. June 2020. https://scag.ca.gov/sites/main/files/file-attachments/riversidecountylp.pdf?1606013116.

——— 2020. *Final 2020-2045 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) Plan*. Accessed July 2020. https://connectsocal.org/Pages/Connect-SoCal-Final-Plan.aspx.

——— 2021. *2021 Approved FTIP: Riverside County-State Highways*. https://scag.ca.gov/2021-approved-ftip. Accessed June 2021.

——— 2022. *2023 Adopted FTIP.* https://scag.ca.gov/2023-adopted-ftip. Accessed July 2023.

South Coast Air Quality Management District (SCAQMD). 2010. Near Road Air Monitoring Network. http://www.aqmd.gov/home/air-quality/air-quality-studies/air-quality-monitoring-studies/near-road-air-network.

——— 2019. Air Quality Modeling. https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-modeling.

——— 2022. Historical Data By Year. Accessed: May 2023. https://www.aqmd.gov/home/air-quality/historical-air-quality-data/historical-data-by-year.

State of California. 2018. *California's Fourth Climate Change Assessment.* http://www.climateassessment.ca.gov/. Accessed: August 21, 2019. United States (U.S.) Census Bureau. 2010. 2006-2010 American Community Survey (ACS) 5-Year Estimates. Accessed January 2021. https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t.

——— 2020. 2015-2019 American Community Survey (ACS) 5-Year Estimates. Accessed January 2021. https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t.

United States (U.S.) Department of Agriculture. n.d. Farmland Protection Policy Act – Farmland Conversion Impact Rating (Form AD-1006). Accessed June 2020. https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/fppa/.

United States (U.S.) Department of Health and Human Services (DHHS). 2023. *2023 Poverty Guidelines*. Accessed May 2023. https://aspe.hhs.gov/2023-poverty-guidelines.

United States Department of Transportation (USDOT). 2015. *Guidelines for the Visual Impact Assessment of Highway Projects.* January. Accessed June 3, 2024. https://www.environment.fhwa.dot.gov/env_topics/other_topics/VIA_Guidelines_for_Highway_Projects.pdf.

——— 2011. *Policy Statement on Climate Change Adaptation.* June. Accessed: August 21, 2019. https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm.

——— 2014. *Corporate Average Fuel Economy (CAFÉ) Standards.* Accessed: November 2, 2022. https://www.transportation.gov/mission/sustainability/corporate-average-fuel-economy-café-standards.

——— 2021. *Climate Action Plan: Ensuring Transportation Infrastructure and System Resilience.* https://www.transportation.gov/sites/dot.gov/files/docs/DOT%20Adaptation%20Plan.pdf. Accessed: November 2, 2022.

U.S. Environmental Protection Agency. 2021a. *Fast Facts 1990-2019*. EPA 430-F-21-011. April. Accessed: April 28, 2021. https://www.epa.gov/sites/production/files/2021-04/documents/fastfacts-1990-2019.pdf.pdf.

——— 2021b. Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2019. EPA 430-R-21-005. Accessed: May 5, 2021. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2019.

——— 2021c. *Sources of Greenhouse Gas Emissions*. Accessed: May 5, 2021. https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions.

——— 2022a. Interactive Map of Air Quality Monitors. Accessed: May 2023. https://www.epa.gov/outdoor-air-quality-data/interactive-map-air-quality-monitors.

——— 2022b. *Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026.* Accessed: November 2, 2022. https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-revise-existing-national-ghg-emissions.

——— 2022c. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2020.* Accessed: November 2, 2022. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks.

United States Fish and Wildlife Service (USFWS). 2023. *Ipac: Information For Planning And Consultation*. Accessed May 8, 2023. https://ecos.fws.gov/ipac/location/index.

United States Geologic Survey. 2017. Ecoregions of California. https://pubs.er.usgs.gov/publication/ofr20161021.

White House. 2021. Executive Order on Tackling the Climate Crisis at Home and Abroad. January 27. https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/. Accessed: November 14, 2022.

U.S. Global Change Research Program (USGCRP). 2018. Fourth National Climate Assessment. https://nca2018.globalchange.gov/. Accessed: August 21, 2019.

Witham, E.T. Bauder, D. Belk, W.R. Ferren Jr., and R. Ornduff (Editors). 1998. *Ecology, Conservation, and Management of Vernal Pool Ecosystems* – Proceedings from a 1996 Conference. California Native Plant Society, Sacramento, CA. Pages 124-139.

Appendix L. Required Consultation/Consultation Documentation

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L.1 FHWA Air Quality Conformity Determination

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U.S. Department of Transportation
Federal Highway Administration

California Division

650 Capitol Mall, Suite 4-100
Sacramento, CA 95814
(916) 498-5001
(916) 498-5008 (FAX)

August 9, 2024

In Reply, Refer To:
HDA-CA

ELECTRONIC CORRESPONDENCE ONLY

Olufemi Odufalu, PE, Senior Transportation
Engineer
California Department of Transportation,
District 8
464 W. 4th ST., 8TH Floor
San Bernardino, CA 92401

SUBJECT: Project Level Conformity Determination for the I-15/SR-74 Interchange Improvement Project (CTIPS ID 209-4000-5031; RTP ID RIV060109), EA 08-0F3100, EFIS Project No. 0800000124.

Dear Mr. Odufalu:

On July 16, 2024, the California Department of Transportation (Caltrans) submitted to the Federal Highway Administration (FHWA) a complete request for a project level conformity determination for the I-15/SR-74 Interchange Improvement Project. The project is in an area that is designated Non-Attainment or Maintenance for Ozone, Carbon Monoxide, and Particulate Matter (PM 2.5 & PM 10).

The project level conformity analysis submitted by Caltrans indicates that the project-level transportation conformity requirements of 40 CFR Part 93 have been met. The project is included in the Southern California Association of Governments (SCAG) current Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP), as amended. The design concept and scope of the preferred alternative have not changed significantly from those assumed in the regional emissions analysis.

As required by 40 CFR 93.116 and 93.123, the localized $PM_{2.5}$ and PM_{10} analyses are included in the documentation. The analyses demonstrate that the project will not create any new violations of the standards or increase the severity or number of existing violations.

Based on the information provided, FHWA finds that the I-15/SR-74 Interchange Improvement Project conforms with the State Implementation Plan (SIP) in accordance with 40 CFR Part 93.

If you have any questions pertaining to this conformity finding, please contact Antonio Johnson at (916) 498-5889 or antonio.johnson@dot.gov.

Sincerely,

ANTONIO DESHAWN JOHNSON
Digitally signed by ANTONIO DESHAWN JOHNSON
Date: 2024.08.09 10:46:39 -07'00'

Antonio Johnson
Director of Planning, Environment,
& Right of Way
Federal Highway Administration

TO:

Olufemi Odufalu, Caltrans
Olufemi Odufalu@dot.ca.gov

CC: (via email)

Rodney Tavitas, Caltrans
Michael Morris, FHWA

Rodney.Tavitas@dot.ca.gov
Michael.morris@dot.gov

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L.2 Western Riverside County Multiple Species Habitat Conservation Plan Consistency Determination

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From:	Lin, Serena
To:	Lin, Serena
Subject:	RE: [EXTERNAL] RE: I-15 / SR-74 Interchange Improvement Project - FWS-WRIV-2022-0025084 - City of Lake Elsinore (EA: 0F310)
Date:	Tuesday, July 2, 2024 3:27:41 PM
Attachments:	image001.png

From: Taylor, John <john_m_taylor@fws.gov>
Sent: Friday, June 14, 2024 2:43 PM
To: Pollett, Kathleen <Kathleen.Pollett@hdrinc.com>; Rehrer, Katrina@Wildlife <katrina.rehrer@wildlife.ca.gov>
Cc: Remon Habib <rhabib@lake-elsinore.org>; Yu Tagai <ytagai@Lake-Elsinore.org>; Lin, Serena <Serena.Lin@hdrinc.com>; Hager, Mark <mark.hager@hdrinc.com>; Elgeziry, Maggi@DOT <maggi.elgeziry@dot.ca.gov>; Toledo, Antonia@DOT <Antonia.Toledo@dot.ca.gov>; Porter, Jeanine E@DOT <jeanine.porter@dot.ca.gov>; Beck, Carly@Wildlife <carly.beck@wildlife.ca.gov>; Cleary-Rose, Karin <Karin_Cleary-Rose@fws.gov>; Machuca, Breanna@Wildlife <breanna.machuca@wildlife.ca.gov>; Delu, Nina <Nina.Delu@hdrinc.com>; Gorman, George <George.Gorman@hdrinc.com>
Subject: Re: [EXTERNAL] RE: I-15 / SR-74 Interchange Improvement Project - FWS-WRIV-2022-0025084 - City of Lake Elsinore (EA: 0F310)

You don't often get email from john_m_taylor@fws.gov. Learn why this is important

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

In reply, refer to: FWS/CDFW-WRIV-2022-0025084

Kathleen,

On January 4, 2024, the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife, hereafter referred to jointly as the Wildlife Agencies, responded to the second Revised Determination of Biologically Equivalent or Superior Preservation (DBESP) documentation submitted to support the Interstate 15/State Route 74 Interchange Improvement Project's (Project) consistency with the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP), received on November 20, 2023.

Within our correspondence, the Wildlife Agencies acknowledged the affected acreage and mitigation strategy, and affirmed we had no objection to the utilization of the Riverpark Mitigation Bank to achieve a biologically equivalent or superior preservation outcome to address Project related impacts to riparian/riverine resources.

On May 23, 2024, the Wildlife Agencies received your email where you acknowledged Alternative 3 has been selected as the Preferred Alternative for the Project. As a result, the Project will seek to offset impacts to MSHCP riparian/riverine resources with the purchase of 0.28 acres of rehabilitation mitigation credits from a Wildlife Agencies approved mitigation bank.

Once an approved mitigation bank has been selected, and funds submitted to the approved

conservation entity for securing the appropriate mitigation credits, the Wildlife Agencies request a copy of the bank note and/or receipt identifying credits received to offset Project related impacts to MSHCP covered resources.

As a result of the revisions to the second Revised DBESP, and confirmation of the preferred alternative, the Wildlife Agencies find the Project consistent with the MSHCP. We appreciate everyone's time and effort over the last two years and should you have any questions or comments, please contact Katrina Rehrer or myself at any time.

Sincerely,

Katrina Rehrer

Environmental Scientist

Inland Deserts Region

California Department of Fish and Wildlife

3602 Inland Empire Blvd., Suite C-220

Ontario, CA 91764

(909) 260-1998

And

John M. Taylor
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Book time to meet with me

Appendix M. Final Determination of Engineering and Operational Acceptability

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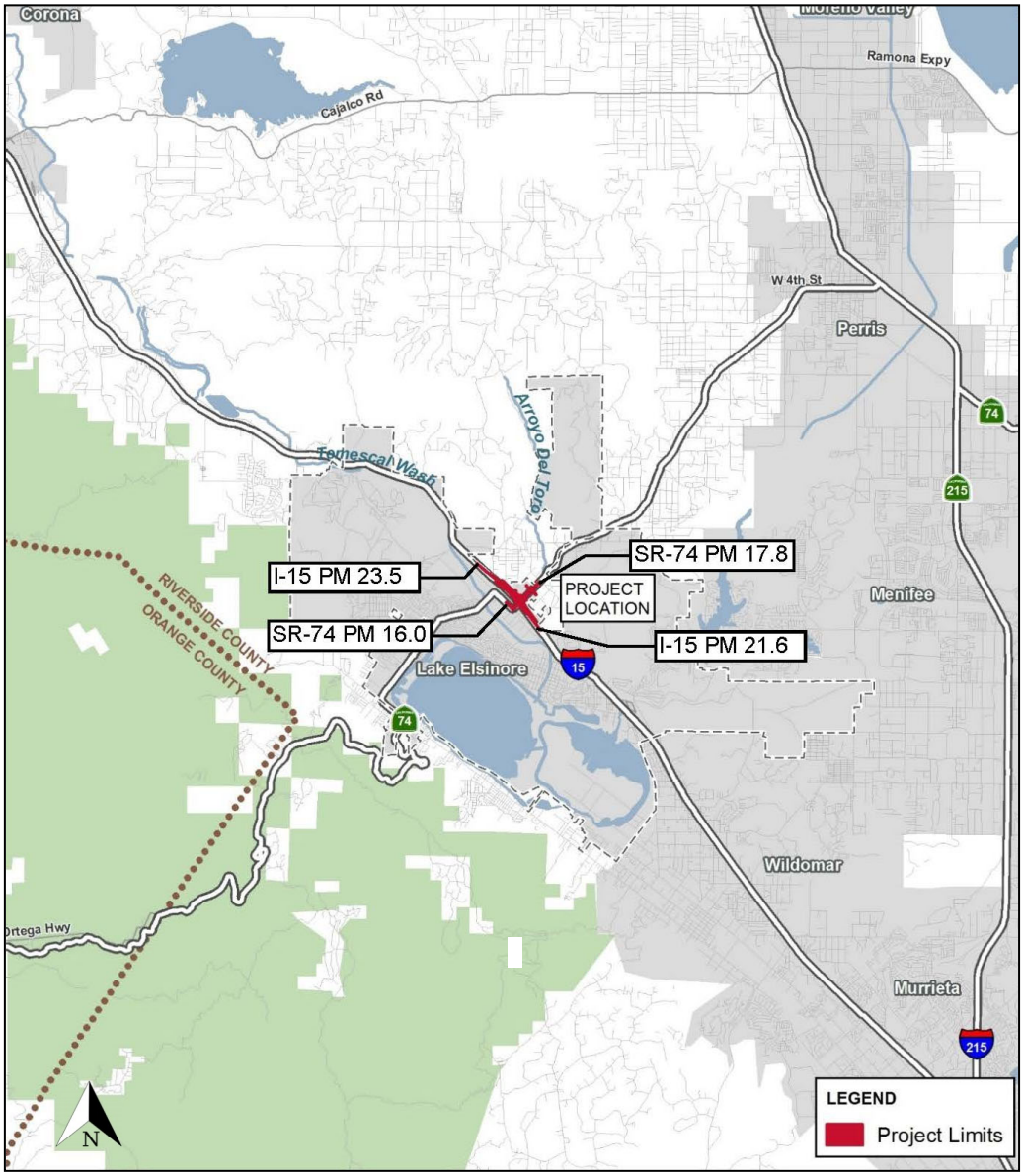
08-RIV-15-PM 21.6/23.5
EA 0F310 – 0800000124
June 2023

MODIFIED ACCESS REPORT FOR ENGINEERING AND OPERATIONAL ACCEPTABILITY DETERMINATION



IN RIVERSIDE COUNTY IN THE CITY OF LAKE ELSINORE ON INTERSTATE 15 FROM 0.6 MILES NORTH OF MAIN STREET TO 0.4 MILES SOUTH OF NICHOLS ROAD

SR-74 INTERCHANGE ON INTERSTATE 15 IN RIVERSIDE COUNTY

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

6/2/2023

Brandon L Reyes *DATE*
REGISTERED CIVIL ENGINEER
MICHAEL BAKER INTERNATIONAL

SUBMITTED BY: 6/2/2023

Remon Habib *DATE*
CITY ENGINEER
CITY OF LAKE ELSINORE

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1. SUMMARY

The City of Lake Elsinore (City) in cooperation with the California Department of Transportation (Caltrans) and Western Riverside Council of Governments (WRCOG) is proposing to modify an existing interchange access point on Interstate 15 (I-15) at State Route 74 (SR-74) (Project), between the Nichols Road Interchange and the Main Street Interchange, in Lake Elsinore, Riverside County, California. Refer to *Attachment 1 – Location Map*.

The modified access purpose is to improve traffic operations and reduce congestion at the I-15/SR-74 Interchange and local intersections within the Project limits. The segment of SR-74 within the Project limits is identified as an augmented Urban Arterial in the City of Lake Elsinore General Plan (Refer to *Attachment 2 – Transportation Network*). The improvements proposed by this Project are consistent with state, regional and local mobility goals, and are being coordinated with the applicable governmental, regulatory, and local agencies in the area. The local road improvements proposed by the Project are consistent with the local circulation elements of the 2011 City of Lake Elsinore General Plan. The Project is generally located approximately 1.6 miles south of the existing I-15/Nichols Road Interchange and 1.3 miles north of the existing I-15/Main Street Interchange (Figure 1).

The Project is considered a priority for the City because the I-15/SR-74 Interchange is ranked as the second most congested freeway interchange in the City and is serving the established Business District and recreational areas along SR-74. The ramp terminals are experiencing severe peak hour traffic congestion and operational deficiencies with existing traffic. To alleviate congestion of the I-15/SR-74 Interchange requires improvements that would enhance its operational efficiency since this interchange is in a fully built out environment along the I-15 freeway and SR-74 corridor which are established regional transportation networks.

The I-15/SR-74 Interchange serves as the primary access for residents, visitors, businesses, recreational areas, and industry in the area. The existing congestion has resulted in inadequate queuing capacity at the interchange and local intersections which result in long periods of gridlock. The amount of traffic utilizing the I-15/SR-74 Interchange is extremely high since it is the interface of two established regional routes and efficiency of the interchange will continue to degrade further without implementation of the proposed operational improvements.

The Project proposes a modified access point on I-15 which requires Federal Highway Administration (FHWA) approval. This Report identifies the project history, proposed improvements, consistency with FHWA requirements, and project recommendations. Issuance of A Finding of Engineering and Operational Acceptability from FHWA constitutes a preliminary approval (Step 1) of the access request. Final Approval (Step 2) by FHWA would occur concurrently, or immediately after, approval of the final environmental document for the Preferred Alternative.

Three alternatives are analyzed in this document: Alternative 1 (No-Build) and Alternatives 2 and 3 (Build Alternatives). Alternative 3 was selected as the locally preferred alternative (LPA) during the March 5, 2020 Project Development Team (PDT) meeting. The primary factor which led to the selection of Alternative 3 as the LPA was based on Alternative 2 requiring traffic from I-15 northbound (NB) to SR-74 westbound (WB) to travel along Dexter Avenue to access SR-74 thus requiring the acquisition of the Burger King located on the northwest corner of the SR-74/Dexter Avenue Intersection and a higher project cost. The build alternatives are detailed in *Section 6. Alternatives*.

2. INTRODUCTION

Project Description and Location

It is proposed to improve the existing interchange at SR-74 and I-15 located in the County of Riverside (County) in the City of Lake Elsinore, in order to reduce traffic congestion and improve operations. The Project's area of influence shown in Figure 1 includes a segment of I-15 from post mile (PM) 21.6 to PM 23.5 and encompasses the following local interchanges and facilities:

- I-15/Main Street Interchange
- I-15/SR-74 Interchange
- I-15/Nichols Road Interchange
- I-15 Mainline

The above-mentioned interchanges and freeway segment were selected for the project's area of influence due to the close proximity to the proposed modified interchange (I-15/SR-74 Interchange). The area of influence includes the adjacent interchanges along I-15 and the nearby crossroad intersections within the interchange influence area at SR-74. The above-mentioned interchanges are further described in *Section 5. Methodology*. An existing conditions map can be referenced in *Attachment 3 – Existing Conditions*. The modified access point proposed at the I-15/SR-74 Interchange will provide reduced congestion and delays at the interchange and nearest local street intersections.

The Project is generally located approximately 1.6 miles south of the existing I-15/Nichols Road Interchange and 1.3 miles north of the existing I-15/Main Street Interchange. Improvements proposed along SR-74 within the City (also known as Central Avenue at the interchange) would extend to portions of Collier Avenue on the west (SR-74 PM 16.0), and up to the intersection with Conard Avenue on the east (SR-74 PM 17.8). The Project is bounded by Riverside Drive to the north, Conard Avenue to the east, Wasson Canyon Wash to the south, and Collier Avenue to the west. The Project is located within existing Caltrans, City, and the County right of way. The City of Lake Elsinore General Plan has adopted specific plan land uses and existing neighborhoods within the City as District Plans. According to the City of Lake Elsinore General Plan, Chapter 2 Community Form adopted December 13, 2011 (Lake Elsinore 2011), the Project is located primarily within the Business District and small portions extend into the North Central Sphere District. The land uses within the Project limits primarily consist of commercial and industrial land uses, interspersed with low density residential and public institutional uses.

The proposed interchange is located within a Transportation Management Area (TMA).

The escalated cost for the proposed modifications to the I-15/SR-74 Interchange project is estimated to range from $36,583,000 to $40,789,000, which includes right of way acquisitions and construction costs. There are no costs for structure items because the existing I-15 structures at the SR-74 undercrossing (UC)will be protected in place. More detailed costs are included in *Section 6. Alternatives.* Funding for this Project consist of local funds from the City and the Transportation Uniform Mitigation Fee (TUMF) distributed by WRCOG. The City is also evaluating options to obtain Federal funding for the final design and construction phases of the Project.

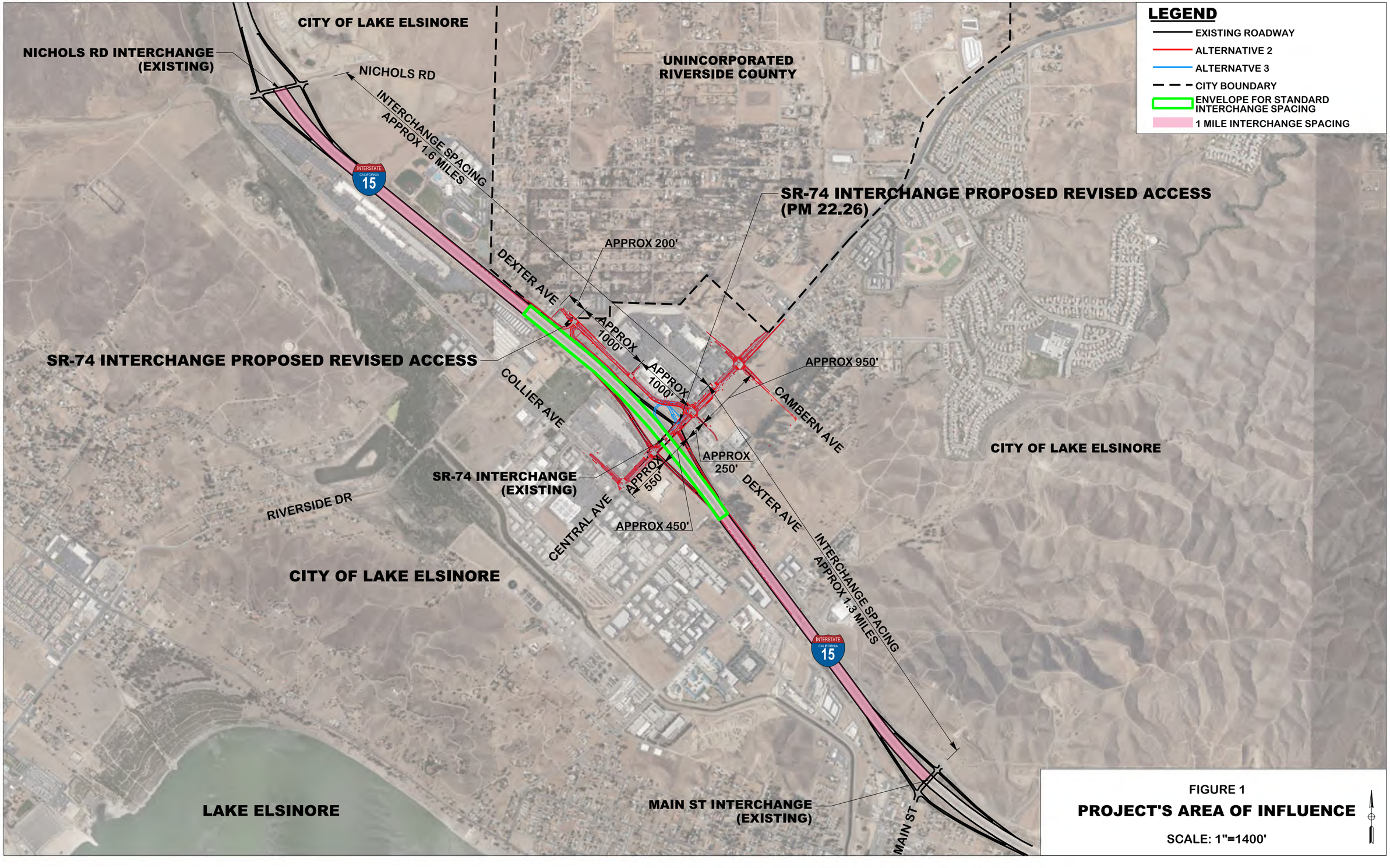

FIGURE 1

PROJECT'S AREA OF INFLUENCE

SCALE: 1"=1400'

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The I-15/SR-74 Interchange project is classified as a Category 4B project as defined in the Caltrans Project Development Procedures Manual (Part 2, Chapter 8, Section 5, dated February 12, 2016).

The alternatives analyzed for this project include the following:

Alternative 1 - No-Build
Alternative 2 - Northbound (NB) Hook Ramps
Alternative 3 - NB Hook Ramps with NB Loop Off-Ramp to Westbound (WB) SR-74

Purpose and Need

The Project purpose is to maximize mobility and accessibility in the region by improving traffic operation the I-15/SR-74 interchange and local intersections within the Project limits. The Project objectives are to:

- Improve traffic operation and address increased travel associated with existing and planned development anticipated in the surrounding area.
- Provide safer access through the interchange by improving the operational efficiency of signalized intersections, queuing, throughput volumes, and limiting cross-traffic movements.
- Improve existing interchange geometry and provide complete streets improvements to improve connectivity and offer additional options for multi-modal connections within the interchange and in the surrounding community.

The need for the Project is as follows:

The I-15/SR-74 interchange serves as the primary access for residents, visitors, businesses and industry in the area. The increase in traffic volumes has resulted in inadequate queuing capacity at the interchange and local intersections. The amount of traffic utilizing the I-15/SR-74 interchange is expected to greatly increase by 2025 and efficiency of the interchange to degrade without implementation of improvements. The safety, mobility, and access within the interchange will be improved by encouraging additional multi-modal options through the construction of new pedestrian and bicycle facilities, and the improvement of those existing facilities. Additionally, the I-15/SR-74 interchange requires improvements that would enhance its operational efficiency.

Complete street improvements include providing new and/or improved connections in existing gaps of pedestrian and bicycle infrastructure that improve access through the existing interchange, which separates existing communities to the major Business District in the City. These planned Project improvements would help meet the proposed Project need, as well as help the City meet its Climate Action Plan (CAP) greenhouse gas (GHG) reduction goals.

Background

I-15 is a major truck/passenger route that begins at its junction with I-5 in San Diego, approximately 10 miles north of the United States/Mexico Border and ends at the United States/Canada Border. Its main use is interstate/interregional movement of people and goods. I-15 is functionally classified at the federal level as a Rural/Urban Principal Arterial and is part of the Freeway and Expressway System (F&E), the Single Interstate Routing System, the National Highway System (NHS), and the Strategic Highway Corridor Network of National Defense (STRAHNET). I-15 is included in the National Network for Federal Surface Transportation Assistance Act (STAA) for conventional combinations. The segment within the Project limits is a six-lane freeway.

I-15 serves as both the primary North American trade corridor between the United States, Mexico and Canada via the Mountain West, as well as a link to the main east-west routes that connect California with the Midwest and East Coast. Furthermore, I-15 has been identified by the U.S. Department of Transportation as one of the six "Corridors of the Future" within the United States that are vital to the long-term health and stability of our national economy. It is a primary link between major economic centers and geographic regions and is classified as a "High Emphasis" and "Gateway" route in the Interregional Road System (IRRS). I-15 is also part of the Intermodal Corridors of Economic Significance (ICES) system of routes, which are significant transportation arteries that provide access to major sea or waterway ports, nationwide railway systems, airports, and interstate and intrastate highway systems, thereby serving as intermodal corridors of economic significance. Within the Project limits I-15 is an access-controlled six-lane divided freeway, with three 12 foot (') mixed flow lanes in each direction, 12' outside shoulders and 8' to 15' inside shoulders, an undeveloped median 68' to 69' wide (shown as 70' in the original as-built plans), and right of way widths that vary from 320' to 370' or more at the interchange.

SR-74 is an east-west regional roadway that begins at I-5 near San Juan Capistrano in Orange County and ends at the junction with SR-111 in Palm Desert. The primary purpose of SR-74 is interregional travel with the secondary purpose of serving local, recreational, and commute travel. SR-74 provides a link between the Counties of Orange and Riverside. Within the limits of the Project, the City of Lake Elsinore 2011 General Plan Recommended Circulation Roadway System (refer to *Attachment 2 – Transportation Network*) shows SR-74 as a truck route and as an Urban Arterial (6 lanes) along Riverside Drive and Collier Avenue west of I-15, then as an Augmented Urban Arterial (8 lanes) along Central Avenue from Collier Avenue to the east of I-15. Caltrans has relinquished ownership of Central Avenue to the City between the I-15 NB ramps and the eastern City boundary.

Traveling from west to east, SR-74 is currently a two lane road along Riverside Drive and portion of Collier Avenue, a four lane segment for the remaining portion of Collier Avenue up to Central Avenue, a five lane segment along Central Avenue between Collier Avenue and the NB ramps intersection, a six lane segment between the NB ramps intersection and Dexter Avenue, a six to five lane segment between Dexter Avenue and Cambern Avenue, and four lane road to the east of Cambern Avenue. These segments of SR-74 generally have turning pockets and striped medians in addition to the number of thru lanes described. The existing through lanes are generally 12' wide, except between the SB ramps and east of Dexter Avenue where lane widths are reduced to 11'. Between the NB ramps and Dexter Avenue the width of right turn pockets from WB SR-74 to the NB On-Ramp is 9', and 10' for the right turn pocket from eastbound (EB) SR-74 to Dexter Avenue. Outside shoulders vary from 2' (gutter pan) to 12'. SR-74 along Central Avenue has right of way widths that vary from 105.5' to 139'.

The City's General Plan's existing bikeway plan does not show bikeway facilities along Central Avenue but it shows Class II bikeways along Riverside Drive, Collier Avenue, and Cambern Avenue. The Caltrans Highway Design Manual 7th Edition (HDM) defines a Class II bikeway as a bike lane and that these are intended to delineate the right of way assigned to bicyclists and motorists and to provide for more predictable movements by each. At the time that the Project Approval and Environmental Document (PA&ED) phase was initiated no designated bike lanes existed within the limits of the Project; however, a recent commercial development called "Central Plaza" located on the south side of Central Avenue between Collier Ave and the I-15 southbound (SB) On-Ramp has striped segments of bike lanes along Collier Avenue and Central Avenue.

The existing I-15/SR-74 Interchange was constructed in 1980 as a compact diamond interchange with separate single-span bridge structure with sloped abutments for each of the I-15 NB and SB roadbeds. These structures are 70' wide and have a span of approximately 140' over SR-74, with

a current minimum vertical clearance of 15'-5". The interchange is located within a horizontal curve of the I-15 alignment. A separate project in late 2007/early 2008 widened SR-74 from Collier Avenue to just west of Cambern Avenue, and constructed tie-back retaining walls below the I-15 bridge structures to accommodate the widening. The terrain within the Project area is generally level with some rolling hills along I-15 south of SR-74 and elevations that range between 1,270' and 1,310' above mean sea level (amsl).

The NB On-Ramp currently provides a single general purpose (GP) lane, the SB On-Ramp provides two GP lanes that are striped only for a length of approximately 150' but the ramp's paved width remains constant for another 480', after which the right side of the ramp is reduced over a 180' long (15:1) taper to a single lane segment near the entrance gore of the freeway. Both on-ramps are unmetered but have traffic monitoring stations, and currently there are no enforcement areas within the median of the freeway nor at the on-ramp entrances. Both of the NB and SB off-ramps provide a single-lane exit from I-15 and then get wider as they approach the intersection with SR-74 to provide dedicated left, thru, and right turn lanes.

There is an existing Park-and-Ride, ride share parling lot on the south-east quadrant of the interchange, which is accessible from Dexter Avenue. There are no railroad facilities within the limits nor in near vicinity of the Project. There are frontage roads running parallel to I-15, but Collier Avenue provides a connection between Main Street to the south, SR-74, and Nichols Road to the north on the west side of the freeway. Similarly, on the east side of the freeway Camino del Norte provides a connection between Main Street and Dexter Avenue, which then connects with SR-74 and El Toro Road on the north side, and El Toro Road ultimately connects with Nichols Road. The City's General Plan shows a recreational trail that starts at Collier Avenue and crosses I-15 in an easterly direction to then continue to the north. This trail is located beyond the limits of the Project.

Within the Project limits the current posted speed limits of different roadway segments are:

- I-15 Freeway: 70 miles per hour (mph) for passenger vehicles, 55 mph for trucks
- SR-74: 40 mph along Riverside Drive, 45 mph along Collier Avenue, 45 mph along Central Avenue from Collier Avenue to east of Dexter Avenue, 55 mph beyond to the east of Dexter Avenue
- Dexter Avenue: 40 mph south of Central Avenue, 45 mph north of Central Avenue with a reduction to 25 mph at curves near the intersection with Central Avenue

The City has identified the need for a modified interchange access point on I-15 at SR-74 to improve traffic operations, reduce congestion, and improve mobility and access for vehicles, pedestrians and bicycles.

The purpose and need statement was reviewed and agreed upon by the City and Caltrans.

A Project Study Report-Project Development Support (PSR-PDS) was completed and approved in April, 2005. The PSR-PDS presented a range of alternatives to address interchange location options. One No-Build alternative, two viable build alternatives, and multiple rejected Build alternatives were studied.

In 2005 the PSR-PDS evaluated the No-Build Alternative and two Build Alternatives consisting of Partial Cloverleaf interchanges at I-15 and SR-74 plus a new bridge overcrossing over I-15 at Riverside Drive. At that time the properties adjacent to the interchange remained largely undeveloped and acquiring the right of way needed to accommodate the loop ramps and proposed improvements was more feasible. All surrounding properties have been developed with commercial shopping centers and businesses, which creates a constraint for the Project.

When traffic analysis and modeling was done for the PSR-PDS Build alternatives the results

showed that these would not provide an acceptable level of service to accommodate the expected growth and increments in traffic volumes. The traffic analysis also concluded that the new overcrossing at Riverside Drive would not significantly benefit the traffic operations at the I-15/SR-74 interchange. Therefore, the City opted to look for new design alternatives that will improve traffic operations and provide an acceptable level of service (LOS).

When the current PA&ED phase started in 2018 several build alternative concepts were developed by the design team based on current Project site constraints. The following early concepts were developed in July 2018:

- Concept #1 - Diverging Diamond Interchange (DDI)
- Concept #2 - Partial Diamond Interchange with NB Hook On-/Off-Ramps at 3rd Street
- Concept #3 - Partial Diamond Interchange with NB Hook On-/Off-Ramps & C-D Road

A variation to these concepts proposed NB Hook On-/Off-Ramps at Dexter Avenue across from the Cambern Avenue extension to provide a bypass for traffic traveling between I-15 and SR-74. Preliminary evaluation of traffic operations and Project impacts was conducted on these concepts to assess their feasibility. While Concept #1 (DDI) continued to be considered a viable alternative, Concepts #2 and #3 were dropped due to expected poor traffic operations for the design year, the significant amount of improvements needed along 3rd Street, Dexter Avenue and Cambern Avenue, plus the impacts to private properties and utilities. Members of the PDT also recommended not having the ramp terminal for the NB hook ramps at the intersection of Dexter Avenue with the Cambern Avenue extension, because their preference is that ramp terminals should not line up with local roads.

Additional concepts with different design iterations were developed by the design team, and by November of 2018 the following options were selected as the design alternatives to carry forward (the No-Build Alternative was designated as Alternative 1).

- Alternative 2 - Diverging Diamond Interchange (DDI)
- Alternative 3 Design Variation A - Partial Diamond Interchange with NB Hook On-Off-ramps next to Arroyo del Toro Channel with SR-74 Couplet
- Alternative 3 Design Variation B - Partial Diamond Interchange with NB Hook On-/Off-Ramps by Lowe's with SR-74 Couplet
- Alternative 3 Design Variation C - Partial Diamond Interchange with NB Hook On-/Off-Ramps by Costco with SR-74 Couplet

As the traffic operations analysis was advanced on these alternatives, it was concluded that the DDI (Alternative 2) would fail to provide an acceptable LOS before the design year unless the UC of I-15 at Central Avenue is widened to accommodate 9 lanes. Since the widening would require the reconstruction of the freeway bridge structures, it would result in significant impacts to I-15 freeway operations. Therefore, the DDI Alternative was dropped leaving Alternative 3 with its three variations as the only viable options.

Members of the PDT did not agree with the design variations that proposed the NB hook ramps terminal on Dexter Avenue across from a private driveway or that created closely spaced intersections. There was also a disagreement with providing a connector road (couplet) between SB Dexter Avenue and WB SR-74 as this was perceived as a continuation of the NB Hook Off-Ramp along Dexter Avenue. As a result, four additional design alternatives were developed in a Mini Value Analysis (VA) Study, and one of those was selected for further evaluation (see *Section 6. Alternatives*).

An Intersection Control Evaluation (ICE) Step One and Step Two analysis was completed for the

Project, which evaluated the feasibility of roundabout, signal, and stop control at the ramp intersections. The ICE Step One analysis was approved with the Traffic Operations Analysis Report (TOAR) on May 2020. Per the ICE analysis, roundabout intersections would not provide better operations along the corridor as compared to traffic signals and the required roundabout footprint consisting of three or more circulating lanes would result in a lower Benefit to Cost Ratio for the proposed intersections. Signalized intersections are considered the most viable intersection control type for the Project.

The proposed Project is included in the Final Adopted 2020 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2020) for Riverside County. The Project is programmed in the 2021 Federal Transportation Improvement Program (FTIP) under RTP ID RIV060109. The programmed dollar amounts include $49,300,000 in City Funds and $8,950,000 in Western Riverside TUMF funds for a total of $58,250,000 including engineering, construction, and right of way. The RTP/SCS will be updated throughout project development as costs are refined and funding is identified.

Transportation Concept Report

The I-15 Transportation Concept Report (TCR) is a Caltrans planning document that identifies the existing and future route conditions as well as future route needs on the State Highway System (SHS). Caltrans District 8 I-15 TCR dated September 2012 identifies I-15 from Bundy Canyon in the City of Wildomar to SR-74 in the City as Segment 5, and from SR-74 to Cajalco Road in the City of Corona as Segment 6. According to the 2012 TCR, traffic is forecasted to increase on I-15 by 2035 and will require additional lanes to achieve acceptable concept level of service. A significant increase in freight traffic volume is also expected throughout the corridor. The TCR shows six Mixed Flow (MF) lanes and 2 High Occupancy Vehicle (HOV) lanes for segment 5, and eight MF lanes and four High Occupancy Toll (HOT) lanes for segment 6 as being implemented by year 2035. Funding for segment 5 HOV improvements has not been identified, but the improvements for segment 6 are included on the SCAG RTP/SCS project list, as well as in the FTIP. This Project does not preclude the implementation of the planned future improvements described in the TCR.

Per the TCR, I-15 within the Project limits is classified as an Urbanized Interstate and is an STAA route. It is also included in the State F&E, NHS, and STRAHNET network.

District System Management Plan

The 2017 District System Management Plan (DSMP) lists the Project as a Tier 1 which are programmed or partially programmed projects. According to the 2017 DSMP, I-15 corridor projects include two HOT lanes from Cajalco Road to SR-74 and two HOV lanes from SR-74 to I-215 in Murrieta, both projects are within the Project limits. The Project build alternatives will accommodate these improvements.

3. CONSISTENCY WITH FHWA POLICY

For new or modified access points to the existing Interstate System, FHWA policy requires that the new or modified access points to the existing Interstate System meet the following two requirements per the FHWA's Policy on Access to the Interstate System (May 22, 2017) (refer to *Attachment 4 – FHWA Interstate Access Policy Points Prompt – List*):

Policy Point 1

An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, and ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections.

A TOAR (May 2020) for the Existing (2018), Opening Year (2025), and Design Year (2045) traffic analysis for the project was prepared and concurred with by Caltrans on May 28, 2020, and signed as final on March 2022 as seen in *Attachment 5 – Traffic Operations Analysis Report (TOAR) Cover Sheet.* See *Section 5. Methodology* for more discussion and background. The forecast volumes and methodology were approved by Caltrans as indicated the TOAR. The TOAR analysis compared and evaluated the capacity of the existing and proposed modified interchange geometrics based upon traffic volumes forecast for the years 2025 and 2045. The TOAR included analysis of basic freeway segments, freeway ramp segments, ramp junctions, and crossroad intersections.

The study area includes the following adjacent interchanges and associated major intersections that may be impacted by the proposed modifications at the I-15/SR-74 Interchange:

- I-15/Main Street Interchange – located approximately 1.3 mile from the project
- I-15/Nichols Road Interchange – located approximately 1.6 mile from the project
- Collier Avenue/Central Avenue
- Cambern Avenue/Central Avenue

The area of influence is further discussed in *Section 5. Methodology*. The existing I-15/SR-74 Interchange is a compact diamond configuration.

The study scenarios for traffic operations analysis include the following:

- Existing (2018) Conditions
- Opening Year (2025) No-Build Alternative (Alternative 1)
- Opening Year (2025) Alternative 2 and Alternative 3 (LPA)
- Design Year (2045) No-Build Alternative (Alternative 1)
- Design Year (2045) Alternative 2 and Alternative 3 (LPA)

Alternatives 1, 2, and 3 were analyzed and compared under both Opening Year (2025) and Design Year (2045) conditions.

Refer to *Attachment 3 – Existing Conditions* for a map of the existing conditions (Alternative 1). Refer to *Attachment 6 –Geometric Drawings* for the conceptual geometric drawings for each build alternative.

The traffic operational study segments are listed in *Section 5. Methodology*.

The analysis tools used were those consistent with the Highway Capacity Manual (HCM) 6th Edition. The HCM tools used included basic freeway segments, freeway ramp segments merge/diverge, and intersection analysis (Signalized and Unsignalized) using a Highway Capacity Software (HCS) equivalent tool and Synchro/SimTraffic analysis software. Relevant HCM chapters were referenced in the development of the analysis including but not limited to: Chapter 12 (Basic Freeway and Multilane Highway Segments), Chapter 14 (Freeway Merge and Diverge Segments), Chapter 19 (Signalized Intersections), Chapter 20 (Two-Way Stop-Controlled Intersections, and Chapter 21 (All-Way Stop-Controlled Intersections). The circulation scenarios analyzed have been evaluated for opening year (2025) and long range (2045) conditions as noted above. As shown in *Section 7. Alternative Analysis*.

A summary of the Forecast Year 2045 analysis results is provided below. The narrative and traffic data tables in *Section 4. Existing Conditions* (for 2018 volumes) and *Section 7. Alternative Analysis* (for 2025 and 2045 volumes) are intended to concisely summarize traffic data pertinent to 'Policy Point 1'; specifically, traffic impacts to existing or future conditions, potential needs for upgrades or improvements, and the interchange's ability to accommodate the design year traffic volumes with the proposed modifications.

Analysis Summary – Forecast Year 2045 Conditions

Forecast year 2045 conditions on I-15 assume six general-purpose lanes (three per direction), two express lanes (one per direction) north of SR-74, and two HOV lanes (one per direction) south of SR-74. Currently there are no existing HOV lanes in this segment of I-15. SCAG's RTP/RCS includes a separate project (RTP 3160001) that proposes to add Express lanes from Cajalco Road in the City of Corona to SR-74 in the City. Likewise, Caltrans District 8 I-15 TCR shows that an HOV lane will be added on each direction of travel along I-15 between Bundy Canyon and SR-74. Although the opening year for the HOV lanes is listed as 2035 in the TCR, currently no funding sources have been identified for that project.

The results of the traffic operations analysis for Alternatives 2 and 3 do not result in adverse impacts caused by the Project while accommodating design year traffic volumes. Under the No-Build condition (Alternative 1), seven intersections are projected to operate at unacceptable LOS during at least one of the peak hours. Under both Alternative 2 and Alternative 3 (LPA), all of the study intersections are projected to operate at acceptable LOS.

Under the No-Build condition (Alternative 1), ten freeway segments were found to operate unacceptably during at least one of the peak hours. Under Alternative 2, five of those freeway segments are projected to improve to acceptable LOS while the remaining five freeway segments were found to continue to operate at the same unacceptable LOS as the No-Build during at least one of the peak hours. Under Alternative 3 (LPA), four of those freeway segments are projected to improve to acceptable LOS while the remaining six freeway segments were found to continue to operate at the same unacceptable LOS as the No-Build during at least one of the peak hours.

Refer to *Section 7*. *Alternative Analysis* for detailed safety and operational performance analysis results.

Collision Data and Safety Analysis Results

Collision data was reviewed for the Project study area including I-15 mainline segments and ramps within the Project limits (Main Street to Nichols Road). For this Project, a three-year collision history was provided by Caltrans from October 1, 2019 to September 30, 2022.

The segment of I-15 mainline within the study area had collision rates lower than the statewide average. No auto-pedestrian collisions are reported for this segment and the main types of collisions are rear-end, hit-object, and side-swipe. The primary collision factors are speeding and improper turn.

The segment of SR-74 between Collier Avenue and Conard Avenue reported fatal plus injury and total collision rates higher than the statewide average. No auto-pedestrian collisions were reported for this facility, and the main type of collision reported is rear-end. The primary collision factors are speeding, improper turn, and failure to yield.

Safety Performance Function (SPF) was used to determine the predicted number of crashes for each of the Project alternatives using Volume 2 of the 1st Edition of the Highway Safety Manual 2010 (HSM 2010) crash prediction methodology, located in Chapters 18 and 19.

Based on the SPF, the build alternatives are expected to have higher number of collisions than the No-Build Alternative. This is because both alternatives 2 and 3 add new NB hook on- and off-ramps on I-15, and a new ramp terminal intersection at Dexter Avenue, which introduces new conflict points. On the other hand, both Alternatives 2 and 3 meet the Project's Purpose and Need, and the No-Build Alternative does not.

Alternative 3 adds an additional NB Loop Off-Ramp on I-15 with its ramp terminal intersecting SR-74. This introduces additional conflict points compared to Alternative 2, and that is the reason why Alternative 3 has the highest number of predicted collisions compared to the other alternatives.

Refer to *Section 7. Alternative Analysis* for the detailed collision data and safety analysis results.

Bicycle and Pedestrian Accommodations

Pedestrian and bicycle access is prohibited on I-15. The Project will accommodate pedestrians and bicyclists along local roadway facilities. The existing bikeway plan in the City's General Plan does not show bikeway facilities along SR-74 between Collier Avenue and Cambern Avenue, but it includes Class II bikeways (bike lanes) along Riverside Drive, Collier Avenue, and Cambern Avenue. Currently there is not signage or pavement markings designating bikeway facilities on any of these local roads within the Project limits.

As part of the Project, the shoulders on both sides of Collier Avenue between Hunco Way and Central Avenue will be marked as bike lanes, and north of Hunco Way (beyond Project limits) there are existing shoulders that can be utilized by cyclists. Between Collier Avenue and the SB ramps the WB side of Central Avenue has a shoulder that will be marked as bike lane, and on the EB side a new commercial development called "Central Plaza" widened the street and provided a segment of bike lane up to the intersection with the SB On-Ramp. Due to the lack of cross-sectional space, signage to share the road will be installed on both sides of Central Avenue between the SB ramps and Cambern Avenue. Between Cambern Avenue and Conard Avenue there are shoulders on both sides of Central Avenue that will be marked as bike lanes, and east of Conard Avenue (beyond Project limits) there are existing shoulders that can be utilized by cyclists.

On Dexter Avenue between Central Avenue and 11th Street the SB side of the road will be widened and a bike lane provided. No dedicated bike lane is provided on the NB side to minimize street widening needs and impacts to the Arroyo del Toro basin located between Dexter Avenue and I-15, but signs to share the road will be installed. Lastly, on Cambern Avenue a segment of the NB side of the road will be widened north and south of its intersection at Central Avenue, and the shoulders will be marked as bike lanes. Share the road signs will be installed where the shoulders/bike lanes end, as well as on the SB side where no shoulder exists to accommodate dedicated bike lanes. Sidewalk facilities will maintain or enhance existing pedestrian circulation patterns, serving businesses and properties with access to the local roadways. The Project will build additional segments of sidewalks or remove and replace existing ones as well as curb returns where street widening is needed.

Limits of Access

Access control limits will be adjusted to provide 100' minimum from ramp terminals where possible under the Build alternative. It is anticipated that the Build alternative will be designed to maximize access control standards to facilitate operations and safety.

Conceptual Signing Plan

Approved interchange signage will provide drivers with advanced warning of decision points, and proposed features/objects will be placed outside the clear recovery zone or adequately protected. Please refer to *Attachment 9 - Conceptual Signing Plan*. The conceptual sign plan varies slightly between Alternative 2 and Alternative 3. It will be reviewed, refined and compliant with the CA MUTCD as the Project develops through the PA&ED phase.

Policy Point 2

The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access. The proposed access will be designed to meet or exceed current standards.

The I-15/SR-74 Interchange currently connects to a public road (SR-74) and proposes to continue to connect to public roadways (SR-74 and Dexter Avenue). The I-15/SR-74 Interchange is a full interchange that provides for all movements. The modified access proposes to maintain all movements between I-15 and SR-74/Dexter Avenue. Each movement was examined in terms of ease of operation. Truck turning templates were applied to each movement using STAA-compliant vehicles. Geometric in *Attachment 6 – Geometric Drawings* are a result of the truck turning analysis.

The proposed modified interstate access point anticipates nonstandard features that are documented in the Design Standard Decision Document (DSDD), some are existing nonstandard features (Refer to *Section 6. Alternatives*). The majority of the proposed improvements in both Build alternatives would be constructed within existing right of way, with a minimum amount of utility relocations expected to be required. The proposed improvements within Caltrans right of way are based on Caltrans HDM, and outside the State right of way the improvements follow City or County design standards.

Access control limits will be adjusted to provide 100' minimum from ramp terminals where possible. Partial acquisitions and full acquisitions, as well as Temporary Construction Easements (TCE), would be required to construct the NB On-Ramp from Dexter Avenue as well as for the widening of Dexter Avenue, SR-74 (Central Avenue), and the intersection improvements of SR-74 at Dexter Avenue and Cambern Avenue. Under Alternative 2 three full property acquisitions would be required where the NB Hook Ramp terminals are proposed. Additionally, a full property acquisition of the Burger King property (18611 Dexter Avenue) located at the northwest quadrant of Dexter Avenue and Central Avenue would be required to build a direct connection for right turn movements between SB Dexter Avenue and WB SR-74. Phasing of construction resulting in a partial interchange is not currently proposed nor anticipated.

Alternative 3, the LPA, would require the same TCEs and partial acquisitions identified under Alternative 2. However, Alternative 3 only requires a TCE and partial acquisition for the Burger King property located in the northwest quadrant of SR-74 and Dexter Avenue, and a retaining wall would be used to contain the footprint of the loop ramp within the available right of way. Construction laydown areas could be accommodated within existing Caltrans or City properties.

Alternatives 2 and 3 are fully compatible with the design concept and scope described in the 2020 RTP/SCS.

The project Opening Year has been defined as 2025 and the Design Year has been defined as 2045. Discussion of the analysis years was conducted with FHWA during a project focus meeting held on December 4, 2019.

The 10 controlling design criteria are as follows: design speed, lane width, shoulder width, horizontal curve radius, superelevation rate, stopping sight distance, maximum grade, cross slope, vertical clearance, and design loading structural capacity. Design criteria for the build alternatives are included in *Attachment 6 – Geometric Drawings* and will also be addressed for the preferred alternative in the Geometric Approval Drawing (GAD).

4. EXISTING CONDITIONS

Existing Facility and Roadway Network

I-15 is a major truck/passenger route that begins at its junction with I-5 in San Diego, approximately 10 miles north of the United States/Mexico Border, and ends at the United States/Canada Border. Its main use is interstate/interregional movement of people and goods. I-15 is functionally classified at the federal level as a Rural/Urban Principal Arterial and is part of the F&E, the Single Interstate Routing System, the NHS, STRAHNET. I-15 is included in the STAA for conventional combinations.

I-15 serves as both the primary North American trade corridor between the United States, Mexico and Canada via the Mountain West, as well as a link to the main east-west routes that connect California with the Midwest and East Coast. Furthermore, I-15 has been identified by the U.S. Department of Transportation as one of the six "Corridors of the Future" within the United States that are vital to the long-term health and stability of our national economy. It is a primary link between major economic centers and geographic regions and is classified as a "High Emphasis" and "Gateway" route in the IRRS. I-15 is also part of the ICES system of routes, which are significant transportation arteries that provide access to major sea or waterway ports, nationwide railway systems, airports, and interstate and intrastate highway systems, thereby serving as intermodal corridors of economic significance. Within the Project limits I-15 is an access-controlled six-lane divided freeway, with three 12' mixed flow lanes in each direction, 12' outside shoulders and 8' to 15' inside shoulders, an undeveloped median 68' to 69' wide (shown as 70' in the original as-built plans), and right of way widths that vary from 320' to 370' or more at the interchange.

SR-74 is an east-west regional roadway that begins at I-5 near San Juan Capistrano in Orange County and ends at the junction with SR-111 in Palm Desert. The primary purpose of SR-74 is interregional travel with the secondary purpose of serving local, recreational, and commute travel. SR-74 provides a link between the Counties of Orange and Riverside. Within the limits of the Project the City of Lake Elsinore 2011 General Plan Recommended Circulation Roadway System shows SR-74 as a truck route and as an Urban Arterial (6 lanes) along Riverside Drive and Collier Avenue west of I-15, then as an Augmented Urban Arterial (8 lanes) along SR-74 from Collier Avenue to the east of I-15. Caltrans has relinquished ownership of Central Avenue to the City of Lake Elsinore between the I-15 NB ramps and the eastern City boundary.

Traveling from west to east, SR-74 is currently a two lane road along Riverside Drive and portion of Collier Avenue, a four lane segment for the remaining portion of Collier Avenue up to Central Avenue, a five lane segment along Central Avenue between Collier Avenue and the NB ramps intersection, a six lane segment between the NB ramps intersection and Dexter Avenue, a six to five lane segment between Dexter Avenue and Cambern Avenue, and four lane road to the east of Cambern Avenue. These segments of SR-74 generally have turning pockets and striped medians in addition to the number of thru lanes described. The existing through lanes are generally 12' wide, except between the SB ramps and east of Dexter Avenue where lane widths are reduced to 11'. Between the NB ramps and Dexter Avenue the width of right turn pockets from WB SR-74 to the NB On-Ramp is 9', and 10' for the right turn pocket from EB SR-74 to Dexter Avenue. Outside shoulders vary from 2' (gutter pan) to 12'. SR-74 along Central Avenue has right of way widths that vary from 105.5' to 139'.

State Planning

I-15 System Planning strategies are outlined in the *DSMP* and the *TCR.*

District System Management Plan

The 2017 DSMP lists the Project as a Tier 1 which are programmed or partially programmed projects. According to the 2017 DSMP, I-15 corridor projects include two HOT lanes from Cajalco Road to SR-74 and two HOV lanes from SR-74 to I-215 in Murrieta, both projects are within the Project limits. The Project build alternatives will accommodate these improvements.

Transportation Concept Report

The TCR is a planning document that identifies the existing and future route conditions as well as future route needs on the SHS. The 2012 TCR is based on the 2012 SCAG RTP and describes the existing and future (2035) I-15 System Characteristics through the Project limits. Per the TCR, I-15 within the Project limits is classified as an Urbanized Freeway and is an STAA route. It is also included in the State F&E, NHS, and STRAHNET network.

According to the 2012 TCR, traffic is forecasted to increase on I-15 by 2035 and will require additional lanes to achieve acceptable concept level of service. A significant increase in freight traffic volume is also expected throughout the corridor. The TCR shows six MF lanes and 2 HOV lanes for segment 5, and eight MF lanes and four HOT lanes for segment 6 as being implemented by year 2035. Funding for segment 5 HOV improvements has not been identified, but the improvements for segment 6 are included on the 2016 SCAG RTP/SCS project list. This Project does not preclude the implementation of the planned future improvements described in the TCR.

According to the 2012 TCR, traffic is forecasted to increase on I-15 by 2035 and will operate at LOS D with six MF lanes and 2 HOV lanes for segment 5 and LOS C with eight MF lanes and four HOT lanes for segment 6.

Regional Planning

The RTP is a long-range transportation plan that is developed and updated by SCAG every four years to provide a vision for transportation investments. The modified I-15/SR-74 Interchange improvements are included in the 2020-2045 RTP/SCS:

2020 RTP Project Identification (ID) RIV060109

AT I-15/SR-74 (CENTRAL AVE) IC JCT BTWN 1,000 FT W/O COLLIER AVE TO CONARD AVE: REMOVE/REPLACE EXIST NB ON-RAMP WITH NB HOOK ON- AND OFF- RAMPS AT DEXTER AVE NORTH OF CENTRAL AVE, ADD NB LOOP OFF-RAMP AT CENTRAL AVE, ADD AUX LANE SEGMENTS AT ON-/OFF-RAMPS, WIDEN SB ON-/OFF-RAMPS AND SEGMENTS OF CENTRAL AVE AND DEXTER AVE. PM LIMITS FOR SR-74: R15.97 to 17.82 (EA: 0F3100).

Project details identified within the Final Adopted 2021 FTIP and 2020-2045 RTP are currently being amended. The I-15 overcrossing at Riverside Drive will be removed from the City's General Plan as the latest traffic studies (January 2021) have shown little benefit from the construction of the overcrossing, because the majority of the traffic is traveling between I-15, SR-74 and local destinations such as the shopping centers adjacent to the interchange. The City's General Plan shows SR-74 along Central Avenue as an Augmented Urban Arterial with 8 lanes (4 in each direction). This Project will add lanes to the extent possible to build the road to its ultimate cross section within the Project limits.

There is an existing Park-and-Ride lot on the south-east quadrant of the interchange, which is accessible from Dexter Avenue. This Project will not affect or make any modifications to this facility.

The FTIP is a federally mandated four-year program of all surface transportation projects that will receive federal funding or are subject to a federally required action. The Project proposal is included in the 2021 FTIP. The conformity requirement is based on Federal Clean Air Act Section 176(c), which prohibits the U.S. Department of Transportation and other federal agencies from

funding, authorizing, or approving plans, programs, or projects that do not conform to State Implementation Plans (SIP) for attaining the National Ambient Air Quality Standards. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: the regional (i.e., planning and programming) level and the project level. The proposed Project must conform at both levels to be approved. As the Project is currently listed in the 2019 FTIP, it conforms to the SIP.

Table 1 shows other ongoing projects that are located within the Project limits and their current status. The I-15/SR-74 Interchange improvement project would not preclude any of these planned future improvements.

Table 1
Other State Projects within the Project Limits

ID	Location	Scope of Work	Status
RTP 3160002	I-15 from I-15/I-215 Junction to SR-74 Central Ave (PM 8.7 to 22.3)	Construct HOV lanes on I-15 between I-15/I-215 Junction and SR-74 Central Avenue.	Planning
FTIP RIV180144	Main Street/I-15 Interchange	Widen local road undercrossing and ramps, install new traffic signals and ramp metering.	Construction
RTP 3A04A16	2nd Street (Chaney Ave) at I-15	Construct new 4 lane overcrossing over I-15.	Cancelled, City is requesting removal of project from RTP.
RTP 3A04A17	Riverside Drive at I-15	Construct new 4 lane overcrossing over I-15.	Cancelled. City is requesting removal of project from RTP
RTP 3M0736	Nichols Road/I-15 Interchange	Reconstruct/widen interchange from 2 to 6 lanes and reconstruct/widen ramps.	PID
RTP 3A04A11	Nichols Road between SR-74 & I-15	Nichols Road extension and widening 2 to 6 lanes.	PID
RTP 3A04WT047	Riverside Drive (SR-74) between Hunco Way and Ortega Highway	Widen to 6 lanes.	Planning City requesting RTP update to show as widening to 4 lanes
RTP 3A04WT191 & others	Ethanac Expressway	Construct new expressway that will connect SR-74 in the City of Menifee with Ethanac Road in the City of Perris and continue along SR-74 in unincorporated Riverside County to ultimately connect with Nichols Road and I-15.	PID
RTP 3160001 EA 0J0820	I-15 Express Lanes Project Southern Extension	Construct new express lanes in the median from Cajalco Road in the City of Corona to SR-74 in the City of Lake Elsinore.	PA&ED

Notes: PA&ED = Project Approval and Environmental Document; PIP = Project Initiation Proposal; PS&E = Plans, Specifications, & Estimate; RTP = Regional Transportation Plan; FTIP = Federal Transportation Improvement Program

The Riverside County Congestion Management Program (CMP) dated December 2011 defines a network of state highways and arterials, and that the minimum LOS standard for intersections and segments within the CMP system shall be "E". The CMP network includes both I-15 and SR-74.

Local Planning

City of Lake Elsinore General Plan

The segment of SR-74 within the Project limits is identified as an Augmented Urban Arterial in the City of Lake Elsinore General Plan. The local road improvements proposed by the Project are consistent with the local circulation elements of the 2011 City of Lake Elsinore General Plan (refer to *Attachment 2 – Transportation Network*). The improvements proposed by this Project are consistent with local mobility goals.

The Project would provide improved freeway access to existing developments. The City of Lake Elsinore General Plan has adopted specific plan land uses and existing neighborhoods within the City as District Plans. According to the City of Lake Elsinore General Plan, Chapter 2 Community Form adopted December 13, 2011 (Lake Elsinore 2011), the Project is located primarily within the Business District and small portions extend into the North Central Sphere District. The land uses within the Project limits primarily consist of commercial and industrial land uses, interspersed with low density residential and public institutional uses.

The General Plan's existing bikeway plan does not show bikeway facilities along Central Avenue but it shows Class II bikeways along Riverside Drive, Collier Avenue, and Cambern Avenue. The HDM defines a Class II bikeway as a bike lane and that these are intended to delineate the right of way assigned to bicyclists and motorists and to provide for more predictable movements by each. At the time that the PA&ED phase was initiated no designated bike lanes existed within the limits of the Project; however a new commercial development called "Central Plaza" located on the south side of Central Avenue between Collier Ave and the I-15 SB On-Ramp has striped segments of bike lanes along Collier Avenue and Central Avenue.

Existing Interchanges

As shown in Figure 1, the existing interchange at I-15/SR-74 is a tight diamond configuration (L-1), the existing interchange at I-15/Main Street is a tight diamond configuration (L-1), and the existing interchange at I-15/Nichols Road is a tight diamond (L-1) configuration.

Existing Safety and Operational Conditions

Operational Conditions

Existing freeway volumes were obtained in April 2018. Existing conditions on I-15 consist of three general-purpose lanes in both directions in the vicinity of the I-15/SR-74 Interchange. Table 2 through Table 6 present existing (2018) traffic volumes and operational conditions including LOS and queue metrics within the area of influence. For the purposes of this study, LOS D is assumed to be the criteria for I-15 mainline segments, on-and off-ramps, and intersections. The methodology for measuring LOS is based on the Highway Capacity Manual and is presented on Tables 10 and 11 of this document.

TABLE 2
Existing (2018) Freeway Mainline and Ramp Peak Hourly Volumes

Freeway Segment	Existing (2018)	
	AM	PM
I-15 Northbound		
Mainline south of Main Street	4,896	4,272
Diverge to Main Street (off-ramp)	630	488
Merge from Main Street (on-ramp)	88	114
Mainline between Main Street and SR-74	4,354	3,898
Diverge to SR-74 (off-ramp)	1,088	1,035
Merge from SR-74 (on-ramp)	524	419
Mainline between SR-74 and Nichols Road	3,790	3,282
Diverge to Nichols Road (off-ramp)	290	309
Merge from Nichols Road (on-ramp)	171	183
Mainline north of Nichols Road	3,671	3,156
I-15 Southbound		
Mainline north of Nichols Road	2,920	4,272
Diverge to Nichols Road (off-ramp)	250	215
Merge from Nichols Road (on-ramp)	361	272
Mainline between Nichols Road and SR-74	3,031	4,329
Diverge to SR-74 (off-ramp)	460	688
Merge from SR-74 (on-ramp)	1,177	961
Mainline between SR-74 and Main Street	3,748	4,602
Diverge to Main Street (off-ramp)	121	316
Merge from Main Street (on-ramp)	462	419
Mainline south of Main Street	4,089	4,705

TABLE 3
Existing Conditions (2018) I-15 Northbound Operations

I-15 Northbound Segment	Facility Type	LOS / Density[1]	
		AM	PM
Main Street Off-Ramp	Diverge	D / 34	D / 30
Main Street On-Ramp	Merge	D / 33	D / 30
Mainline between Main Street and SR-74	Basic	C / 25	C / 21
SR-74 Off-Ramp	Diverge	D / 32	D / 29
SR-74 On-Ramp	Merge	D / 29	C / 25
Mainline between SR-74 and Nichols Road	Basic	C / 21	B / 18
Nichols Road Off-Ramp	Diverge	C / 28	C / 24
Nichols Road On-Ramp	Merge	C / 23	B / 19

Notes:
1. The LOS and density (in vehicles per lane per mile) are reported.
2. Bold font indicates unacceptable LOS E or F conditions.

TABLE 4
Existing Conditions (2018) I-15 Southbound Operations

I-15 Southbound Segment	Facility Type	LOS / Density[1]	
		AM	PM
Nichols Road Off-Ramp	Diverge	C / 23	D / 30
Nichols Road On-Ramp	Merge	C / 26	D / 34
Mainline between Nichols Road and SR-74	Basic	B / 17	C / 25
SR-74 Off-Ramp	Diverge	C / 24	D / 31
SR-74 On-Ramp	Merge	D / 30	**E / 36**
Mainline between SR-74 and Main Street	Basic	C / 21	D / 27
Main Street Off-Ramp	Diverge	C / 28	D / 32
Main Street On-Ramp	Merge	C / 26	D / 29

Note:

1. The LOS and density (in vehicles per lane per mile) are reported.
2. Bold font indicates unacceptable LOS E or F conditions.

TABLE 5
Existing Conditions (2018) Intersection Operations

Intersection	Control	LOS / Delay[1]	
		AM	PM
SR-74 at Nichols Road	OWSC	**F[3] / 54**	D / 29
Nichols Road at I-15 Southbound Ramps	AWSC	C / 18	B / 13
Nichols Road at I-15 Northbound Ramps	OWSC	**F[3] / 85**	B / 13
SR-74 at SR-74 (Collier Avenue)	Signalized	C[2] / 33	C / 26
SR-74 at I-15 Southbound Ramps	Signalized	C / 22	C[2] / 30
SR-74 at I-15 Northbound Ramps	Signalized	C[2] / 27	C[2] / 29
SR-74 at Dexter Avenue	Signalized	C[2] / 27	C[2] / 23
SR-74 at Central Plaza Shopping Center Driveway	OWSC	A / 3	D / 31
SR-74 at Lowe's Shopping Center Driveway	OWSC	A / 3	A / 7
SR-74 at Cambern Avenue	Signalized	C / 20	C / 23
Main Street at I-15 Southbound Ramps	OWSC	B / 13	C / 19
Main Street at I-15 Northbound Ramps	AWSC	**F / 61**	C / 20

Notes:

1. Delay shown in seconds per vehicle.
2. The weighted average delay for the intersection is at LOS D or better, but one or more approaches at the intersection result in LOS E or worse.
3. The worst-case approach delay reported is LOS E or worse, but the average intersection delay is LOS D or better.
4. Bold font indicates unacceptable LOS E or F conditions.
5. OWSC = One-way stop-controlled; AWSC = All-way stop-controlled.

Table 6
Existing Conditions (2018) Intersection Queue Length

Intersection	Movement	Storage Length	Queue Length	
			AM	PM
SR-74 at SR-74 (Collier Avenue)	SBL	640	335	350
	SBR	340	30	30
	WBL	580	380	145
	WBR	580	135	180
SR-74 at I-15 Southbound Ramps	EBR	600	325	270
	SBL	245	260	**480**
	SBR	245	210	**420**
	WBL	200	**330**	**280**
SR-74 at I-15 Northbound Ramps	NBL	240	**390**	**390**
	NBR	240	**390**	**390**
	EBL	195	160	180
SR-74 at Dexter Avenue	EBL	240	**240**	**240**
	EBR	240	90	140
	WBL	160	**180**	**180**
	WBR	250	120	60
SR-74 at Central Plaza Shopping Center Driveway	NBR	120	60	130
SR-74 at Lowe's Shopping Center Driveway	SBR	180	30	80
SR-74 at Cambern Avenue	EBL	260	120	210
	EBT/EBR	970	160	250
	WBL	380	20	10
	WBR	380	150	90

Note:
1. The storage and maximum queue length (in feet) is reported for key movements.
2. Bold font indicates a queue that exceeds the storage.
3. Max queues reported in microsimulation include queues that build up within a green phase and clear out within the same phase and cycle as to not block the intersection.
4. WB = Westbound; EB = Eastbound; NB = Northbound; SB = Southbound; L = Left = L; R = Right

As shown in the Table 3, all I-15 northbound freeway segments currently operate at acceptable conditions. As shown in Table 4, all I-15 southbound freeway segments currently operate at acceptable LOS with the exception of the Southbound SR-74 On-Ramp merge which currently operates at LOS E during the PM peak hour.

As shown in Table 5, all study intersections are currently operating at an acceptable LOS with the following exceptions:

- SR-74 at Nichols Road (one-way stop-control) currently operates at LOS F during the AM peak hour.
- Nichols Road at I-15 Northbound Ramps (one-way stop-control) currently operates at LOS F during the AM peak hour.
- Main Street at I-15 Northbound Ramps (all-way stop-control) currently operates at LOS F during the AM peak hour.

As shown in Table 6, the following turning movements currently exceed available storage capacity during AM and PM peak hours:

- SR-74 at I-15 Southbound Ramps – Southbound Left (PM only), Southbound Right (PM only) and Westbound Left
- SR-74 at I-15 Northbound Ramps – Northbound Left and Northbound Right
- SR-74 at Dexter Avenue – Eastbound Left and Westbound Left

The southbound left turn and southbound right turn at the I-15/SR-74 Southbound Ramps intersection were found to exceed storage capacity during the PM peak hour, however, these queues do not spill back onto the freeway or affect freeway operations. Additionally, the westbound left turn accessing the southbound ramps exceeds storage capacity during the AM and PM peak hours. At the I-15/SR-74 Northbound Ramps intersection, the northbound right turn was found to currently exceed storage capacity in both the AM and PM peak hours.

Safety

Refer to *Section 7. Alternative Analysis* which documents the safety analysis including a review of historic collision data.

Existing Land Use and Demographics

The Project is located within existing Caltrans, City, and the County right of way. The City of Lake Elsinore General Plan has adopted specific plan land uses and existing neighborhoods within the City as District Plans. According to the City of Lake Elsinore General Plan, Chapter 2 Community Form adopted December 13, 2011 (Lake Elsinore 2011), the Project is located primarily within the Business District and small portions extend into the North Central Sphere District. The land uses within the Project limits primarily consist of commercial and industrial land uses, interspersed with low density residential and public institutional uses.

Table 7 shows the SCAG 2020-2045 RTP/SCS total population, number of households, and employees for the City in the years 2016 and 2045.

Table 7
City of Elsinore Socio-Economic Data

Location	Population	Households	Employment
City of Lake Elsinore	**2016**		
	61,500	16,900	14,000
	2045		
	111,600	37,800	24,900

Source: Southern California Association of Governments 2020-2045 RTP/SCS, Demographics & Growth Forecast Technical Report (Adopted May 7, 2020)

Alternative Travel Modes

Fixed-guide way mass transit, airports, ports and special use modes of travel do not exist within the Project limits. There is an existing Park-and-Ride lot on the south-east quadrant of the interchange, which is accessible from Dexter Avenue. This Project will not affect or make any modifications to this facility.

Caltrans District 8 TCR dated September 2012 identifies I-15 from Bundy Canyon in the City of Wildomar to SR-74 in the City as Segment 5, and from SR-74 to Cajalco Road in the City of Corona as Segment 6. The TCR shows six MF lanes and 2 HOV lanes for Segment 5, and eight MF lanes and four HOT lanes for Segment 6 as being implemented by year 2035. Funding for segment 5 HOV improvements has not been identified, but the improvements for Segment 6 are included in

the Regional Planning section below. This Project does not preclude the implementation of the planned future improvements described in the TCR. The Project area does not include any facilities listed in the California Recreational Trails Plan nor in the SIP for air quality.

This Project is not anticipated to impact transit services. The Riverside Transit Agency (RTA) is the local transit agency that operates Bus Routes 8, 9, and Commuter Link Express Route 205/206 in the Project area. There are no known future transit projects by RTA or other agencies within or in the immediate vicinity of the Project.

Environmental Constraints

Caltrans is the California Environmental Quality Act (CEQA) Lead Agency and National Environmental Policy Act (NEPA) Lead Agency for this Project. 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. 326. An Initial Study (IS) is anticipated to be the appropriate type of environmental document under CEQA. An Environmental Assessment (IS/EA) is anticipated to be the appropriate type of environmental document under NEPA. Public circulation of the Draft IS/EA is anticipated in 2022.

It is required that the Environmental Commitments Record (ECR) prepared in conjunction with completion of the PA&ED phase, be tracked and implemented timely throughout the PS&E and Construction phases of the Project, and updated as necessary based on direct coordination with the Caltrans Environmental Planner Generalist and Caltrans Senior Environmental Planner assigned to the Project. The Caltrans Senior Environmental Planner assigned to the Project is responsible for approving changes to the ECR. An Environmental Certification will be required at the end of the PS&E phase and completion of a Certificate of Environmental Compliance. Construction Contract Acceptance will be required following completion of construction of the Project.

5. METHODOLOGY

Future Year Traffic Development

The TOAR dated May 2020 was concurred for the Project by Caltrans on May 28, 2020. Existing traffic volumes were collected in 2018. The traffic volumes were validated as part of the TOAR development. The TOAR contains the Traffic Forecasting and Operations Assessment Methodology and Assumptions for City of Lake Elsinore I-15 and SR-74/Central Avenue Interchange Project PA&ED (EA: Riv 08-0F310), (May 2018). A vehicle miles traveled (VMT) screening analysis was conducted in the environmental process. It was determined that the Project screened out from conducting a full VMT analysis.

The purpose of the TOAR is to demonstrate the traffic impact of the proposed modified access point at the I-15/SR-74 Interchange on the surrounding roadway network and adjacent freeway interchanges for long-range traffic conditions.

The City of Lake Elsinore Transportation Analysis Model (LETAM), a sub-regional model of the Riverside Traffic Analysis Model (RIVTAM), was used to develop traffic forecasts in the study area for this project. At a traffic focus meeting on May 15, 2018, LETAM was identified as the preferred travel demand forecasting model for this effort. This followed a review of socioeconomic data (SED) and roadway network detail of the 2016 SCAG RTP/SCS model, RIVTAM, and LETAM.

LETAM uses the existing RIVTAM base year (2008) and a modified RIVTAM future year (2035) roadway network and socioeconomic dataset within the City of Lake Elsinore General Plan and Circulation Element. The LETAM future year roadway network and SED were updated to be consistent with SCAG's 2016 financially constrained RTP adopted in April 2016, Amendment 1 adopted in April 2017, and Amendment 2 adopted in July 2017. The modified roadway network and SED were then used to develop the traffic forecasts for this project. The TOAR contains list of RTP project future roadway network assumptions in the study area and if these projects were assumed to be completed by the Opening Year (2025) or Design Year (2045).

The City is actively removing and modifying projects from the SCAG RTP/SCS project list based on updated information and needs of the City. One of the projects being removed from the RTP is the Riverside Drive Overcrossing (RTP ID 3A04A17). Based on the Origin-Destination data collected along SR-74, approximately one sixth of the traffic using SR-74 would use the bypass to avoid Central Avenue and continue on SR-74. An estimated 60,000 average daily traffic (ADT) along Central Avenue (SR-74) by Design Year (2045) which would equate to approximately 10,000 trips per day that would utilize this overcrossing. With an estimated cost of over $30,000,000 and no significant benefit to the community, the City recommended the TOAR assume this project will not be implemented by Design Year (2045) unless no adequate project alternatives are determined through this PA&ED process.

Traffic forecasts for study locations were developed through application of a post-processing methodology that uses the difference method. This method is consistent with the National Cooperative Highway Research Program Report (NCHRP) 765 published by the Transportation Research Board (TRB): Analytical Travel Forecasting Approaches for Project Level Planning and Design (Transportation Research Board, 2014) methodologies. The Base Year and Future Year models were used to calculate the annual growth at study facilities, which were then applied to existing (2018) traffic counts to develop the Opening Year (2025) and Design Year (2045) traffic forecasts. Along Central Avenue (SR-74), the average model link level growth rate was calculated as 2 percent per year for the 2025 network and 2.7 percent per year for the 2045 network.

Area of Influence

The project's area of influence encompasses the following interchanges and freeway facilities:

- I-15/Main Street Interchange
- I-15/SR-74 Interchange
- I-15/Nichols Road Interchange
- I-15 Mainline
    - Existing and Opening Year (2025) Conditions – three general purpose NB lanes and three general purpose SB lanes
    - Design Year (2045) Conditions – three general purpose NB lanes and three general purpose SB lanes; one HOV NB lane and one HOV SB lane south of SR-74; and one NB express lane and one SB express lane north of SR-74

The above-mentioned interchanges and freeway segments were selected for the Project's area of influence because of their close proximity to the proposed Project (I-15/SR-74 Interchange). The I-15/SR-74 Interchange currently exists as a tight diamond configuration.

I-15 was analyzed between Main Street and Nichols Road. I-15/Main Street is the first adjacent interchange to the south of the proposed interchange. The first existing adjacent interchange to the north of the proposed interchange is I-15/Nichols Road.

This following State Highway study segments have been evaluated with and without the proposed Project conditions for analysis in the study:

- I-15 NB Main Street Off-Ramp (Diverge)
- I-15 NB Main Street On-Ramp (Merge)
- I-15 NB Mainline between Main Street and SR-74 (Basic)
- I-15 NB SR-74 Off-Ramp (Diverge)
- I-15 NB SR-74 Loop Off-Ramp (Diverge, Alternative 3)
- I-15 NB SR-74 On-Ramp (Merge, Alternative 1) / I-15 NB Dexter Avenue On-Ramp (Merge, Alternatives 2 and 3)
- I-15 NB Dexter Avenue Hook Off-Ramp (Diverge, Alternatives 2 and 3)
- I-15 NB Mainline between SR-74 and Nichols Road (Basic)
- I-15 NB Nichols Road Off-Ramp (Diverge)
- I-15 NB Nichols Road On-Ramp (Merge)
- I-15 SB Nichols Road Off-Ramp (Diverge)
- I-15 SB Nichols Road On-Ramp (Merge)
- I-15 SB Mainline between Nichols Road and SR-74 (Basic)
- I-15 SB SR-74 Off-Ramp (Diverge)
- I-15 SB SR-74 On-Ramp (Merge)
- I-15 SB Mainline between SR-74 and Main Street (Basic)
- I-15 SB Main Street Off-Ramp (Diverge)

- I-15 SB Main Street On-Ramp (Merge)

The following intersections have been identified for analysis in the study:

- Nichols Road at Collier Avenue
- Nichols Road at I-15 Southbound Ramps
- Nichols Road at I-15 Northbound Ramps
- SR-74 at SR-74 (Collier Avenue)
- SR-74 at I-15 Southbound Ramps
- SR-74 at I-15 Northbound Ramps
- SR-74 at Dexter Avenue
- SR-74 at Central Plaza Shopping Center Driveway
- SR-74 at Lowe's Shopping Center Driveway
- SR-74 at Cambern Avenue
- Main Street at I-15 Southbound Ramps
- Main Street at I-15 Northbound Ramps
- Dexter Avenue at 1-15 Northbound Ramps (Alternatives 2 and 3)

The area of influence chosen demonstrates that the traffic operational analysis was consistent with FHWA guidance. The identification of crossroad analysis locations considered the potential effect of the proposed access point and extend to an appropriate location required to fully evaluate the alternatives.

Table 8 provides a summary of existing and forecast ADT volumes for the I-15/Main Street, I-15/SR-74, I-15/Nichols Road Interchanges, and the I-15 mainline. Table 9 provides the existing and forecast peak hour traffic volumes for each location.

TABLE 8
Freeway Mainline and Ramp ADT

Location		Existing (2018)	2025 (Opening)			2045 (Design)		
			Alternative 1 (No-Build)	Alternative 2 (NB Hook Ramps)	Alternative 3 (NB Hook Ramps + NB Loop) - LPA	Alternative 1 (No-Build)	Alternative 2 (NB Hook Ramps)	Alternative 3 (NB Hook Ramps + NB Loop) - LPA
I-15 Northbound								
Mainline south of Main Street	GP	73,000	77,300	77,300	77,300	75,000	75,000	75,000
	HOV	--	--	--	--	23,600	23,600	23,600
Diverge to Main Street (off-ramp)		6,400	6,000	6,000	6,000	4,600	4,600	4,600
Merge from Main Street (on-ramp)		1,500	2,200	2,200	2,200	4,500	4,500	4,500
Mainline between Main Street and SR-74	GP	68,100	73,500	73,500	73,500	75,500	75,000	75,000
	HOV	--	--	--	--	23,500	23,500	23,500
Diverge to SR-74 (off-ramp)		13,600	14,100	5,600	5,400	17,500	7,000	6,700
Merge from SR-74 (on-ramp)		5,500	6,200	--	--	7,400	--	--
Diverge to SR-74 (loop off-ramp)		--	--	--	6,900	--	--	8,600
Diverge to Dexter Avenue (off-ramp)		--	--	8,500	1,800	--	10,500	2,200
Merge from Dexter Avenue (on-ramp)		--	--	6,200	6,200	--	7,400	7,400
Mainline between SR-74 and Nichols Road	GP	60,000	65,600	65,600	65,600	67,200	67,200	67,200
	EL	--	--	--	--	21,200	21,200	21,200
Diverge to Nichols Road (off-ramp)		4,100	5,400	5,400	5,400	8,100	8,100	8,100
Merge from Nichols Road (on-ramp)		2,400	2,700	2,700	2,700	12,000	12,000	12,000
Mainline north of Nichols Road	GP	58,300	62,900	62,900	62,900	70,200	70,200	70,200
	EL	--	--	--	--	22,100	22,100	22,100
I-15 Southbound								
Mainline north of Nichols Road	GP	57,400	61,600	61,600	61,600	68,600	68,600	68,600
	EL	--	--	--	--	21,600	21,600	21,600
Diverge to Nichols Road (off-ramp)		2,800	3,000	3,000	3,000	8,000	8,000	8,000
Merge from Nichols Road (on-ramp)		3,600	4,700	4,700	4,700	7,300	7,300	7,300
Mainline between Nichols Road and SR-74	GP	58,200	63,300	63,300	63,300	68,100	68,100	68,100
	EL	--	--	--	--	21,400	21,400	21,400
Diverge to SR-74 (off-ramp)		9,100	9,400	9,400	9,400	13,800	13,800	13,800
Merge from SR-74 (on-ramp)		12,600	15,100	15,100	15,100	17,200	17,200	17,200
Mainline between SR-74 and Main Street	GP	61,700	69,000	69,000	69,000	70,600	70,600	70,600
	HOV	--	--	--	--	22,300	22,300	22,300
Diverge to Main Street (off-ramp)		4,200	4,700	4,700	4,700	6,700	6,700	6,700
Merge from Main Street (on-ramp)		5,500	5,000	5,000	5,000	2,800	2,800	2,800
Mainline south of Main Street	GP	63,000	69,300	69,300	69,300	67,700	67,700	67,700
	HOV	--	--	--	--	21,300	21,300	21,300

Notes
1. NB = Northbound
2. GP = general purpose; EL = express lane; HOV = high occupancy vehicle lane

TABLE 9
Freeway Mainline and Ramp Peak Hourly Volumes

Location		Existing (2018)		2025 (Opening)						2045 (Design)					
				Alternative 1 (No-Build)		Alternative 2 (NB Hook Ramps)		Alternative 3 (NB Hook Ramps + NB Loop) - LPA		Alternative 1 (No-Build)		Alternative 2 (NB Hook Ramps)		Alternative 3 (NB Hook Ramps + NB Loop) - LPA	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
I-15 Northbound															
Mainline south of Main Street	GP	4,896	4,272	5,050	4,740	5,050	4,740	5,050	4,740	5,510	4,970	5,510	4,970	5,510	4,970
	HOV	--	--	--	--	--	--	--	--	1,600	1,570	1,600	1,570	1,600	1,570
Diverge to Main Street (off-ramp)		630	488	640	510	640	510	640	510	640	500	640	500	640	500
Merge from Main Street (on-ramp)		88	114	140	160	140	160	140	160	330	320	330	320	330	320
Mainline between Main Street and SR-74	GP	4,354	3,898	4,550	4,390	4,550	4,390	4,550	4,390	5,200	4,830	5,200	4,830	5,200	4,830
	HOV	--	--	--	--	--	--	--	--	1,600	1,530	1,600	1,530	1,600	1,530
Diverge to SR-74 (off-ramp)		1,088	1,035	1,180	1,170	390	500	390	500	1,500	1,390	550	580	550	580
Merge from SR-74 (on-ramp)		524	419	570	460	--	--	--	--	990	580	--	--	--	--
Diverge to SR-74 (loop off-ramp)		--	--	--	--	--	--	660	500	--	--	--	--	780	640
Diverge to Dexter Avenue (hook off-ramp)		--	--	--	--	790	670	130	170	--	--	950	810	170	170
Merge from Dexter Avenue (on-ramp)		--	--	--	--	570	460	570	460	--	--	990	580	990	580
Mainline between SR-74 and Nichols Road	GP	3,790	3,282	3,940	3,680	3,940	3,680	3,960	3,680	4,690	4,160	4,690	4,160	4,690	4,160
	EL	--	--	--	--	--	--	--	--	1,600	1,390	1,600	1,390	1,600	1,390
Diverge to Nichols Road (off-ramp)		290	309	340	360	340	360	340	360	480	520	480	520	480	520
Merge from Nichols Road (on-ramp)		171	183	240	220	240	220	240	220	1,080	760	1,080	760	1,080	760
Mainline north of Nichols Road	GP	3,671	3,156	3,840	3,540	3,840	3,540	3,840	3,540	5,290	4,400	5,290	4,400	5,290	4,400
	EL	--	--	--	--	--	--	--	--	1,600	1,390	1,600	1,390	1,600	1,390
I-15 Southbound															
Mainline north of Nichols Road	GP	2,920	4,272	3,370	4,480	3,370	4,480	3,370	4,480	3,960	6,190	3,960	6,190	3,960	6,190
	EL	--	--	--	--	--	--	--	--	990	1,600	990	1,600	990	1,600
Diverge to Nichols Road (off-ramp)		250	215	330	290	330	290	330	290	650	760	650	760	650	760
Merge from Nichols Road (on-ramp)		361	272	430	400	430	400	430	400	660	500	660	500	660	500
Mainline between Nichols Road and SR-74	GP	3,031	4,329	3,470	4,590	3,470	4,590	3,470	4,590	3,840	5,930	3,840	5,930	3,840	5,930
	EL	--	--	--	--	--	--	--	--	700	1,600	700	1,600	700	1,600
Diverge to SR-74 (off-ramp)		460	688	560	780	560	780	560	780	770	1,260	770	1,260	770	1,260
Merge from SR-74 (on-ramp)		1,177	961	1,220	1,060	1,220	1,060	1,220	1,060	1,390	1,200	1,390	1,200	1,390	1,200
Mainline between SR-74 and Main Street	GP	3,748	4,602	4,130	4,870	4,130	4,870	4,130	4,870	4,790	5,870	4,790	5,870	4,790	5,870
	HOV	--	--	--	--	--	--	--	--	790	1,600	790	1,600	790	1,600
Diverge to Main Street (off-ramp)		121	316	160	420	160	420	160	420	300	660	300	660	300	660
Merge from Main Street (on-ramp)		462	419	490	430	490	430	490	430	510	440	510	440	510	440
Mainline south of Main Street	GP	4,089	4,705	4,460	4,880	4,460	4,880	4,460	4,880	4,970	5,650	4,970	5,650	4,970	5,650
	HOV	--	--	--	--	--	--	--	--	820	1,600	820	1,600	820	1,600

Notes
1. NB = Northbound
2. GP = general purpose; EL = express lane; HOV = high occupancy vehicle lane

Study Scenarios

The study scenarios for traffic operations analysis include the following:

- Existing (2018) Conditions
- Opening Year (2025) No-Build Alternative (Alternative 1)
- Opening Year (2025) Alternative 2 and Alternative 3 (LPA)
- Design Year (2045) No-Build Alternative (Alternative 1)
- Design Year (2045) Alternative 2 and Alternative 3 (LPA)

Alternatives 1, 2 and 3 were analyzed and compared under both Opening Year (2025) and Design Year (2045) conditions.

Traffic Evaluation Criteria

Performance measures reported for this Project are:

- AM/PM peak hour density and LOS for freeway mainline, and ramp junctions
- AM/PM peak hour delay and LOS for intersections
- AM/PM peak hour vehicle queues for intersections

Freeway Mainline and Ramp Analysis Methodology

HCM 6th Edition analysis methodology describes the operation of a basic freeway segment using a range of LOS from LOS A to LOS F based on corresponding density (passenger cars/mile/lane). In the analysis, density is based on the highest peak hour volume for a segment and the results have been calculated based on the number of freeway mainline travel lanes. Table 10 shows the HCM 6th Edition density thresholds for freeway mainline segments, ramps, and weaves.

TABLE 10
Freeway LOS Thresholds

Level of Service	Description	Density (vplpm) [1]	
		Mainline (Basic)	Ramp
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	≤ 11	≤ 10
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.	> 11 to 18	> 10 to 20
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	> 18 to 26	> 20 to 28
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	> 26 to 35	> 28 to 35
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.	> 35 to 45	> 35[2]
F	Represents a breakdown in flow.	Demand Exceeds Capacity	Demand Exceeds Capacity

Notes:
1. Density is reported in vehicles per lane per mile (vplpm).
2. The maximum density for ramp junctions under LOS E is not defined in the HCM. The maximum density for basic freeway segments of 45 vehicles per lane per mile was assumed to apply to ramp junctions.
3. Volume over capacity greater than or equal to one (v/c ≥ 1.0) is considered LOS F.

Source: Highway Capacity Manual (HCM), 6th Edition, (Transportation Research Board, 2016)

Freeway mainline and ramp junctions were analyzed using an HCS equivalent tool which applies methodologies contained in the HCM 6th Edition. The LOS was calculated for each study facility to evaluate traffic operations. The freeway LOS was calculated for each study facility based on density in terms of the number of vehicles per hour per lane. The peak hour density calculations are consistent with the HCM 6th Edition definitions for the three types: merge, diverge and basic. Merge and diverge sections refer to the freeway ramp junctions and are defined as the section of the freeway 1,500 feet downstream of an on-ramp and upstream of an off-ramp, respectively. The density is measure over the two adjacent freeways through lanes plus any auxiliary lanes. A weaving section occurs between a successive on-ramp and off-ramp pair connected by an auxiliary lane, and the maximum weaving distance between the ramps is no longer a fixed distance but determined by the weaving/total volumes and number of weaving lanes in the HCM. Weaving sections do not exist within the Project's study area. Basic freeway sections include all other freeway sections that are not included in the merge or diverge sections. The densities along basic sections are measured across all mixed-flow freeway lanes.

For the purposes of this study, LOS D is assumed to be the criteria for I-15 mainline basic, merge, and diverge segments.

Intersection Analysis Methodology

The HCM 6th Edition methodology for signalized intersections estimates the weighted average control delay for vehicles at the intersection while the methodology for unsignalized intersections estimates the worst- case movement control delay for two-way stop-controlled intersections and the average control delay for all-way stop-controlled intersections. After the quantitative delay estimates are complete, the methodology assigns a qualitative letter grade that represents the operations of the intersection. These grades range from LOS A (minimal delay) to

LOS F (congested conditions). LOS E represents at-capacity operations. Table 11 shows the HCM 6th Edition density thresholds for stop controlled and signalized intersections.

TABLE 11
Intersection LOS & Delay Ranges

Level of Service	Unsignalized Intersections	Signalized Intersections	Description
	Average Control Delay (seconds/Vehicle)	Average Stopped Delay per Vehicle (seconds)	
A	≤10.0	≤10.0	Operations with very low delay occurring with favorable progression and/or short cycle length.
B	>10.0 to 15.0	>10.0 to 20.0	Operations with low delay occurring with good progression and/or short cycle lengths.
C	>15.0 to 25.0	>20.0 to 35.0	Operations with average delays resulting from fair progression and or/longer cycle lengths. Individual cycle failures begin to appear.
D	>25.0 to 35.0	>35.0 to 55.0	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.
E	>35.0 to 50.0	>55.0 to 80.0	Operations with high delay values indicating poor progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.
F	>50.0	>80.0	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.

Source: Highway Capacity Manual (HCM), 6th Edition, (Transportation Research Board, 2016)

Intersection operations analysis was conducted using methodologies contained in the HCM 6th Edition. Given the close spacing between study intersections, microsimulation operations analysis was performed to account for queues that build up over space and time throughout the study corridor. The microsimulation was performed using SimTraffic, a traffic simulation model embedded in the Synchro software. SimTraffic captures the observed characteristics of driver behavior and models the interaction between vehicles in a study network. Traffic simulation better represents delays under congested conditions, weaving operations between adjacent intersections, effect of queue spillback and blocking between various traffic movements and between adjacent intersections.

For the purposes of this study, LOS D is assumed to be the acceptable criteria for the study intersections.

6. ALTERNATIVES

A No-Build Alternative and two Build Alternatives are being evaluated as part of the PA&ED phase of the Project. Refer to *Attachment 6 – Geometric Drawings* for conceptual diagrams of the alternatives. Refer to *Section 9* and *Attachment 8 – Preliminary Cost Estimates* for construction costs and right of way costs.

The modified access point at I-15 and SR-74 proposes to improve traffic operations and reduce congestion by taking into account current and future land uses, the associated future traffic volumes, and travel demands on I-15. The improvements proposed by this Project are consistent with state, regional and local mobility goals, and are being coordinated with the applicable governmental, regulatory, and local agencies in the area. The local road improvements proposed by the Project are consistent with the local circulation elements of the 2011 City of Lake Elsinore General Plan. The need being addressed can be adequately satisfied by improving the Project interchange.

Alternative 1 – No-Build

Under Alternative 1, the existing I-15/SR-74 Interchange would be maintained in its current condition and no improvements would be implemented. As local and regional development continues and the traffic demand increases, traffic operations at the I-15/SR-74 Interchange would further deteriorate, resulting in increased congestion, vehicle delay, vehicle-operating costs, and vehicle emissions due to slower operating speeds on both the I-15 and local roads. Alternative 1 would not address or alleviate the existing and forecasted operational and capacity issues of the I-15/SR-74 Interchange and would not satisfy the Project purpose and need.

Alternative 2 – Northbound Hook Ramps

Alternative 2 would maintain the existing NB Off-Ramp as a single lane exit with a slight realignment to increase its angle of intersection at SR-74 (Central Avenue), which is currently less than the minimum 75 degrees as recommended in Caltrans HDM. The SR-74 (Central Avenue) Off-Ramp would operate as a right turn only. This alternative would remove and replace the existing NB On-Ramp with on- and off- NB hook ramps terminating at Dexter Avenue, north of Central Avenue. The NB hook ramps would reduce traffic congestion at the I-15/SR-74 Interchange by providing a separate off-ramp for I-15 NB traffic heading west on SR-74 (Exit B), while the existing NB Off-Ramp would prohibit left turns and only serve traffic heading east on SR-74 (Exit A).

The proposed NB Hook Off-Ramp would have a dual lane exit from the freeway and provide one left turn and two right turn lanes at the intersection with Dexter Avenue, and would provide a more direct connection to residences and destinations located in the northeast quadrant of the I-15/SR-74 Interchange, including the Costco/Lowe's shopping center and Temescal Canyon High School. The auxiliary lane that started prior to the existing NB off-Ramp (Exit A) would end as a trap lane at the NB Hook Off-Ramp (Exit B). With implementation of Alternative 2 improvements, there would be a reduction in traffic turning left at Dexter Avenue from EB SR-74, which would allow for an increase in usable storage capacity between the intersections of Dexter Avenue and the SB On-Ramp. Dexter Avenue would be widened between 11th Street and SR-74 to provide two lanes in each direction.

The NB hook on and off ramp horizontal alignments will provide standard convergence and divergence angles to and from the freeway, and minimum radii of 165' near the ramp terminal at Dexter Avenue. The preliminary profiles show that flat grades (2% max.) can be provided for the hook ramps to closely follow the grades of the mainline and reduce the extent of grading slopes and retaining walls. The existing longitudinal grades of the freeway and ramps will be maintained; as well as the grades of local roads which are relatively flat (under 4%) and meet

ADA compliance. The cross slopes for the travel way of the new NB hook ramps and where street or ramp widening is proposed would be 2%, or the applicable superelevation rate along curves. The existing 2:1 fill slopes at the mainline and ramps will be maintained or graded where outside ramp widening is proposed. Midwest guardrail systems (MGS) with hot mix asphalt (HMA) dikes are proposed at ramps to prevent vehicles from running down the 2:1 fill embankments.

Jointed Plain Concrete Pavement (JPCP) is proposed at off-ramp terminals as recommended in section 626.1(3) of the Caltrans HDM to preclude pavement failure such as rutting or shoving from vehicular braking, turning movements, and oil dripping from vehicles. Rubberized Hot Mix Asphalt – Gap Graded (RHMA-G) will be used for the top layer of new flexible pavements on ramp and street widening, Maintenance Vehicle Pullouts (MVP), and remaining portions of hook ramps beyond the JPCP at ramp terminals; as well as for overlay on AC pavements to resurface portions of ramps and local roads within the limits of the Project.

Access control limits will be adjusted to provide 100' minimum from ramp terminals where possible. The proposed improvements under Alternative 2 would generally occur within existing Caltrans, City, and County right of way. Partial acquisitions and full acquisitions, as well as TCEs, would be required to construct the NB On-Ramp from Dexter Avenue as well as for the widening of Dexter Avenue, SR-74 (Central Avenue), and the intersection improvements of SR-74 at Dexter Avenue and Cambern Avenue. Three full property acquisitions would be required where the NB Hook Ramp terminals are proposed. Additionally, a full property acquisition of the Burger King property (18611 Dexter Avenue) located at the northwest quadrant of Dexter Avenue and Central Avenue would be required to build a direct connection for right turn movements between SB Dexter Avenue and WB SR-74.

In addition to the intersection improvements described above, new sidewalks would be constructed along the east side of Dexter Avenue between the Arroyo Del Toro Channel and the Latter Day Saints (LDS) Church, and on the south side of Central Avenue between the SB On-Ramp and Dexter Avenue, where currently no sidewalk exists. Other local improvements proposed under Alternative 2 include:

- Restriping Collier Avenue to add a third left turn lane to EB SR-74 (Central Avenue)
- Widening the existing NB off, SB on- and off-ramps to increase storage capacity. The existing SB Off-Ramp would be changed from single to dual lane exit from the freeway
- Replacing portion of an existing masonry soundwall located along the proposed NB Hook On-Ramp
- Drainage culvert extensions and modifications to maintain existing capacity at the Arroyo Del Toro Channel outfall detention basin, located between I-15 and Dexter Avenue, north of SR-74
- Installing new traffic signals on Dexter Avenue at the following intersections:
  - Costco/Lowe's Shopping Center driveway
  - NB Hook On-/Off-Ramps terminal
- Installing new half traffic signal on Central Avenue at the intersection with Costco Shopping Center driveway, about mid-block between Dexter Avenue and Cambern Avenue
- Traffic signal modifications on SR-74 at the following intersections:
  - Collier Avenue/Central Avenue
  - Central Avenue/SB Ramps
  - Central Avenue/NB Ramps (also replace damaged traffic signal cabinet)
  - Central Avenue/Dexter Avenue
  - Central Avenue/Cambern Avenue

The existing I-15/SR-74 Interchange bridge UC and retaining walls would be protected in place, and construction would occur within previously disturbed areas, with the exception of the new NB hook ramps, which would be constructed to the north and within a portion of the existing detention basin. Retaining walls would be constructed to contain the NB Hook Off-Ramp and portion of the Dexter Avenue widening. Additional grading will extend the basin to the south to restore the basin capacity that would be lost as a result of the construction of the NB Hook Off-Ramp and the widening of Dexter Avenue.

Minor utility relocations would be required, and the flat infield areas located between the existing ramps and I-15 would serve as staging and material laydown areas during construction. Additional freeway signage extending 35 feet below ground surface (bgs) would be required in area near the existing NB Off-Ramp (Exit A) and the proposed NB Hook Off-Ramp (Exit B). In addition, proposed retaining walls may require excavation to approximately 5 feet bgs. The reconstruction of portion of the existing masonry sound wall affected by the new NB Hook On-Ramp would require pile foundations with depths of 16 feet bgs. Any potential new sound walls located within the clear recovery zone of the roadways would also need pile foundations at the same depths. It is anticipated that construction could be staged so that the new NB Hook On-Ramp, street widening and related improvements are constructed first, followed by the closure and removal of the existing NB On-Ramp to construct the new NB Hook Off-Ramp.

Alternative 2 was analyzed and compared under both Opening Year (2025) and Design Year (2045) conditions.

Alternative 3 (LPA) – Northbound Hook Ramps with NB Loop Off-Ramp to WB SR-74

Alternative 3, the LPA, would be similar to Alternative 2 with the primary difference being that Alternative 3 would provide three consecutive NB off-ramps. The existing NB Off-Ramp (Exit A) would remain as a single lane exit with the modifications described in Alternative 2, and would be followed by a new loop off-ramp (Exit B) diverging from the freeway as a single lane exit just past the existing I-15/SR-74 bridge OC. The auxiliary lane that started prior to the existing NB off-Ramp (Exit A) would end as a trap lane at the NB Loop Off-Ramp (Exit B). The third off ramp would be the Hook Off-Ramp (Exit C) proposed under Alternative 2.

The NB Loop Off-Ramp (Exit B) would be constructed in the area where the existing NB On-Ramp exists and on adjacent properties within City right of way. This additional ramp would provide a direct connection between NB I-15 and WB SR-74 without the need to route directional traffic along Dexter Avenue. Access control limits will be adjusted to provide 100’ minimum from ramp terminals where possible. Alternative 3 would require the same TCEs and partial acquisitions identified under Alternative 2. However, Alternative 3 only requires a TCE and partial acquisition for the Burger King property located in the northwest quadrant of SR-74 and Dexter Avenue, and a retaining wall would be used to contain the footprint of the loop ramp within the available right of way.

The NB Hook Off-Ramp (Exit C) would still provide direct connectivity from NB I-15 to the residences and destinations located in the northeast quadrant of the I-15/SR-74 Interchange but would only require one left and one right turn lane at the terminal. This alternative would also reduce the amount of traffic turning left at Dexter Avenue from EB SR-74, which would allow for an increase in usable storage capacity between the intersections of Dexter Avenue and the SB On-Ramp.

The horizontal alignments of the new loop and hook ramps will provide standard convergence and divergence angles to and from the freeway. In order to fit the NB Loop Off-Ramp within the available right of way, a minimum radii of 140’ would be used. Advance signage would be installed to warn drivers about the speed reduction at the loop exit ramp, and the auxiliary lane

that ends at the loop exit ramp will serve as deceleration lane. The preliminary profile shows that a grade less than 5% can be provided for the NB Loop Off-Ramp.

The proposed cross slopes, pavement type recommendations, and additional improvements described in the bullet list of Alternative 2 would also apply to Alternative 3, and the construction staging would also be similar. Once the NB Hook On-Ramp is built the existing NB On-Ramp would be closed and removed to construct the NB Loop and Hook off-ramps. Likewise, no bridge work would be required under this alternative. Most of the work would take place within previously disturbed areas with the exception of the new NB Loop and Hook ramps which would be constructed in vacant parcels and to the north, partially within the existing detention basin. Retaining walls would also be constructed to contain the NB Loop and Hook off-ramps, and portion of the Dexter Avenue widening to minimize impacts to the basin. Additional grading will extend the basin to the south to restore the basin capacity that would be lost as a result of the construction of the NB Hook Off-Ramp and the widening of Dexter Avenue. Minor utility relocations are expected to be needed and the flat infield areas between the existing ramps and the freeway could be used as staging and material laydown areas during construction.

Alternative 3 was analyzed and compared under both Opening Year (2025) and Design Year (2045) conditions.

Nonstandard Design Features

A risk assessment of nonstandard design features was developed for Alternative 2 and Alternative 3 (LPA) (*Refer to Attachment 7 – Design Standards Risk Assessment)*. Some of these nonstandard features are existing conditions that cannot be easily corrected, while others are part of the proposed design where physical restrictions do not allow implementation of standard design. Mitigation measures for nonstandard design features are described on the risk assessment matrix included in Attachment 7. Further evaluation including a more detailed discussion of the nonstandard design features are included in the DSDD approved by Caltrans on August 8, 2021.

Cost Estimates

The cost estimates for the viable alternatives are summarized in Table 12 (*r*efer to *Attachment 8 – Preliminary Cost Estimate).*

TABLE 12
Capital Outlay Cost Summary

Type	Current Year Cost		Escalated Cost	
	Alternative 2	**Alternative 3 (LPA)**	**Alternative 2**	**Alternative 3 (LPA)**
Roadway Cost	$31,060,000	$31,797,000	$32,314,000	$33,082,000
Structures Cost	$0	$0	$0	$0
Right of Way Cost	$8,145,000	$3,365,000	$8,475,000	$3,501,000
Total Capital Outlay Cost	**$39,205,000**	**$35,162,000**	**$40,789,000**	**$36,583,000**

Right of Way Data

Right of Way Data Sheets have been prepared for each Build Alternative. The majority of the proposed improvements in both build alternatives would be constructed within existing right of way, with a minimum amount of utility relocations expected to be required. Table 13 provides a summary of the required right of way takes and acquisition costs for each Build Alternative:

TABLE 13
Right of Way Acquisition Summary

Alternative	No. of Partial Takes				No. of Full Takes	Acquisition Cost Estimate
	Vacant Land Parcels	Commercial / Industrial Parcels	Permanent and / or Temporary Easements	Total		
2	6	3	13	22	5	$8,475,000
3 (LPA)	6	5	15	26	3	$3,501,000

The type of right of way acquisitions vary slightly depending on the Build alternative. Alternative 2 would require five parcels that would be fully acquired, four parcels that would require partial acquisitions, eight parcels that would require TCEs only, and five parcels that would require both TCEs and partial acquisitions. Full parcel acquisitions include three parcels that make up the R&N Landscape Supply property and two parcels that make up a Burger King. The displacement of R&N Landscape Supply is required to accommodate the NB Hook On-Ramp terminal at Dexter Avenue, and the displacement of the Burger King would occur as a result of the proposed dual right-turn lanes from SB Dexter Avenue to WB SR-74.

The four parcels that would require a partial acquisition are vacant/undeveloped parcels along Cambern Avenue. The eight parcels that would require a TCE are located along Dexter Avenue and Central Avenue. These parcels contain retail establishments (Costco, Lowes, Wendy's, Wells Fargo Bank, Valvoline Instant Oil Change, and Central Plaza), the Church of Jesus Christ of Latter-day Saints, and a portion of the Arroyo del Toro Channel detention basin. The five parcels that would require both a partial acquisition and a TCE include retail establishments (Chevron gas station, Circle K/Mobil gas station, and Arco gas station) and two vacant/undeveloped parcels. None of the businesses or structures themselves would be impacted by the partial acquisitions and TCEs, as these impacts would be retained along the perimeter of the parcels adjacent to the roadway improvements. Access and operation of the existing businesses would be maintained during construction. Therefore, no displacement of nonresidential uses or disruption to the current function of the properties would occur.

Alternative 3, the LPA, has the same right of way requirements as Alternative 2, with the exception that only a partial take plus TCE would be required from the property where the Burger King restaurant is located to accommodate a single right turn lane from SB Dexter Avenue to WB SR-74.

Effect of Projects-Funded-by-Others on State Highway

The City of Lake Elsinore is the Project Sponsor, and funding will be provided by a combination of local and state funds. Caltrans will provide oversight through the construction phase of the Project. As previously mentioned, the purpose of the Project is to improve traffic operations and reduce congestion at the interchange, taking into account current and future travel demand on the I-15 and SR-74 corridors. No impacts to mainline freeway operations are expected as a result of construction activities, and all the existing lanes in both directions of travel will remain open during the construction of the Project. The proposed work on the ramps and local roads will be staged in a way to provide continuous access to motorists, pedestrians and bicyclists through the interchange and to adjacent properties. More details about staging will be provided during final design.

Constructability and Value Analysis

A VA Study was previously completed in December 2006, and a Mini VA study was completed by Caltrans in early 2019 to brainstorm and come up with additional alternatives that would improve the interchange traffic operations and satisfy the Project's purpose and need. The following is a list of the four alternatives that the Mini VA team created with a brief description for each.

- Mini VA Alternative 1
    - Removes existing NB Off-Ramp and severs Dexter Avenue with a cul-de-sac north of 3rd Street
    - Builds a NB Off-Ramp and NB Loop On-Ramp that use portion of the existing Dexter Avenue to terminate at the Dexter Avenue/Central Avenue intersection
    - Widens local roadways and the existing SB On and Off ramps to increase storage capacity
    - New bridge structure for NB Loop On-Ramp over Central Avenue
- Mini VA Alternative 2
    - Extends Cambern Avenue with new overcrossing structures at Dexter Avenue and I-15, connecting to Riverside Drive on the west side of I-15
    - Removes existing NB On and SB Off ramps to create C-D roads between the new Cambern Avenue overcrossing and Central Avenue
    - Builds the SB Off and NB On-Ramps on the north side of the Cambern Avenue overcrossing
    - Widens local roadways and the existing SB On and NB Off ramps to increase storage capacity
- Mini VA Alternative 3
    - Removes existing NB Off and On ramps and severs Dexter Avenue with a cul-de-sac south of 3rd Street
    - Builds a NB Off-Ramp and NB Loop On-Ramp that use portion of the existing Dexter Avenue to terminate at the Dexter Avenue/3rd Street intersection
    - Builds a NB Loop Off-Ramp to WB Central Avenue (SR-74) where the existing NB On-Ramp is located
    - New bridge structure for NB Loop Off-Ramp over Central Avenue
    - Widens local roadways and the existing SB On and Off ramps to increase storage capacity
- Mini VA Alternative 4
    - Similar to Mini VA Alternative 3 but this alternative adds a SB Hook Off-Ramp that would turn and continue along Riverside Drive up to its intersection at Collier Avenue
    - Along Riverside Drive and parallel to portion of the SB Hook Off-Ramp, a C-D road is created which would turn in a southerly direction to run parallel to SB I-15 and then join the existing SB Off-Ramp
    - The existing SB Off-Ramp exit is preserved and the ramp merges with the C-D road

- New access roads are created for properties east of Collier Avenue on the north and south sides of Riverside Drive, since that segment of Riverside Drive would become part of the new SB Hook Off-Ramp and C-D road

The PDT held a meeting on April 2, 2019 to review these Mini VA alternatives and the ones previously proposed by the City to assess their impacts and select the ones to carry forward in the PA&ED phase. The selected alternatives and descriptions are as follows:

- Alternative 1 remained as the No-Build Alternative
- Alternative 2 – NB Hook Ramps is the City's Alternative #3 Design Variation A with some modifications to move the hook ramp terminals as far north as possible
- Alternative 3 – NB Hook Ramps with NB Loop Off-Ramp to WB SR-74 was created as a variance of Alternative 2 by adding a Loop ramp as suggested by Mini VA Alternative 3, which would provide a direct connection between NB I-15 and WB SR-74
- Alternative 4 – Cambern Avenue Overcrossing & Cambern Avenue Extension with C-D Roads is Mini VA Alternative 2

During the following months the traffic analysis showed that Alternative 4 would yield very similar levels of service for the design year compared to the other two build alternatives, but the impacts and cost of this alternative were about four to five times more than the other build alternatives. Therefore, in October of 2019 the PDT met again and agreed to remove Alternative 4 from further study, leaving two build alternatives for further study.

Accommodation of Oversized Loads

I-15 traverses over SR-74 and has no height restrictions for oversize load vehicles. The existing bridge structures that span over Central Avenue have a minimum vertical clearance of 15'-5" and the Project will not modify these bridge structures or their current vertical clearance.

Truck turning analysis was done within the interchange for the different design alternatives to ensure that the standard Caltrans STAA truck can be accommodated. On local roads the outer-most lanes are given as much additional width as possible to help with the turning of large vehicles at intersections.

7. ALTERNATIVE ANALYSIS

Safety

Substantive Safety Assessment

A substantive safety assessment was conducted by reviewing historical collision data for the Project study area including segments of I-15 and SR-74, ramps and intersections within the project limits, and by conducting a predictive analysis of safety performance using Part C of the Highway Safety Manual (HSM).

Collision Data

Collision data was obtained from Caltrans' Traffic Accident and Surveillance Analysis Systems (TASAS) on May 2, 2023, for a 36-month period from October 1, 2019, through September 30, 2022, for segments of I-15 and SR-74, ramps, and intersections within the Project limits.

TABLE 14
Collision Rate Summary (October 1, 2019 through September 30, 2022)

Location	Post Mile	Actual Collision Rate			Average Collision Rate		
		Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
Segments							
I-15 NB from Main Street to Nichols Road	20.661 – 24.041	0.000	0.120	0.300	0.006	0.400	1.220
I-15 SB from Nichols Road to Main Street	20.661 – 24.041	0.000	0.130	0.390	0.006	0.400	1.220
SR-74 Segment from Collier Avenue to Conard Avenue	R16.170 – 17.354	0.000	**0.750**	**2.020**	0.013	0.440	0.930
Intersections & Ramps							
SR-74 Collier Avenue/Central Avenue Intersection	R16.170	0.000	0.080	0.110	0.002	0.160	0.330
SR-74 RTE 15 SB On & Off Ramps	R16.300	0.000	0.030	0.150	0.002	0.160	0.330
SR-74 RTE 15 NB On & Off Ramps	17.302	0.000	0.060	0.190	0.002	0.160	0.330
I-15 NB Off-Ramp to SR-74	22.094	0.000	0.180	0.480	0.006	0.280	0.820
I-15 SB Off-Ramp to SR-74	22.492	0.000	0.100	0.800	0.006	0.280	0.820
I-15 NB On-Ramp from SR-74	22.428	0.000	0.110	0.110	0.001	0.150	0.480
I-15 SB On-Ramp from SR-74	22.080	0.000	**0.180**	0.430	0.001	0.150	0.480

Notes:

1. Bold represents actual rates greater than the state average
2. Source: Caltrans District 8 Traffic Accident Surveillance and Analysis (TASAS), May 2023

TABLE 15
Collision Type Summary (October 1, 2019 through September 30, 2022)

Location	Head-On	Side-Swipe	Rear-End	Broad-Side	Hit-Object	Over-Turn	Auto-Ped	Other	Not Stated
I-15 NB (PM 20.661 to 24.041)	0.0%	16.4%	47.5%	3.3%	19.7%	11.5%	0.0%	1.6%	0.0%
I-15 SB (PM 20.661 to 24.041)	0.0%	29.1%	39.2%	1.3%	22.8%	5.1%	0.0%	2.5%	0.0%
SR-74 Segment (PM R16.170 to 17.354)	15.8%	15.8%	52.6%	15.8%	0.0%	0.0%	0.0%	0.0%	0.0%
SR-74 Collier Avenue / Central Avenue Intersection (PM R16.170)	25.0%	25.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SR-74 RTE 15 SB On & Off Ramps (PM R16.300)	33.3%	16.7%	16.7%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%
SR-74 RTE 15 NB On & Off Ramps (PM 17.302)	0.0%	16.7%	83.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
I-15 NB Off-Ramp to SR-74 (PM 22.094)	0.0%	50.0%	25.0%	12.5%	12.5%	0.0%	0.0%	0.0%	0.0%
I-15 SB Off-Ramp to SR-74 (PM 22.492)	0.0%	25.0%	62.5%	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%
I-15 NB On-Ramp from SR-74 (PM 22.428)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
I-15 SB On-Ramp from SR-74 (PM 22.080)	14.3%	14.3%	14.3%	0.0%	28.6%	28.6%	0.0%	0.0%	0.0%

TABLE 16
Primary Collision Factor Summary (October 1, 2019 through September 30, 2022)

Location	HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
I-15 NB (PM 20.661 to 24.041)	13.1%	0.0%	0.0%	27.9%	39.3%	14.8%	0.0%	4.9%	0.0%	0.0%	0.0%
I-15 SB (PM 20.661 to 24.041)	13.9%	0.0%	0.0%	26.6%	40.5%	16.5%	0.0%	2.5%	0.0%	0.0%	0.0%
SR-74 Segment (PM R16.170 to 17.354)	10.5%	0.0%	21.1%	26.3%	31.6%	5.3%	0.0%	0.0%	0.0%	0.0%	5.3%
SR-74 Collier Avenue /Central Avenue Intersection (PM R16.170)	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SR-74 RTE 15 SB On & Off Ramps (PM R16.300)	33.3%	0.0%	33.3%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.7%
SR-74 RTE 15 NB On & Off Ramps (PM 17.302)	0.0%	0.0%	16.7%	33.3%	33.3%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%
I-15 NB Off-Ramp to SR-74 (PM 22.094)	0.0%	0.0%	0.0%	12.5%	50.0%	12.5%	0.0%	12.5%	12.5%	0.0%	0.0%
I-15 SB Off-Ramp to SR-74 (PM 22.492)	0.0%	0.0%	0.0%	37.5%	50.0%	12.5%	0.0%	0.0%	0.0%	0.0%	0.0%
I-15 NB On-Ramp from SR-74 (PM 22.428)	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
I-15 SB On-Ramp from SR-74 (PM 22.080)	14.3%	0.0%	0.0%	42.9%	14.3%	28.6%	0.0%	0.0%	0.0%	0.0%	0.0%

Notes:
HBD = Influence of Alcohol
FTC = Following Too Close
FTY = Failure to Yield
ID = Improper Driving
IT = Improper Turn
ESS = Speeding
OV = Other Violations
NS = Not Stated
OTD = Other Than Driver
UNK = Unknown
FA = Fell Asleep

The segment of I-15 mainline within the study area had collision rates lower than the statewide average. No auto-pedestrian collisions are reported for this segment and the main types of collisions are rear-end, hit-object, and side-swipe. The primary collision factors are speeding and improper turn.

The segment of SR-74 between Collier Avenue and Conard Avenue reported fatal plus injury and total collision rates higher than the statewide average. No auto-pedestrian collisions were reported for this facility, and the main type of collision reported is rear-end. The primary collision factors are speeding, improper turn, and failure to yield.

The intersection at Central Avenue and Collier Avenue reported collision rates lower than the statewide average with no auto-pedestrian collisions. The main type of collision reported is rear-end; and the primary collision factors are improper turn and speeding.

The intersection at SR-74 (Central Avenue) and the I-15 SB on-/off-ramps reported collision rates lower than the statewide average with no auto-pedestrian collisions. The main type of collisions reported are head-on and broad-side. The primary collision factors are driving under the influence and failure to yield.

The intersection at SR-74 (Central Avenue) and the I-15 NB on-/off-ramps reported collision rates lower than the statewide average with no auto-pedestrian collisions. The main type of collision reported is rear-end; and the primary collision factors are improper turn and speeding.

The NB Off-Ramp collision rates are lower than the statewide average with no auto-pedestrian collisions. The main type of collision reported is sideswipe, and the primary collision factor is speeding.

The SB Off-Ramp collision rates are lower than the statewide average with no auto-pedestrian collisions. The main type of collision reported is rear-end, and the primary collision factors are speeding and improper turn.

The NB On-Ramp collision rates are lower than the statewide average with no auto-pedestrian collisions. The main type of collision reported is head-on, and the primary collision factor is other violations.

The SB On-Ramp fatal plus injury collision rates are higher than the statewide average with no auto-pedestrian collisions. The main types of collisions reported are hit-object and overturn, and the primary collision factor is improper turn.

It can be concluded that rear-end is the most common type of collision at most locations. The primary factors for these types of collisions include speeding, improper turn, and other violations. Many of the collisions reported could be related to traffic congestion, reduced corner (stopping) sight distance, reduced intersection spacing, low storage capacity, drivers running red lights trying to make it through the intersections to avoid waiting for the next cycle, and vehicles blocking the intersections. During peak hours queues at the NB and SB off-ramps often spill into the I-15 mainline, which could be a cause for rear end collisions.

The congestion and poor traffic operations are likely to worsen if no improvements are implemented at the interchange. The Project will increase storage capacity, eliminates left turning movements at the existing NB Off-Ramp terminal, and reduces the volume of traffic from that ramp onto EB Central Avenue and the volume of left turns to NB Dexter Avenue by providing directional connectivity with the NB loop and hook off-ramps. The Project also includes the following mitigation strategies for the reduced corner sight distance at the existing SB and NB off-ramps:

- Reduced crosswalk widths at off-ramp intersections to get vehicles from the off-ramps closer to the edge of travel way of Central Avenue and increase their visibility of approaching traffic.
- Reduced lane widths on Central Avenue through the interchange for traffic calming/operating speed reduction.
- Warning signs.
- Street lighting that covers the areas below the I-15 bridge structures.
- Not allowing right turns on red.

Safety Performance Function

SPF was used to determine the predicted number of crashes for each of the Project alternatives using Volume 2 of the 1st Edition of the Highway Safety Manual 2010 (HSM 2010) crash prediction methodology, located in Chapters 18 and 19.

Part C of the HSM provides predictive methods that use SPFs, crash modification factors (CMFs), and a calibration factor to estimate average crash frequencies as function of traffic volumes and roadway characteristics at individual sites. The National Cooperative Highway Research Program (NCHRP) Enhanced Interchange Safety Analysis Tool (ISATe) was used to evaluate and predict average crash frequencies for the Project's No-Build and two Build alternatives. The ISATe tool can only evaluate freeway segments and speed-change lanes (HSM Chapter 18), ramps and ramp terminals (HSM Chapter 19).

Methodology and Assumptions

The ISATe manual was used as reference to setup and enter the data in the spreadsheet for each of the Project alternatives. Default ISATe calibration factors and distributions were used for this analysis as there are no factors developed by the local jurisdiction. The ISATe manual states that satisfactory results can be obtained with the default factors provided with ISATe.

Consistent with guidance from the ISATe manual, the following steps were followed to setup the analysis:

1. The Project limits for the analysis were established so that each alternative would cover the same area along the I-15 mainline.
2. The study period is defined by the Project's Opening Year 2025 and Design Year 2045.
3. Traffic data from the TOAR (approved on 5/28/2020) was used to determine AADTs. The Empirical Bayes (EB) method was not applied due to the addition of new ramps, the change in some of the ramp access locations on the mainline, and the change in number of lanes for existing ramps and ramp terminal intersections.
4. The geometric design and traffic control data was entered in the ISATe tool for each alternative.
5. The freeway mainline and ramps for each of the Project alternatives were divided into individual sites, consisting of individual geometrically homogeneous segments.

Since the ramp terminals of the proposed NB Hook Ramps and the NB Loop Off-Ramp do not exactly match the crossroad ramp terminal configurations listed on Figure 1 of the ISATe manual, terminal configuration B2 was used for the NB Hook Ramps on both Alternatives 2 and 3; terminal configuration D3ex was used for the NB Off-Ramp of Alternative 2; and terminal configuration B4 was used for the NB Off-Ramp/Loop Off-ramp of Alternative 3 because these most closely resemble the proposed terminal configurations. A D4 ramp terminal configuration was used for the SB ramps of all three alternatives as well as for the NB On-/Off-Ramp of Alternative 1 (No-Build).

It should be noted that for the analysis of ramp terminals under Alternative 3, only the AADT data for the NB diagonal ramp with terminal at Central Avenue was entered, and the AADT for the NB Loop Off-Ramp was accounted for with the traffic volume of the inside crossroad leg at the SB ramps terminal, consistent with guidance found on pages 19-25 of the HSM and page 238 of the NCHRP 17-45 report.

Speed-change (auxiliary) lanes associated with ramps that merge with or diverge from the mainline, with lengths exceeding 1,600 ft were included as additional mainline through lanes. The on-ramps are proposed to be metered, but there are no existing nor proposed HOV lanes on the ramps as part of this Project.

Predicted Crash Frequency

Table 17 provides a summary of the predicted number of crashes for the study period between the Project's Opening Year 2025 and Design Year 2045 for each of the alternatives, by level of severity and type of facility (freeway segments, ramp segments, ramp terminals). Table 18 shows the predicted annual crash frequency for total, fatal plus injury, and property-damage only (PDO) crashes for each alternative.

TABLE 17
Predicted Number of Crash Incidents between 2025 and 2045 (total crashes)

Alt.1 No-Build	Fatal (K)	Injury (A, B, C)	PDO	Total
Freeway segments	5.5	328.9	871.7	1,206.1
Ramp segments	0.8	27.5	35.3	63.6
Ramp terminals	0.2	240.3	322.2	562.7
Entire Facility	6.5	596.7	1,229.2	**1,832.4**
Alt.2 NB Hook Ramps				
Freeway segments	5.6	336.2	843.5	1,185.3
Ramp segments	1.5	62.2	99.5	163.2
Ramp terminals	0.2	246.7	314.1	561.0
Entire Facility	7.3	645.1	1,257.1	**1,909.5**
Alt.3 NB Loop-Hook Ramps				
Freeway segments	5.6	337.2	848.3	1,191.1
Ramp segments	3.1	116.4	206.0	325.5
Ramp terminals	0.2	179.8	242.7	422.7
Entire Facility	8.9	633.4	1,297.0	**1,939.3**

A = Incapacitating injury, B = Non-incapacitating injury, C = Possible injury,
PDO = Property-damage-only

TABLE 18
Predicted Annual Crash Frequency between 2025 and 2045 (crashes/year)

Alternative	Number Predicted (Total)	Number Predicted (F+I)	Number Predicted (PDO)
1 No-Build	87.2	28.7	58.5
2 NB Hook Ramps	91.0	31.1	59.9
3 NB Hook Ramps + NB Loop	92.4	30.6	61.8

In general, the total number of predicted collisions for the entire facility, and the number of predicted collisions for ramp segments are higher for Alternatives 2 & 3 compared to the No-Build Alternative 1. However, the number of predicted collisions for freeway segments and ramp terminals are lower for the build alternatives when compared to the No-Build alternative. These results are further discussed in the Evaluation of Analysis Results section below. The term "collisions" is also used when referring to crashes, and both terms are used interchangeably.

Predicted Collision Types

Table 19 shows each of the alternative's predicted annual crashes by type for the entire facility.

TABLE 19
Predicted Annual Crashes by Type between 2025 and 2045 (crashes/year)

Predicted Total Collisions						
Alternative	Head-On	Side-Swipe	Rear-End	Angle	Single-Vehicle	Other
1 No-Build	0.4	13.6	46.6	7.3	17.9	1.6
2 NB Hook Ramps	0.4	13.1	45.4	7.3	23.1	1.6
3 NB Hook Ramps + Loop	0.3	12.6	42.0	5.7	30.2	1.5
Predicted Fatal + Injury Collisions						
Alternative	Head-On	Side-Swipe	Rear-End	Angle	Single-Vehicle	Other
1 No-Build	0.2	2.7	16.4	3.3	5.6	0.5
2 NB Hook Ramps	0.2	2.7	16.5	3.4	7.7	0.5
3 NB Hook Ramps + Loop	0.2	2.6	14.6	2.6	10.1	0.5
Predicted PDO Collisions						
Alternative	Head-On	Side-Swipe	Rear-End	Angle	Single-Vehicle	Other
1 No-Build	0.2	10.9	30.2	3.9	12.3	1.1
2 NB Hook Ramps	0.2	10.5	28.9	3.8	15.4	1.1
3 NB Hook Ramps + Loop	0.1	10.0	27.4	3.1	20.1	1.0

Evaluation of Analysis Results

Freeway Segments

Alternatives 2 and 3 have a slightly higher number of predicted fatal plus injury related crashes, but a lower number of predicted property-damage-only crashes when compared to Alternative 1.

The total number of crashes for freeway segments is predicted to be lower for the build alternatives and higher for the No-Build Alternative. This could be due to the increased ramp storage capacity and the addition of auxiliary lanes at ramp entrances and exits, which helps in providing uninterrupted flow for freeway through traffic.

In the existing condition, I-15 mainline is a six-lane facility within the study area. Table 1 of the ISATe manual recommends using this predictive tool when AADT range is up to 180,000 for a six-lane facility. The tool may not provide reliable results if used for sites with AADT volumes substantially higher than the ranges specified in the manual. The projected 2045 AADTs for the mainline under all three alternatives are within the recommended range, therefore the results for freeway segments are deemed to be reliable.

Ramp Segments

Alternatives 2 and 3 have a higher number of predicted fatal plus injury related crashes and property-damage-only crashes when compared to Alternative 1.

The total number of crashes for ramp segments is also predicted to be higher for the build alternatives when compared to the No-Build Alternative. This could be due to the geometry of the new hook and loop ramps, which have small radii due to existing physical constraints. Other factors that may influence the results include the presence of proposed Midwest Guardrail Systems (MGS) and concrete barriers along the edge of shoulders (or near) of existing and new

ramps, which are necessary roadside fixed objects to prevent errant vehicles from leaving the roadway. Section 3.5 of Caltrans Traffic Safety System Guidance states "placement of guardrail, itself a fixed object, may also increase the probability of a vehicle colliding with the guardrail".

MGS is proposed where warranted along existing ramps with 2:1 fill slopes. Concrete barrier is proposed at the NB hook ramps due to the close spacing between the freeway mainline and the ramps, and along the outside of the small radii curves of the NB hook and loop off-ramps to prevent the departure of errant vehicles onto adjacent roadways and adjacent private properties.

Table 2 of the ISATe manual recommends using this predictive tool when ramp AADT range is up to 18,000 or 32,000 for one lane and two-lane ramps respectively. The tool may not provide reliable results if used for sites with AADT volumes substantially higher than the ranges specified in the manual. The projected 2045 AADTs for the ramps under all three alternatives are within the recommended range and the results are deemed to be reliable.

Crossroad Ramp Terminals

The total number of injury-related collisions is projected to be slightly higher for Alternative 2 than for Alternative 1, but Alternative 3 results are the lowest. Both Alternatives 2 and 3 have a lower number of predicted property-damage-only crashes when compared to Alternative 1, with the results from Alternative 3 being the lowest.

All ramp terminals are signal controlled. Table 20 below shows the ramp terminals 2045 AADT volumes and the type of terminal configuration used for each alternative based on Figure 1 of the ISATe manual.

TABLE 20
Proposed Ramp Terminal Configurations and Projected AADTs.

Alternative No.	SB Ramps			NB Ramps			NB Hook Ramps		
	Terminal Configuration	2045 AADT		Terminal Configuration	2045 AADT		Terminal Configuration	2045 AADT	
		Cross Road	All Ramps		Cross Road	All Ramps		Cross Road	All Ramps
1	D4	62,500	29,770	D4	76,760	23,910	N/A	N/A	N/A
2	D4	62,500	29,770	D3ex	76,760	6,720	B2	6,820	17,190
3	D4	62,500	29,770	B4	76,760	6,440	B2	5,720	9,230

For signal-controlled intersections, Table 3 of the manual recommends using this predictive tool for the AADT ranges presented in the Table 21 below. The tool may not provide reliable results if used for sites with AADT volumes substantially higher than the ranges specified in the manual.

TABLE 21
Applicable AADT Volume Ranges for Predictive Models for Cross Ramp Terminals

Ramp Configuration	Crossroad AADT	Total AADT for All Ramps
Three-leg terminals with diagonal exit ramp (D3ex)	0 to 34,000	0 to 16,000
Four-leg terminals with diagonal ramps (D4)	0 to 47,000	0 to 31,000
Four-leg terminals at four-quadrant parclo (B4)	0 to 45,000	0 to 29,000
Three-leg terminals at two-quadrant parclo (B2)	0 to 44,000	0 to 22,000

The projected 2045 AADTs for the ramps at crossroad terminals are within the recommended ranges, but they are higher for the crossroad (Central Avenue) at the SB and NB ramp terminals. Therefore, the predicted results for crossroad ramp terminals may not be reliable.

Cost-Benefit Analysis

An Economic Analysis was conducted to compare the cost of the No-Build versus each of the build alternatives. The cost comparison includes the following elements:

- Collision Costs: A total collision cost is estimated for the No-Build and build alternatives based on the different types of collisions predicted for the study period.
- Benefit of Alternative: This is the difference in collision costs between the No-Build and build alternatives. A higher collision cost for the build alternative results in a negative value.
- Project Costs: The build alternative's cost to construct the Project.
- Net Value: This is calculated by subtracting the benefit of alternative minus the project cost.
- Cost to the State: Is the addition of collision cost, project cost, and delay cost (when applicable).
- Benefit/Cost Ratio: Cost $ benefit per dollar of project cost.

The following table provides a summary of predicted collision costs, benefits, and cost analysis for the No-Build Alternative and build Alternatives 2 and 3.

TABLE 22
Summary of Collision Costs, Benefits, and Cost Analysis

Alternative	Collision Costs	Benefit of Alternative [1]	Project Costs	Net Value [2]	Cost to the State	Benefit/ Cost Ratio
1 No-Build	$195,724,910	--	--	--	--	--
2 NB Hook Ramps	$213,656,130	-$17,931,220	$38,802,200	-$56,733,420	$252,458,330	N/A
3 NB Hook Ramps + Loop	$231,239,140	-$35,514,230	$34,385,500	-$69,899,730	$265,624,640	N/A

Source: Caltrans Cost-Benefit Analysis, April 27, 2022

Notes:
1. Collision cost of the build alternative minus collision cost of the No-Build alternative.
2. Benefit of Alternative minus Project Cost.
3. Collision Costs plus Project Costs.

The cost-benefit analysis shows that Alternatives 2 and 3 have higher collision costs than the No-Build Alternative, which in turn result in a negative value for the benefit of the alternatives and their net value. From the two build alternatives, Alternative 3 has a higher cost to the State compared to Alternative 2 because it has the highest number of predicted collisions, which increases its collisions cost.

A negative value for the benefit of the alternatives does not mean that the build alternatives are not viable. There is a Purpose and Need for the Project which the build alternatives address, and the resulting operational improvements (such as reduced operational delays and reduced green-house emissions) cannot be monetized.

There are many projects that result in more collisions than the No-Build. For example, anytime that a new intersection or interchange is added to the highway system it results in additional conflict points and therefore more collisions. However, the new intersection or interchange is meeting the needs for regional connectivity for the local and interstate highway system.

Substantive Safety Assessment Conclusions

Based on the substantive safety assessment and the SPF, the build alternatives are expected to have higher number of collisions than the No-Build Alternative. This is because both alternatives 2 and 3 add new NB hook on- and off- ramps on I-15, and a new ramp terminal intersection at

Dexter Avenue, which introduces new conflict points. On the other hand, both Alternatives 2 and 3 meet the Project's Purpose and Need, and the No-Build Alternative does not.

Alternative 3 adds an additional NB Loop Off-Ramp on I-15 with its ramp terminal intersecting SR-74. This introduces additional conflict points compared to Alternative 2, and that is the reason why Alternative 3 has the highest number of predicted collisions and higher collision costs compared to the other alternatives.

It should be noted that the SPF analysis did not include local roads, and although the reduced corner sight distance at the existing NB and SB off-ramps caused by the existing retaining walls below the I-15 bridge structures has the potential to increase high-risk broadside crashes, on the other hand the directional connectivity provided by the new NB loop off-ramp will eliminate left turns and conflict points at the intersection of the existing NB Off-Ramp and Central Avenue. Likewise, the new NB hook off-ramp will reduce left turn volumes and weaving across lanes on EB Central Avenue between the NB Off-Ramp and Dexter Avenue. These ramp improvements are expected to reduce broadside crashes from left turn movements at the NB off-ramp and at the EB Central Avenue and Dexter Avenue intersection. So while there is an expected increase in collisions at some locations there is also an expected decrease at other locations along the local road system.

Nominal Safety Assessment

A nominal safety assessment examines the Project in reference to compliance with standards, warrants, guidelines, and best design practices. The following discussion includes Project features that are part of the nominal safety assessment.

Queue lengths

The existing congestion has resulted in inadequate queuing capacity at the interchange and local intersections. Under the No-Build Alternative 1 the queuing capacity will worsen by the 2025 opening and 2045 design years, which in turn could result in gridlocks during peak hours at the interchange and adjacent local intersections. Alternatives 2 and 3 do provide additional ramp storage capacity to accommodate the projected 2045 queue lengths and avoid spillbacks onto the freeway mainline. Likewise, queuing along the segments of SR-74 is not anticipated to affect through traffic operations. Refer to Operational Performance in this section for further details.

Decision Sight Distance

The freeway exits are located along tangent segments of the mainline, and the freeway profile is relatively flat with grades below 2% within Project limits. Therefore, the decision sight distance to freeway exits exceeds the minimum 1,180' required for the 75 mph design speed under all of the Project alternatives.

Adverse Compound Curvature on Loop Ramps

Alternative 3 includes a NB Loop Off-Ramp located along the outside of a horizontal curve of the freeway mainline. A 2,300' segment of auxiliary lane is proposed on NB I-15 to serve the existing off-ramp to EB SR-74 and the loop ramp to WB SR-74. The loop ramp alignment follows HDM guidance for ramps located on curves and starts with a large horizontal curve whose radius of 10,069' like the mainline's outside ETW, followed by a reverse 140' curve at the loop which could not be larger due to the limited space between I-15, Dexter Avenue, and the existing Burger King restaurant. Advance freeway signs will warn drivers of the reduced speed at the loop ramp exit so they can adjust their speed. The length of the auxiliary lane that ends as trap lane at the loop ramp provides plenty of deceleration length for vehicles prior to entering the smaller curve of the loop ramp.

Lane-Balanced Entrances and Exits

Under Alternatives 2 and 3 the proposed segments of auxiliary lanes on the I-15 freeway mainline provide for one more lane going away at ramp exits, or one more lane merging in at ramp entrances, thus maintaining lane-balance by providing the same number of lanes on the freeway before and after the interchange. The No-Build Alternative 1 also features lane balance.

Acceleration Lengths

Alternatives 2 and 3 provide standard acceleration lengths at on-ramps per HDM standards. The No-Build Alternative 1 also provides standard acceleration lengths.

Merge Areas

Alternatives 2 and 3 provide standard merging lengths at on-ramps per HDM standards. The No-Build Alternative 1 also provides standard merging lengths.

Right-Side Ramps

Under all of the Project alternatives the existing and proposed entrance and exit ramps are located on the right side of the direction of travel along the freeway mainline.

Ramp Spacing & Weaving Sections

Under all of the Project alternatives the existing and proposed ramp spacing and weaving sections meet HDM standards.

Guide Signing

The existing guide signs seem adequate for the existing and No-Build Alternative 1 condition. Additional guide signs and sign replacements are proposed for Alternatives 2 and 3 configurations, refer to Attachment 9 Conceptual Signing Plan.

High-Risk Geometric Combinations

None of the Project alternatives include existing or proposed complex or high-risk geometric combinations. The existing and proposed superelevations provide comfortable speeds along horizontal curves, and the vertical curves on ramp profiles provide standard stopping sight distance.

Deceleration Length in Advance of Sharp Loop Ramp

The length of the auxiliary lane that ends as trap lane at the NB Loop Off-Ramp provides plenty of deceleration length for vehicles prior to entering the loop ramp.

Steep Downgrade Leading into Horizontal Curvatures

None of the Project alternatives have steep profile downgrades leading into horizontal curves. Under Alternatives 2 and 3 the grades leading to the small horizontal curves of the NB Loop and NB Hook off-ramps are relatively flat with 0.5% and 1.1% respectively.

Pedestrian-Focused Crossroad Design

Under the No-Build Alternative 1, segments of sidewalk are missing on the south side of SR-74 between the SB On-Ramp and the NB On-Ramp, and on the east side of Dexter Avenue south of 11th Street where the terminal for the hook ramps is proposed under the build alternatives. Alternatives 2 and 3 do include these segments of sidewalks to provide a continuous pedestrian accessible route.

Access Control Along Crossroads

Under the No-Build Alternative 1 the access control limits along SR-74 are 50' long beyond the ramp terminals' curb returns and would remain unchanged. Under Alternatives 2 and 3 100' of access control along crossroads is proposed at existing and proposed ramps. On Dexter Avenue, across from the NB loop ramps, the access control is proposed at 100' on the south side of the ramp terminal and 48' on the north side due to the proximity of an existing private driveway to the Later Days Saints church.

Nominal Safety Assessment Conclusions

The design features under Alternatives 2 and 3 generally conform with design standards, guidelines, and best design practices and do not introduce complex or high-risk geometric combinations. Nonstandard design features have been evaluated in the design standards risk assessment matrix included in Attachment 7 and have been documented in the approved DSDD.

Operational Performance

Intersection Analysis – Forecast Year 2025 Conditions

Table 23 summarizes forecast year 2025 conditions AM peak hour and PM peak hour average stopped delay per vehicle and corresponding LOS of the study intersections for without and with Project conditions. Table 24 summarizes the projected queue lengths.

TABLE 23
Forecast Conditions 2025 AM & PM Peak Hour Intersection LOS

Intersection	Control	Alternative 1 (No-Build)		Alternative 2 (NB Hook Ramps)		Alternative 3 (NB Hook Ramps + NB Loop) - LPA	
		AM	PM	AM	PM	AM	PM
Nichols Road at Collier Avenue	Signalized	B / 15	B / 15	B / 15	B / 15	B / 15	B / 15
Nichols Road at I-15 Southbound Ramps	Signalized	B / 11	A / 9	B / 11	A / 9	B / 11	A / 9
Nichols Road at I-15 Northbound Ramps	Signalized	B / 13	C / 20	B / 13	C / 20	B / 13	C / 20
SR-74 at SR-74 (Collier Avenue)	Signalized	C[3] / 22	D[3] / 37	C[3] / 25	D[3] / 51	C[3] / 27	D[3] / 53
SR-74 at I-15 Southbound Ramps	Signalized	C / 23	C[3] / 32	C / 24	C[3] / 34	C[3] / 25	C[3] / 34
SR-74 at I-15 Northbound Ramps	Signalized	C[3]/ 32	D[3] / 49	A / 9	B / 11	B / 15	B / 16
SR-74 at Dexter Avenue	Signalized	D[3] / 46	D[3] / 50	B[3] / 17	B[3] / 17	B[3] / 19	B[3] / 18
SR-74 at Central Plaza Shopping Center Driveway	OWSC	C / 17	B / 11	A / 3	A / 5	A / 3	A / 4
SR-74 at Lowe's Shopping Center Driveway	TWSC / Signalized[5]	A / 4	A / 5	A / 5	A / 7	A[3] / 5	A / 7
SR-74 at Cambern Avenue	Signalized	B[3] / 18	C[3] / 26	B[3] / 18	C[3] / 21	B[3] / 18	C[3] / 21
Main Street at I-15 Southbound Ramps	Signalized	A / 9	B / 11	A / 9	B / 11	A / 9	B / 11
Main Street at I-15 Northbound Ramps	Signalized	B / 19	B / 18	B / 19	B / 18	B / 19	B / 18
Dexter Avenue at 1-15 Northbound Ramps	Signalized	--	--	B / 15	A / 9	B / 14	B / 11

Notes:
1. Delay shown in seconds per vehicle.
2. The weighted average delay for the intersection is at LOS D or better, but one or more approaches at the intersection result in LOS E or worse.
3. The worst-case approach delay reported is LOS E or worse, but the average intersection delay is LOS D or better.
4. Bold font indicates unacceptable LOS E or F conditions.
5. TWSC under No-Build condition. Signalized under Alternative 2 and Alternative 3 conditions.
6. OWSC = One-way stop-controlled; AWSC = All-way stop-controlled.

Table 24
Intersection Queue Length – Opening Year (2025) Conditions

Intersection	Movement	Queue Length								
		Alternative 1 (No-Build)			Alternative 2 (NB Hook Ramps)			Alternative 3 (NB Hook Ramps + NB Loop) - LPA		
		Storage	AM	PM	Storage	AM	PM	Storage	AM	PM
Central Ave/Collier Ave	SBL	640	340	620	760	580	**890**[5]	760	540	**900**[5]
	SBR	200	40	40	135	40	50	135	40	40
	WBL	580	270	280	580	280	260	580	300	310
	WBR	580	160	190	580	190	200	580	180	200
I-15 Southbound Ramps/Central Ave	EBT/EBR	600	305	340	600	340	360	600	345	360
	SBL	245	220	**280**	760	230	320	760	230	350
	SBT	--	--	--	--	--	--	--	--	--
	SBR	245	200	**260**	570	220	190	570	220	210
	WBL	405	**520**	**460**	420	290	270	420	280	270
I-15 Northbound Ramps/Central Ave	NBL	240	**390**	**270**[4]	--	--	--	--	--	--
	NBT	--	--	--	--	--	--	--	--	--
	NBR	240	**390**	**270**[4]	440	200	240	440	200	230
	EBL	195	**240**	**220**	--	--	--	--	--	--
	SBR	--	--	--	--	--	--	250	**560**[4]	**430**[4]
Central Ave/Dexter Avenue	EBL	240	220	240	265	170	180	265	170	170
	EBT/EBR	240	110	240	265	150	220	265	110	220
	WBL	160	**180**	**180**	--	--	--	--	--	--
	WBT/WBR	250	90	70	460	180	140	460	190	140
Central Ave/Central Plaza Shopping Center Driveway	NBR	120	80	**140**	120	70	**150**	120	70	**160**
Central Ave/Lowe's Shopping Center Driveway	EBL	--	--	--	230	170	210	230	185	220
	SBR	180	50	90	180	70	110	180	60	100
Central Ave/Cambern Ave	EBL	180	150	**290**	360	120	120	360	110	110
	EBR	970	70	150	560	50	70	560	60	80
	WBL	400	120	50	300	200	200	300	210	180
	WBT/WBR	380	110	250	340	210	220	340	200	190
I-15 Northbound Ramps/Dexter Avenue	NBL	--	--	--	360	180	180	360	270	200
	EBL	--	--	--	270	130	100	270	110	90
	EBR	--	--	--	240	**290**	160	270	70	100

Note:

1. The storage and maximum queue length (in feet) is reported for key movements.
2. Bold font indicates a queue that exceeds the storage.
3. Max queues reported in microsimulation include queues that build up within a green phase and clear out within the same phase and cycle as to not block the intersection.
4. Max queue exceeds length of dedicated turn pockets but not the length of the ramp storage.
5. Max queue exceeds length of dedicated turn pocket but does not extend past adjacent driveway intersection.
6. WB = Westbound; EB = Eastbound; NB = Northbound; SB = Southbound; L = Left = L; R = Right

As shown in Table 23, all intersections are projected to operate at acceptable intersection LOS without and with the proposed modifications at the I-15/SR-74 Interchange under the Opening Year (2025).

Table 24 reports the average maximum queue results under Opening Year (2025) conditions at the ramp terminal and nearby intersections. The following turning movements would exceed storage capacity under the No-Build Alternative:

- SR-74 at I-15 SB Ramps – WB Left
- SR-74 at I-15 NB Ramps – NB Left, NB Right, and EB Left
- SR-74 at Dexter Avenue – EB Left (PM only), EB Through/Right (PM only) WB Left
- SR-74/Central Plaza Shopping Center Driveway – NB Right (PM only)
- SR-74/Cambern Avenue – EB Left (PM only)

The following findings were determined for the Opening Year (2025) conditions queuing analysis:

I-15 Off-Ramp - Under the Alternative 1 during the AM peak hour, the NB right-turn movement on the I-15 NB off-ramp and the WB left-turn on to the I-15 SB on-ramp exceeds storage during. Both queues at these movements would improve to within storage in Alternative 2 and Alternative 3. The queue reduction is in part due to the movement restrictions at the I-15 NB Ramps and Central Avenue.

Under the Alternative 1 during the PM peak hour at the I-15 NB off-ramp, the NB right-turn movement exceeds storage. At the I-15 SB ramp, the SB left-turn, SB right-turn, and the WB left-turn movement also exceed storage during the PM peak hour. These queues would improve to within storage under Alternative 2 and Alternative 3. The decrease in queuing is in part due to the movement restrictions at the I-15 NB Ramps and Central Avenue.

SR-74 - During the AM peak hour, queueing throughout SR-74 is anticipated without any improvements, as shown in the queueing estimates for Alternative 1. In the AM peak hour, the heaviest traffic moves east to west along SR-74. Most intersections are anticipated to have multiple movements exceed storage capacity and spill back to adjacent intersections, affecting operations.

Under Alternative 2, operations have been improved during the AM peak hour throughout the corridor and most queues along SR-74 have been reduced to meet storage capacity. Coordination through the corridor is prioritized along SR-74 for the heaviest movements and through the most closely spaced intersections at the I-15 interchange.

Alternative 3 performs similar to Alternative 2 during the AM peak hour. The max queue at the southbound left-turn at the intersection of Central Avenue and Collier Avenue is 40 feet longer than Alternative 2 but still within the through storage capacity. Queues at Central Avenue and Dexter Avenue were reduced due to the reallocation of traffic to the loop ramp.

During the PM peak hour, queueing throughout SR-74 is anticipated without any improvements, as shown in the queueing estimates for Alternative 1. The PM peak hour contains the highest traffic volumes, with the heaviest

traffic moving west to east along SR-74. Most intersections are anticipated to have multiple movements exceed storage capacity and spill back to adjacent intersections, affecting operations.

During the PM peak hour under Alternative 2, operations have been improved throughout the corridor and most queues along SR-74 have been reduced to meet storage capacity. Coordination through the corridor is prioritized along SR-74 for the heaviest movements and through the most closely spaced intersections at the I-15 interchange. Max queues at the southbound left-turn at the intersection of Central Avenue and Collier Avenue extend past the striped turn lanes but not as far as the adjacent driveway intersection. As this movement is the primary movement along the meandering alignment of SR-74, the through movement storage is assumed to be allocated to this primary movement and therefore the queues have enough storage capacity. At Central Avenue and Cambern Avenue, eastbound queues were observed in the simulation to extend past the dedicated left-turn pocket but remain in the long taper. These queues were not observed to block through traffic.

Alternative 3 performs similar to Alternative 2 during the PM peak hour. Queues at Central Avenue and Collier Avenue increased slightly.

Intersection Analysis – Forecast Year 2045 Conditions

Table 25 summarizes forecast year 2045 AM peak hour and PM peak hour average stopped delay per vehicle and corresponding LOS of the study intersection. Table 26 summarizes the projected queue lengths.

TABLE 25
Forecast Conditions 2045 AM & PM Peak Hour Intersection LOS

Intersection	Control	Alternative 1 (No-Build)		Alternative 2 (NB Hook Ramps)		Alternative 3 (NB Hook Ramps + NB Loop) - LPA	
		AM	PM	AM	PM	AM	PM
Nichols Road at Collier Avenue	Signalized	B / 16	B / 20	B / 16	B / 16	B / 16	B / 16
Nichols Road at I-15 Southbound Ramps	Signalized	B / 14	B / 13	B / 14	B / 14	B / 14	B / 14
Nichols Road at I-15 Northbound Ramps	Signalized	B / 16	B / 16	B / 16	B / 16	B / 16	B / 16
SR-74 at SR-74 (Collier Avenue)	Signalized	**F / 81**	**F / 201**	D[3] / 40	C[3] / 34	D[3] / 42	C[3] / 28
SR-74 at I-15 Southbound Ramps	Signalized	D[3] / 40	**F / 121**	C / 28	D[3] / 52	C / 31	D[3] / 40
SR-74 at I-15 Northbound Ramps	Signalized	D[3] / 54	**E / 75**	A / 10	C / 24	B / 19	C / 22
SR-74 at Dexter Avenue	Signalized	**E / 78**	**F / 97**	C[3] / 33	C[3] / 33	C[3] / 31	C[3] / 26
SR-74 at Central Plaza Shopping Center Driveway	OWSC	**E / 37**	**F / 61**	B / 14	A / 9	B / 11	A / 8
SR-74 at Lowe's Shopping Center Driveway	TWSC / Signalized[5]	C / 21	**F / 96**	B / 12	C / 21	B / 11	B / 17
SR-74 at Cambern Avenue	Signalized	**F / 88**	**F / 114**	C[3] / 31	D[3] / 41	C[3] / 31	D[3] / 38
Main Street at I-15 Southbound Ramps	Signalized	B / 11	B / 15	B / 11	B / 15	B / 11	B / 15
Main Street at I-15 Northbound Ramps	Signalized	B / 18	B / 16	B / 18	B / 16	B / 18	B / 16
Dexter Avenue at 1-15 Northbound Ramps	Signalized	--	--	B / 16	B / 11	C / 22	B / 11

Notes:
1. Delay shown in seconds per vehicle.
2. The weighted average delay for the intersection is at LOS D or better, but one or more approaches at the intersection result in LOS E or worse.
3. The worst-case approach delay reported is LOS E or worse, but the average intersection delay is LOS D or better.
4. Bold font indicates unacceptable LOS E or F conditions.
5. TWSC under No-Build condition. Signalized under Alternative 2 and Alternative 3 conditions.
6. OWSC = One-way stop-controlled; AWSC = All-way stop-controlled.

Table 26
Intersection Queue Length – Design Year (2045) Conditions

Intersection	Movement	Queue Length								
		Alternative 1 (No-Build)			Alternative 2 (NB Hook Ramps)			Alternative 3 (NB Hook Ramps + NB Loop) - LPA		
		Storage	AM	PM	Storage	AM	PM	Storage	AM	PM
Central Ave/Collier Ave	SBL	640	**1,000**	**1,020**	760	710	400	760	750	360
	SBR	200	30	30	135	30	40	135	40	40
	WBL	580	290	160	580	360	250	580	370	260
	WBR	580	160	300	580	300	280	580	260	270
I-15 Southbound Ramps/Central Ave	EBT/EBR	600	335	380	600	335	350	600	330	350
	SBL	245	**440**	**500**	760	250	400	760	230	390
	SBT	--	--	--	--	--	--	--	--	--
	SBR	245	**380**	**420**	570	300	220	570	320	250
	WBL	405	**500**	**520**	420	320	420	420	310	420
I-15 Northbound Ramps/Central Ave	NBL	240	**390**[4]	**390**[4]	--	--	--	--	--	--
	NBT	--	--	--	--	--	--	--	--	--
	NBR	240	**390**[4]	**390**[4]	440	250	290	440	270	270
	EBL	195	**280**	**280**	--	--	--	--	--	--
	SBR	--	--	--	--	--	--	250	**620**[4]	**410**[4]
Central Ave/Dexter Avenue	EBL	240	240	240	265	240	240	265	220	200
	EBT/EBR	240	190	240	265	220	240	265	200	240
	WBL	160	**180**	**180**	--	--	--	--	--	--
	WBT/WBR	250	120	80	460	260	170	460	260	180
Central Ave/Central Plaza Shopping Center Driveway	NBR	120	70	130	120	70	110	120	60	100
Central Ave/Lowe's Shopping Center Driveway	EBL	--	--	--	230	175	230	230	185	230
	SBR	180	60	180	180	100	120	180	100	110
Central Ave/Cambern Ave	EBL	180	**360**	**360**	360	290	360	360	300	360
	EBR	970	300	490	560	60	510	560	70	510
	WBL	400	**480**	**480**	300	290	290	300	270	290
	WBT/WBR	380	**480**	**480**	340	**440**	240	340	**470**	220
I-15 Northbound Ramps/Dexter Avenue	NBL	--	--	--	360	250	180	360	**460**[4]	190
	EBL	--	--	--	270	190	70	270	150	80
	EBR	--	--	--	240	230	190	270	80	80

Note:

1. The storage and maximum queue length (in feet) is reported for key movements.
2. Bold font indicates a queue that exceeds the storage.
3. Max queues reported in microsimulation include queues that build up within a green phase and clear out within the same phase and cycle as to not block the intersection.
4. Max queue exceeds length of dedicated turn pockets but not the length of the ramp storage.
5. Max queue exceeds length of dedicated turn pocket but does not extend past adjacent driveway intersection.
6. WB = Westbound; EB = Eastbound; NB = Northbound; SB = Southbound; L = Left = L; R = Right

As shown in Table 25, the following intersections are projected to operate at unacceptable intersection LOS without the proposed modifications at the I-15/SR-74 Interchange in the year 2045 (No-Build, Alternative 1):

- SR-74 at SR-74 (Collier Avenue) (AM peak hour and PM peak hour)
- SR-74 at I-15 SB Ramps (PM peak hour)
- SR-74 at I-15 NB Ramps (PM peak hour)
- SR-74 at Dexter Avenue (AM peak hour and PM peak hour)
- SR-74 at Central Plaza Shopping Center Driveway (AM peak hour and PM peak hour)
- SR-74 at Lowe's Shopping Center Driveway (PM peak hour)
- SR-74 at Cambern Avenue (AM peak hour and PM peak hour)

All of these intersections are projected to improve to acceptable intersection LOS D or better with the proposed modifications at the I-15/SR-74 Interchange in the year 2045 under both build alternatives (Alternative 2 and Alternative 3).

Table 26 summarizes the average maximum queue results under Design Year (2045) conditions at the ramp terminal and nearby intersections. The following turning movements would exceed storage capacity under the No-Build Alternative:

- SR-74 at SR-74 (Collier Avenue) – SB Left
- SR-74 at I-15 SB Ramps – SB Left, SB Right, WB Left
- SR-74 at I-15 NB Ramps – NB Left, NB Right, and EB Left
- SR-74 at Dexter Avenue – EB Left, EB Through/Right (PM only), and WB Left
- SR-74/Cambern Avenue – Eastbound Left, Westbound Left, and Westbound Through/Right

The following findings were determined for the Design Year (2045) conditions queuing analysis:

I-15 Off-Ramp - Under the Alternative 1 (No-Build) during the AM peak hour, the NB right-turn movement at the I-15 NB off-ramp exceeds storage. At the I-15 SB ramp, the SB left-turn, SB right-turn, and the WB left-turn movement also exceed storage. These queues would improve to within storage in Alternative 2 and Alternative 3.

Under Alternative 2 during the AM peak hour, queuing was improved such that no movements would exceed the storage capacity. The decrease in queuing is in part due to the movement restrictions at the I-15 northbound off-ramp at Central Avenue and the signal coordination along Central Avenue.

Under Alternative 3, the SB right-turn queue at the proposed I-15 NB loop off-ramp at Central Avenue will exceed storage by 370 feet at intervals during the AM peak hour. Although the queue exceeds designated storage lanes, the queueing is not anticipated to spillback onto the freeway mainline.

Under the Alternative 1 (No-Build) during the PM peak hour, the NB right-turn movement at the I-15 NB off-ramp exceeds storage. At the I-15 SB ramp, the SB left-turn, SB right-turn, and the WB left-turn movement exceed storage.

Under Alternative 2 during the PM peak hour, queuing was improved within storage at the I-15 NB ramp at Central Avenue intersection. At the I-15 SB ramps and Central Avenue intersection, the SB approach queues would improve within storage. The WB left-turn queue exceeds storage by 40 feet at intervals during the PM peak hour. Queuing is not anticipated to affect through traffic operations and reduces the queue in Alternative 1 by 100 feet.

Under Alternative 3 during the PM peak hour, the SB right-turn queue at the proposed I-15 NB loop off-ramp at Central Avenue will exceed storage by 160 feet. Although the queue exceeds designated storage lanes where two lanes are provided on the ramp, the queuing is not anticipated to spillback onto the freeway mainline as there is storage capacity on the ramp. At the I-15 SB ramps and Central Avenue intersection, the WB left-turn queue exceeds storage by 40 feet at intervals during the PM peak hour. Queuing is not anticipated to affect through traffic operations and reduces the queue in Alternative 1 by 100 feet.

SR-74 - Queueing throughout SR-74 during the AM peak hour is anticipated without any improvements, as shown in the queueing estimates for Alternative 1. In the AM peak hour, the heaviest traffic moves east to west along SR-74. Most intersections are anticipated to have multiple movements exceed storage capacity and spill back to adjacent intersections, affecting operations.

Under Alternative 2 during the AM peak hour, operations have been improved throughout the corridor and most queues along SR-74 have been reduced to meet storage capacity. Coordination through the corridor is prioritized along SR-74 for the heaviest movements and through the most closely spaced intersections at the I-15 interchange. Max queues at the SB left-turn at the intersection of Central Avenue and Collier Avenue extend past the striped turn lanes but not as far as the adjacent driveway intersection. As this movement is the primary movement along the meandering alignment of SR-74, the through movement storage is assumed to be allocated to this primary movement and therefore the queues have enough storage capacity. At the intersection of Central Avenue (SR-74) and Dexter Avenue, the EB approach reaches storage capacity. At Central Avenue and Cambern Avenue, eastbound queues were observed in the simulation to extend past the dedicated left-turn pocket but remain in the long taper. These queues were not observed to block through traffic.

Alternative 3 performs similar to Alternative 2 during the AM peak hour. The max queue at the SB left-turn at the intersection of Central Avenue and Collier Avenue is 40 feet longer than Alternative 2 but still within the through storage capacity. Queues at Central Avenue and Dexter Avenue were reduced due to the reallocation of traffic to the loop ramp.

Queueing throughout SR-74 is anticipated without any improvements during the PM peak hour, as shown in the queueing estimates for Alternative 1 (No-Build). The PM peak hour contains the highest traffic volumes, with the heaviest traffic moving west to east along SR-74. Most intersections are anticipated to have multiple movements exceed storage capacity and spill back to adjacent intersections, affecting operations.

Under Alternative 2 during the PM peak hour, operations have been improved throughout the corridor and most queues along SR-74 have been reduced to meet storage capacity. Coordination through the corridor is prioritized along SR-74 for the heaviest movements and through the most closely spaced intersections at the I-15 interchange. At the intersection of Central Avenue (SR-74) and Dexter Avenue, the EB approach reaches storage capacity throughout phases of the coordination and platoons of vehicles queue past the dedicated storage during the PM peak hour. However, these queues clear out within the same phase and do not block the intersection during other phases within the same cycle. At Central Avenue and Cambern Avenue, eastbound queues were observed in the simulation to extend past the dedicated left-turn pocket but remain in the long taper. These queues were not observed to block through traffic.

Alternative 3 performs similar to Alternative 2 during the PM peak hour. Queues at Central Avenue and Dexter Avenue were reduced due to the reallocation of traffic to the loop ramp.

Freeway Analysis – Forecast Year 2025 Conditions

Forecast year 2025 conditions on I-15 assume the existing number of general-purpose lanes (three per direction) in the vicinity of the SR-74 Interchange. Table 27 summarizes the forecast year 2025 peak hour LOS of the northbound freeway system and Table 28 summarizes the forecast year 2025 peak hour LOS of the southbound freeway system. Alternatives 1, 2, and 3 were analyzed and compared under both Opening Year (2025) and Design Year (2045) conditions.

TABLE 27
Forecast Conditions 2025 AM & PM Peak Hour I-15 Northbound Freeway LOS

I-15 Segment	Facility Type	LOS[2] / Delay					
		Alternative 1 (No-Build)		Alternative 2 (NB Hook Ramps)		Alternative 3 (NB Hook Ramps + NB Loop) - LPA	
		AM	PM	AM	PM	AM	PM
Main Street Off-Ramp	Diverge	D / 35	D / 33	D / 35	D / 33	D / 35	D / 33
Main Street On-Ramp	Merge	D / 34	D / 33	C / 27	C / 26	C / 27	C / 26
Mainline between Main Street and SR-74	Basic	D / 26	C / 28	D / 26	C / 25	D / 27	C / 25
SR-74 Off-Ramp	Diverge	D / 33	D / 32	C / 25	C / 24	C / 24	C / 24
Central Avenue Loop Off-Ramp	Diverge[4]	--	--	--	--	C / 20	B / 18
Dexter Avenue Hook Off-Ramp	Diverge[5]	--	--	B / 17	B / 16	C / 26	C / 25
SR-74 On-Ramp	Merge[6]	D / 30	C / 28	C / 25	C / 23	D / 29	C / 27
Mainline between SR-74 and Nichols Road	Basic	C / 22	C / 20	C / 22	C / 20	C / 22	C / 20
Nichols Road Off-Ramp	Diverge	D / 29	C / 27	D / 28	C / 27	D / 29	C / 27
Nichols Road On-Ramp	Merge	C / 24	C / 21	C / 24	C / 21	C / 24	C / 21

Notes:
1.The LOS and density (in vehicles per lane per mile) are reported.
2. Estimated average grade for the analysis segment.
3. Bold font indicates unacceptable LOS E or F conditions.
4. Diverge to Central Avenue Loop Ramp only exists under Alternative 3.
5. Diverge to Dexter Avenue Hook Ramp only exists under Alternative 2 and Alternative 3.
6. Merge from SR-74 under Alternative 2 and Alternative 3 is the proposed hook ramp merge from Dexter Avenue.

TABLE 28
Forecast Conditions 2025 AM & PM Peak Hour I-15 Southbound Freeway LOS

I-15 Segment	Facility Type	LOS[2] / Density					
		Alternative 1 (No-Build)		Alternative 2 (NB Hook Ramps)		Alternative 3 (NB Hook Ramps + NB Loop) - LPA	
		AM	PM	AM	PM	AM	PM
Nichols Road Off-Ramp	Diverge	C / 26	D / 31	C / 26	D / 31	C / 26	D / 31
Nichols Road On-Ramp	Merge	D / 30	**E / 36**	C / 23	C / 28	C / 23	C / 28
Mainline between Nichols Road and SR-74	Basic	C / 19	D / 27	C / 19	D / 27	C / 19	D / 27
SR-74 Off-Ramp	Diverge	C / 27	D / 33	B / 11	B / 17	B / 11	B / 17
SR-74 On-Ramp	Merge	D / 33	**F / -**	B / 17	C / 20	B / 17	C / 20
Mainline between SR-74 and Main Street	Basic	C / 24	D / 29	C / 23	D / 29	C / 23	D / 29
Main Street Off-Ramp	Diverge	D / 30	D / 34	D / 30	D / 34	D / 30	D / 34
Main Street On-Ramp	Merge	C / 28	D / 30	C / 28	D / 30	C / 28	D / 30

Notes:
1.The LOS and density (in vehicles per lane per mile) are reported.
2. Estimated average grade for the analysis segment.
3. Bold font indicates unacceptable LOS E or F conditions.

As shown in Table 27 and Table 28, the following study freeway segments are projected to operate at unacceptable LOS operations without the proposed modifications to the I-15/SR-74 Interchange Project in the year 2025:

- I-15 SB Nichols Road On-Ramp (merge) (PM peak hour)
- I-15 SB SR-74 On-Ramp (merge) (PM peak hour)

Both the I-15 SB Nichols Road On-Ramp (merge) and the I-15 SB SR-74 On-Ramp (merge) are projected to improve to LOS C under Alternative 2 and Alternative 3 in the forecast year 2025.

Freeway Analysis – Forecast Year 2045 Conditions

Forecast year 2045 conditions on I-15 assume the existing number of general-purpose lanes (three per direction) in the vicinity of the SR-74 interchange, with the addition of the I-15 HOV lanes (one per direction) south of SR-74 and the addition of the I-15 Express lanes (one per direction) north of SR-74. Table 29 summarizes the forecast year 2045 peak hour LOS of the northbound freeway system and Table 30 summarizes the forecast year 2045 peak hour LOS of the southbound freeway system.

TABLE 29
Forecast Conditions 2045 AM & PM Peak Hour I-15 Northbound Freeway LOS

I-15 Segment	Facility Type	LOS[2] / Density					
		Alternative 1 (No-Build)		Alternative 2 (NB Hook Ramps)		Alternative 3 (NB Hook Ramps + NB Loop) - LPA	
		AM	PM	AM	PM	AM	PM
Main Street Off-Ramp	Diverge	**E / 36**	D / 34	**E / 36**	D / 34	**E / 36**	D / 34
Main Street On-Ramp	Merge	**F / -**	**E / 36**	D / 30	D / 28	**F / -**	**E / 36**
Mainline between Main Street and SR-74	Basic	D / 32	D / 28	D / 32	D / 28	D / 32	D / 28
SR-74 Off-Ramp	Diverge	**E / 38**	**E / 36**	C / 28	C / 27	C / 27	C / 26
Central Avenue Loop Off-Ramp	Diverge[4]	--	--	--	--	C / 23	C / 20
Dexter Avenue Hook Off-Ramp	Diverge[5]	--	--	C / 19	B / 17	C / 28	C / 26
SR-74 On-Ramp	Merge[6]	D / 35	D / 30	D / 30	C / 25	D / 34	D / 29
Mainline between SR-74 and Nichols Road	Basic	D / 27	C / 23	D / 27	C / 23	D / 27	C / 23
Nichols Road Off-Ramp	Diverge	D / 32	D / 30	D / 32	D / 29	D / 32	D / 29
Nichols Road On-Ramp	Merge	D / 33	C / 27	D / 33	C / 27	D / 33	C / 27

Notes:
1. The LOS and density (in vehicles per lane per mile) are reported.
2. Estimated average grade for the analysis segment.
3. Bold font indicates unacceptable LOS E or F conditions.
4. Diverge to Central Avenue Loop Ramp only exists under Alternative 3.
5. Diverge to Dexter Avenue Hook Ramp only exists under Alternative 2 and Alternative 3.
6. Merge from SR-74 under Alternative 2 and Alternative 3 is the proposed hook ramp merge from Dexter Avenue.

TABLE 30
Forecast Conditions 2045 AM & PM Peak Hour I-15 Southbound Freeway LOS

I-15 Segment	Facility Type	LOS[2] / Density					
		Alternative 1 (No-Build)		Alternative 2 (NB Hook Ramps)		Alternative 3 (NB Hook Ramps + NB Loop) - LPA	
		AM	PM	AM	PM	AM	PM
Nichols Road Off-Ramp	Diverge	D / 29	**F / -**	D / 29	**F / -**	D / 29	**F / -**
Nichols Road On-Ramp	Merge	D / 31	**F / -**	C / 25	D / 35	C / 25	D / 35
Mainline between Nichols Road and SR-74	Basic	C / 24	**E / 40**	C / 24	**E / 40**	C / 24	**E / 40**
SR-74 Off-Ramp	Diverge	D / 31	**E / 39**	B / 15	C / 26	B / 15	C / 26
SR-74 On-Ramp	Merge	**F / -**	**F / -**	C / 19	C / 24	C / 19	C / 24
Mainline between SR-74 and Main Street	Basic	D / 28	**E / 39**	D / 28	**E / 39**	D / 28	**E / 39**
Main Street Off-Ramp	Diverge	D / 33	**E / 38**	D / 33	**E / 38**	D / 33	**E / 38**
Main Street On-Ramp	Merge	D /30	D / 33	D / 30	D / 33	D / 30	D / 33

Notes:
1.The LOS and density (in vehicles per lane per mile) are reported.
2. Estimated average grade for the analysis segment.
3. Bold font indicates unacceptable LOS E or F conditions.

As shown in Table 29 and Table 30, the following study freeway segments are projected to improve LOS to acceptable operations with the proposed modifications to the I-15/SR-74 Interchange Project in the year 2045:

- I-15 NB Main Street On-Ramp (Merge) (Alternative 2)
- I-15 NB SR-74 Off-Ramp (Diverge)
- I-15 SB Nichols Road On-Ramp (Merge) (PM peak hour)
- I-15 SB SR-74 Off-Ramp (Diverge) (PM peak hour)
- I-15 SB SR-74 On-Ramp (Merge)

The following study freeway segments are projected to maintain acceptable LOS operations without and with the proposed modifications to the I-15/SR-74 Interchange Project in the year 2045:

- I-15 NB Main Street Off-Ramp (Diverge) (PM peak hour)
- I-15 NB Mainline between Main Street and SR-74 (Basic)
- I-15 NB Mainline between SR-74 and Nichols Road (Basic)
- I-15 NB Nichols Road Off-Ramp (Diverge)
- I-15 NB Nichols Road On-Ramp (Merge)
- I-15 SB Nichols Road Off-Ramp (Diverge) (AM peak hour)
- I-15 SB Nichols Road On-Ramp (Merge) (AM peak hour)
- I-15 SB Mainline between Nichols Road and SR-74 (Basic) (AM peak hour)
- I-15 SB SR-74 Off-Ramp (Diverge) (AM peak hour)

- I-15 SB Mainline between SR-74 and Main Street (Basic) (AM peak hour)
- I-15 SB Main Street Off-Ramp (Diverge) (AM peak hour)
- I-15 SB Main Street On-Ramp (Merge)

The following study freeway segments are projected to experience acceptable LOS with the proposed modifications to the I-15/SR-74 Interchange Project in the year 2045:

- I-15 NB SR-74 Loop Off-Ramp (Diverge) (Alternative 3)
- I-15 NB Dexter Avenue Hook Off-Ramp (Diverge) (Alternatives 2 and 3)
- I-15 NB SR-74 On-Ramp (at Dexter Avenue) (Merge) (Alternatives 2 and 3)

The following study freeway ramps are projected to continue to operate at unacceptable LOS operations with the proposed modifications to the I-15/SR-74 Interchange Project in the year 2045:

- I-15 NB Main Street Off-Ramp (Diverge) (AM peak hour)
- I-15 NB Main Street On-Ramp (Merge) (Alternative 3)
- I-15 SB Nichols Road Off-Ramp (Diverge) (PM peak hour)
- I-15 SB Mainline between Nichols Road and SR-74 (Basic) (PM peak hour)
- I-15 SB Mainline between SR-74 and Main Street (Basic) (PM peak hour)
- I-15 SB Main Street Off-Ramp (Diverge) (PM peak hour)

None of the study freeway segments are projected to degrade to unacceptable LOS with the proposed modifications to the I-15/SR-74 Interchange Project in the year 2045 when compared to the No-Build condition.

The results of the traffic operations analysis for Build Alternatives (Alternatives 2 and 3) do not result in adverse impacts caused by the Project. Acceptable LOS is projected during the Year 2025 conditions under both Alternative 2 and Alternative 3 at both the study intersections and along the mainline. During the Year 2045, acceptable LOS is projected under both Build Alternatives at the study intersections, and deficient LOS is projected under both Build Alternatives at the above mentioned freeway segments. The deficient LOS occurs both without and with the Project therefore it is not an adverse impact caused by the Project.

Stakeholder and Environmental Concerns

A public hearing is anticipated in December 2022 when the Draft IS/EA is approved for public circulation. City staff will provide Project status updates to City Council as needed.

Caltrans uses Context Sensitive Solutions (CSS) as an approach to plan, design, construct, maintain, and operate its transportation system aligned with its mission, vision, and goals. CSS employs a collaborative, interdisciplinary approach involving all stakeholders to promote concepts that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. As the Project progresses through the PA&ED phase, the incorporation of CSS is implemented through coordination amongst the PDT. Project design shall consider features including light standards and/or softscape treatments such as revegetation or other landscape treatments. These design features will reduce visual impacts and enhance the aesthetic quality of the various project components.

The Project is supported by the City and WRCOG.

Caltrans is the CEQA Lead Agency and NEPA Lead Agency for this Project. 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. 326. An Initial Study (IS) is the appropriate type of environmental document under CEQA. An Environmental Assessment (EA) is the appropriate type of environmental document under NEPA. It is required that the ECR prepared in conjunction with completion of the PA&ED phase, be tracked and implemented timely throughout the PS&E and Construction phases of the Project, and updated as necessary based on direct coordination with the Caltrans Environmental Planner Generalist and Caltrans Senior Environmental Planner assigned to the Project. The Caltrans Senior Environmental Planner assigned to the Project is responsible for approving changes to the ECR. An Environmental Certification will be required at the end of the PS&E phase and completion of a Certificate of Environmental Compliance. Construction Contract Acceptance will be required following completion of construction of the Project.

Permits

The following regulatory permits, reviews and approvals would likely be required for the construction of the Project:

US Army Corps of Engineers
Clean Water Act Section 404 Nationwide Permit

California Department of Fish and Wildlife
1602 Streambed Alteration Agreement

Regional Water Quality Control Board
Clean Water Act Section 401 Water Quality Certification Section 402 NPDES

Riverside County Flood Control District
Encroachment Permit

Conformance with Transportation Plans

Alternatives 2 and 3 are fully compatible with the design concept and scope described in the 2020 RTP/SCS, which SCAG has determined to conform to the SIP for air quality. The project ID for the RTP/SCS is RIV060109 and is defined as follows:

2020 RTP Project ID RIV060109
AT I-15/SR74 (CENTRAL AVE) IC JCT MOD. BTWN 1,000 FT W/O COLLIER AVE TO RIVERSIDE ST: ADD NB LOOP ENTRY RAMP WITH ACCEL LN, REALIGN NB ENTRY & EXIT RAMPS, ADD SB ACCEL/DECEL LNS, ADD NB DECEL LN, WIDEN SR 74 FROM RIVERSIDE DR. TO CENTRAL AVE 2 TO 4 THROUGH LANES AND FROM COLLIER AVE TO CAMBERN AVE FROM 6 TO 8 THRU LNS, CONST NEW RIVERSIDE AVE OC & SR74 PM 15.5 to 18.5 (EA: 0F3100).

Alternatives Comparison

Table 31 is an alternatives comparison matrix for all alternatives including the No-Build:

TABLE 31
Alternatives Comparison Matrix

Qualifier	Alternative 1 (No-Build)	Alternative 2 (NB Hook Ramps)	Alternative 3 (NB Hook Ramps + NB Loop) - LPA
Cost	✓✓✓✓✓	✓✓✓	✓✓✓✓
Benefits	✓	✓✓✓✓✓	✓✓✓✓✓
Safety	✓✓✓✓	✓✓✓	✓✓
Operations Performance	✓	✓✓✓✓✓	✓✓✓✓✓
Stakeholder Preference	✓	✓✓✓✓	✓✓✓✓✓
Environmental Concerns	✓✓✓✓	✓✓✓	✓✓✓
Conformance with Transportation Plan	✓	✓✓✓✓✓	✓✓✓✓✓
Right of Way Impacts	✓✓✓✓✓	✓✓✓	✓✓✓✓
Total	**22**	**31**	**33**

As shown in Table 31 above, Alternative 3 has a higher score than the other two alternatives and has been selected as the locally preferred alternative (LPA).

Under Alternative 1, the existing I-15/SR-74 (Central Avenue) Interchange would be maintained in its current condition and no improvements would be implemented. Alternative 1 would not address or alleviate the existing and forecasted operational and capacity issues of the I-15/SR-74 Interchange and would not satisfy the Project purpose and need.

Alternative 2 includes widening of ramps, local streets, and replaces the existing NB On-Ramp with new NB Hook On-/Off-Ramps whose ramp terminal would be located on Dexter Avenue between Arroyo del Toro Channel and 11th Street. Alternative 3 includes the same improvements proposed in Alternative 2 plus an additional NB Loop Off-Ramp that would provide direct connectivity between NB I-15 and WB SR-74.

While Alternative 2 is viable, Alternative 3 was selected as LPA because it better enhances directional connectivity for various destinations at the interchange, and because it only requires a partial take of the Burger King property located on the NE quadrant of the interchange compared to Alternative 2, which requires a full take to build double right turn lanes from SB Dexter Ave to WB SR-74.

8. FUNDING AND SCHEDULE

The Project is included in SCAG's project listing of the Final 2021 FTIP. Funding for this Project consist of local funds from the City and the TUMF distributed by the WRCOG. The City is also evaluating options to obtain Federal funding for the final design and construction phases of the Project.

Environmental review, consultation, and actions required in accordance with applicable federal laws for this Project are being, or have been, carried out by the Project team and Caltrans for CEQA and NEPA compliance.

Issuance of A Finding of Engineering and Operational Acceptability from FHWA constitutes a preliminary approval (Step 1) of the access request. Final Approval (Step 2) by FHWA would occur concurrently, or immediately after, approval of the final environmental document for the Preferred Alternative.

The escalated cost for the proposed modifications to the I-15/SR-74 Interchange is estimated to range from $36,583,000 to $40,789,000, which includes right of way acquisitions, utility relocations, and construction costs.

The Project is programmed in the 2021 FTIP with a project cost of $58,250,000. The RTP/SCS will be updated throughout project development as costs are refined and funding is identified.

2020-2045 RTP Project ID RIV060109

The Project is consistent with the project description above listed in the RTP/SCS. The Project proposal is also included in the Final 2021 FTIP.

Table 32 is a tentative Project schedule:

TABLE 32
Delivery Schedule

Project Milestones		Milestone Date (Month/Day/Year)	Milestone Designation (Target/Actual)
PROGRAM PROJECT	M015	2005	Actual
BEGIN ENVIRONMENTAL	M020	1/25/2018	Actual
CIRCULATE DPR & DED EXTERNALLY	M120	8/2023	Target
COMPLETE PA&ED	M200	10/2023	Target
RIGHT OF WAY CERTIFICATION	M410	9/2024	Target
COMPLETE PROJECT PS&E	M380	9/2024	Target
PS&E TO DOE	M377	11/2024	Target
READY TO LIST	M460	9/2024	Target
AWARD	M495	11/2024	Target
APPROVE CONTRACT	M500	12/2024	Target
CONTRACT ACCEPTANCE	M600	1/2026	Target
END PROJECT EXPENDITURES	M800	6/2026	Target
FINAL PROJECT CLOSEOUT	M900	7/2026	Target

Notes:
DPR = Draft Project Report
DED = Draft Environmental Document
PA&ED = Project Approval and Environmental Document
PS&E = Plans, Specifications, & Estimate
DOE = District Office Engineer

9. FHWA COORDINATION

Per the current Joint Stewardship and Oversight Agreement (Agreement) between Caltrans and the FHWA, dated May 28, 2015, this Project is considered to be a Delegated Project. However, should any future situation/circumstance that will potentially classify the project for Risk-based Project Involvement (RBPI), Caltrans shall notify FHWA. FHWA will reassess this project to determine if the Project is selected for RBPI and identify the specific FHWA involvement activities.

The Project proposes a modified access point on I-15 and requires FHWA approval as documented in this Report. Issuance of A Finding of Engineering and Operational Acceptability from FHWA constitutes a preliminary approval (Step 1) of the access request. Final Approval (Step 2) by FHWA would occur concurrently, or immediately after, approval of the final environmental document for the Preferred Alternative.

A meeting with an FHWA representative took place on December 4, 2019 to go over the project alternatives that have been studied during the PA&ED phase and how the PDT selected the current build alternatives. During the meeting it was discussed that the partial reconfiguration of the interchange to eliminate the existing NB On-Ramp and add the NB hook/loop ramps would require a Modified Access Report (MAR). The coordination effort described above indicates FHWA support of the selection of design controls/criteria and desired operational goals.

Final FHWA coordination through Caltrans District 8 concluded in April 2023 with further clarification related to the previously studied 8-lane DDI which was eliminated from further study in PA&ED for several reasons. Some of which included limited operational capacity, higher community impacts, increased costs including additional arterial improvements and a new segment of Cambern Avenue over a low water crossing within a designated flood plain and along a residential community. Additionally, the DDI required restricted Business District access on both legs of Dexter Avenue at its intersection with Central Avenue limiting to right-in/right-out only movements. It also required substantially more property takes on businesses and replacement of the two existing mainline freeway bridge structures since more than 8 through lanes would be necessary along Central Avenue to handle traffic volumes. Having only 8 through lanes would result in an early failure year, providing only 13-years of service life compared to the more viable, low impact, and reduced cost of the locally preferred alternative which exceeds the 20-year service life.

As a result of the final MAR review, mitigation measures were recommended by the oversight team to address the nonstandard stopping sight distance (SSD) at the existing NB Off-Ramp terminal of the locally preferred alternative to restrict turning movements and heighten driver awareness:

- No Turn On Red – (regulatory sign)
- Red arrows traffic signal lens (regulatory measure to restrict right turns on red)
- Speed zoning survey for Central Avenue to consider a lower posted speed limit

The queue lengths for the diamond off-ramps of the locally preferred alternative were also verified to not exceed the capacity of each associated turn pocket as obtained from the Sychro output files.

- NB 295’/430’ (forecast queue length / queue storage length)
- SB 300’/550’ (forecast queue length / queue storage length)

HSM analysis was completed for the NB & SB diamond off-ramps and predicted 9 and 22 total collisions respectively for the locally preferred alternative versus 18 and 16 for the No-Build alternative over the 20-year study period. Under both build alternatives the diamond NB Off-Ramp eliminates all cross-traffic (left) turns at the ramp terminal.

10. PROJECT REVIEWS

This Modified Access Report has been reviewed and concurred by the following:

Caltrans District Design Oversight:_____
Caltrans Traffic Operations Engineer:_____
Headquarters Project Delivery Coordinator:_____
Caltrans District Design Liaison/ADA/FHWA:_____
Caltrans Planning/Engineering Studies: _____

11. SUMMARY AND RECOMMENDATIONS

The modifications to the I-15/SR-74 Interchange propose to improve traffic operations and reduce congestion at the interchange and local intersections within the Project limits. The improvements proposed by this Project are consistent with state, regional and local mobility goals, and are being coordinated with the applicable governmental, regulatory, and local agencies in the area. The local road improvements proposed by the Project are consistent with the local circulation elements of the 2011 City of Lake Elsinore General Plan.

The results of the traffic operations analysis for build alternatives (Alternatives 2 and 3) do not result in adverse impacts caused by the Project. Acceptable LOS is projected during the Year 2025 conditions under both Alternative 2 and Alternative 3 at both the study intersections and along the mainline. During the Year 2045, acceptable LOS is projected under both build alternatives at the study intersections. While deficient LOS experienced on the mainline in the design year under the No-Build alternative is projected to improve at some locations under the Build Alternatives, a few deficient locations are projected to continue to exist within the study area independent of the Project.

The need being addressed can be adequately satisfied by improving the interchange. The modified interchange under Alternative 2 and Alternative 3 (LPA) provide for all traffic movements.

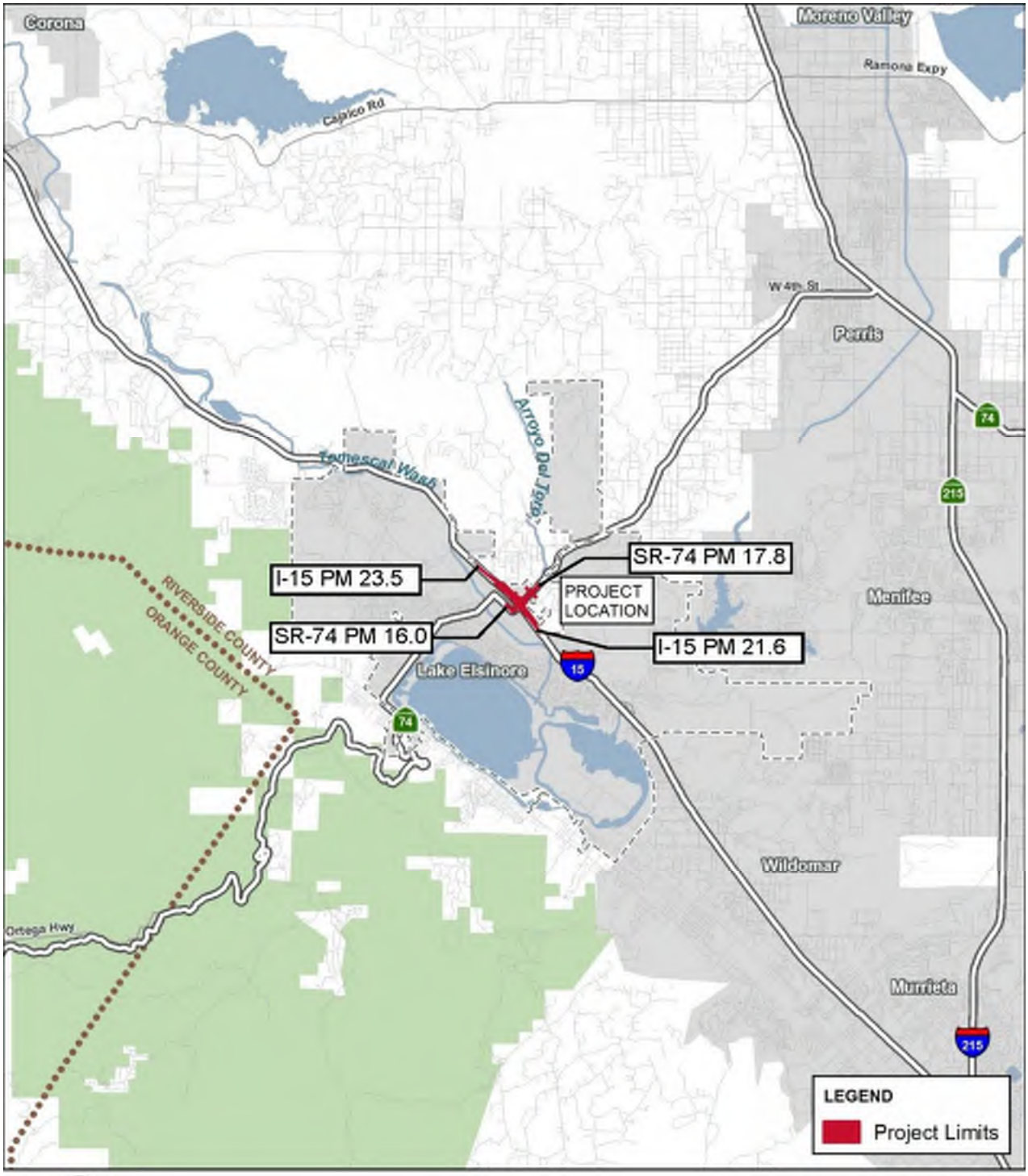
It is recommended that FHWA approves this MAR for Engineering and Operational Acceptability Determination at the I-15/SR-74 access point.

12. APPENDICES

Attachment Title	Attachment No.
Location Map	1
Transportation Network	2
Existing Conditions	3
FHWA Interstate Access Policy Points Prompt – List	4
Traffic Operations Analysis Report (TOAR) Cover Sheet	5
Geometric Drawings	6
Design Standards Risk Assessment	7
Preliminary Cost Estimates	8
Conceptual Signing Plan	9

Location Map

Attachment 1

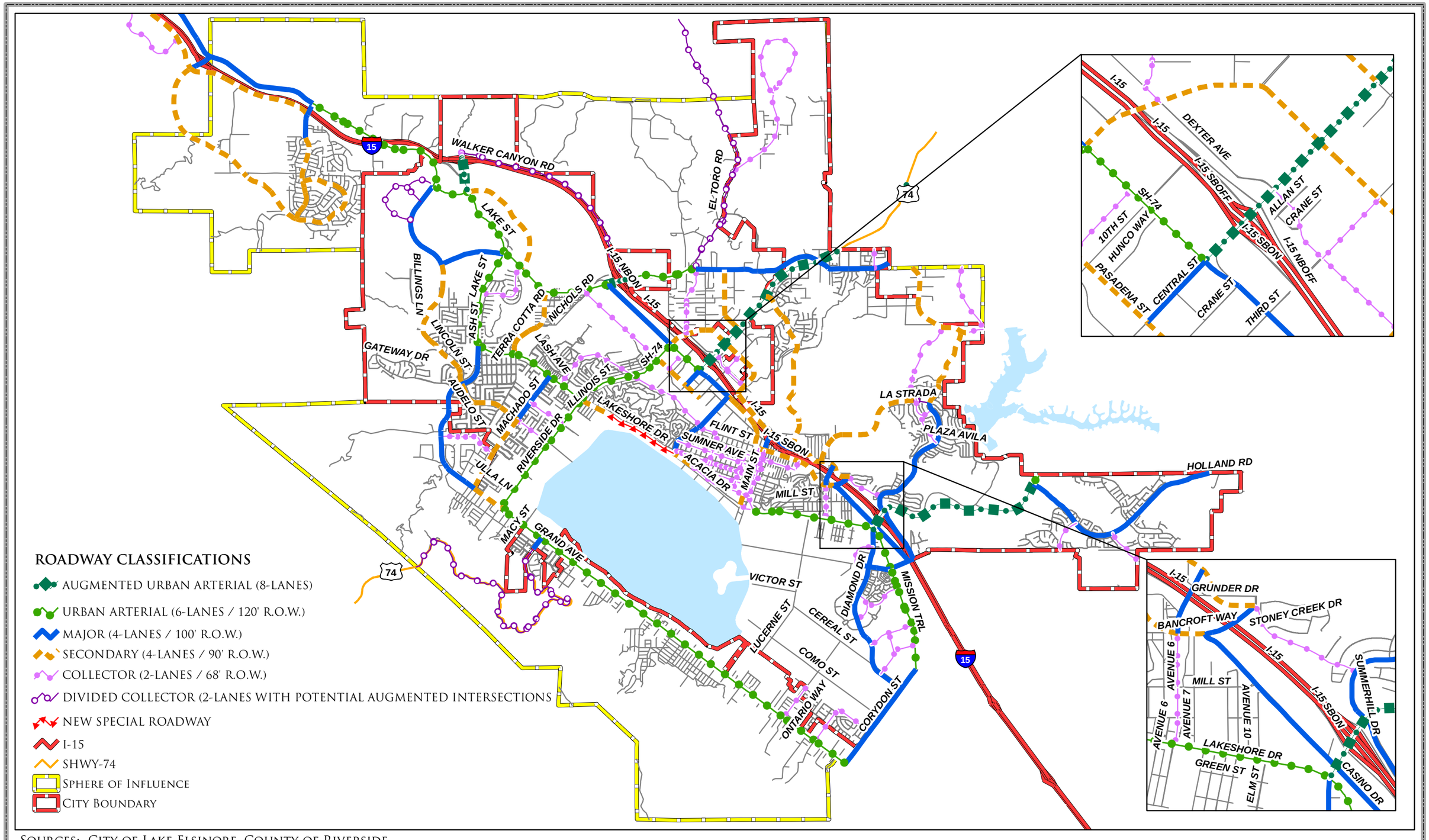


I-15 RIV PM 21.6/23.5
EA 08-0F310

I-15/SR-74 Interchange Improvement Project

Transportation Network

Attachment 2



ROADWAY CLASSIFICATIONS

- AUGMENTED URBAN ARTERIAL (8-LANES)
- URBAN ARTERIAL (6-LANES / 120' R.O.W.)
- MAJOR (4-LANES / 100' R.O.W.)
- SECONDARY (4-LANES / 90' R.O.W.)
- COLLECTOR (2-LANES / 68' R.O.W.)
- DIVIDED COLLECTOR (2-LANES WITH POTENTIAL AUGMENTED INTERSECTIONS
- NEW SPECIAL ROADWAY
- I-15
- SHWY-74
- SPHERE OF INFLUENCE
- CITY BOUNDARY

SOURCES: CITY OF LAKE ELSINORE, COUNTY OF RIVERSIDE

CITY OF LAKE ELSINORE
DREAM EXTREME

N

0 0.5 1 MILES

CITY OF LAKE ELSINORE
RECOMMENDED CIRCULATION ROADWAY SYSTEM
FIGURE 3.4-14

Existing Conditions

Attachment 3

EXISTING CONDITIONS

SCALE: 1"=700'

FHWA Interstate Access Policy Points Prompt – List

Attachment 4

Adequately Addressed ?		FHWA Interstate Access Policy Points
Yes	No	
X		**Policy Point 1**: An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access must include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request must also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).
X		**Policy Point 2**: The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access for managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)).

Policy Point 1: "An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access must include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request must also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).")

Addressed Adequately?			Question	Reference Location
Yes	No	N/A		
X			Does the report demonstrate that a proper traffic operational analysis was conducted? The analysis should include the applicable basic freeway segments, freeway weaving segments, freeway ramp segments, ramp junctions and crossroad intersections related to the proposed access point and at least the two adjacent interchanges.	Section 4 – Existing Safety and Operational Conditions; Section 5 – Area of Influence; Section 7 – Operational Performance
X			Does the report include a **safety** analysis of the mainline, ramps, and intersections of the proposed access point and the nearest adjacent interchange (provided they are near enough that it is reasonable to assume there may be impacts)?	Section 7 – Safety
X			Has the design traffic volume been validated?	Section 5 – Future Year Traffic Development; Attachment 4 – TOAR & Concurrence Email
X			Has a conceptual signing plan been provided?	Attachment 9
X			Is guidance signing (i.e., way-finding or trail blazing signs) clear and simple?	MUTCD Chapter 2E & 2G: Attachment 9; Section 7 – Safety – Analysis of Safety Data
X			Do the results of the operational analysis result in a significant adverse impact to existing or future conditions?	Section 3 – Policy Point 1 – Analysis Summary – Forecast Year 2045 Conditions – 2nd Paragraph

X			Will the proposed change in access result in needed upgrades or improvements to the cross road for a significant distance away from the interchange? If so, have impacts to the local network been disclosed and fully evaluated?"	Section 7 – Operational Performance – Tables 22 & 23 (Design Year operations analysis results); Section 6 – Discussion of Alternatives (description)
X			Are the crossroads or adjacent surface level roads and intersections affected by the proposed access point analyzed to the extent (length) where impacts caused or affecting the new proposed access point are disclosed to the appropriate managing jurisdiction?	Section 5 – Area of Influence
X			Are pedestrian and/or bicycle facilities included (as appropriate) and do these facilities provide for reasonable accommodation?	Section 3 – Policy Point 1 – Bicycle and Pedestrian Accommodations
X			Does the proposed access secure sufficient Limits of Access adjacent to the Interchange Ramps?	AASHTO's "A Policy on Design Standards Interstate System, 2016" Pg. 2 Policy Point 1 – Limits of Access
X			Does the proximity of the nearest crossroad intersections to the ramps contribute to safety or operational problems? Can they be mitigated?	Section 7 – Operational Performance (Intersection Analysis – Forecast 2025 Conditions & 2045 Conditions)
X			In addition to HCS, what analysis tools were employed and were they appropriate?	Section 5 – Freeway Mainline and Ramp Analysis Methodology; & Intersection Analysis Methodology
X			Has the proposal distinguished between nominal safety (i.e. adherence to design policies and standards) and substantive safety (actual and expected safety performance)?	Nominal Safety: Section 6 – Nonstandard Design Features; Substantive Safety: Section 7 - Safety
X			Will any individual elements within the recommended alternative be degraded operationally as a result of this action? If yes, are reasons provided to accept them?	Section 7 – Operational Performance
X			In evaluating whether the proposal has a "significant adverse impact" on safety, has the State Strategic Highway Safety Plan been used as a benchmark?	Section 7 – Safety

X			Are the proposed interchange design configurations able to satisfactorily accommodate the design year traffic volumes?	Section 7 – Operational Performance: Intersection Analysis – Forecast Year 2045 Conditions & Freeway Analysis – Forecast Year 2045 Conditions
		X	If the project is to be built in phases, has the traffic operational and safety analyses considered the interim stages of the proposal?	Project phasing is not currently proposed.

Policy Point 2: "The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access for managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d))."

Addressed Adequately?			Question	Reference Location
Yes	No	N/A		
X			Does the proposed access connect to a public road?	Section 3 – Policy Point 2 – 1st paragraph
X			Are all traffic movements for full interchange access provided?	Section 3 – Policy Point 2 – 1st paragraph
		X	If a partial interchange is proposed, is there sufficient justification for providing only a partial interchange?	AASHTO Greenbook 2018 Pg. 10-98 Section 3 – Policy Point 2 – paragraph 3
		X	If a partial interchange is proposed, was a full interchange evaluated as an alternative and is there sufficient justification to eliminate or discard it?	Section 3 – Policy Point 2 – paragraphs 1 & 3
		X	Is sufficient ROW available (or being acquired) to provide a full interchange at a future date (staged construction)?	Section 3 – Policy Point 2 – paragraph 4
		X	Are you comfortable with how the missing movements will be accommodated on the surface streets and adjacent interchanges?	Missing movements not proposed.
		X	If not, is the proposed access for special purposes such as transit vehicles, HOV's, and/or a park and ride lot?	Not applicable.
X			Does FHWA support the selection of design controls/criteria and desired operational goals?	Section 9 – FHWA Coordination Section

X			Does the proposed access meet or exceed current design standards for the Interstate System?	AASHTO's Greenbook and A Policy on Design Standards Interstate System, 2016 Section 6 – Nonstandard Design Features (Attachment 7- Design Standards Risk Assessment)
X			If not, have anticipated design exceptions been identified and reviewed (at least conceptually)?	Section 6 – Nonstandard Design Features (Attachment 7- Design Standards Risk Assessment)
X			If expected design exceptions could have significant operational impacts on the Interstate and/or Crossroad system, are mitigation measures described?	Section 6 – Nonstandard Design Features (Attachment 7- Design Standards Risk Assessment)
X			If the expected design exceptions could have significant safety impacts on the Interstate and/or Crossroad system, are mitigation measures described?	Section 6 – Nonstandard Design Features (Attachment 7- Design Standards Risk Assessment)
X			Will the length of access control along the crossroad provide for acceptable operations and safety? (100-300' is a minimum. Additional access control is strongly encouraged when needed for safety' and operational enhancement.)	AASHTO "A Policy on Design Standards Interstate System" 2016 Policy Point 1 – Limits of Access
X			Does FHWA support selection of opening and design years?	Section 9 – FHWA Coordination
X			Have all design criteria (including but not limited to the following) been adequately addressed?	Attachment 6 – Geometric Drawings
X			a. Sight distance at ramp terminals (Do not overlook signal heads obscured by structures.)	AASHTO Greenbook 2018 Pg. 10-123 Attachment 6 – Geometric Drawings
X			b. Sufficient storage on ramp to prevent queues from spilling on to the Interstate (based on current and/or future projected traffic demand)	Attachment 6 – Geometric Drawings
X			c. Vertical clearance AASHTO "A Policy on Design Standards Interstate System" 2016	Attachment 6 – Geometric Drawings
X			d. Pedestrian access through the interchange	AASHTO Greenbook 2018 Pg. 10-151 Attachment 6 –

				Geometric Drawings
X			e. Length of accel/decel lanes	AASHTO Greenbook 2018 Pg. 10-123 Attachment 6 – Geometric Drawings
X			f. Length of tapers	AASHTO Greenbook 2018 Pg. 10-118 Attachment 6 – Geometric Drawings
X			g. Spacing between ramps	AASHTO Greenbook 2018 Pg. 10-82 Attachment 6 – Geometric Drawings
X			h. Lane continuity	AASHTO Greenbook 2018 Pg. 10-87 Attachment 6 – Geometric Drawings
X			i. Lane balance	AASHTO Greenbook 2018 Pg. 10-87 Attachment 6 – Geometric Drawings
X			j. Uniformity in interchange design and operational patterns (i.e. right-side ramps, exit design consistent w/adjacent interchanges)	AASHTO Greenbook 2018 Pg. 10-82 Attachment 6 – Geometric Drawings
X			Has each movement of the proposal been "tested" for ease of operation?	AASHTO Greenbook 2018 Pg. 10-150 Attachment 6 – Geometric Drawings

Traffic Operations Analysis Report (TOAR) Cover Sheet

Attachment 5

FINAL
Interstate 15 & State Route 74 Central Avenue Interchange Project

Project Approval/Environmental Document

Traffic Operations Analysis Report

(EA: Riv 08-0F310)

CITY OF LAKE ELSINORE
DREAM EXTREME

Caltrans

HDR

FEHR & PEERS

March 2022

Geometric Drawings

Attachment 6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	1	X

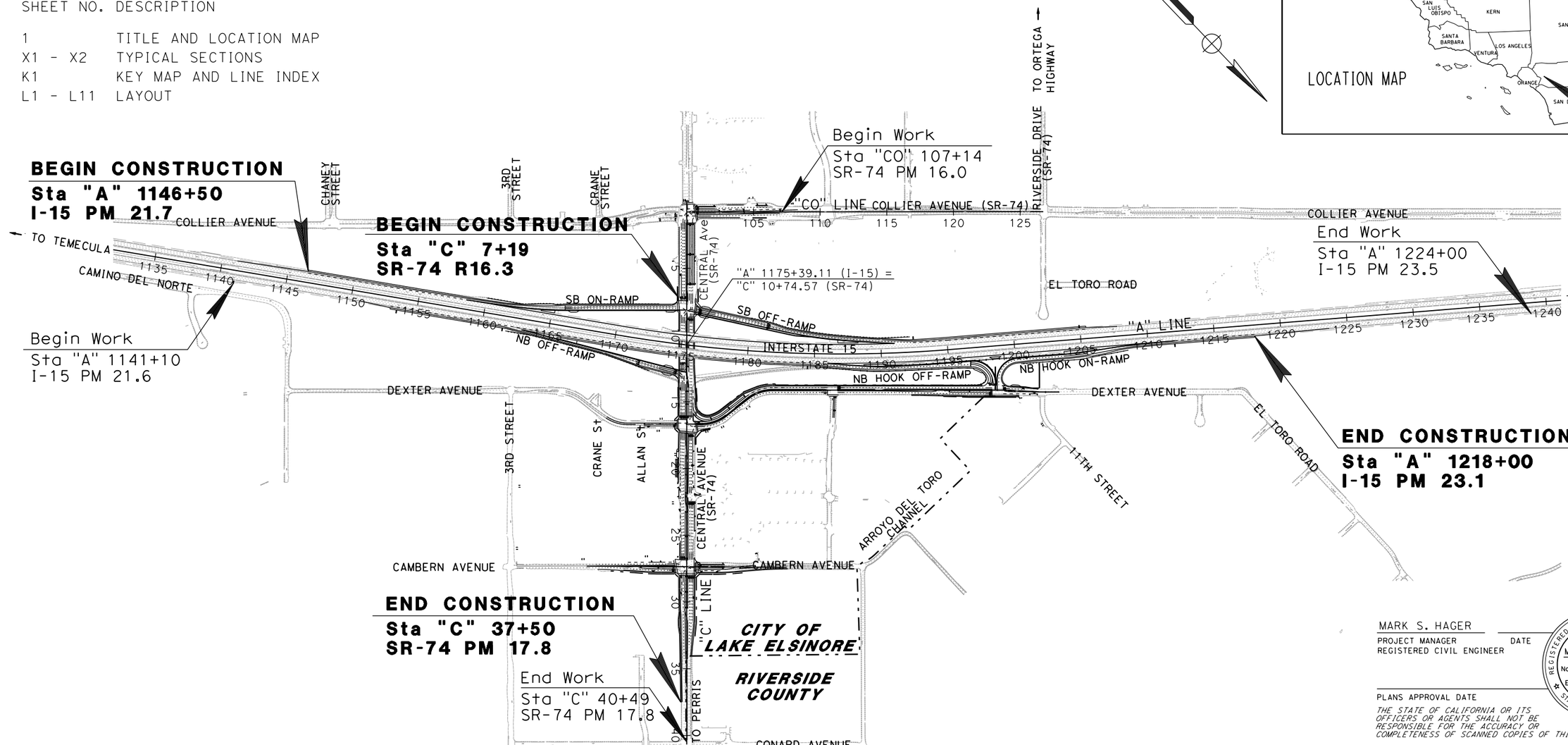
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DRAFT PROJECT REPORT EXHIBITS FOR
INTERSTATE 15 AT STATE ROUTE 74
INTERCHANGE IMPROVEMENTS PROJECT IN THE CITY OF LAKE ELSINORE FROM 0.6 MILES NORTH OF MAIN STREET TO 0.4 MILES SOUTH OF NICHOLS ROAD

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2018

INDEX OF PLANS

SHEET NO.	DESCRIPTION
1	TITLE AND LOCATION MAP
X1 - X2	TYPICAL SECTIONS
K1	KEY MAP AND LINE INDEX
L1 - L11	LAYOUT



ALTERNATIVE 2 - NOT FOR CONSTRUCTION

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

PROJECT MANAGER: MARK HAGER
DESIGN MANAGER: JULIAN HERNANDEZ

MARK S. HAGER
PROJECT MANAGER
REGISTERED CIVIL ENGINEER
DATE

REGISTERED PROFESSIONAL ENGINEER
Mark S. Hager
No. C 67659
Exp. 6-30-23
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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CONTRACT No.	08-0F310
PROJECT ID	0800000124

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8	RIV	15	21.6/23.5	1	X

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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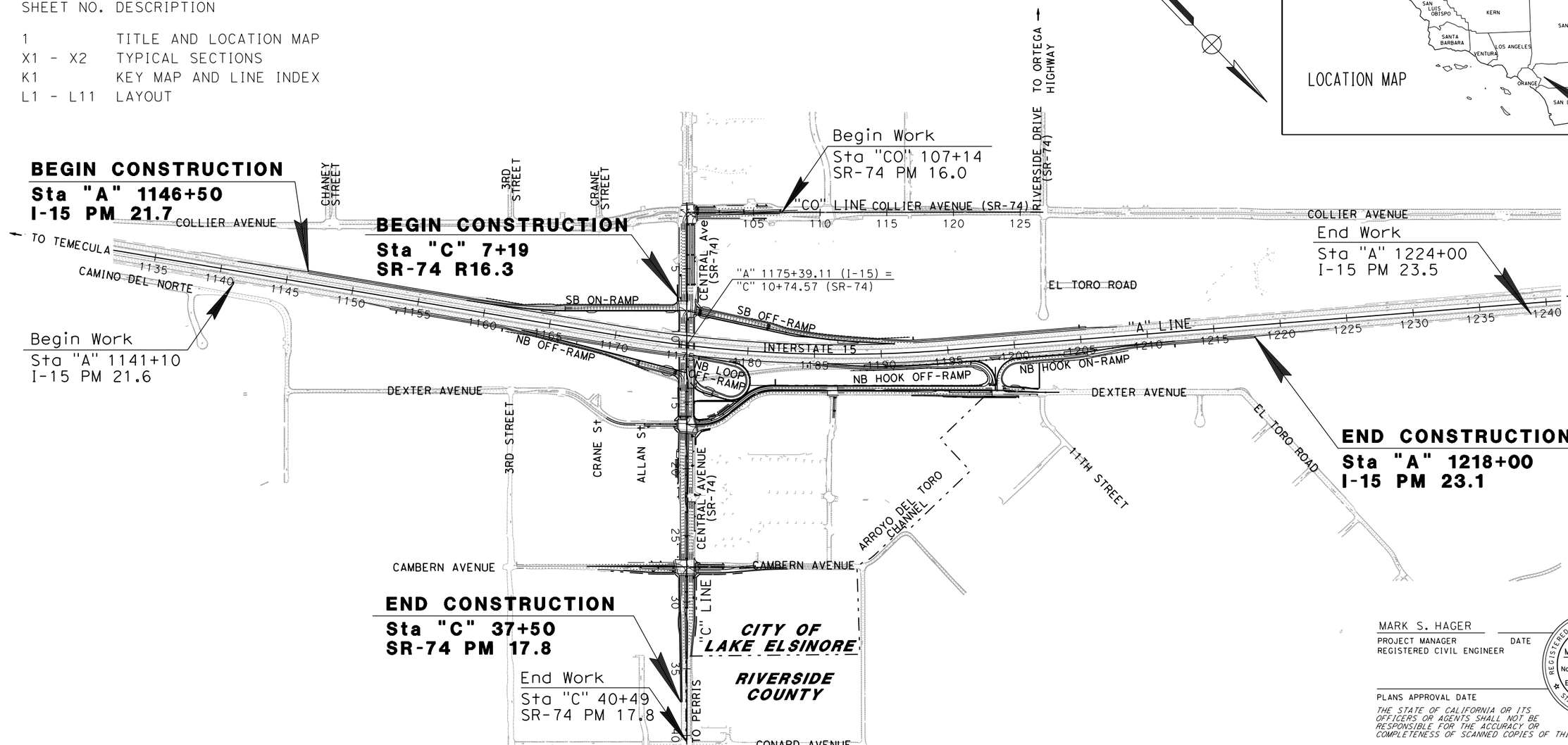

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

ALTERNATIVE 3 - NOT FOR CONSTRUCTION

MARK S. HAGER
PROJECT MANAGER
REGISTERED CIVIL ENGINEER
DATE

Registered Professional Engineer — Mark S. Hager — No. C 67659 — Exp. 6-30-23 — CIVIL — State of California

PLANS APPROVAL DATE

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CONTRACT No.	08-0F310
PROJECT ID	0800000124

PROJECT MANAGER: MARK HAGER
DESIGN MANAGER: JULIAN HERNANDEZ

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Julian Hernandez — No. C 79062 — Exp. 3-31-24 — CIVIL — STATE OF CALIFORNIA

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CITY OF LAKE ELSINORE
130 S. MAIN STREET
LAKE ELSINORE, CA 92530

NOTES:

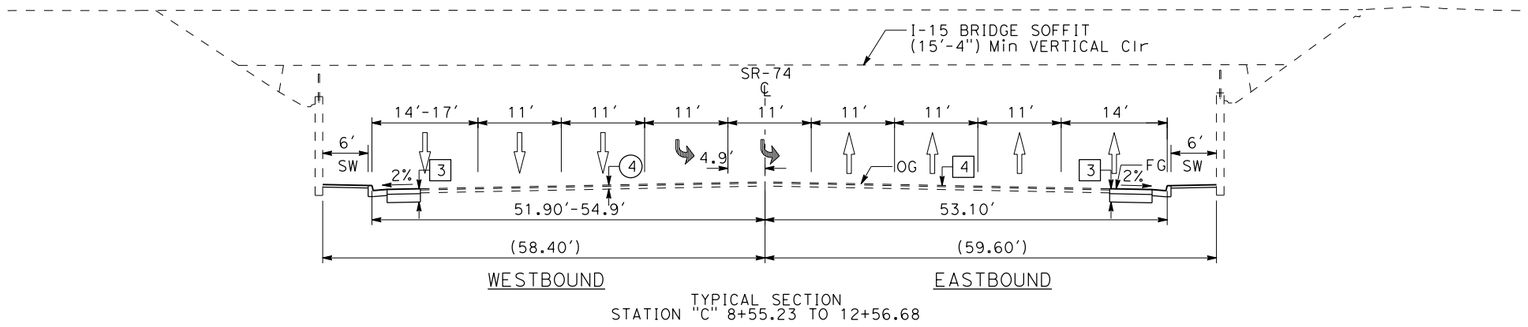
1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATIONS ARE SHOWN ON THE SUPERELEVATION DIAGRAMS.
3. THESE TYPICAL SECTIONS ARE THE SAME FOR BOTH BUILD ALTERNATIVES 2 AND 3, EXCEPT WHERE NOTED.

DESIGN DESIGNATION (ROUTE 15)

ADT (2025) = 73,500
ADT (2045) = 98,500
DHV = 6,250
V= 75 MPH
$ESAL_{20}$= 1,384,688
TI_{20}= 12
T = 1.2%
CLIMATE REGION: INLAND VALLEY

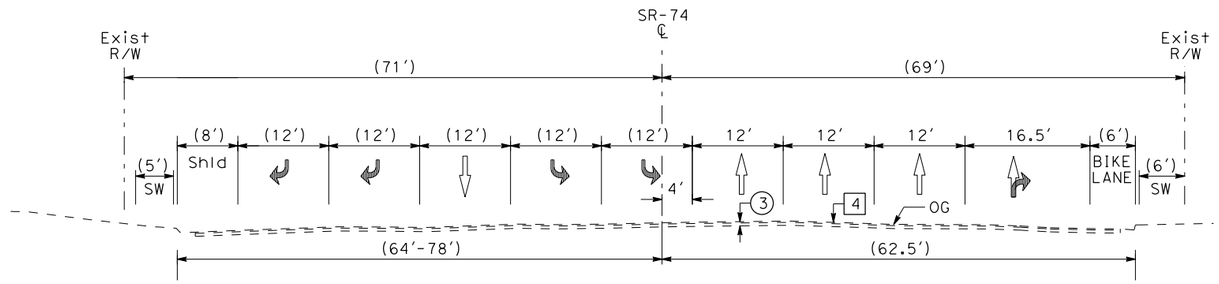
DESIGN DESIGNATION (STATE ROUTE 74)

ADT (2025) = 47,800
ADT (2045) = 65,100
DHV = 5,830
V= 50 MPH
$ESAL_{20}$= 3,383,776
TI_{20}= 10.5
T = 3.8%



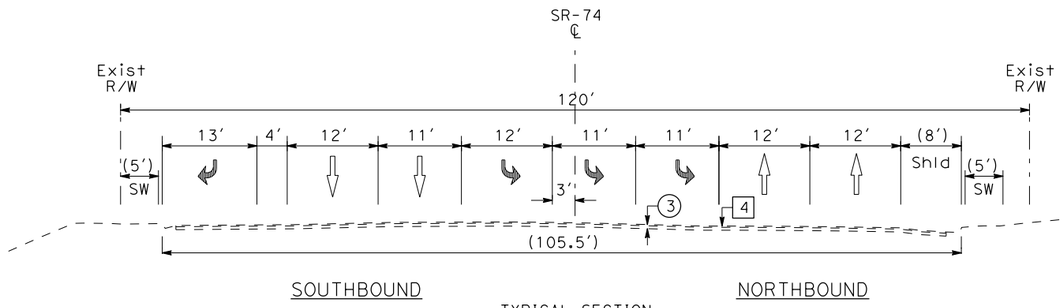
TYPICAL SECTION
STATION "C" 8+55.23 TO 12+56.68

CENTRAL AVENUE



TYPICAL SECTION
STATION "C" 1+88.00 TO 7+19.00

CENTRAL AVENUE



TYPICAL SECTION
STATION "CO" 100+80.00 TO 107+14.00

COLLIER AVENUE

TYPICAL PAVEMENT STRUCTURE SECTIONS

[1] 1.05' JPCP, 0.30' HMA-A, 0.70' AS, 1.00' CS — MAINLINE SHOULDERS

[2] 0.95' JPCP, 0.30' HMA-A, 0.60' AS, 1.00' CS — RAMP TERMINAL CONCRETE PAVING

[3] 0.20' RHMA-G, 0.55' HMA-A, 0.90' AB — ASPHALT PAVING

[4] 0.20' RHMA-G — ASPHALT OVERLAY

EXISTING PAVEMENT STRUCTURE SECTIONS

(1) 0.80' PCC, 0.45' CTB, 0.40' AS — I-15 MAINLINE

(2) 0.25' AC, 0.60' CTB, 0.55' AS — RAMPS ORIGINAL
0.50' AC, 1.50' AB — RAMPS PREVIOUS WIDENING

(3) 0.55' AC, 1.75' AB — SR-74 ORIGINAL
0.55' AC, 1.80' AB — SR-74 PREVIOUS WIDENING

(4) 0.30' AC, 0.60' CTB, 0.60' AS — SR-74 ORIGINAL
0.55' AC, 1.80' AB — SR-74 PREVIOUS WIDENING

(5) 0.66' AC, 1.60' AB — SR-74 ORIGINAL
0.55' AC, 1.80' AB — SR-74 PREVIOUS WIDENING

(6) 0.42' AC, 0.50' AB — DEXTER AVENUE & CAMBERN AVENUE

ALTERNATIVES 2-3
TYPICAL CROSS SECTIONS

NO SCALE

X-1

PRELIMINARY - NOT FOR CONSTRUCTION

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JULIAN HERNANDEZ, P.E.
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Julian Hernandez
No. C 79062
Exp. 3-31-24
CIVIL
STATE OF CALIFORNIA

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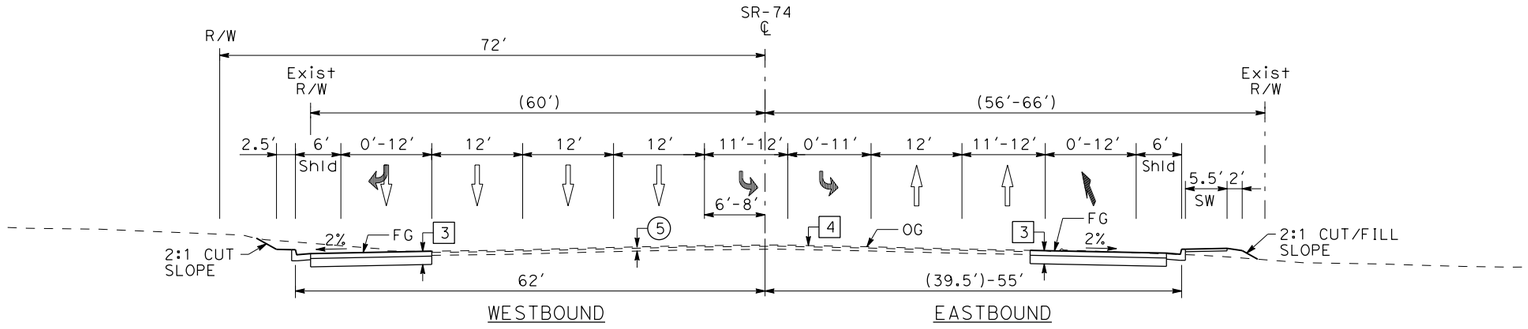
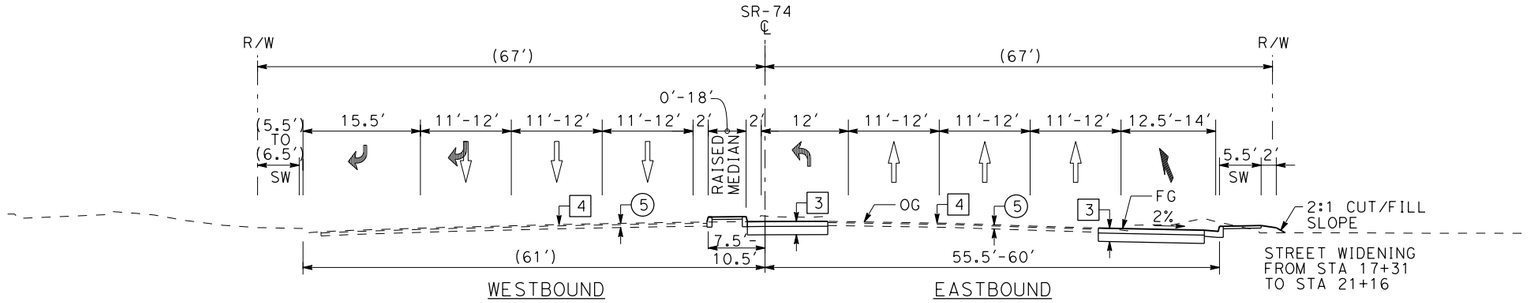


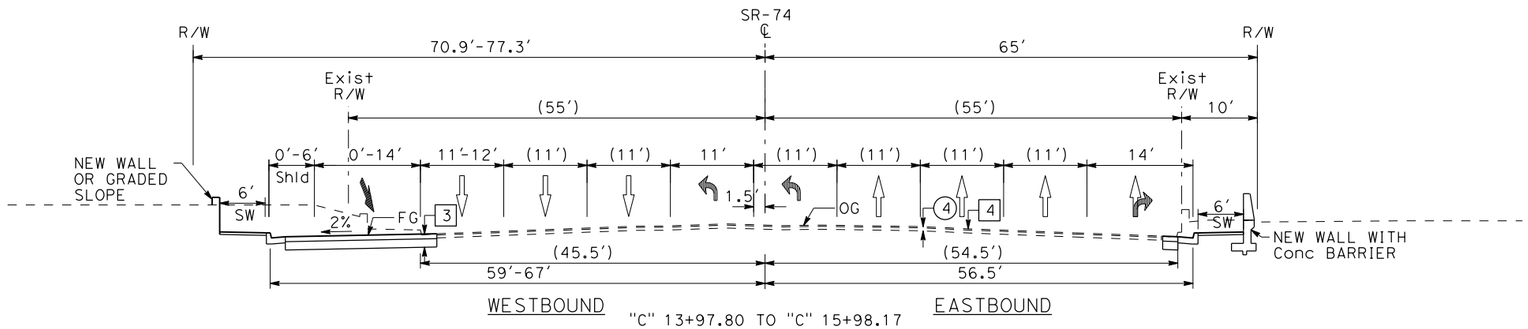
"C" 28+17.58 TO "C" 37+50.00

CENTRAL AVENUE



"C" 17+73.63 TO "C" 26+69.35

CENTRAL AVENUE



"C" 13+97.80 TO "C" 15+98.17

CENTRAL AVENUE

ALTERNATIVES 2-3
TYPICAL CROSS SECTIONS

NO SCALE

X-2

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PROJECT NUMBER & PHASE 0800000124

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

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REGISTERED PROFESSIONAL ENGINEER
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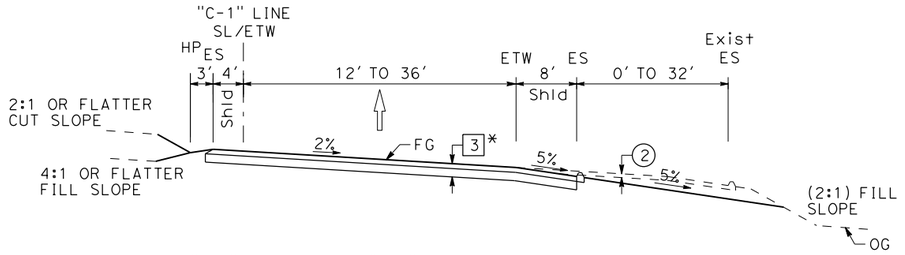
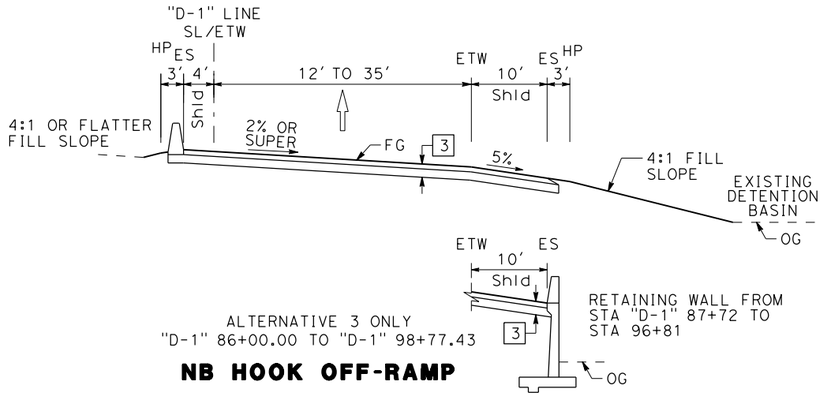


"C-1" 63+00.00 TO "C-1" 74+78.72

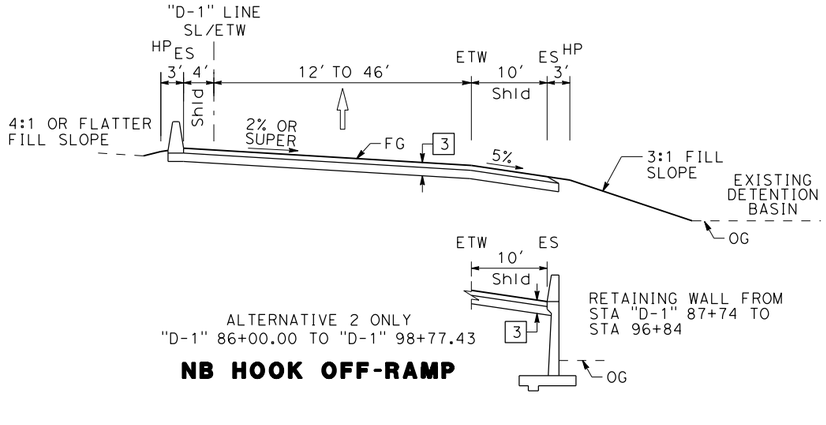
NB OFF-RAMP

* PARTIAL LEFT WIDENING & ASPHALT OVERLAY OF EXISTING NB OFF-RAMP BETWEEN STATIONS "C-1" 63+00.00 AND "C-1" 72+50.00.



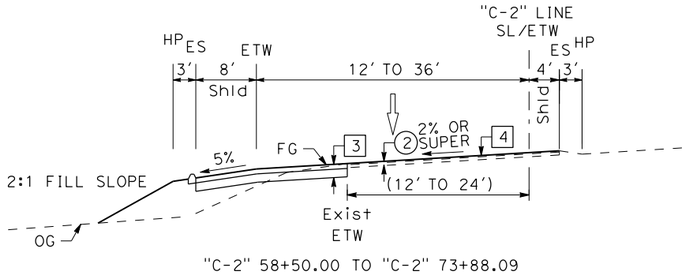
ALTERNATIVE 3 ONLY
"D-1" 86+00.00 TO "D-1" 98+77.43

NB HOOK OFF-RAMP



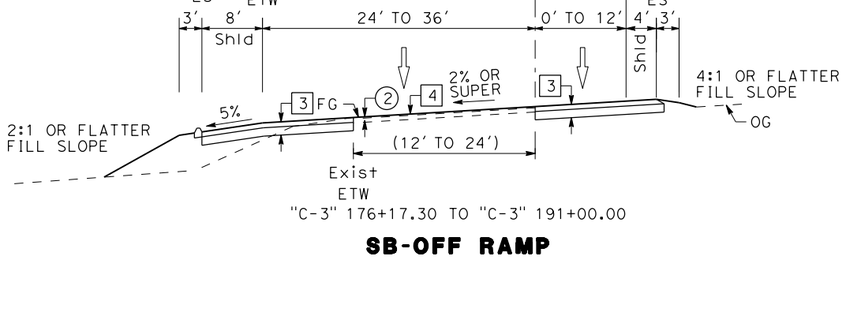
ALTERNATIVE 2 ONLY
"D-1" 86+00.00 TO "D-1" 98+77.43

NB HOOK OFF-RAMP



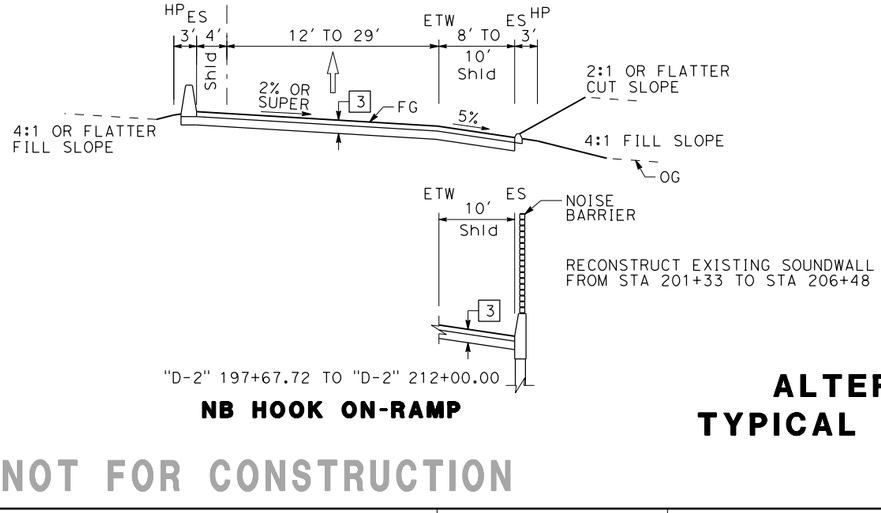
"C-2" 58+50.00 TO "C-2" 73+88.09

SB ON-RAMP



"C-3" 176+17.30 TO "C-3" 191+00.00

SB-OFF RAMP



"D-2" 197+67.72 TO "D-2" 212+00.00

NB HOOK ON-RAMP

ALTERNATIVES 2-3
TYPICAL CROSS SECTIONS

NO SCALE

X-3

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CONSULTANT FUNCTIONAL SUPERVISOR | JULIAN HERNANDEZ, P.E. | CALCULATED-DESIGNED BY | CHECKED BY | REVISED BY | DATE REVISED

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Julian Hernandez
No. C 79062
Exp. 3-31-24
CIVIL
STATE OF CALIFORNIA

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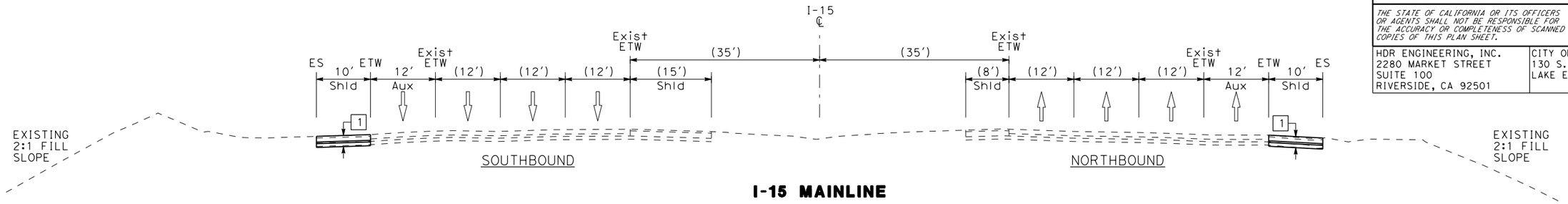
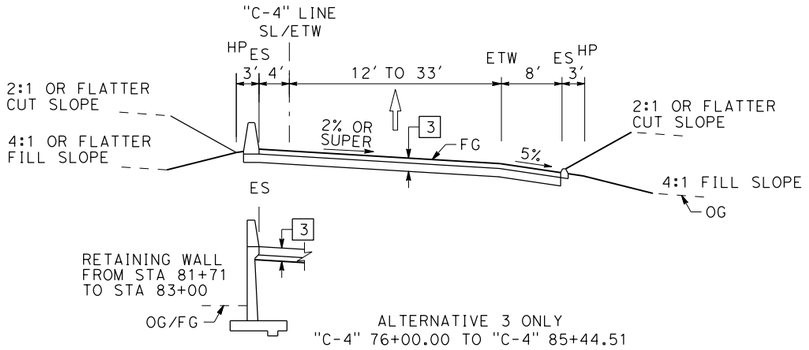


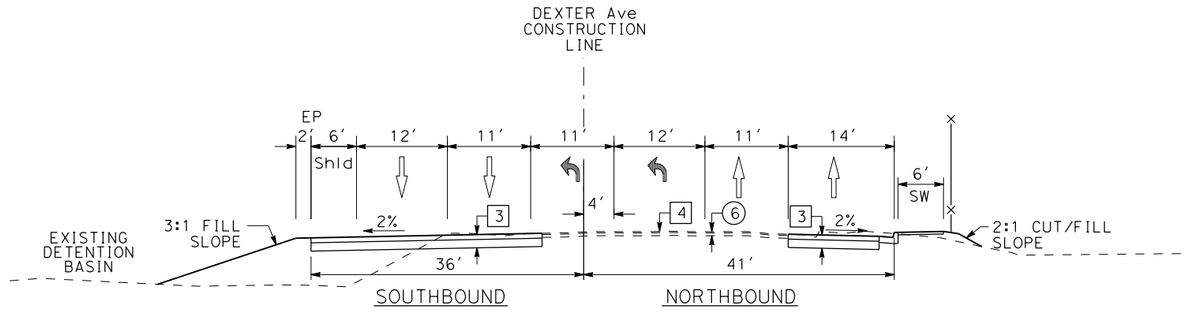
I-15 MAINLINE

AT AUXILIARY LANE LOCATIONS



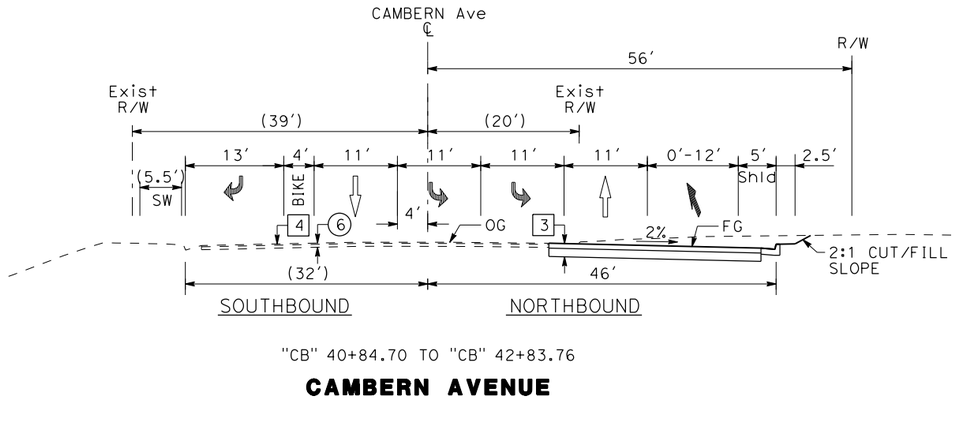
ALTERNATIVE 3 ONLY
"C-4" 76+00.00 TO "C-4" 85+44.51

NB LOOP OFF-RAMP



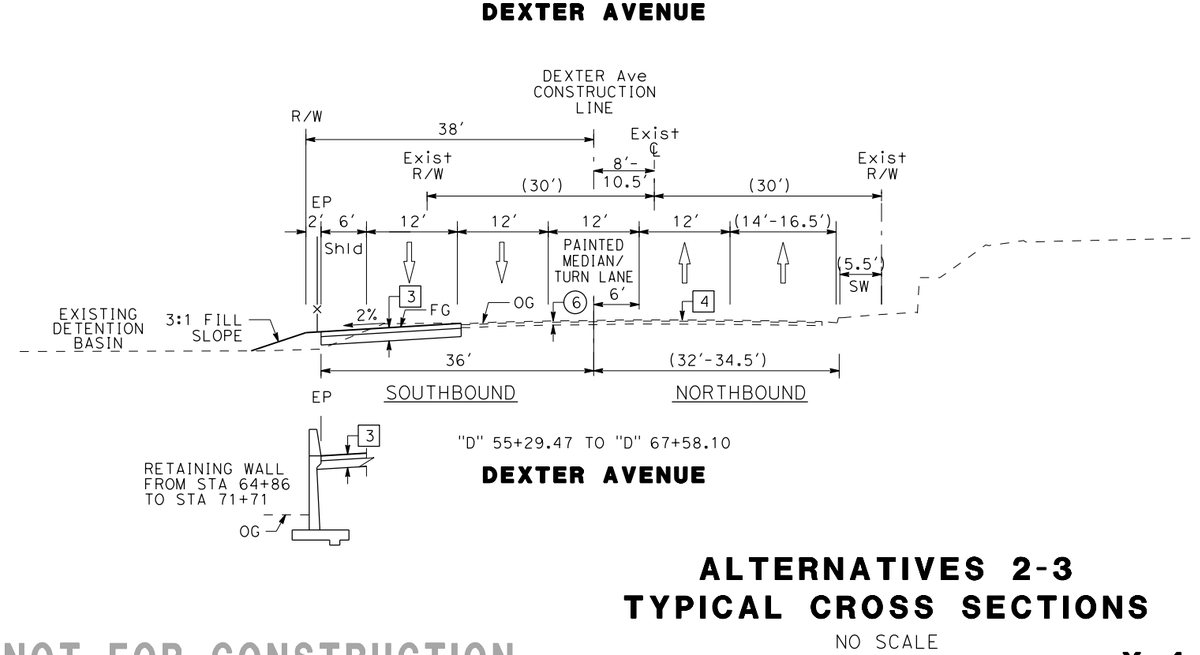
"D" 67+58.10 TO "D" 74+01.04

DEXTER AVENUE



"CB" 40+84.70 TO "CB" 42+83.76

CAMBERN AVENUE



"D" 55+29.47 TO "D" 67+58.10

DEXTER AVENUE

ALTERNATIVES 2-3
TYPICAL CROSS SECTIONS

NO SCALE

X-4

PRELIMINARY - NOT FOR CONSTRUCTION

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JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Julian Hernandez
No. C 79062
Exp. 3-31-24
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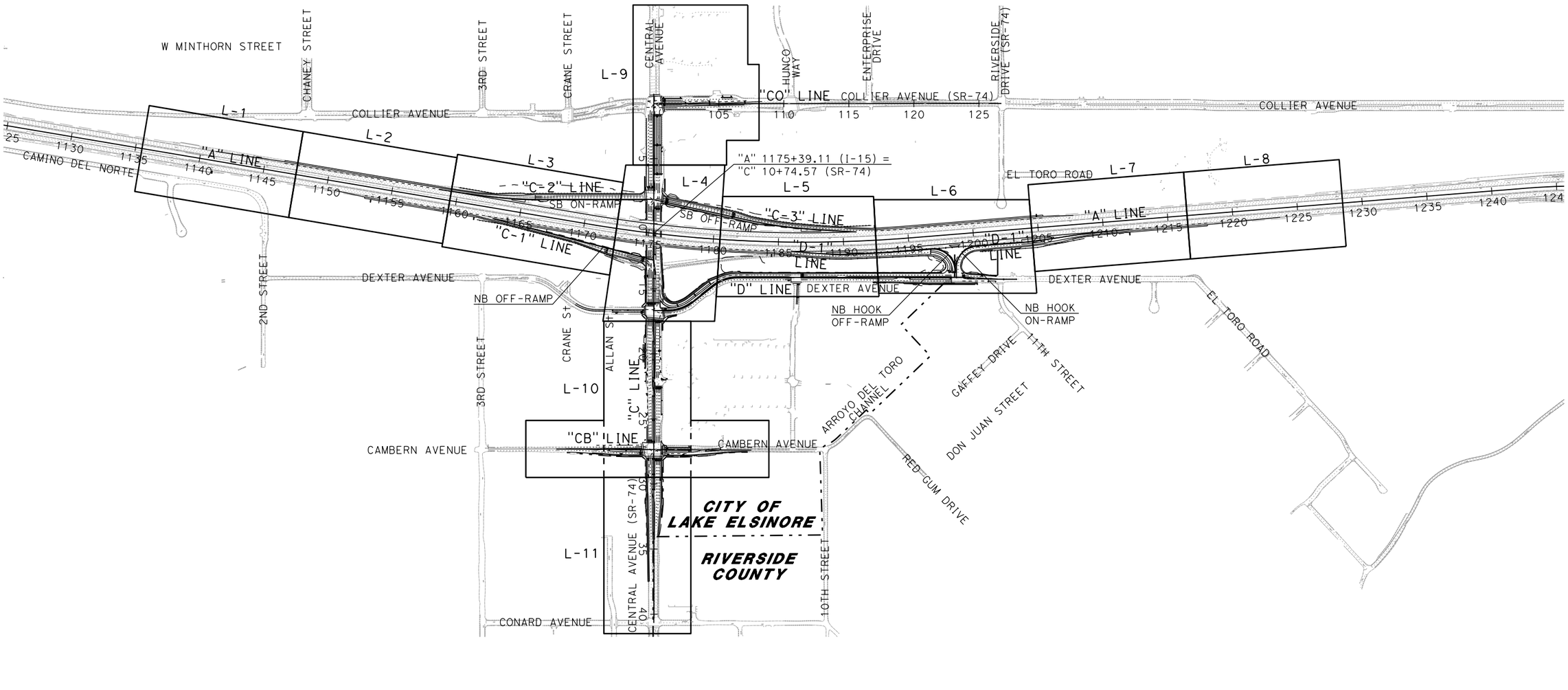

ALTERNATIVE 2
KEY MAP AND LINE INDEX

NO SCALE

PRELIMINARY - NOT FOR CONSTRUCTION

K-1

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JULIAN HERNANDEZ, P.E.
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CHECKED BY
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 5/21/2023
TIME PLOTTED => 10:24:06 AM

BORDER LAST REVISED 7/2/2010
USERNAME => Personal
DGN FILE => 080F310da001 Alternative 2.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 0800000124

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Julian Hernandez
No. C 79062
Exp. 3-31-24
CIVIL
STATE OF CALIFORNIA

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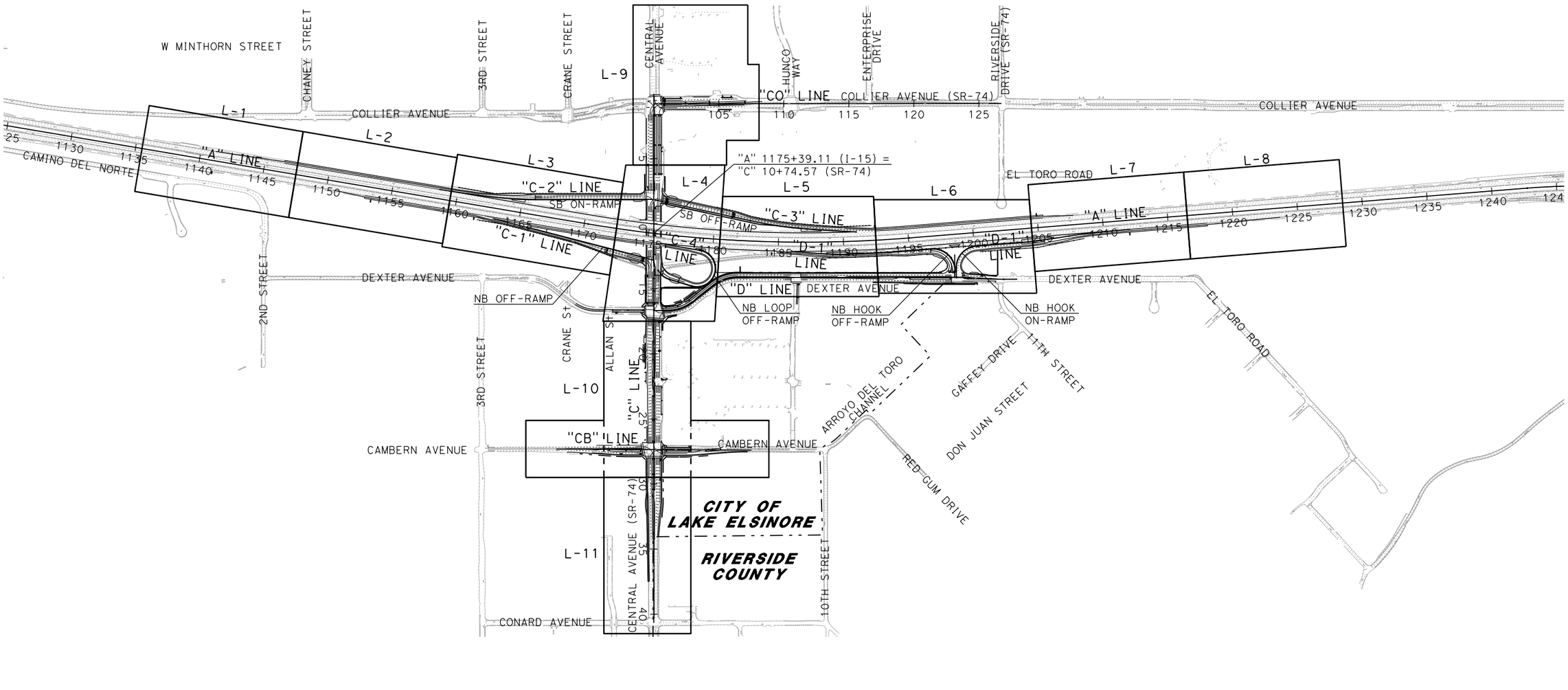
SUITE 100
RIVERSIDE, CA 92501

CITY OF LAKE ELSINORE
130 S. MAIN STREET
LAKE ELSINORE, CA 92530



ALTERNATIVE 3
KEY MAP AND LINE INDEX

NO SCALE

K-1

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JULIAN HERNANDEZ, P.E.
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LAST REVISION 00-00-00
DATE PLOTTED => 5/21/2023
TIME PLOTTED => 10:24:08 AM

BORDER LAST REVISED 7/2/2010
USERNAME => Personal
DGN FILE => 080F310da001 Alternative 3.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 0800000124

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Julian Hernandez
No. C 79062
Exp. 3-31-24
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STATE OF CALIFORNIA

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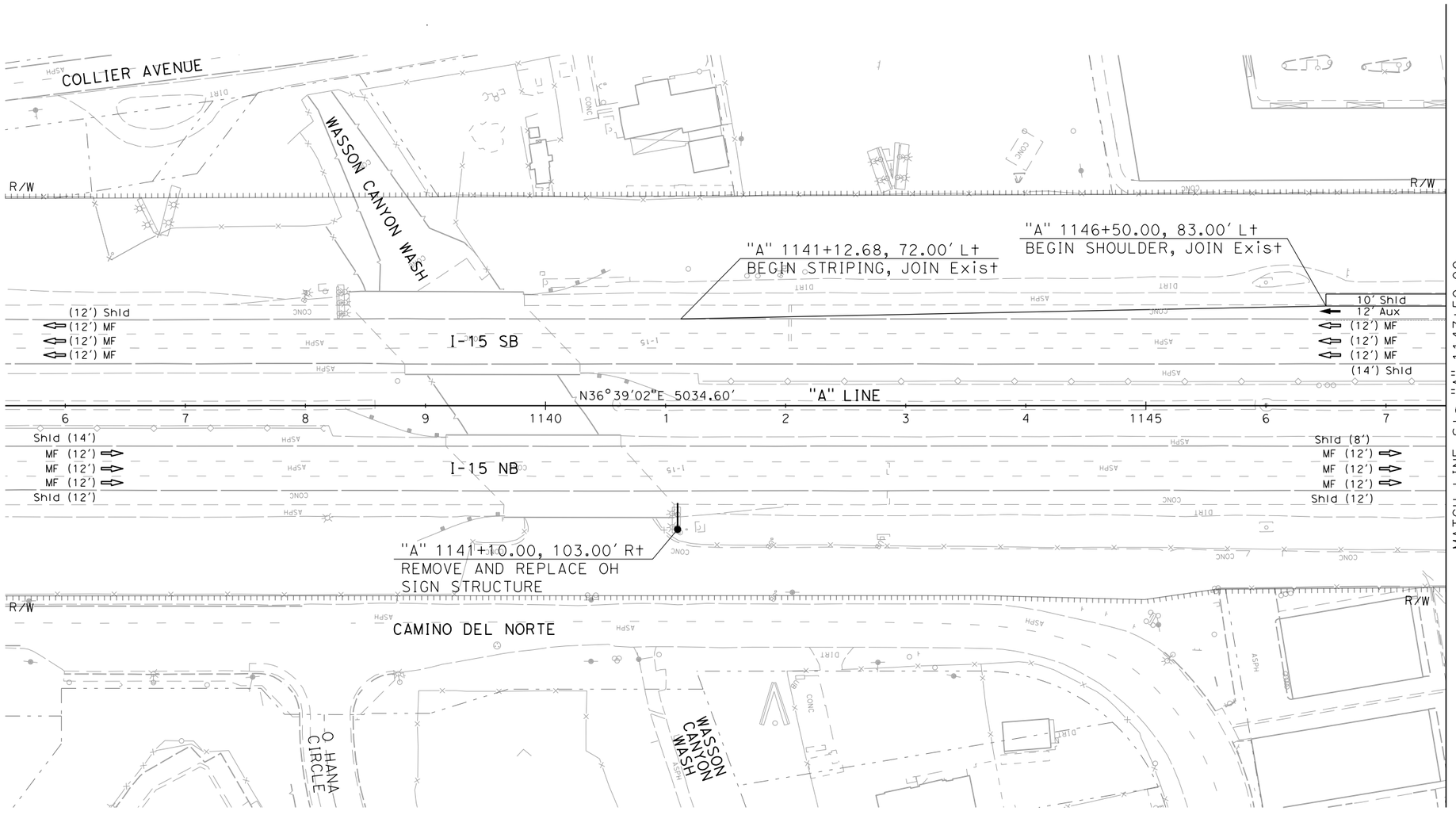
CITY OF LAKE ELSINORE
130 S. MAIN STREET
LAKE ELSINORE, CA 92530

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

LEGEND:

- MF — MIXED FLOW LANE
- DIRECTION OF TRAVEL (EXISTING LANE)
- DIRECTION OF TRAVEL (NEW LANE)
- FILL GRADING LINE
- CUT GRADING LINE
- EXISTING R/W WITH ACCESS CONTROL
- PROPOSED NEW OR EXISTING ACCESS CONTROL EXTENSION
- CONCRETE BARRIER
- TRAFFIC SIGNAL
- MIDWEST GUARDRAIL SYSTEM (MGS)
- OVERHEAD SIGN STRUCTURE (SINGLE POST)



ALTERNATIVES 2-3 LAYOUT

SCALE: 1"=50'

L-1

PRELIMINARY - NOT FOR CONSTRUCTION

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: JULIAN HERNANDEZ, P.E.
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CONSULTANT FUNCTIONAL SUPERVISOR:
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LAST REVISION 00-00-00
DATE PLOTTED => 5/21/2023
TIME PLOTTED => 9:41:04 AM

BORDER LAST REVISED 7/2/2010
USERNAME => Personal
DGN FILE => 080F310ea001 Alternatives 2-3.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 0800000124

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Julian Hernandez
No. C 79062
Exp. 3-31-24
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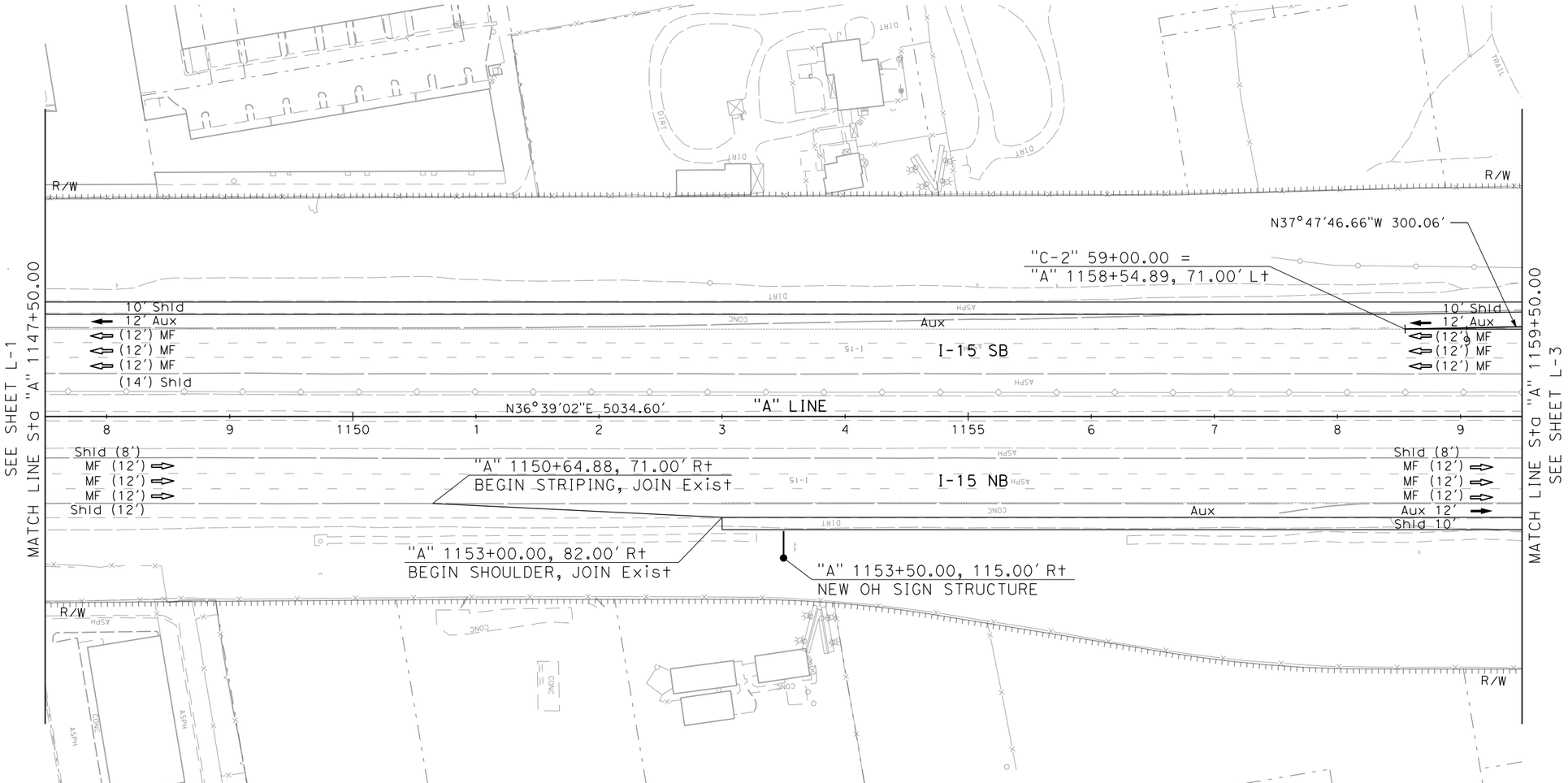
CITY OF LAKE ELSINORE
130 S. MAIN STREET
LAKE ELSINORE, CA 92530

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



ALTERNATIVES 2-3 LAYOUT

SCALE: 1"=50'

L-2

PRELIMINARY - NOT FOR CONSTRUCTION

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR
JULIAN HERNANDEZ, P.E.
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 5/21/2023
TIME PLOTTED => 9:41:22 AM

BORDER LAST REVISED 7/2/2010
USERNAME => Personal
DGN FILE => 080F310eq002 Alternatives 2-3.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 0800000124

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

CURVE DATA

No. ⊗	R	Δ	T	L
1	9999.16′	14°12′02"	1245.51′	2478.26′
2	3000.00′	08°28′35"	222.32′	443.82′

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Julian Hernandez — No. C 79062 — Exp. 3-31-24 — CIVIL — STATE OF CALIFORNIA

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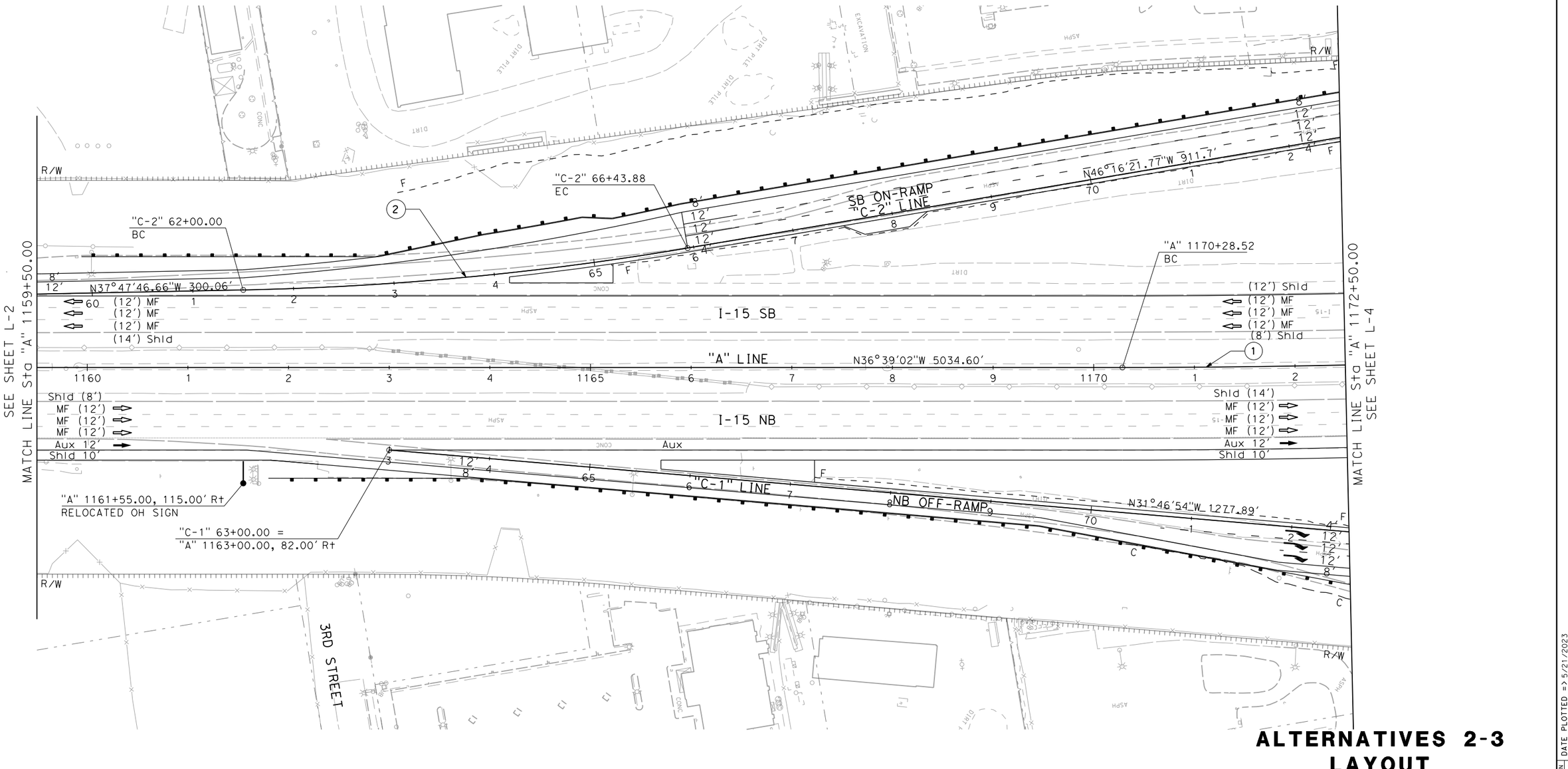
SUITE 100
RIVERSIDE, CA 92501

CITY OF LAKE ELSINORE
130 S. MAIN STREET
LAKE ELSINORE, CA 92530



ALTERNATIVES 2-3
LAYOUT
SCALE: 1"=50′

L-3

PRELIMINARY - NOT FOR CONSTRUCTION

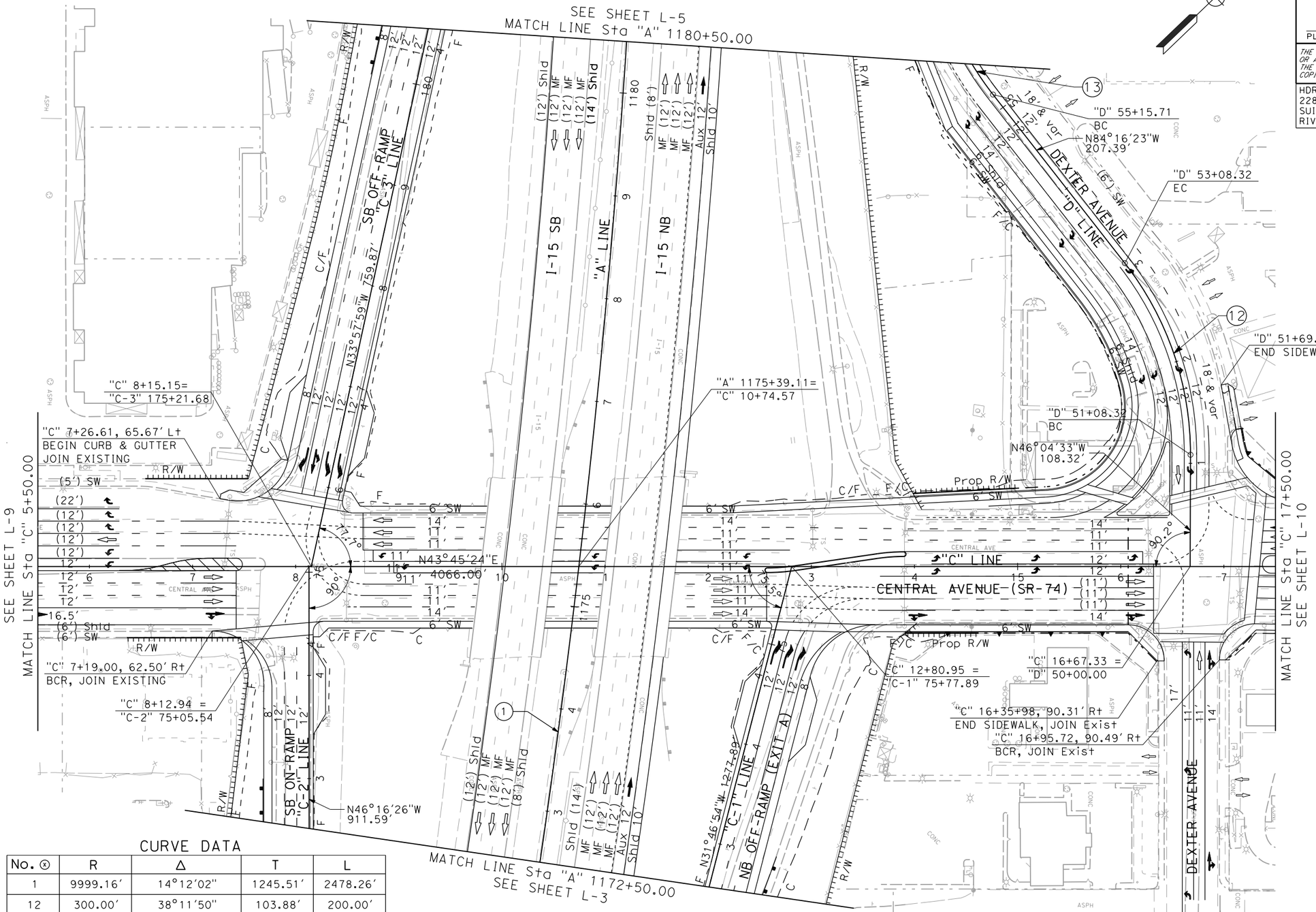
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR
JULIAN HERNANDEZ, P.E.
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 5/21/2023
TIME PLOTTED => 9:41:19 AM

BORDER LAST REVISED 7/2/2010
USERNAME => Personal
DGN FILE => 080F310ea003 Alternatives 2-3.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 0800000124

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



CURVE DATA

No. ⓧ	R	Δ	T	L
1	9999.16′	14°12′02"	1245.51′	2478.26′
12	300.00′	38°11′50"	103.88′	200.00′
13	300.00′	38°04′04"	103.50′	199.32′

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Julian Hernandez — No. C 79062 — Exp. 3-31-24 — CIVIL — STATE OF CALIFORNIA

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LAKE ELSINORE, CA 92530

ALTERNATIVE 2 LAYOUT

SCALE: 1"=50′

L-4

PRELIMINARY - NOT FOR CONSTRUCTION

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LAST REVISION 00-00-00 | DATE PLOTTED => 5/21/2023 | TIME PLOTTED => 10:02:41 AM

BORDER LAST REVISED 7/2/2010 | USERNAME => Personal | DGN FILE => 080F310ea004 Alternative 2.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 0800000124

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Julian Hernandez — No. C 79062 — Exp. 3-31-24 — CIVIL — STATE OF CALIFORNIA

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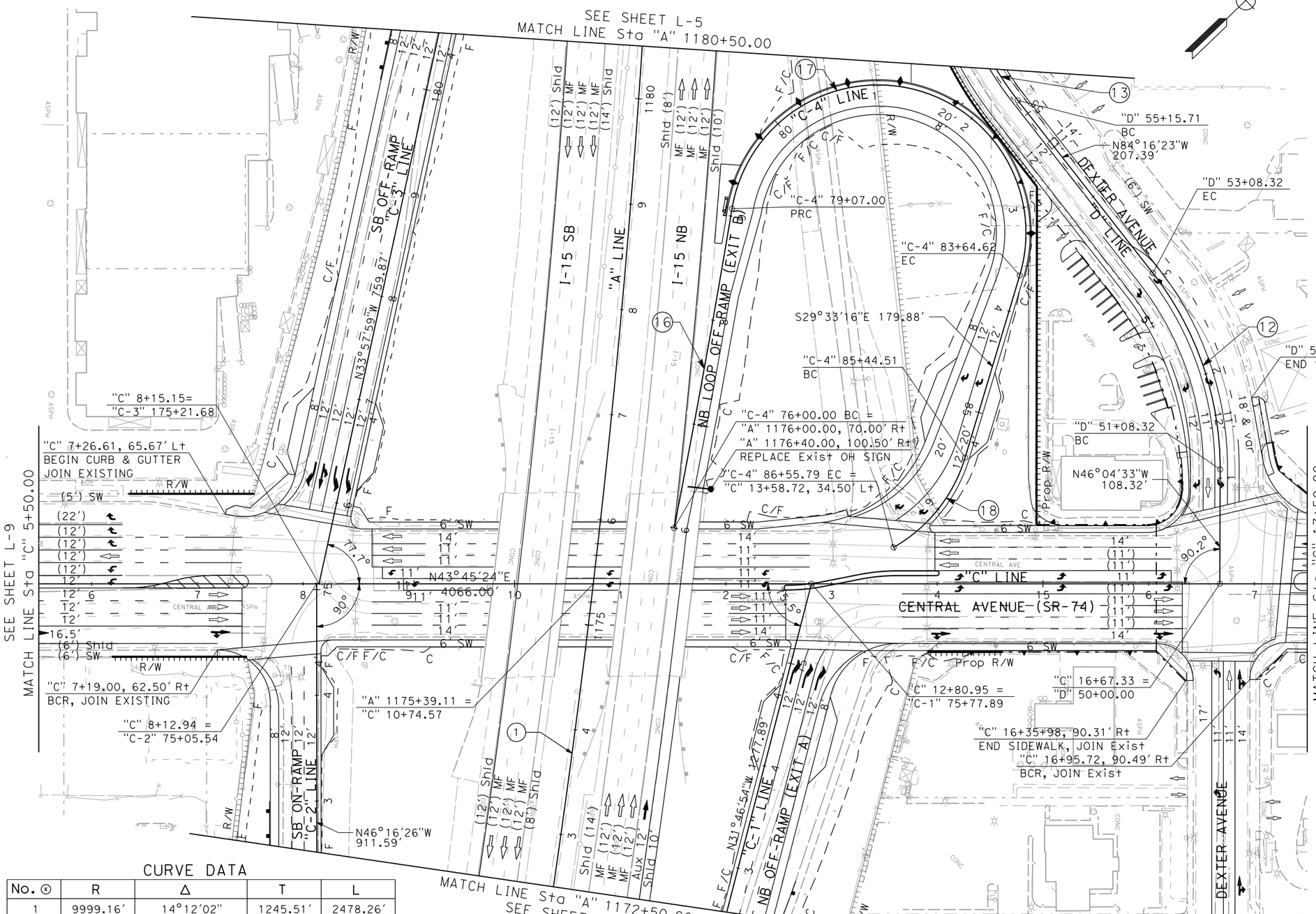
SUITE 100
RIVERSIDE, CA 92501

CITY OF LAKE ELSINORE
130 S. MAIN STREET
LAKE ELSINORE, CA 92530

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



CURVE DATA

No. ⓧ	R	Δ	T	L
1	9999.16'	14°12'02"	1245.51'	2478.26'
12	300.00'	38°11'50"	103.88'	200.00'
13	300.00'	38°04'04"	103.50'	199.32'
16	10069.00'	01°44'49"	153.51'	307.00'
17	140.00'	187°17'05"	N/A	457.62'
18	146.00'	43°40'19"	58.50'	111.28'

PRELIMINARY - NOT FOR CONSTRUCTION

ALTERNATIVE 3 LAYOUT

SCALE: 1"=50'

L-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | CONSULTANT FUNCTIONAL SUPERVISOR | JULIAN HERNANDEZ, P.E. | CALCULATED-DESIGNED BY | CHECKED BY

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BORDER LAST REVISED 7/2/2010 | USERNAME => Personal | DGN FILE => 080F310ea004 Alternative 3.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 0800000124

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

CURVE DATA

No. ⊗	R	Δ	T	L
1	9999.16′	14°12′02"	1245.51′	2478.26′
3	3000.00′	07°06′18"	186.25′	372.02′
4	9928.00′	02°34′35"	223.25′	446.43′
5	10069.00′	01°33′17"	136.61′	273.20′
6	1600.00′	05°46′23"	80.68′	161.22′
7	10100.00′	02°44′05"	241.08′	482.07′
13	300.00′	38°04′04"	103.50′	199.32′

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Julian Hernandez — No. C 79062 — Exp. 3-31-24 — CIVIL — STATE OF CALIFORNIA

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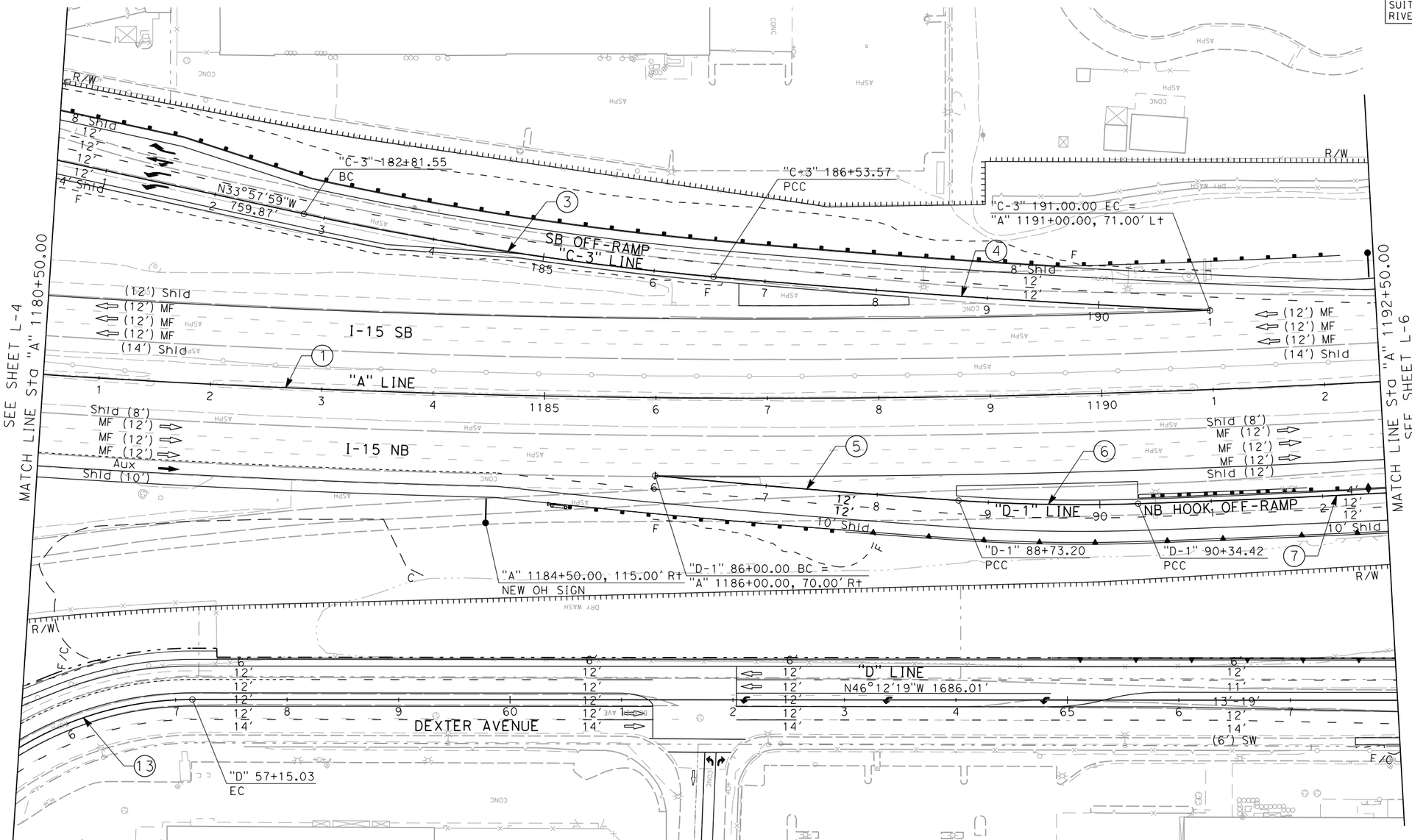
LAKE ELSINORE, CA 92530



ALTERNATIVE 2 LAYOUT

SCALE: 1"=50′

L-5

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JULIAN HERNANDEZ, P.E.
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LAST REVISION | DATE PLOTTED => 5/21/2023
00-00-00 | TIME PLOTTED => 10:02:37 AM

BORDER LAST REVISED 7/2/2010 | USERNAME => Personal | DGN FILE => 080F310ea005 Alternative 2.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 0800000124

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

CURVE DATA

No. ⊗	R	Δ	T	L
1	9999.16′	14°12′02"	1245.51′	2478.26′
3	3000.00′	07°06′18"	186.25′	372.02′
4	9928.00′	02°34′35"	223.25′	446.43′
5	10069.00′	01°33′17"	136.61′	273.20′
6	1600.00′	05°46′23"	80.68′	161.22′
7	10100.00′	02°44′05"	241.08′	482.07′
13	300.00′	38°04′04"	103.50′	199.32′

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Julian Hernandez — No. C 79062 — Exp. 3-31-24 — CIVIL — STATE OF CALIFORNIA

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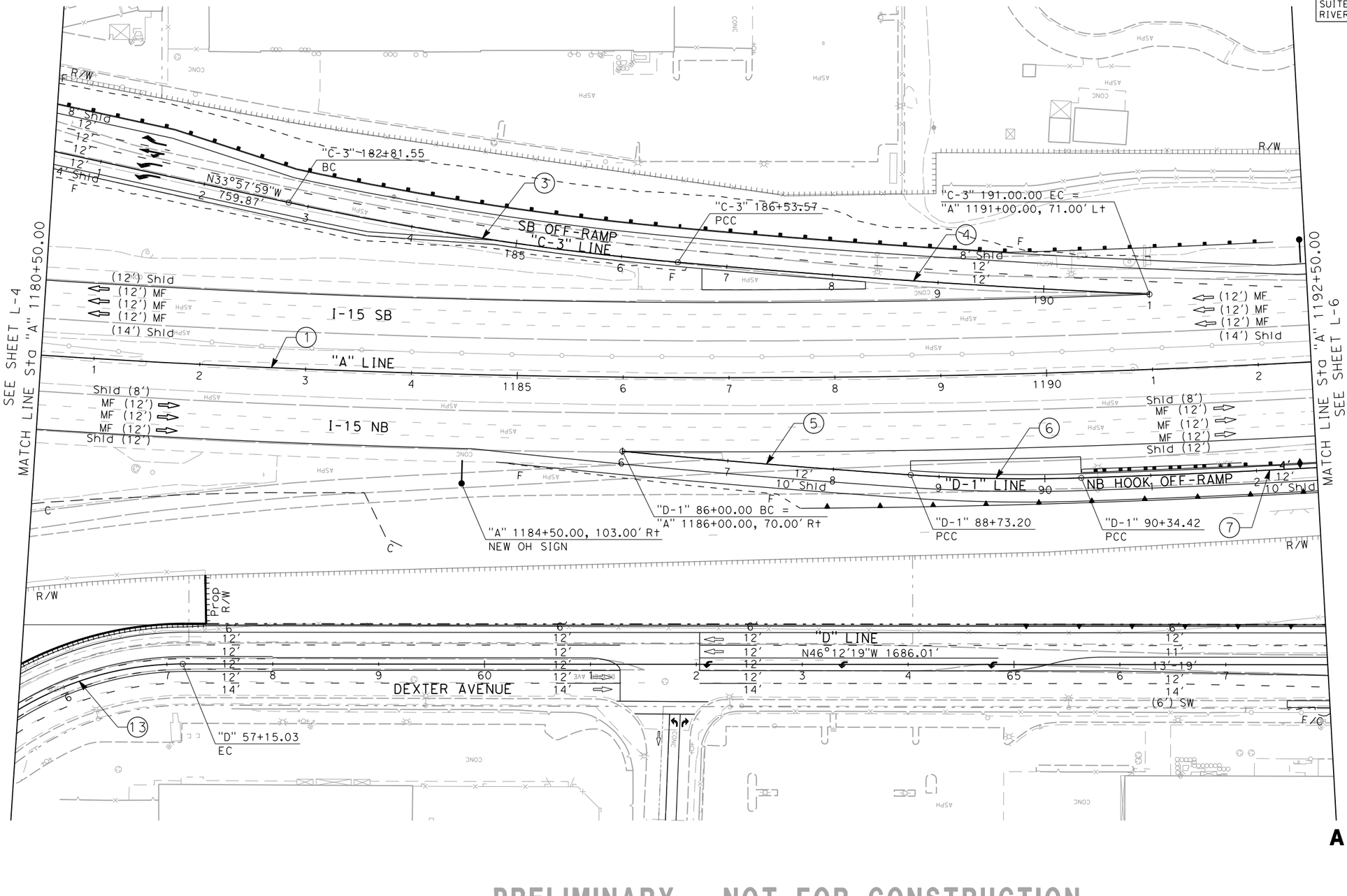
RIVERSIDE, CA 92501

CITY OF LAKE ELSINORE
130 S. MAIN STREET
LAKE ELSINORE, CA 92530



ALTERNATIVE 3
LAYOUT
SCALE: 1"=50′

L-5

PRELIMINARY - NOT FOR CONSTRUCTION

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LAST REVISION | DATE PLOTTED => 5/21/2023
00-00-00 | TIME PLOTTED => 10:02:07 AM

BORDER LAST REVISED 7/2/2010 | USERNAME => Personal | DGN FILE => 080F310ea005 Alternative 3.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 0800000124

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

CURVE DATA

No. ⊗	R	Δ	T	L
1	9999.16′	14°12′02"	1245.51′	2478.26′
7	10100.00′	02°44′05"	241.08′	482.07′
8	166.00′	94°42′32"	180.24′	274.40′
9	165.00′	85°17′26"	151.97′	245.62′
10	2000.00′	04°20′29"	75.81′	151.54′
14	1900.00′	02°55′34"	48.53′	97.03′
15	1900.00′	02°59′24"	49.59′	99.15′

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Julian Hernandez — No. C 79062 — Exp. 3-31-24 — CIVIL — STATE OF CALIFORNIA

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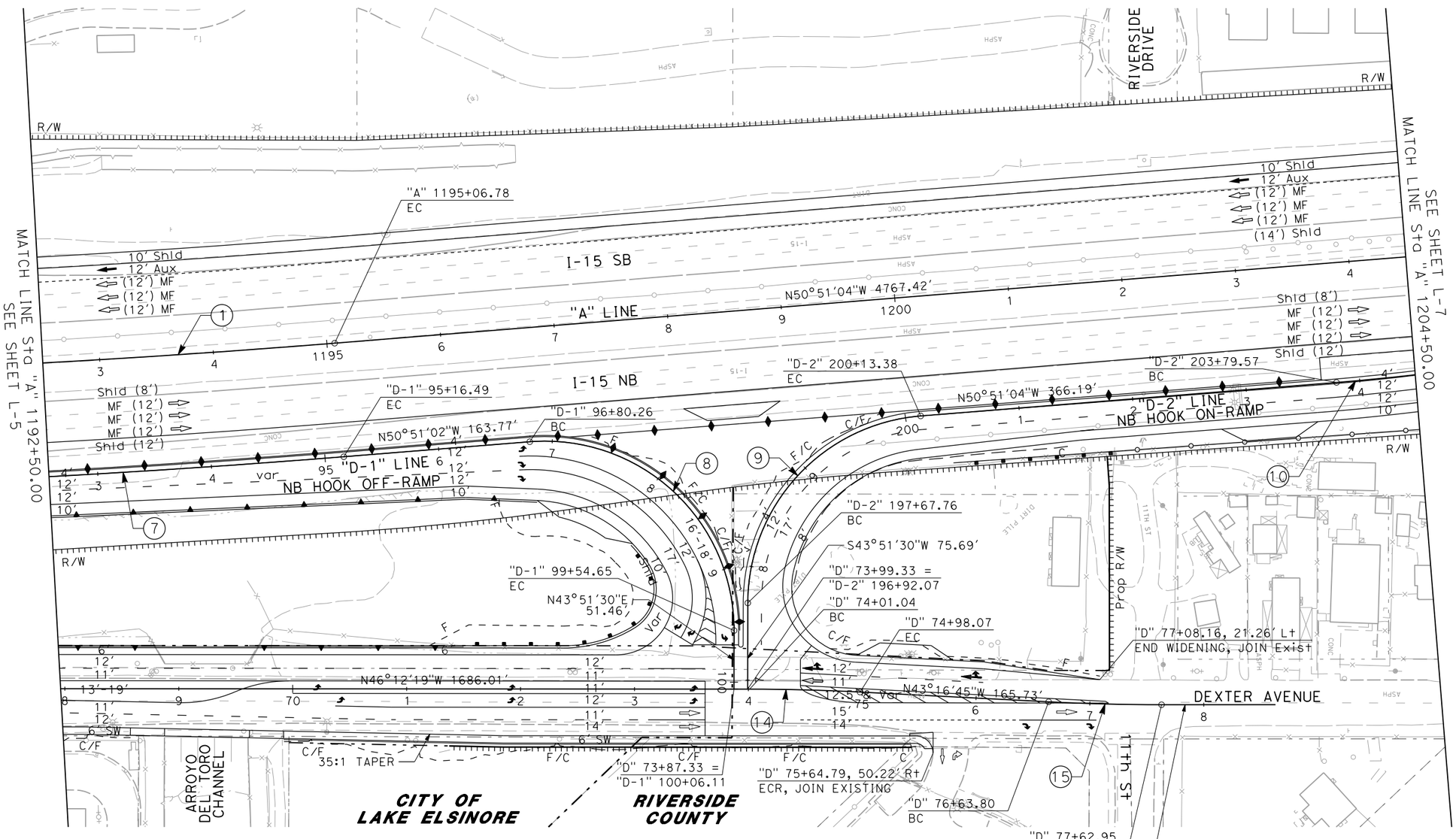
SUITE 100
RIVERSIDE, CA 92501

CITY OF LAKE ELSINORE
130 S. MAIN STREET
LAKE ELSINORE, CA 92530



ALTERNATIVE 2 LAYOUT

SCALE: 1"=50′

L-6

PRELIMINARY - NOT FOR CONSTRUCTION

REVISED BY | DATE REVISED

JULIAN HERNANDEZ, P.E.

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LAST REVISION 00-00-00 | DATE PLOTTED => 5/21/2023 | TIME PLOTTED => 10:24:30 AM

BORDER LAST REVISED 7/2/2010 | USERNAME => Personal | DGN FILE => 080F310ea006 Alternative 2.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 0800000124

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

CURVE DATA

No. ⊗	R	Δ	T	L
1	9999.16′	14°12′02"	1245.51′	2478.26′
7	10100.00′	02°44′05"	241.08′	482.07′
8	166.00′	94°42′32"	180.24′	274.40′
9	165.00′	85°17′26"	151.97′	245.62′
10	2000.00′	04°20′29"	75.81′	151.54′
14	1900.00′	02°55′34"	48.53′	97.03′
15	1900.00′	02°59′24"	49.59′	99.15′

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Julian Hernandez — No. C 79062 — Exp. 3-31-24 — CIVIL — STATE OF CALIFORNIA

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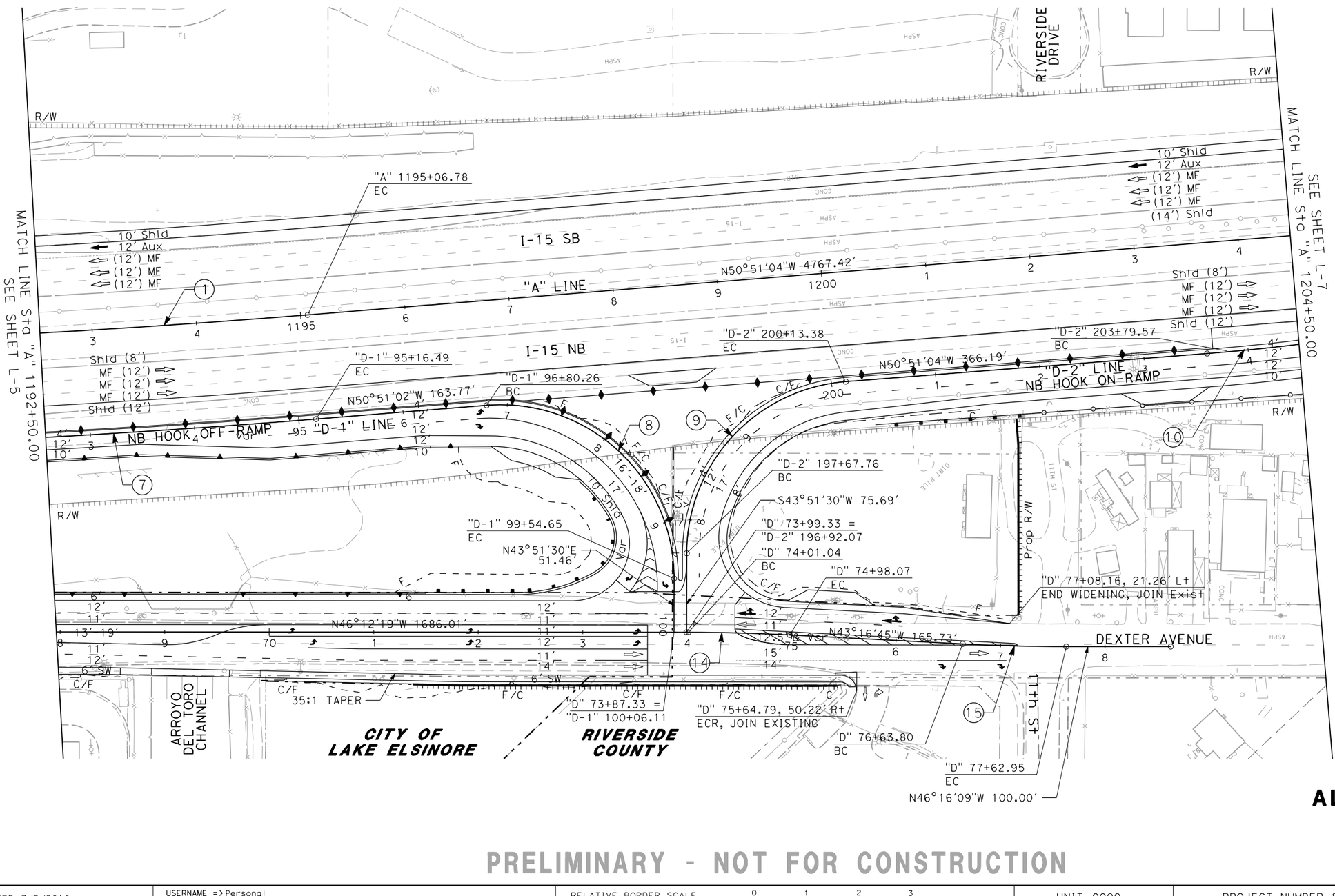
SUITE 100
RIVERSIDE, CA 92501

CITY OF LAKE ELSINORE
130 S. MAIN STREET
LAKE ELSINORE, CA 92530



ALTERNATIVE 3 LAYOUT

SCALE: 1"=50′

L-6

PRELIMINARY - NOT FOR CONSTRUCTION

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: JULIAN HERNANDEZ, P.E.
CHECKED BY:
CONSULTANT FUNCTIONAL SUPERVISOR:
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00 — DATE PLOTTED => 5/21/2023 — TIME PLOTTED => 10:02:09 AM

BORDER LAST REVISED 7/2/2010 | USERNAME => Personal | DGN FILE => 080F310ea006 Alternative 3.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 0800000124

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Julian Hernandez
No. C 79062
Exp. 3-31-24
CIVIL
STATE OF CALIFORNIA

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RIVERSIDE, CA 92501

CITY OF LAKE ELSINORE
130 S. MAIN STREET
LAKE ELSINORE, CA 92530

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

CURVE DATA

No. ⊗	R	Δ	T	L
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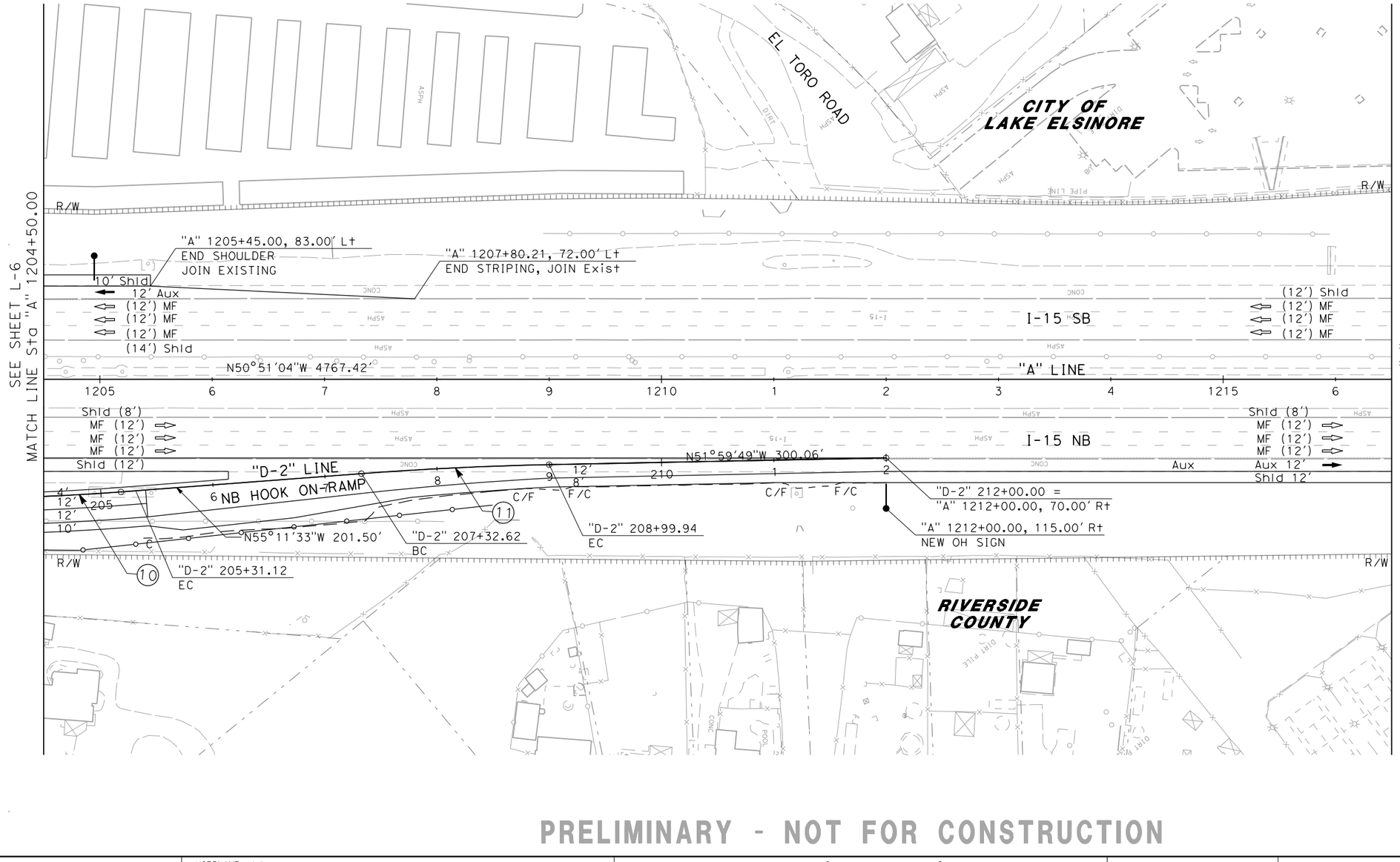
11	3000.00′	03°11′44"	83.68′	167.32′



ALTERNATIVES 2-3 LAYOUT

SCALE: 1"=50′

L-7

PRELIMINARY - NOT FOR CONSTRUCTION

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR
JULIAN HERNANDEZ, P.E.
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 5/21/2023
00-00-00 TIME PLOTTED => 9:41:29 AM

BORDER LAST REVISED 7/2/2010
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DGN FILE => 080F310ea007 Alternatives 2-3.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 0800000124

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Julian Hernandez
No. C 79062
Exp. 3-31-24
CIVIL
STATE OF CALIFORNIA

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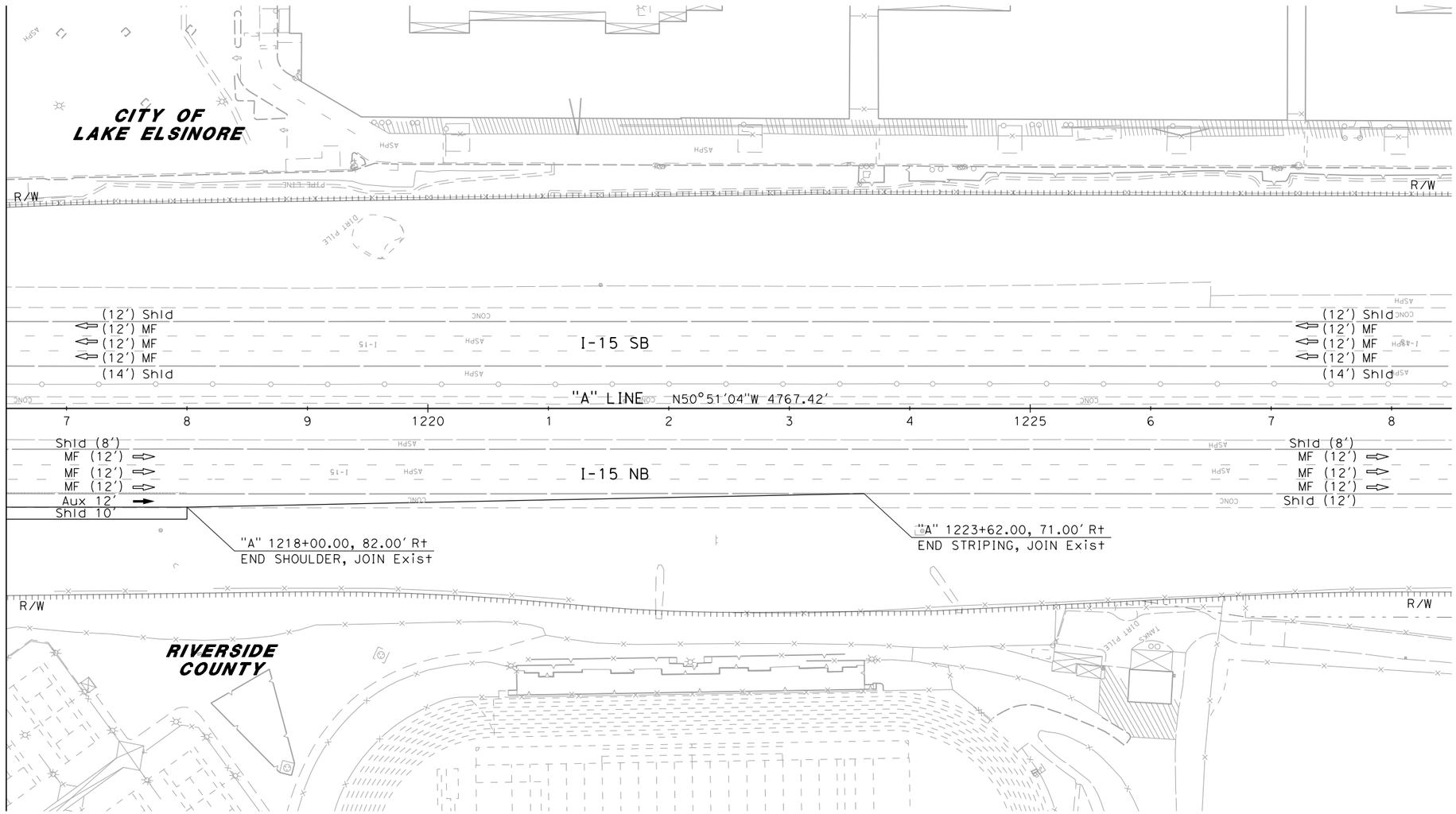
CITY OF LAKE ELSINORE
130 S. MAIN STREET
LAKE ELSINORE, CA 92530

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



ALTERNATIVES 2-3 LAYOUT

SCALE: 1"=50'

L-8

PRELIMINARY - NOT FOR CONSTRUCTION

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Caltrans

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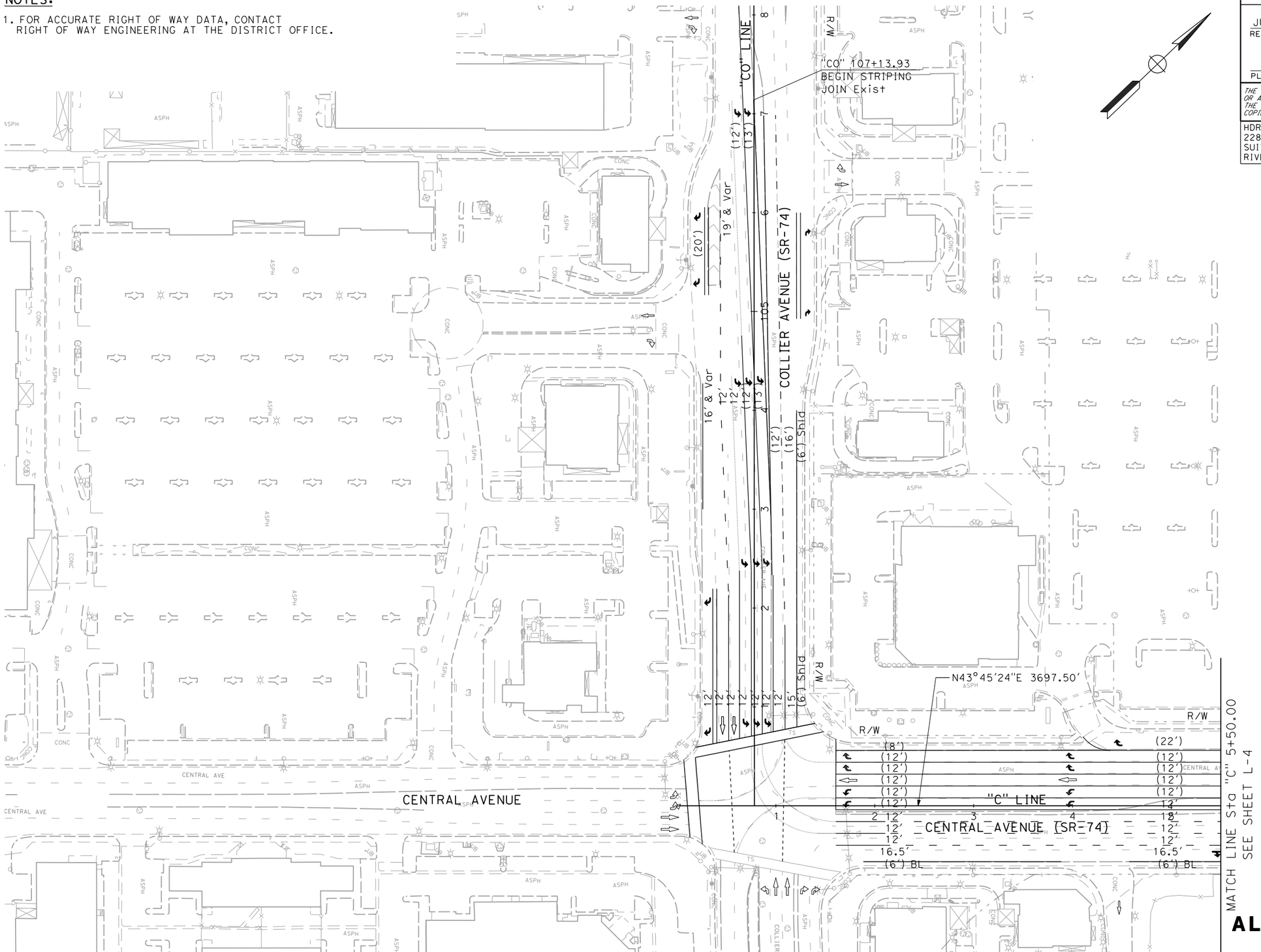

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
Julian Hernandez
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ALTERNATIVES 2-3 LAYOUT

SCALE: 1"=50'

L-9

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CALCULATED-DESIGNED BY: JULIAN HERNANDEZ, P.E.
CHECKED BY:

CONSULTANT FUNCTIONAL SUPERVISOR:

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0800000124

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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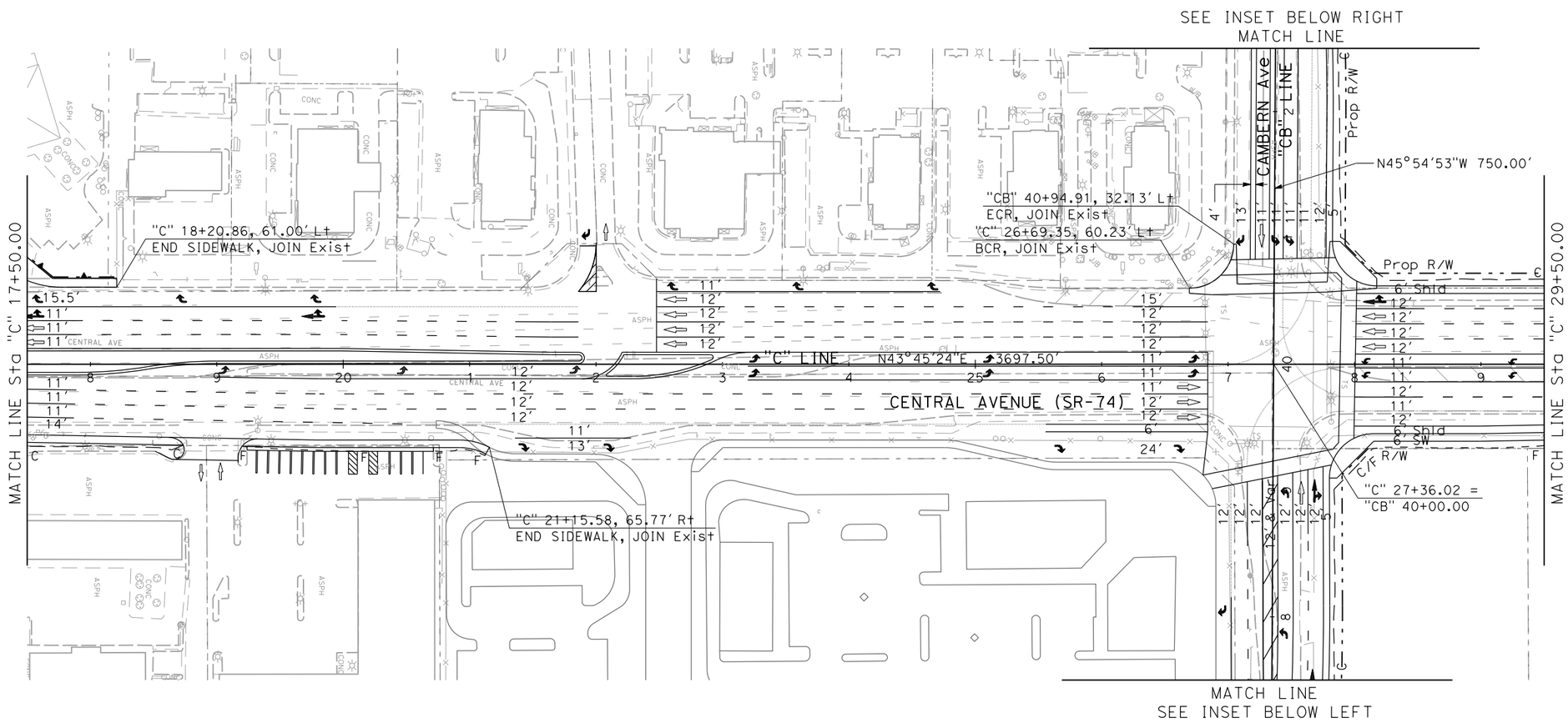

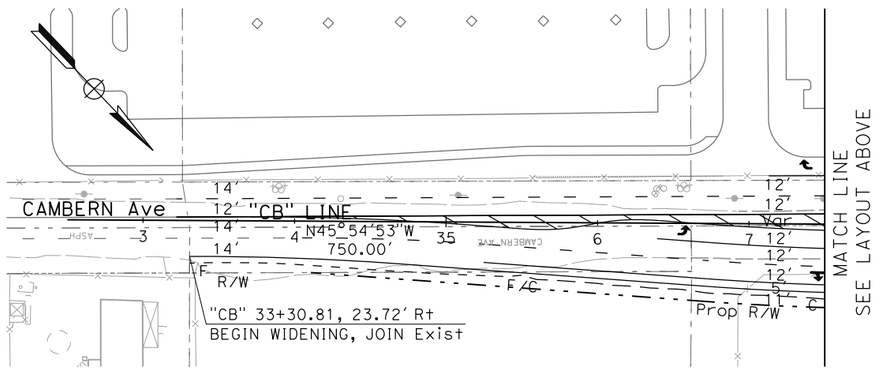

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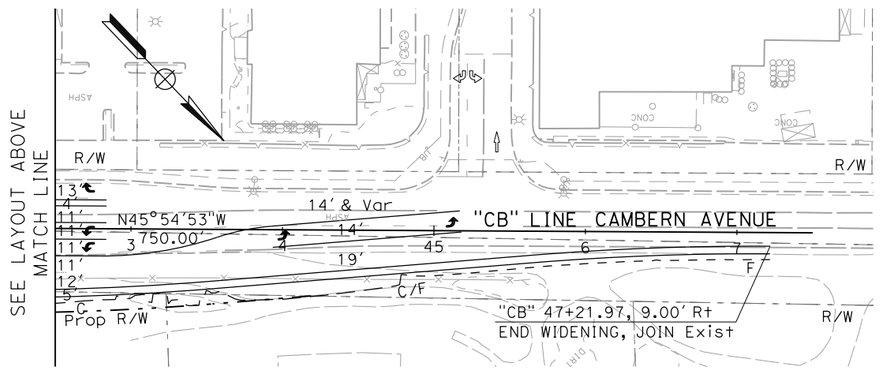

RIGHT INSET

ALTERNATIVES 2-3 LAYOUT

SCALE: 1"=50'

L-10

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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DEXTER AVENUE
JULIAN HERNANDEZ, P.E.
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BORDER LAST REVISED 7/2/2010
USERNAME => Personal
DGN FILE => 080F310ea010 Alternatives 2-3.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 0800000124

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	RIV	15	21.6/23.5	-	-

JULIAN HERNANDEZ
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Julian Hernandez
No. C 79062
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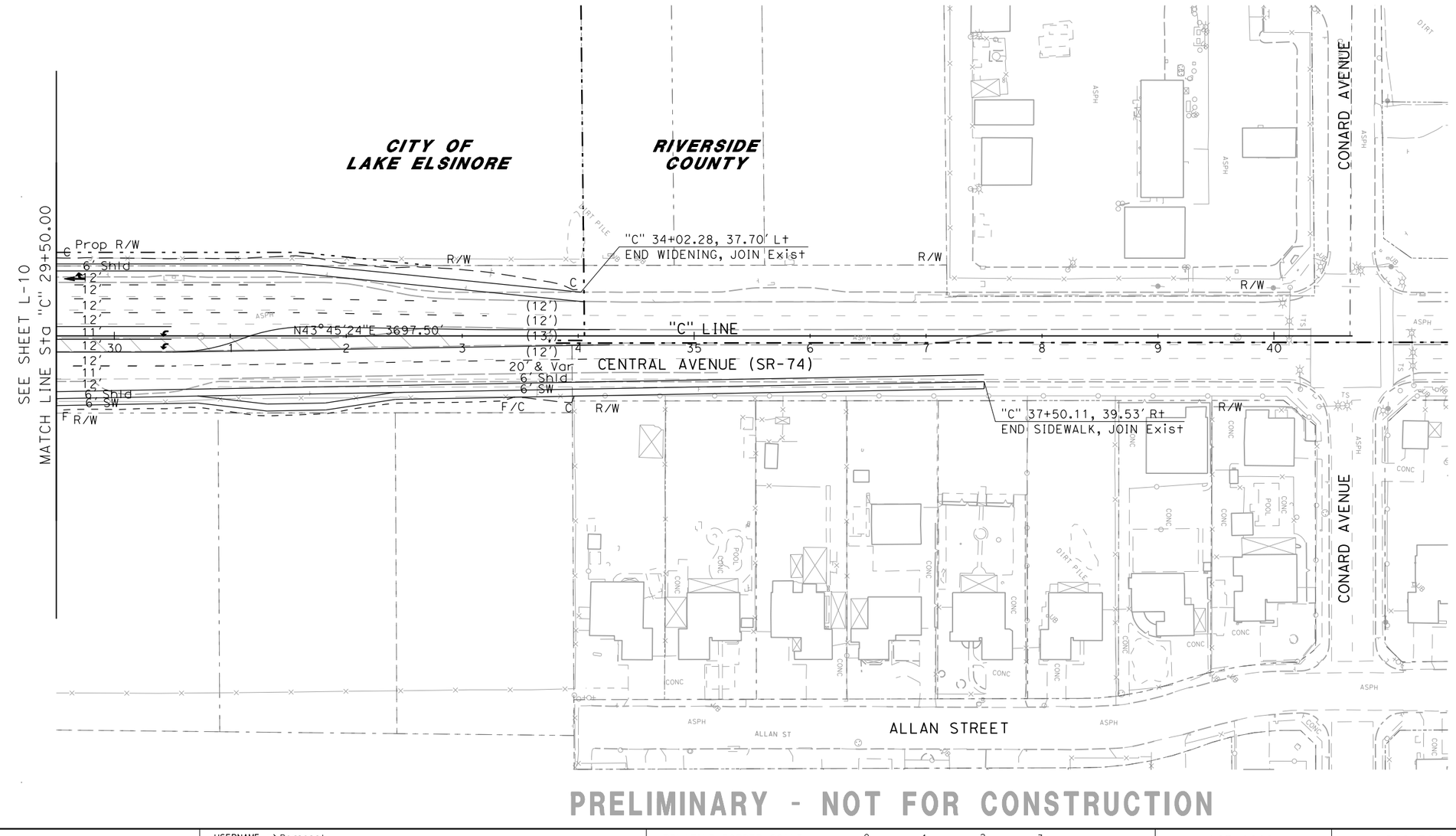
LAKE ELSINORE, CA 92530



ALTERNATIVES 2-3 LAYOUT

SCALE: 1"=50'

L-11

PRELIMINARY - NOT FOR CONSTRUCTION

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR
JULIAN HERNANDEZ, P.E.
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REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 5/21/2023
TIME PLOTTED => 9:41:17 AM

BORDER LAST REVISED 7/2/2010
USERNAME => Personal
DGN FILE => 080F310ea011 Alternatives 2-3.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 0800000124

Design Standards Risk Assessment

Attachment 7

Table 5-8 Nonstandard Design Features Risk Assessment					Project Name:		I-15 / SR-74 Interchange PA/ED				DIST- EA: 08-0F310		
Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IA-1	B	202.2(1)	Standards for Superelevation	Roadways described below, (a) through (e), shall be designed with the emax indicated.", "Based on the above emax, superelevation rates from Tables 202.2A through 202.2E shall be used with the minimum curve radii and design speed (Vd).	2, 3	Ramp Terminal	NB Hook Off-Ramp at Dexter Ave	11.40%	4%	N/A	A lower superelevation rate will keep the longitudinal grades of crosswalk locations under 5%, and could avoid potential overturning of trucks when they come to a stop [HDM 504.3(3)]. Under certain restrictive conditions the superelevation rates from Index 202.2 may not be required on the curve nearest the ramp intersection of a ramp [HDM 504.3(4)]. The combination of proposed horizontal curve radii and lower superelevation rates provide a comfortable speed equal to the 25 mph design speed at the ramp terminals.	Medium	Advance signing for reduced speed at ramp terminal. Reflectors on barrier. Widen the roadway. Enhanced pavement markings. Lighting. Paved shoulders. Shield fixed objects and steep slopes.
IA-2	B	202.2(1)	Standards for Superelevation	Roadways described below, (a) through (e), shall be designed with the emax indicated.", "Based on the above emax, superelevation rates from Tables 202.2A through 202.2E shall be used with the minimum curve radii and design speed (Vd).	2, 3	Ramp Terminal	NB Hook On-Ramp at Dexter Ave	11.40%	4%	N/A	A lower superelevation rate will keep the longitudinal grades of crosswalk locations under 5%, and could avoid potential overturning of trucks when they come to a stop [HDM 504.3(3)]. Under certain restrictive conditions the superelevation rates from Index 202.2 may not be required on the curve nearest the ramp intersection of a ramp [HDM 504.3(4)]. The combination of proposed horizontal curve radii and lower superelevation rates provide a comfortable speed equal to the 25 mph design speed at the ramp terminals.	Medium	Advance signing for reduced speed at ramp terminal. Reflectors on barrier. Widen the roadway. Enhanced pavement markings. Lighting. Paved shoulders. Shield fixed objects and steep slopes.
IA-3	B	202.2(1)	Standards for Superelevation	Roadways described below, (a) through (e), shall be designed with the emax indicated.", "Based on the above emax, superelevation rates from Tables 202.2A through 202.2E shall be used with the minimum curve radii and design speed (Vd).	3	Ramp Terminal	NB Loop Off-Ramp at Central Ave	12%	4%	N/A	A lower superelevation rate will keep the longitudinal grades of crosswalk locations under 5%, and could avoid potential overturning of trucks when they come to a stop [HDM 504.3(3)]. Under certain restrictive conditions the superelevation rates from Index 202.2 may not be required on the curve nearest the ramp intersection of a ramp [HDM 504.3(4)]. The combination of proposed horizontal curve radii and lower superelevation rates provide a comfortable speed equal to the 25 mph design speed at the ramp terminals.	Medium	Advance signing for reduced speed at ramp terminal. Reflectors on barrier. Enhanced pavement markings. Paved shoulders. Lighting.

Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IB-1	B	504.3(3)	Intersection Spacing	The minimum distance (curb return to curb return) between ramp intersections and local road intersections shall be 400 feet.	2, 3	Local Road	Dexter Ave between NB Hook On-Ramp & 11th St	400'	201'	N/A	The proposed NB Hook Ramp terminal was moved as far north as possible to reduce impacts to Arroyo del Toro basin. Another reason is to prevent the ramps from being straight across from the potential future extension of Cambern Avenue to Dexter Avenue along the north side of Arroyo del Toro channel.	Medium	None
IB-2	B	504.3(3)	Intersection Spacing	The minimum distance (curb return to curb return) between ramp intersections and local road intersections shall be 400 feet.	2, 3	Local Road	Central Ave between NB Off-Ramp & Dexter Ave	400'	240'	225'	The existing intersection spacing is nonstandard and will be slightly increased by the proposed NB Off-Ramp improvements. Closure of Dexter Avenue would be required to meet standard.	Medium	The proposed realignment of NB Off-Ramp terminal slightly increases intersection spacing.
IB-3	B	504.3(3)	Intersection Spacing	The minimum distance (curb return to curb return) between ramp intersections and local road intersections shall be 400 feet.	3	Local Road	Central Ave between NB Loop Off-Ramp & Dexter Ave	400'	200'	225'	The existing intersection spacing is nonstandard and will be slightly decreased by the proposed NB Loop Off-Ramp. Closure of Dexter Avenue would be required to meet standard.	Medium	None
IC-1	B	504.2(2)	Deceleration Length	The minimum deceleration length shown on Figure 504.2B shall be provided prior to the first curve beyond the exit nose to assure adequate distance for vehicles to decelerate.	3	Exit Ramp	NB Loop Off-Ramp to WB Central Ave	570'	307'	N/A	The existing I-15 NB bridge structure and the space available between the I-15 NB roadbed and Dexter Avenue do not provide room to develop the tangent length necessary to meet standard deceleration length at the NB Loop Off-Ramp exit. The auxiliary lane that ends at the loop ramp will serve as deceleration lane.	Medium	Advance signing for reduced speed at loop. Reflectors on barrier. Widen the roadway. Enhanced pavement markings. Paved shoulders. Traversable slopes.
IIA-1	B	301.1	Lane Width	The minimum lane width on two-lane and multilane highways, ramps, collector-distributor roads, and other appurtenant roadways shall be 12 feet,…", "Where a multilane State Highway connects to a freeway within an interchange, the outer most lane of the highway in each direction of travel shall be 12 feet.	2, 3	Local Road	Central Ave inside through lanes between SB and NB ramp intersections	12'	11'	11' to 12'	The existing tie-back retaining walls below the I-15 bridge structures do not provide the room necessary to accommodate the standard lane widths. Truck turning templates were used to verify that the proposed configuration does not create an operational challenge for large trucks.	Medium	Delineators. Lighting.
IIA-2	B	301.1	Lane Width	The minimum lane width on two-lane and multilane highways, ramps, collector-distributor roads, and other appurtenant roadways shall be 12 feet,…", "Where a multilane State Highway connects to a freeway within an interchange, the outer most lane of the highway in each direction of travel shall be 12 feet.	2, 3	Local Road	Central Ave inside through lanes & EB outer most lane between NB ramps & Dexter Ave intersections	12'	11' through lanes, 10' EB outer most lane	11' through lanes, 10' EB outer most lane	The existing tie-back retaining walls below the I-15 bridge structures do not provide the room necessary to accommodate the standard lane widths. Truck turning templates were used to verify that the proposed configuration does not create an operational challenge for large trucks.	Medium	Delineators. Lighting.

Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IIA-3	B	301.1	Lane Width	The minimum lane width on two-lane and multilane highways, ramps, collector-distributor roads, and other appurtenant roadways shall be 12 feet,…", "Where a multilane State Highway connects to a freeway within an interchange, the outer most lane of the highway in each direction of travel shall be 12 feet.	2, 3	Local Road	Collier Ave SB inside through lane & right turn lane, north of Central Ave intersection	12'	11	12' through lane, 14' right turn lane	R/W acquisitions from the commercial property next to the right turn pocket would be required to widen the road and provide standard lane width. The roadway widening would require reconstruction of the curb return at the intersection, traffic signal modifications, replacing three wooden poles that support high voltage overhead electric lines with steel poles, because the relocation of one pole for the widening causes it to be offset from the existing straight line alignment, regrading of the landscape area behind the existing sidewalk that would be reconstructed, reconstructing an ADA ramp that connects the sidewalk with the parking lot, and a retaining wall to avoid impacts to the property's parking lot.	Medium	Delineators. Lighting.
IIB-1	B	302.1	Shoulder Width	The shoulder widths given in Table 302.1 shall be the minimum continuous usable width of paved shoulder on highways.	2, 3	Local Road	Central Ave EB between SB On & NB Off ramp intersections	8'	2'	7' to 8' (not striped)	The existing tie-back retaining walls below the I-15 bridge structures do not provide the room necessary to accommodate the standard shoulder widths. Truck turning templates were used to verify that the proposed configuration does not create an operational challenge for large trucks.	Medium	Lighting.
IIB-2	B	302.1	Shoulder Width	The shoulder widths given in Table 302.1 shall be the minimum continuous usable width of paved shoulder on highways.	2, 3	Local Road	Central Ave WB between SB Off & NB ramp intersections	8'	Varies from 2' to 6'	8' to 12' (not striped)	The existing tie-back retaining walls below the I-15 bridge structures do not provide the room necessary to accommodate the standard shoulder widths. Truck turning templates were used to verify that the proposed configuration does not create an operational challenge for large trucks.	Medium	Lighting.
IIB-3	B	302.1	Shoulder Width	The shoulder widths given in Table 302.1 shall be the minimum continuous usable width of paved shoulder on highways.	2, 3	Local Road	Central Ave EB between NB Off-Ramp & Dexter Ave	8'	2'	2'	The R/W available and proximity of gas station facility does not provide the room necessary to accommodate the standard shoulder widths. Truck turning templates were used to verify that the proposed configuration does not create an operational challenge for large trucks.	Medium	Lighting.
IIB-4	B	302.1	Shoulder Width	The shoulder widths given in Table 302.1 shall be the minimum continuous usable width of paved shoulder on highways.	3	Local Road	Central Ave WB between NB Loop Off-Ramp & Dexter Ave	8'	2'	2'	The R/W available and proximity of Burger King drive through does not provide the room necessary to accommodate the standard shoulder widths. Truck turning templates were used to verify that the proposed configuration does not create an operational challenge for large trucks.	Medium	Lighting.

Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IIB-5	B	302.1	Shoulder Width	The shoulder widths given in Table 302.1 shall be the minimum continuous usable width of paved shoulder on highways.	2, 3	Local Road	Collier Ave SB right turn pocket at intersection with Central Ave	8'	2'	2'	R/W acquisitions from the commercial property next to the right turn pocket would be required to widen the road and provide standard shoulder width. The roadway widening would require reconstruction of the curb return at the intersection, traffic signal modifications, replacing three wooden poles that support high voltage overhead electric lines with steel poles, because the relocation of one pole for the widening causes it to be offset from the existing straight line alignment, regrading of the landscape area behind the existing sidewalk that would be reconstructed, reconstructing an ADA ramp that connects the sidewalk with the parking lot, and a retaining wall to avoid impacts to the property's parking lot.	Medium	Lighting.
IIB-6	B	302.1	Shoulder Width	Where a local facility crosses over or under a freeway or expressway and connects to the State facility (such as ramp terminal intersections), the minimum design standards for the cross section of the local facility shall be at least equal to those for a conventional highway with the exception that the outside shoulder width shall match the approach roadway, but not less than 4 feet. If gutter pans are used, then the minimum shoulder width shall be 3 feet wider than the width of the gutter pan being used.	2, 3	Local Road	Dexter Ave NB at proposed access control across from NB Hook Ramps	5'	2'	7'-8'	No additional road widening is proposed to minimize impacts to the adjacent private property, and also to match the existing street width to the north of this location. Implementing a wider shoulder would require additional R/W takes, widening the road up to 11th Street, and reconstructing a driveway, existing curb and gutter, sidewalk, and irrigation system in front of the Later Days Saints (LDS) church.	Medium	Lighting.
IIC-1	B	405.2(2)(a)	Left-Turn Channelization Lane Width	The lane width for both single and double left-turn lanes on State highways shall be 12 feet. For conventional State highways with posted speeds less than or equal to 40 miles per hour and AADTT (truck volume) less than 250 per lane that are in urban, city or town centers (rural main streets), the minimum lane width shall be 11 feet."	2, 3	Local Road	Central Ave WB left turn lanes to SB On-Ramp	12'	11'	12'	The existing tie-back retaining walls below the I-15 bridge structures do not provide the room necessary to accommodate the standard left turn lane widths. Truck turning templates were used to verify that the proposed configuration does not create an operational challenge for large trucks.	Medium	Delineators. Lighting.
IIC-2	B	405.2(2)(a)	Left-Turn Channelization Lane Width	The lane width for both single and double left-turn lanes on State highways shall be 12 feet. For conventional State highways with posted speeds less than or equal to 40 miles per hour and AADTT (truck volume) less than 250 per lane that are in urban, city or town centers (rural main streets), the minimum lane width shall be 11 feet."	2, 3	Local Road	Central Ave EB left turn lanes to Dexter Ave	12'	11'	11'	The existing tie-back retaining walls below the I-15 bridge structures do not provide the room necessary to accommodate the standard left turn lane widths. Truck turning templates were used to verify that the proposed configuration does not create an operational challenge for large trucks.	Medium	Delineators. Lighting.

Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IIC-3	B	405.2(2)(a)	Left-Turn Channelization Lane Width	The lane width for both single and double left-turn lanes on State highways shall be 12 feet. For conventional State highways with posted speeds less than or equal to 40 miles per hour and AADTT (truck volume) less than 250 per lane that are in urban, city or town centers (rural main streets), the minimum lane width shall be 11 feet."	2, 3	Local Road	Collier Ave SB inside two left turn lanes to EB Central Ave	12'	11'	12'	R/W acquisitions from the commercial property next to the right turn pocket would be required to widen the road and provide standard left turn lane width. The roadway widening would require reconstruction of the curb return at the intersection, traffic signal modifications, replacing three wooden poles that support high voltage overhead electric lines with steel poles, because the relocation of one pole for the widening causes it to be offset from the existing straight line alignment, regrading of the landscape area behind the existing sidewalk that would be reconstructed, reconstructing an ADA ramp that connects the sidewalk with the parking lot, and a retaining wall to avoid impacts to the property's parking lot.	Medium	Delineators. Lighting.
IIIA-1	U	202.5(1) & (2)	Superelevation Transition	A superelevation transition should be designed in accordance with the diagram and tabular data shown in Figure 202.5A to satisfy the requirements of safety, comfort, and pleasing appearance., and Two-thirds of the superelevation runoff should be on the tangent and one-third within the curve.	2, 3	Ramp Terminal	NB Hook Off-Ramp Terminal	150' runoff length, 2/3 on tangent, 1/3 on curve	130.7' runoff length, 2/5 on curve	N/A	The space available between the I-15 NB roadbed and Dexter Avenue does not provide the room necessary to provide tangent lengths that would accommodate standard SE runoffs at the Hook Ramp terminal.	Medium	Advance signing for reduced speed at ramp terminal. Widen the roadway. Enhanced pavement markings. Lighting. Paved shoulders. Shield fixed objects and steep slopes.
IIIA-2	U	202.5(1) & (2)	Superelevation Transition	A superelevation transition should be designed in accordance with the diagram and tabular data shown in Figure 202.5A to satisfy the requirements of safety, comfort, and pleasing appearance., and Two-thirds of the superelevation runoff should be on the tangent and one-third within the curve.	2, 3	Ramp Terminal	NB Hook On-Ramp Terminal	150' runoff length, 2/3 on tangent, 1/3 on curve	69.3' Min runoff length, 7/10 on curve	N/A	The space available between the I-15 NB roadbed and Dexter Avenue does not provide the room necessary to provide tangent lengths that would accommodate standard SE runoffs at the Hook Ramp terminal.	Medium	Widen the roadway. Enhanced pavement markings. Lighting. Paved shoulders. Shield fixed objects and steep slopes.

Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IIIA-3	U	202.5(1) & (2)	Superelevation Transition	A superelevation transition should be designed in accordance with the diagram and tabular data shown in Figure 202.5A to satisfy the requirements of safety, comfort, and pleasing appearance., and Two-thirds of the superelevation runoff should be on the tangent and one-third within the curve.	3	Ramp	NB Loop Off-Ramp Exit	240’ runoff length, 2/3 on tangent, 1/3 on curve	218.6’ runoff length, 1/2 on curve	N/A	The space available between the I-15 NB roadbed and the loop ramp's 140' curve does not provide the room necessary to provide tangent lengths that would accommodate standard SE runoffs at the Hook Ramp terminal.	Medium	Advance signing for reduced speed at ramp terminal. Widen the roadway at loop. Enhanced pavement markings. Paved shoulders. Shield fixed objects and steep slopes. Traversable slopes.
IIIA-4	U	202.5(1) & (2)	Superelevation Transition	A superelevation transition should be designed in accordance with the diagram and tabular data shown in Figure 202.5A to satisfy the requirements of safety, comfort, and pleasing appearance., and Two-thirds of the superelevation runoff should be on the tangent and one-third within the curve.	3	Ramp Terminal	NB Loop Off-Ramp Terminal	150’ runoff length, 2/3 on tangent, 1/3 on curve	94’ runoff length, 1/2 on curve	N/A	The space available between the I-15 NB roadbed and Dexter Avenue does not provide the room necessary to provide tangent lengths that would accommodate standard SE runoffs at the Hook Ramp terminal.	Medium	Widen the roadway. Enhanced pavement markings. Lighting. Paved shoulders.
IIIB-1	U	204.4	Vertical Curves	For algebraic grade differences of less than 2 percent, or design speeds less than 40 miles per hour, the vertical curve length should be a minimum of 200 feet.	2, 3	Ramp	Central Ave NB Off-Ramp Terminal Sag Curve	200'	100’ with 3% algebraic grade difference	100’ with 3.55% algebraic grade difference	The existing profile of the NB Off-Ramp has a 100’ sag vertical curve followed by a grade break with 3.55% algebraic difference at the intersection with Central Avenue. Partial realignment of the ramp is proposed to shift the terminal closer to I-15 and provide the minimum standard angle of intersection, which is currently less than 75 degrees, but a profile similar to the existing one will be used. Although HDM 504.2(5)(a) allows the use of 100’ sag curves at ramp terminals of descending off-ramps, eliminating the grade break would result in steeper downhill grades which in turn would reduce the stopping sight distance (SSD) at the crest and sag curves.	Medium	Lighting.
IIIB-2	U	204.4	Vertical Curves	For algebraic grade differences of less than 2 percent, or design speeds less than 40 miles per hour, the vertical curve length should be a minimum of 200 feet.	2, 3	Ramp	Central Ave SB On-Ramp Terminal Sag Curve	200'	100’ with 1.75% algebraic grade difference	100’ with 1.75% algebraic grade difference	In the existing condition the ramp's sag curve next to the intersection with Central Ave is 100' and only ramp widening is proposed. In order to increase the length of the sag curve the ramp would have to be realigned to increase its length and to avoid creating steep grades and nonstandard stopping sight distance at the crest curve by the ramp's entrance.	Medium	Lighting.

Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IIIC-1	U	304.1	Side Slope Standards	For new construction, widening, or where slopes are otherwise being modified, embankment (fill) slopes should be 4:1 or flatter.	2, 3	Ramp	Central Ave SB On-Ramp	4:1	2:1	2:1	In the existing condition the interchange ramps have 2:1 outside fill slopes. The Project proposes to widen the ramps with 2:1 fill slopes to keep the ramp footprints within the available R/W.	Medium	Shield steep slopes.
IIIC-2	U	304.1	Side Slope Standards	For new construction, widening, or where slopes are otherwise being modified, embankment (fill) slopes should be 4:1 or flatter.	2, 3	Ramp	Central Ave SB Off-Ramp	4:1	2:1	2:1 & flatter	In the existing condition the interchange ramps have 2:1 outside fill slopes. The Project proposes to widen the ramps with 2:1 fill slopes to keep the ramp footprints within the available R/W.	Medium	Shield steep slopes.
IIIC-3	U	304.1	Side Slope Standards	For new construction, widening, or where slopes are otherwise being modified, embankment (fill) slopes should be 4:1 or flatter.	2, 3	Local Road	Dexter Avenue left side widening at Basin	4:1	2:1 & 3:1	2:1 & 3:1	2:1 and 3:1 fill slopes are proposed beyond the street widening to limit the impacts to the existing basin's capacity. Dexter Avenue is within jurisdiction of the City of Lake Elsinore, but the fill slope for the street widening at the basin is within Caltrans R/W. The basin is already proposed to be regraded and extended to the south as far as possible to restore the basin's capacity that will be lost due to the construction of the new NB Hook off and on ramps.	Medium	Shield steep slopes.
IIID-1	U	405.1(2)(b)	Corner Sight Distance	The minimum value for corner sight distance at signalized intersections should be equal to the stopping sight distance as given in Table 201.1, measured as previously described. This includes an urban driveway that forms a leg of the signalized intersection.	2, 3	Ramp Intersection	Central Ave NB Off-Ramp	430'	161'	>430'	The existing tie-back retaining walls located on either side of Central Avenue below the I-15 bridge structures create an obstruction to the line of sight to see vehicles approaching along Central Avenue.	Medium	Lighting.
IIID-2	U	405.1(2)(b)	Corner Sight Distance	The minimum value for corner sight distance at signalized intersections should be equal to the stopping sight distance as given in Table 201.1, measured as previously described. This includes an urban driveway that forms a leg of the signalized intersection.	2, 3	Ramp Intersection	Central Ave SB Off-Ramp	430'	216'	264'	The existing tie-back retaining walls located on either side of Central Avenue below the I-15 bridge structures create an obstruction to the line of sight to see vehicles approaching along Central Avenue.	Medium	Lighting.
IIID-3	U	405.1(2)(b)	Corner Sight Distance	The minimum value for corner sight distance at signalized intersections should be equal to the stopping sight distance as given in Table 201.1, measured as previously described. This includes an urban driveway that forms a leg of the signalized intersection.	3	Ramp Intersection	Central Ave NB Loop Off-Ramp	430'	337'	N/A	The proximity of the retaining wall at the Burger King drive through create an obstruction to the line of sight to see vehicles approaching along Central Avenue.	Medium	Lighting.
IIIE-1	U	504.2(2)	Interchange Design Standards, Freeway Exit	Design of freeway entrances and exits should conform to the standard designs illustrated in Figure 504.2A-B (single lane), and Figure 504.3K (two-lane entrances and exits) and/or Figure 504.4 (diverging branch connections), as appropriate., and Contrasting surface treatment beyond the gore pavement should be provided on both entrance and exit ramps as shown on Figures 504.2A, 504.2B, and 504.3K.	2, 3	Ramp	NB Hook Off-Ramp Exit	36'	30'	N/A	There proposed NB Hook Off-Ramp horizontal alignment was designed to minimize impacts to the basin located between I-15 NB and Dexter Avenue, since both the street widening of Dexter Avenue and the NB Hook Off-Ramp are already encroaching into the basin. Increasing the ramp's divergence to provide the 36' offset at the end of the contrasting surface treatment would further push the ramp into the basin, resulting in basin storage capacity loss.	Medium	None
IIIF-1	U	504.3(1)(d)	Lane Drops	Depending on approach geometry and speed, the lane drop transition between the limit line and the 6-foot separation point should be accomplished with a taper of between 30:1 and 50:1 longitudinal to lateral.	2, 3	Ramp	Central Ave SB On-Ramp	30:1 to 50:1	18.5:1	15:1	The ramp is being widened to add two more GP lanes and the proposed drop taper is to maximize the ramp's storage capacity.	Medium	None

Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IIIG-1	U	504.8	Access Control	Access control shall extend at least 50 feet beyond the end of the curb return, ramp radius, or taper.	2, 3	Local Road	Dexter Ave across from NB Hook On-Ramp	100'	48'	N/A	An existing driveway to the Later Days Saints Church would be less than 100' across the street from the ECR of the new NB Hook On-Ramp terminal. The proposed NB Hook Ramp terminal was moved as far north as possible to reduce impacts to Arroyo del Toro detention basin and to prevent the ramps from being straight across from the potential future extension of Cambern Avenue to Dexter Avenue along the north side of Arroyo del Toro channel.	Medium	None
IIIH-1a	U	309.1(2)(a)	Clear Recovery Zone	Fixed objects, when they are necessary highway features, including, but not limited to, bridge piers, abutments, retaining walls, and noise barriers closer to the edge of traveled way than the distances listed above should be eliminated, moved, redesigned to be made yielding, or shielded in accordance with the following guidelines: • Fixed objects, when they are necessary highway features, should be eliminated or moved outside the clear recovery zone to a location where they are unlikely to be hit. • If necessary highway features such as sign posts or light standards cannot be eliminated or moved outside the clear recovery zone, they should be made yielding with a breakaway feature. • If a fixed object, when they are necessary highway features, cannot be eliminated, moved outside the clear recovery zone, or modified to be made yielding, it should be shielded by guardrail, barrier or a crash cushion."	2, 3	Local Road	Left side of Collier Ave, north of Central Ave	20'	5'	5'	The Project is located in an urban setting where many fixed objects such as traffic signals, light poles, power poles, etc., exist within the CRZ of the roadways. These features are necessary for the operation of the highway / roadway facility and cannot be moved or eliminated. The Caltrans' standard plans do not include a detail to make these features yielding or breakaway. Additionally, per Section 3.5 of the Traffic Safety System Guidance "placement of guardrail, itself a fixed object, may also increase the probability of a vehicle colliding with the guardrail. For this reason, fixed objects such as individual signal poles, lighting standards, utility poles, trees, or traffic control cabinets are typically not shielded by guardrail."	Medium	None
IIIH-1b								20'	4'	4'			
IIIH-1c								20'	8'	8'			
IIIH-1d								20'	10'	9'			
IIIH-1e								20'	15'	15'			
IIIH-1f							Right side of Collier Ave, north of Central Ave	20'	5'	5'			
IIIH-1g								20'	15'	15'			
IIIH-1h								20'	14'	14'			
IIIH-1i								20'	15'	15'			
IIIH-1j								20'	15'	15'			
IIIH-1k								20'	16'	16'			

Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IIIH-2a	U	309.1(2)(a)	Clear Recovery Zone	Fixed objects, when they are necessary highway features, including, but not limited to, bridge piers, abutments, retaining walls, and noise barriers closer to the edge of traveled way than the distances listed above should be eliminated, moved, redesigned to be made yielding, or shielded in accordance with the following guidelines: • Fixed objects, when they are necessary highway features, should be eliminated or moved outside the clear recovery zone to a location where they are unlikely to be hit. • If necessary highway features such as sign posts or light standards cannot be eliminated or moved outside the clear recovery zone, they should be made yielding with a breakaway feature. • If a fixed object, when they are necessary highway features, cannot be eliminated, moved outside the clear recovery zone, or modified to be made yielding, it should be shielded by guardrail, barrier or a crash cushion.”	2, 3	Local Road	Right side of Central Ave between Collier Ave and SB On/Off Ramps	20'	5'	5'	The Project is located in an urban setting where many fixed objects such as traffic signals, light poles, power poles, etc., exist within the CRZ of the roadways. These features are necessary for the operation of the highway / roadway facility and cannot be moved or eliminated. The Caltrans’ standard plans do not include a detail to make these features yielding or breakaway. Additionally, per Section 3.5 of the Traffic Safety System Guidance “placement of guardrail, itself a fixed object, may also increase the probability of a vehicle colliding with the guardrail. For this reason, fixed objects such as individual signal poles, lighting standards, utility poles, trees, or traffic control cabinets are typically not shielded by guardrail.”	Medium	None
IIIH-2b								20'	13'	13'			
IIIH-2c								20'	13'	13'			
IIIH-2d								20'	13'	9'			
IIIH-2e								20'	13'	9'			
IIIH-2f							Left side of Central Ave between Collier Ave and SB On/Off Ramps	20'	5'	5'			
IIIH-2g								20'	13'	13'			
IIIH-2h								20'	13'	13'			
IIIH-2i								20'	8'	8'			
IIIH-3a	U	309.1(2)(a)	Clear Recovery Zone	Fixed objects, when they are necessary highway features, including, but not limited to, bridge piers, abutments, retaining walls, and noise barriers closer to the edge of traveled way than the distances listed above should be eliminated, moved, redesigned to be made yielding, or shielded in accordance with the following guidelines: • Fixed objects, when they are necessary highway features, should be eliminated or moved outside the clear recovery zone to a location where they are unlikely to be hit. • If necessary highway features such as sign posts or light standards cannot be eliminated or moved outside the clear recovery zone, they should be made yielding with a breakaway feature. • If a fixed object, when they are necessary highway features, cannot be eliminated, moved outside the clear recovery zone, or modified to be made yielding, it should be shielded by guardrail, barrier or a crash cushion.”	2, 3	Local Road	Left side of Central Ave at SB Off-Ramp Intersection	20'	4'	4'	The Project is located in an urban setting where many fixed objects such as traffic signals, light poles, power poles, etc., exist within the CRZ of the roadways. These features are necessary for the operation of the highway / roadway facility and cannot be moved or eliminated. The Caltrans’ standard plans do not include a detail to make these features yielding or breakaway. Additionally, per Section 3.5 of the Traffic Safety System Guidance “placement of guardrail, itself a fixed object, may also increase the probability of a vehicle colliding with the guardrail. For this reason, fixed objects such as individual signal poles, lighting standards, utility poles, trees, or traffic control cabinets are typically not shielded by guardrail.”	Medium	None
IIIH-3b								20'	18'	18'			
IIIH-3c								20'	5'	5'			
IIIH-3d								20'	4'	4'			
IIIH-3e							Right side of Central Ave at SB On-Ramp Intersection	20'	14'	11'			
IIIH-3f								20'	5'	10'			
IIIH-3g								20'	7'	5'			
IIIH-3h								20'	4'	4'			

Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IIIH-4a	U	309.1(2)(a)	Clear Recovery Zone	Fixed objects, when they are necessary highway features, including, but not limited to, bridge piers, abutments, retaining walls, and noise barriers closer to the edge of traveled way than the distances listed above should be eliminated, moved, redesigned to be made yielding, or shielded in accordance with the following guidelines: • Fixed objects, when they are necessary highway features, should be eliminated or moved outside the clear recovery zone to a location where they are unlikely to be hit. • If necessary highway features such as sign posts or light standards cannot be eliminated or moved outside the clear recovery zone, they should be made yielding with a breakaway feature. • If a fixed object, when they are necessary highway features, cannot be eliminated, moved outside the clear recovery zone, or modified to be made yielding, it should be shielded by guardrail, barrier or a crash cushion.”	2, 3	Ramp	Central Ave SB On-Ramp entrance on Left Side	30'	11'	N/A	The Project will install flashing beacons at on-ramp entrances within the 30’ CRZ, most without guardrail to reduce the maintenance requirements that guardrail installation typically implies. These elements are necessary for the operation of the highway facility and cannot be moved or eliminated. The Caltrans’ standard plans do not include a detail to make the ramp meter poles yielding or breakaway. Additionally, per Section 3.5 of the Traffic Safety System Guidance “placement of guardrail, itself a fixed object, may also increase the probability of a vehicle colliding with the guardrail. For this reason, fixed objects such as individual signal poles, lighting standards, utility poles, trees, or traffic control cabinets are typically not shielded by guardrail.”	Medium	None
IIIH-4b							Central Ave SB On-Ramp entrance on Right Side	30'	7'	N/A			
IIIH-5a	U	309.1(2)(a)	Clear Recovery Zone	Fixed objects, when they are necessary highway features, including, but not limited to, bridge piers, abutments, retaining walls, and noise barriers closer to the edge of traveled way than the distances listed above should be eliminated, moved, redesigned to be made yielding, or shielded in accordance with the following guidelines: • Fixed objects, when they are necessary highway features, should be eliminated or moved outside the clear recovery zone to a location where they are unlikely to be hit. • If necessary highway features such as sign posts or light standards cannot be eliminated or moved outside the clear recovery zone, they should be made yielding with a breakaway feature. • If a fixed object, when they are necessary highway features, cannot be eliminated, moved outside the clear recovery zone, or modified to be made yielding, it should be shielded by guardrail, barrier or a crash cushion.”	2, 3	Local Road	Left side of Central Ave below I-15 SB & NB bridge structures	20'	8.5'	11'	There are existing tie-back retaining walls on both sides of Central Avenue that cannot be moved or eliminated, unless the I-15 NB and SB bridge structures are reconstructed to provide longer spans so that the bridge abutments are placed outside the CRZ. Both walls will continue to be located at the back of sidewalk once the proposed street widening is completed.	Medium	None
IIIH-5b							Right side of Central Ave below I-15 bridge structure	20'	8.5'	12'			

Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IIIH-6a	U	309.1(2)(a)	Clear Recovery Zone	Fixed objects, when they are necessary highway features, including, but not limited to, bridge piers, abutments, retaining walls, and noise barriers closer to the edge of traveled way than the distances listed above should be eliminated, moved, redesigned to be made yielding, or shielded in accordance with the following guidelines: • Fixed objects, when they are necessary highway features, should be eliminated or moved outside the clear recovery zone to a location where they are unlikely to be hit. • If necessary highway features such as sign posts or light standards cannot be eliminated or moved outside the clear recovery zone, they should be made yielding with a breakaway feature. • If a fixed object, when they are necessary highway features, cannot be eliminated, moved outside the clear recovery zone, or modified to be made yielding, it should be shielded by guardrail, barrier or a crash cushion.”	2, 3	Local Road	Left side of Central Ave at NB Loop Off-Ramp Intersection (Alternative3 only)	20'	10'	5'	The Project is located in an urban setting where many fixed objects such as traffic signals, light poles, power poles, etc., exist within the CRZ of the roadways. These features are necessary for the operation of the highway / roadway facility and cannot be moved or eliminated. The Caltrans’ standard plans do not include a detail to make these features yielding or breakaway. Additionally, per Section 3.5 of the Traffic Safety System Guidance “placement of guardrail, itself a fixed object, may also increase the probability of a vehicle colliding with the guardrail. For this reason, fixed objects such as individual signal poles, lighting standards, utility poles, trees, or traffic control cabinets are typically not shielded by guardrail.”	Medium	None
IIIH-6b								20'	4'	N/A			
IIIH-6c								20'	9'	4'			
IIIH-6d							Right side of Central Ave at NB Off-Ramp Intersection	20'	9'	5'			
IIIH-6e								20'	4'	4'			
IIIH-7a	U	309.1(2)(a)	Clear Recovery Zone	Fixed objects, when they are necessary highway features, including, but not limited to, bridge piers, abutments, retaining walls, and noise barriers closer to the edge of traveled way than the distances listed above should be eliminated, moved, redesigned to be made yielding, or shielded in accordance with the following guidelines: • Fixed objects, when they are necessary highway features, should be eliminated or moved outside the clear recovery zone to a location where they are unlikely to be hit. • If necessary highway features such as sign posts or light standards cannot be eliminated or moved outside the clear recovery zone, they should be made yielding with a breakaway feature. • If a fixed object, when they are necessary highway features, cannot be eliminated, moved outside the clear recovery zone, or modified to be made yielding, it should be shielded by guardrail, barrier or a crash cushion.”	2, 3	Local Road	Left side of Central Ave between NB Off ramps and Dexter Ave	20'	5'	8'	The Project is located in an urban setting where many fixed objects such as traffic signals, light poles, power poles, etc., exist within the CRZ of the roadways. These features are necessary for the operation of the highway / roadway facility and cannot be moved or eliminated. The Caltrans’ standard plans do not include a detail to make these features yielding or breakaway. Additionally, per Section 3.5 of the Traffic Safety System Guidance “placement of guardrail, itself a fixed object, may also increase the probability of a vehicle colliding with the guardrail. For this reason, fixed objects such as individual signal poles, lighting standards, utility poles, trees, or traffic control cabinets are typically not shielded by guardrail.”	Medium	None
IIIH-7b								20'	5'	8'			
IIIH-7c								20'	8.5'	10'			
IIIH-7d								20'	4'	4'			
IIIH-7e							Right side of Central Ave between NB Off ramps and Dexter Ave	20'	15'	15'			
IIIH-7f								20'	9.5'	9.5'			
IIIH-7g								20'	6'	6'			
IIIH-7h								20'	2.5'	2.5'			
IIIH-7j								20'	6'	6'			
IIIH-7i								20'	6'	6'			

Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IIIH-8a	U	309.1(2)(a)	Clear Recovery Zone	Fixed objects, when they are necessary highway features, including, but not limited to, bridge piers, abutments, retaining walls, and noise barriers closer to the edge of traveled way than the distances listed above should be eliminated, moved, redesigned to be made yielding, or shielded in accordance with the following guidelines: • Fixed objects, when they are necessary highway features, should be eliminated or moved outside the clear recovery zone to a location where they are unlikely to be hit. • If necessary highway features such as sign posts or light standards cannot be eliminated or moved outside the clear recovery zone, they should be made yielding with a breakaway feature. • If a fixed object, when they are necessary highway features, cannot be eliminated, moved outside the clear recovery zone, or modified to be made yielding, it should be shielded by guardrail, barrier or a crash cushion.”	2, 3	Local Road	Left side of Dexter Ave at NB Hook Ramps Intersection	20'	6'	N/A	On Dexter Avenue at intersection with the proposed NB Hook Ramp terminals there is existing chain link fencing and a fire hydrant that will be relocated on the right side of the road, and new traffic signals will be installed at the intersection. These features will be in proposed access controlled areas and within the CRZ of the roadway. These features are necessary for the operation of the highway / roadway facility and cannot be moved or eliminated. The Caltrans’ standard plans do not include a detail to make these features yielding or breakaway. Additionally, per Section 3.5 of the Traffic Safety System Guidance “placement of guardrail, itself a fixed object, may also increase the probability of a vehicle colliding with the guardrail. For this reason, fixed objects such as individual signal poles, lighting standards, utility poles, trees, or traffic control cabinets are typically not shielded by guardrail.”	Medium	None
IIIH-8b								20'	12'	N/A			
IIIH-8c								20'	12'	N/A			
IIIH-8d							Right side of Dexter Ave across from NB Hook Ramps	20'	12'	15'			
IIIH-8e								20'	9'	7'			
IIIH-8f								20'	9'	N/A			
IIIH-8g								20'	9'	N/A			
IIIH-9	U	309.1(2)(a)	Clear Recovery Zone	Fixed objects, when they are necessary highway features, including, but not limited to, bridge piers, abutments, retaining walls, and noise barriers closer to the edge of traveled way than the distances listed above should be eliminated, moved, redesigned to be made yielding, or shielded in accordance with the following guidelines: • Fixed objects, when they are necessary highway features, should be eliminated or moved outside the clear recovery zone to a location where they are unlikely to be hit. • If necessary highway features such as sign posts or light standards cannot be eliminated or moved outside the clear recovery zone, they should be made yielding with a breakaway feature. • If a fixed object, when they are necessary highway features, cannot be eliminated, moved outside the clear recovery zone, or modified to be made yielding, it should be shielded by guardrail, barrier or a crash cushion.”	2, 3	Ramp	Central Ave SB On-Ramp Meter Signal Pole on right side	30'	7'	N/A	The Project will install ramp metering equipment and signal poles at on-ramps within the 30’ CRZ, and without guardrail to reduce maintenance requirements. These elements are necessary for the operation of the highway facility and cannot be moved or eliminated. The Caltrans’ standard plans do not include a detail to make the ramp meter poles yielding or breakaway. Additionally, per Section 3.5 of the Traffic Safety System Guidance “placement of guardrail, itself a fixed object, may also increase the probability of a vehicle colliding with the guardrail. For this reason, fixed objects such as individual signal poles, lighting standards, utility poles, trees, or traffic control cabinets are typically not shielded by guardrail.”	Medium	None

Design Standard Information					Location Information						Assessment		
ID#	B/U	HDM Index	HDM Index Heading	Design Standard	Alt #	Facility	Limits	Standard	Proposed	Existing Condition	Justification	Probability of Approval	Possible Mitigation
IIIH-10a	U	309.1(2)(a)	Clear Recovery Zone	Fixed objects, when they are necessary highway features, including, but not limited to, bridge piers, abutments, retaining walls, and noise barriers closer to the edge of traveled way than the distances listed above should be eliminated, moved, redesigned to be made yielding, or shielded in accordance with the following guidelines: • Fixed objects, when they are necessary highway features, should be eliminated or moved outside the clear recovery zone to a location where they are unlikely to be hit. • If necessary highway features such as sign posts or light standards cannot be eliminated or moved outside the clear recovery zone, they should be made yielding with a breakaway feature. • If a fixed object, when they are necessary highway features, cannot be eliminated, moved outside the clear recovery zone, or modified to be made yielding, it should be shielded by guardrail, barrier or a crash cushion.”	2, 3	Ramp	Dexter Ave NB Hook-On Ramp Meter Signal Pole on left side	30'	7'	N/A	The Project will install ramp metering equipment and signal poles at on-ramps within the 30’ CRZ, and without guardrail to reduce maintenance requirements. These elements are necessary for the operation of the highway facility and cannot be moved or eliminated. The Caltrans’ standard plans do not include a detail to make the ramp meter poles yielding or breakaway. Additionally, per Section 3.5 of the Traffic Safety System Guidance “placement of guardrail, itself a fixed object, may also increase the probability of a vehicle colliding with the guardrail. For this reason, fixed objects such as individual signal poles, lighting standards, utility poles, trees, or traffic control cabinets are typically not shielded by guardrail.”	Medium	None
IIIH-10b							Dexter Ave NB Hook-On Ramp Meter Signal Pole on right side	30'	11'	N/A			

Preliminary Cost Estimates

Attachment 8

PROJECT

PLANNING COST ESTIMATE

EA: 0F310 PID: 08-00000124

EA: 0F310

PID: 08-00000124

District-County-Route: 08-Riv-15

PM: 21.6 - 23.5

Type of Estimate : PA/ED Alternative Analysis

Program Code : FTIP ID RIV060109

Project Limits : PM 21.6 to PM 23.5

Project Description: I-15 / SR-74 Interchange Improvements Project

Scope : Improve interchange and local intersections

Alternative : No.2 NB Hook Ramps

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost	Escalated Cost
TOTAL ROADWAY COST	$ 31,059,200	$ 32,314,000
TOTAL STRUCTURES COST	$ -	$ -
SUBTOTAL CONSTRUCTION COST	$ 31,059,200	$ 32,314,000
TOTAL RIGHT OF WAY COST	$ 8,145,000	$ 8,474,100
TOTAL CAPITAL OUTLAY COSTS	$ 39,205,000	$ 40,789,000
PA&ED SUPPORT	$ 2,700,000	$ 2,700,000
PS&E SUPPORT	$ 3,100,000	$ 3,225,300
RIGHT OF WAY SUPPORT	$ 350,000	$ 364,200
CONSTRUCTION SUPPORT	$ 4,000,000	$ 4,161,600
TOTAL SUPPORT COST	$ 10,150,000	$ 10,452,000
TOTAL PROJECT COST	$ 49,400,000	$ 51,300,000

If Project has been programmed enter Programmed Amount

	Month	/	Year
Date of Estimate (Month/Year)	5	/	2023
Estimated Construction Start (Month/Year)	1	/	2025
Number of Working Days =	260		
Estimated Mid-Point of Construction (Month/Year)	6	/	2025
Estimated Construction End (Month/Year)	12	/	2025
Number of Plant Establishment Days	180		

Estimated Project Schedule

PID Approval	April-05
PA&ED Approval	October-23
PS&E	August-24
RTL	October-24
Begin Construction	January-25

Cost Estimate Certifier	Julian Hernandez, HDR Engineering Inc.	5/19/2023	(951)320-7325
	Office Engineer / Cost Estimate Certifier	**Date**	**Phone**
Approved by Project Manager	Mark Hager, HDR Engineering Inc.	5/25/2023	(951)320-7343
	Project Manager	**Date**	**Phone**

I. ROADWAY ITEMS SUMMARY

	Section		Cost
1	**Earthwork**	$	949,700
2	**Pavement Structural Section**	$	9,100,300
3	**Drainage**	$	1,678,700
4	**Specialty Items**	$	3,238,200
5	**Environmental**	$	1,536,800
6	**Traffic Items**	$	4,528,400
7	**Detours**	$	-
8	**Minor Items**	$	420,700
9	**Roadway Mobilization**	$	2,145,300
10	**Supplemental Work**	$	512,500
11	**State Furnished**	$	699,300.00
12	**Time-Related Overhead**	$	1,072,700.00
13	**Roadway Contingency**	$	5,176,600.00
	TOTAL ROADWAY ITEMS	**$**	**31,059,200**

Estimate Prepared By :	Julian Hernandez, Project Engineer	5/19/2023	(951)320-7325
	Name and Title	Date	Phone
Estimate Reviewed By :	Mark Hager	5/19/2023	(951)320-7373
	Name and Title	Date	Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	29,082	x	30.00	=	$	872,460
19010X	Roadway Excavation (Type X) ADL	CY		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198010	Imported Borrow	CY		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
170105	Clearing & Grubbing	ACRE	14	x	4,800.00	=	$	67,200
100100	Develop Water Supply	LS	1	x	10,000.00	=	$	10,000
210130	Duff	ACRE		x		=	$	-
XXXXXX	Some Item	Unit						

TOTAL EARTHWORK SECTION ITEMS	**$**	**949,700**

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
401050	Jointed Plain Concrete Pavement	CY	4,044	x	320.00	=	$	1,294,080
400050	Continuously Reinforced Concrete Pavement	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		=	$	-
280010	Rapid Strength Concrete Base	CY		x		=	$	-
410095	Dowel Bar (Drill and Bond)	EA		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	14,675	x	135.00	=	$	1,981,125
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	15,648	x	150.00	=	$	2,347,200
198205	Subgrade Enhancement Geotextile	SY		x		=	$	-
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		=	$	-
250201	Class 2 Aggregate Sub-base	CY	2,630	x	45.00	=	$	118,350
260203	Class 2 Aggregate Base	CY	10,284	x	50.00	=	$	514,200
270014	Cement Treated Base (Plant-Mixed, Class A)	CY	2,061	x	300.00	=	$	618,300
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
397005	Tack Coat	TON	18	x	1,100.00	=	$	19,800
377501	Slurry Seal	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
730020	Minor Concrete (Curb)(CY)	CY	100	x	1,070.00	=	$	107,000
731504	Minor Concrete (Curb and Gutter)	CY	346	x	1,100.00	=	$	380,600
731521	Minor Concrete (Sidewalk, 4")	CY	361	x	1,100.00	=	$	397,100
370001	Sand Cover (Seal)	TON		x		=	$	-
731530	Minor Concrete (Textured Paving)	CY		x		=	$	-
731502	Minor Concrete (Miscellaneous Construction)	CY	105	x	1,000.00	=	$	105,000
731511	Minor Concrete (Island Paving)	CY	91	x	1,000.00	=	$	91,000
394074	Place Hot Mix Asphalt Dike (Type C)	LF	378	x	8.00	=	$	3,024
394075	Place Hot Mix Asphalt Dike (Type D)	LF	1,740	x	4.00	=	$	6,960
394077	Place Hot Mix Asphalt Dike (Type F)	LF	3,661	x	4.00	=	$	14,644
150305	Obliterate Surfacing	SQYD		x		=	$	-
398100	Remove Asphalt Concrete Dike	LF	6,066	x	7.00	=	$	42,462
731700	Remove Curb	LF	2,294	x	9.00	=	$	20,646
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
153123	Remove Concrete	SQYD	1,410	x	50.00	=	$	70,500
731840	Remove Concrete (Curb and Gutter)	LF	5,222	x	13.00	=	$	67,886
731780	Remove Concrete Sidewalk (SQYD)	SQYD	2,704	x	44.00	=	$	118,976
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD		x		=	$	-
398001	Remove Asphalt Concrete Pavement	SQFT	193,623	x	2.70	=	$	522,782
398200	Cold Plane Asphalt Concrete Pavement	SQYD	86,218	x	3.00	=	$	258,654
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		=	$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		=	$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS	**$**	**9,100,300**

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
710132	Remove Culvert	LF	163	x	80.00	=	$	13,040
710152	Remove Headwall	EA	3	x	2,700.00	=	$	8,100
150820	Modify Inlet	EA		x		=	$	-
155232	Sand Backfill	CY		x		=	$	-
15020X	Abandon Culvert	EA/LF		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
710150	Remove Inlet	EA	17	x	2,000.00	=	$	34,000
710262	Cap Inlet	EA	3	x	2,000.00	=	$	6,000
194001	Ditch Excavation	CY	245	x	60.00	=	$	14,700
510090	Structural Concrete, 5-14x9.5 Reinf. Box Culvert	CY	158	x	2,065.00	=	$	326,270
510092	Structural Concrete, Headwall	CY	3	x	3,600.00	=	$	10,800
510501	Minor Concrete	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
610108	18" Alternative Pipe Culvert	LF	614	x	190.00	=	$	116,660
610112	24" Alternative Pipe Culvert	LF	533	x	225.00	=	$	119,925
610117	30" Alternative Pipe Culvert	LF	169	x	250.00	=	$	42,250
610121	36" Alternative Pipe Culvert	LF	68	x	275.00	=	$	18,700
705309	18" Alternative Flared End Section	EA	9	x	2,000.00	=	$	18,000
705319	30" Alternative Flared End Section	EA	3	x	2,600.00	=	$	7,800
721018	Rock Slope Protection (Facing)	CY	29	x	447.00	=	$	12,963
721420	Concrete (Ditch Lining)	CY	16	x	1,500.00	=	$	24,000
	GD1 Inlet	EA	26	x	8,400.00	=	$	218,400
	OS Inlet	EA	3	x	8,400.00	=	$	25,200
	OL-7 Inlet	EA	6	x	9,000.00	=	$	54,000
	OL-10 Inlet	EA	2	x	9,000.00	=	$	18,000
	OL-14 Inlet	EA	2	x	13,000.00	=	$	26,000
	GMP Inlet	EA	7	x	6,400.00	=	$	44,800
	Remove Bioswale	LF	100	x	50.00		$	5,000
	Manhole No. 1	EA	1	x	6,500.00	=	$	6,500
	Junction Structure No.1	EA	1	x	3,000.00	=	$	3,000
	Junction Structure No.2	EA	1	x	4,500.00	=	$	4,500
	Permanent BMPs	LS	1	x	500,000.00	=	$	500,000

TOTAL DRAINAGE ITEMS $ 1,678,700

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
080050A	Progress Schedule (Critical Path Method)	LS	1	x	10,000.00	=	$	10,000
582001	Sound Wall (Masonry Block)	LF		x		=	$	-
510530	Minor Concrete (Wall)	CY		x		=	$	-
600051	Remove Sound Wall (LF)	LF	865	x	51.00	=	$	44,115
600017	Remove Retaining Wall (LF)	LF	490	x	180.00	=	$	88,200
070030	Lead Compliance Plan	LS	1	x	10,000.00	=	$	10,000
141120	Treated Wood Waste	LB		x		=	$	-
153221	Remove Concrete Barrier	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Flared End Section	EA		x		=	$	-
800360	Chain Link Fence (Type CL-6)	LF	2,823	x	46.00	=	$	129,858
802520	6' Chain Link Gate (Type CL-6)	EA	3	x	3,000.00	=	$	9,000
803050	Remove Chain Link Fence	LF	4,010	x	10.50	=	$	42,105
832005	Midwest Guard Rail System	LF	3,889	x	50.00	=	$	194,450
832070	Vegetation Control (minor concrete)	SQYD	1,267	x	85.00	=	$	107,695
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA	5	x	5,000.00	=	$	25,000
4906XX	CIDH Concrete Piling (Insert Diameter)	LF		x		=	$	-
839XXX	Crash Cushion (Insert Type)	EA		x		=	$	-
839640	Concrete Barrier (Type 60M)	LF	907	x	215.00	=	$	195,005
839736A	Concrete Barrier (Type 742A)	LF	1,603	x	230.00	=	$	368,690
520103	Bar Reinforced Steel (Retaining Wall)	LB	201,300	x	1.70	=	$	342,210
510060	Structural Concrete, Retaining Wall	CY	1,677	x	900.00	=	$	1,509,300
475010	Retaining Wall (Type 6B Masonry Wall, H=4')	SQFT	2,216	x	35.00	=	$	77,560
511035	Architectural Treatment	SQFT		x		=	$	-
598001	Anti-Graffiti Coating	SQFT		x		=	$	-
203070	Rock Stain	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT		x		=	$	-
83954X	Transition Railing (Type X)	EA		x		=	$	-
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
83958X	End Anchor Assembly (Type X)	EA		x		=	$	-
	Reconstruct Monument Sign	EA	1	x	15,000.00	=	$	15,000
	Reconstruct Commercial Sign	EA	2	x	10,000.00	=	$	20,000
	Demolish Building	LS	1	x	50,000.00	=	$	50,000

TOTAL SPECIALTY ITEMS $ 3,238,200

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost		
	Biological Mitigation	LS	1	x	800,000.00	=	$	800,000		
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-		
141000	Temporary Fence (Type ESA)	LF		x		=	$	-		
146002	Contractor-Supplied Biologist (LS)	LS	1	x	50,000.00	=	$	50,000		
								Subtotal Environmental Mitigation	*$*	*850,000*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost		
20XXXX	Highway Planting	LS		x		=	$	-		
20XXXX	Irrigation System	LS		x		=	$	-		
204099	Plant Establishment Work	LS		x		=	$	-		
204101	Extend Plant Establishment Work	LS		x		=	$	-		
20XXXX	Follow-up Landscape Project	LS		x		=	$	-		
150685	Remove Irrigation Facility	LS		x		=	$	-		
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-		
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-		
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-		
200114	Rock Blanket	SQFT	12,495	x	18.00	=	$	224,910		
200113	Rock Mulch (raised medians)	SQFT		x		=	$	-		
200122	Weed Germination	SQYD		x		=	$	-		
208304	Water Meter	EA		x		=	$	-		
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-		
20890X	Extend X" Conduit (Use for Extension of Irrigation	LF		x		=	$	-		
	Irrigation and landscaping restoration, plant establishment	LS	1	x	50,000.00	=	$	50,000		
								Subtotal Landscape and Irrigation	*$*	*274,910*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost		
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-		
210350	Fiber Rolls	LF		x		=	$	-		
210360	Compost Sock	LF		x		=	$	-		
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-		
21025X	Bonded Fiber Matrix	QFT/ACRE		x		=	$	-		
210300	Hydromulch	SQFT		x		=	$	-		
210420	Straw	SQFT		x		=	$	-		
210430	Hydroseed	SQFT	430,000	x	0.15	=	$	64,500		
210600	Compost	SQFT		x		=	$	-		
210630	Incorporate Materials	SQFT		x		=	$	-		
								Subtotal Erosion Control	*$*	*64,500*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost		
130300	Prepare SWPPP	LS	1	x	23,000.00	=	$	23,000		
130200	Prepare WPCP	LS		x		=	$	-		
130100	Job Site Management	LS	1	x	24,000.00	=	$	24,000		
130330	Storm Water Annual Report	EA	2	x	2,000.00	=	$	4,000		
130310	Rain Event Action Plan (REAP)	EA	24	x	500.00	=	$	12,000		
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-		
130520	Temporary Hydraulic Mulch	SQYD	14,969	x	9.00	=	$	134,721		
130550	Temporary Hydroseed	SQYD		x		=	$	-		
130560	Temporary Soil Binder	SQYD	14,969	x	1.00	=	$	14,969		
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$	-		
130640	Temporary Fiber Roll	LF	13,288	x	4.00	=	$	53,152		
130900	Temporary Concrete Washout	LS	1	x	24,000.00	=	$	24,000		
130710	Temporary Construction Entrance	EA	4	x	3,800.00	=	$	15,200		
130610	Temporary Check Dam	LF	300	x	6.00	=	$	1,800		
130620	Temporary Drainage Inlet Protection	EA	30	x	266.00	=	$	7,980		
130730	Street Sweeping	LS	1	x	32,500.00	=	$	32,500		
131103	Water Quality Sampling and Analysis Day	EA		x		=	$	-		
131104	Water Quality Monitoring Report	EA		x		=	$	-		
								Subtotal NPDES	*$*	*347,322*

			TOTAL ENVIRONMENTAL	**$**	**1,536,800**

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS	1	x	23,000.00	=	$	23,000		
066596	Additional Water Pollution Control**	LS	1	x	6,000.00	=	$	6,000		
066597	Storm Water Sampling and Analysis***	LS	1	x	14,467.00	=	$	14,467		
066916	Annual Construction General Permit Fees	LS	1	x	1,870.00	=	$	1,870		
								Subtotal Supplemental Work for NPDES	*$*	*45,337*

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting and Sign Illumination	LS	1	x	110,000.00	=	$	110,000
870400	Signal and Lighting System	LS	2	x	350,000.00	=	$	700,000
	Half Traffic Signal	LS	1	x	250,000.00	=	$	250,000
	Traffic Signal Modifications	LS	5	x	160,000.00	=	$	800,000
871300	Camera Systems	LS	1	x	60,000.00	=	$	60,000
870510	Ramp Metering System	LS	1	x	350,000.00	=	$	350,000
871812	Interconnect Conduit and Cable (LS)	LS	1	x	75,000.00	=	$	75,000
86080X	Inductive Loop Detectors	EA/LS		x		=	$	-
8609XX	Traffic Monitoring Station (Type X)	LS		x		=	$	-
568046	Remove Sign Structure	EA	4	x	3,500.00	=	$	14,000
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
066860	Maintain Existing Traffic Management System Elem	LS	1	x	20,000.00	=	$	20,000
871900	Fiber Optic Cable System	LS	1	x	150,000.00	=	$	150,000
XXXXX	Some Item	LS		x		=	$	-

Subtotal Traffic Electrical *$* *2,529,000*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign - One Post	EA		x		=	$	-
566012	Roadside Sign - Two Post	EA		x		=	$	-
5602XX	Furnish Sign	SQFT		x		=	$	-
568016	Install Sign Panel on Existing Frame	SQFT		x		=	$	-
150711	Remove Painted Traffic Stripe	LF		x		=	$	-
141101	Remove Yellow Painted Traffic Stripe (Hazardous W	LF		x		=	$	-
150712	Remove Painted Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA		x		=	$	-
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
560213A	Furnish Sign Structure (Lightweight)	EA	5	x	120,000.00	=	$	600,000
560214A	Install Sign Structure (Lightweight)	EA	5	x	15,000.00	=	$	75,000
490605	36" Cast-in-drilled-holr Conc Piling (Sign Foundatior	LF	60	x	1,000.00	=	$	60,000
82010X	Delineator (Class X)	EA		x		=	$	-
840502	Thermoplastic Traffic Stripe (Enhanced Wet Night V	LF	107,750	x	1.05	=	$	113,138
846012	Thermoplastic Crosswalk and Pavement Marking (E	SQFT		x		=	$	-
120090	Construction Area Signs	LS		x		=	$	-
84XXXX	Permanent Pavement Delineation	LS		x		=	$	-

Subtotal Traffic Signing and Striping *$* *848,138*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost
120204	Portable Radar Speed Feedback Sign System Day	LS	260	x	80.00	=	$	20,800
129152	Temporary Radar Speed Feedback Sign System	EA	2	x	12,000.00	=	$	24,000
128651	Portable Changeable Message Sign	EA	4	x	5,000.00	=	$	20,000
8609XX	Traffic Monitoring Station (X)	LS		x		=		$0

Subtotal Traffic Management Plan *$* *64,800*

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA		x		=	$	-
12016X	Channelizer (Type X)	EA		x		=	$	-
120120	Type III Barricade	EA		x		=	$	-
129100	Temporary Crash Cushion Module	EA		x		=	$	-
120100	Traffic Control System	LS		x		=	$	-
129110	Temporary Crash Cushion	EA		x		=	$	-
120320	Temporary Railing (Type K)	LF	4,800	x	18.00	=	$	86,400
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
	Staging	LS	1	x	1,000,000.00	=	$	1,000,000

Subtotal Stage Construction and Traffic Handling *$* *1,086,400*

TOTAL TRAFFIC ITEMS **$** **4,528,400**

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON		x		=	$	-
26020X	Class 2 Aggregate Base	TON/CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF		x		=	$	-
128601	Temporary Signal System	LS		x		=	$	-
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
80010X	Temporary Fence (Type X)	LF		x		=	$	-
	Adjust Signals	LS		x		=	$	-

TOTAL DETOURS	**$**	**-**
SUBTOTAL SECTIONS 1 through 7	$	21,032,100

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items							
ADA Items				1.0%	$	210,321	
8B - Bike Path Items							
Bike Path Items				1.0%	$	210,321	
8C - Other Minor Items							
Other Minor Items				0.0%	$	-	
Total of Section 1-7	$	21,032,100	x	2.0%	= $	420,642	

TOTAL MINOR ITEMS	**$**	**420,700**

SECTIONS 9: MOBILIZATION

Item code								
999990	Total Section 1-8	$	21,452,800	x	10%	=	$	2,145,280

TOTAL MOBILIZATION	**$**	**2,145,300**

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)			Cost
066670	Payment Adjustments For Price Index Fluctuations	LS	1	x	213,500.00	=	$	213,500
066094	Value Analysis	LS		x		=	$	-
066070	Maintain Traffic	LS	1	x	156,000.00	=	$	156,000
066919	Dispute Resolution Board	LS	1	x	15,000.00	=	$	15,000
066921	Dispute Resolution Advisor	LS	1	x	15,000.00	=	$	15,000
066015	Federal Trainee Program	LS	1	x	17,600.00	=	$	17,600
066610	Partnering	LS	1	x	50,000.00	=	$	50,000
066204	Remove Rock and Debris	LS		x		=	$	-
066222	Locate Existing Crossover	LS		x		=	$	-
	*Cost of **NPDES** Supplemental Work specified in Section 5D*					=	$	45,337
	Total Section 1-8	$	21,452,800		0%	=	$	-

TOTAL SUPPLEMENTAL WORK	**$**	**512,500**

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS	1	x	294,800	=	$294,800
066063	Traffic Management Plan - Public Information	LS	1	x	100,000.00	=	$100,000
066901	Water Expenses	LS		x		=	$0
066841	Traffic Controller Assembly	LS	3	x	30,000.00	=	$90,000
066840	Traffic Signal Controller Assembly	LS		x		=	$0
066062	COZEEP Contract	LS	1	x	192,000.00	=	$192,000
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066065	Tow Truck Service Patrol	LS		x		=	$0
066916	Annual Construction General Permit Fee	LS	1	x	22,475.00	=	$22,475
060660	Additional Traffic Control	LS		x	39,000.00	=	$0

Total Section 1-8 $ 21,452,800 = $ -

TOTAL STATE FURNISHED $699,300

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization $21,452,800 (used to calculate TRO)

Total Construction Cost (excluding TRO and Contingency) $24,809,900 (used to check if project is greater than $5 million excluding contingency)

Estiamted Time-Releated Overhead (TRO) Percentage (0% to 10%) = **5%**

Item code		Unit	Quantity		Unit Price ($)		Cost
070018	Time-Related Overhead	WD	260	X	$4,126	=	$1,072,700

TOTAL TIME-RELATED OVERHEAD $1,072,700

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-12 $ 25,882,600 x **20%** = $5,176,520

TOTAL CONTINGENCY $5,176,600

II. STRUCTURE ITEMS

DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Name	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Name	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$100		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

TOTAL COST OF BRIDGES		**$0**
TOTAL COST OF BUILDINGS		**$0**
Structures Mobilization Percentage	10%	**$0**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Structures Contingency Percentage	20%	**$0**
TOTAL COST OF STRUCTURES		**$0**

Estimate Prepared By: _____ _____

XXXXXXXXXXXXXXXX ------ Division of Structures — Date

EA: 0F310 PID: 08-00000124

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way data sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees		$	7,750,000
	A2)	SB-1210		$	0
B)	Acquisition of Offsite Mitigation			$	0
C)	C1)	Utility Relocation (State Share)		$	0
	C2)	Potholing (Design Phase)		$	60,000
D)	Railroad Acquisition			$	0
E)	Clearance / Demolition			$	0
F)	Relocation Assistance (RAP and/or Last Resort Housing Costs)			$	0
G)	Title and Escrow			$	0
H)	Environmental Review			$	0
I)	Condemnation Settlements		0%	$	0
J)	Design Appreciation Factor		0%	$	0
K)	Utility Relocation (Construction Cost)			$	335,000

L)	**TOTAL RIGHT OF WAY ESTIMATE**	**$8,145,000**
M)	**TOTAL R/W ESTIMATE: Escalated**	**$8,474,100**
N)	**RIGHT OF WAY SUPPORT**	**$350,000**

Support Cost Estimate Prepared By	Julian Hernandez, P.E.	Project Coordinator[1]	(951)320-7325 Phone
Utility Estimate Prepared By	Julian Hernandez, P.E.	Utiliy Coordinator[2]	(951)320-7325 Phone
R/W Acquistion Estimate Prepared By	Julian Hernandez, P.E.	Right of Way Estimator[3]	(951)320-7325 Phone

Note: Items G & H applied to items A + B

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

PROJECT

PLANNING COST ESTIMATE

EA: 0F310 PID: 08-00000124

EA: 0F310

PID: 08-00000124

District-County-Route: 08-Riv-15

PM: 21.6 - 23.5

Type of Estimate : PA&ED Alternative Analysis

Program Code : FTIP ID RIV060109

Project Limits : PM 21.6 to PM 23.5

Project Description: I-15 / SR-74 Interchange Improvements Project

Scope : Improve interchange and local intersections

Alternative : No.3 NB Hook Ramps with NB Loop Off-Ramp to WB SR-74

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost	Escalated Cost
TOTAL ROADWAY COST	$ 31,796,800	$ 33,081,400
TOTAL STRUCTURES COST	$ -	$ -
SUBTOTAL CONSTRUCTION COST	$ 31,796,800	$ 33,081,400
TOTAL RIGHT OF WAY COST	$ 3,365,000	$ 3,501,000
TOTAL CAPITAL OUTLAY COSTS	$ 35,162,000	$ 36,583,000
PA&ED SUPPORT	$ 2,700,000	$ 2,700,000
PS&E SUPPORT	$ 3,100,000	$ 3,225,300
RIGHT OF WAY SUPPORT	$ 230,000	$ 239,300
CONSTRUCTION SUPPORT	$ 4,000,000	$ 4,161,600
TOTAL SUPPORT COST	$ 10,030,000	$ 10,327,000
TOTAL PROJECT COST	$ 45,200,000	$ 46,950,000

If Project has been programmed enter Programmed Amount

	Month	/	Year
Date of Estimate (Month/Year)	5	/	2023
Estimated Construction Start (Month/Year)	1	/	2025
Number of Working Days =	260		
Estimated Mid-Point of Construction (Month/Year)	6	/	2025
Estimated Construction End (Month/Year)	12	/	2025
Number of Plant Establishment Days	180		

Estimated Project Schedule

PID Approval	April-05
PA&ED Approval	October-23
PS&E	August-24
RTL	October-24
Begin Construction	January-25

Cost Estimate Certifier	Julian Hernandez, HDR Engineering Inc.	5/19/2023	(951)320-7325
	Office Engineer / Cost Estimate Certifier	**Date**	**Phone**
Approved by Project Manager	Mark Hager, HDR Engineering Inc.	5/25/2023	(951)320-7343
	Project Manager	**Date**	**Phone**

I. ROADWAY ITEMS SUMMARY

	Section		Cost
1	**Earthwork**	$	967,200
2	**Pavement Structural Section**	$	9,496,100
3	**Drainage**	$	1,678,700
4	**Specialty Items**	$	3,270,900
5	**Environmental**	$	1,436,800
6	**Traffic Items**	$	4,673,200
7	**Detours**	$	-
8	**Minor Items**	$	430,500
9	**Roadway Mobilization**	$	2,195,400
10	**Supplemental Work**	$	512,500
11	**State Furnished**	$	738,300.00
12	**Time-Related Overhead**	$	1,097,700.00
13	**Roadway Contingency**	$	5,299,500.00
	TOTAL ROADWAY ITEMS	**$**	**31,796,800**

Estimate Prepared By :	Julian Hernandez, Project Engineer	5/19/2023	(951)320-7325
	Name and Title	Date	Phone
Estimate Reviewed By :	Mark Hager	5/19/2023	(951)320-7373
	Name and Title	Date	Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	26,830	x	30.00	=	$	804,900
19010X	Roadway Excavation (Type X) ADL	CY		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198010	Imported Borrow (CY)	CY	2,169	x	37.00	=	$	80,253
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
170105	Clearing & Grubbing (Acre)	ACRE	15	x	4,800.00	=	$	72,000
100100	Develop Water Supply	LS	1	x	10,000.00	=	$	10,000
19801X	Imported Borrow	CY/TON		x		=	$	-
210130	Duff	ACRE		x		=	$	-
XXXXXX	Some Item	Unit						

TOTAL EARTHWORK SECTION ITEMS $ 967,200

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
401050	Jointed Plain Concrete Pavement	CY	4,019	x	320.00	=	$	1,286,080
400050	Continuously Reinforced Concrete Pavement	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		=	$	-
280010	Rapid Strength Concrete Base	CY		x		=	$	-
410095	Dowel Bar (Drill and Bond)	EA		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	14,128	x	135.00	=	$	1,907,280
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	15,446	x	150.00	=	$	2,316,900
198205	Subgrade Enhancement Geotextile	SY		x		=	$	-
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		=	$	-
250201	Class 2 Aggregate Sub-base	CY	2,604	x	45.00	=	$	117,180
260203	Class 2 Aggregate Base (CY)	CY	9,825	x	50.00	=	$	491,250
270014	Cement Treated Base (Plant-Mixed, Class A)	CY	4,043	x	300.00	=	$	1,212,900
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
397005	Tack Coat	TON	18	x	1,100.00	=	$	19,800
377501	Slurry Seal	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
730020	Minor Concrete (Curb)(CY)	CY	100	x	1,070.00	=	$	107,000
731504	Minor Concrete (Curb and Gutter)	CY	345	x	1,100.00	=	$	379,500
731521	Minor Concrete (Sidewalk, 4")	CY	333	x	1,100.00	=	$	366,300
370001	Sand Cover (Seal)	TON		x		=	$	-
731530	Minor Concrete (Textured Paving)	CY		x		=	$	-
731502	Minor Concrete (Miscellaneous Construction)	CY	146	x	1,000.00	=	$	146,000
731511	Minor Concrete (Island Paving)	CY	72	x	1,000.00	=	$	72,000
394074	Place Hot Mix Asphalt Dike (Type C)	LF	378	x	8.00	=	$	3,024
394075	Place Hot Mix Asphalt Dike (Type D)	LF	1,740	x	4.00	=	$	6,960
394077	Place Hot Mix Asphalt Dike (Type F)	LF	3,661	x	4.00	=	$	14,644
150305	Obliterate Surfacing	SQYD		x		=	$	-
398100	Remove Asphalt Concrete Dike	LF	6,066	x	7.00	=	$	42,462
731700	Remove Curb	LF	1,423	x	9.00	=	$	12,807
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
153123	Remove Concrete (SQYD)	SQYD	1,410	x	50.00	=	$	70,500
731840	Remove Concrete (Curb and Gutter)	LF	5,687	x	13.00	=	$	73,931
731780	Remove Concrete Sidewalk (SQYD)	SQYD	2,687	x	44.00	=	$	118,228
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD		x		=	$	-
398001	Remove Asphalt Concrete Pavement (SQFT)	SQFT	175,722	x	2.70	=	$	474,449
398200	Cold Plane Asphalt Concrete Pavement	SQYD	85,610	x	3.00	=	$	256,830
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		=	$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		=	$	-
		Unit		x		=	$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS $ 9,496,100

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
710132	Remove Culvert	LF	163	x	80.00	=	$	13,040
710152	Remove Headwall	EA	3	x	2,700.00	=	$	8,100
150820	Modify Inlet	EA		x		=	$	-
155232	Sand Backfill	CY		x		=	$	-
15020X	Abandon Culvert	EA/LF		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
710150	Remove Inlet	EA	17	x	2,000.00	=	$	34,000
710262	Cap Inlet	EA	3	x	2,000.00	=	$	6,000
194001	Ditch Excavation	CY	245	x	60.00	=	$	14,700
510090	Structural Concrete, 5-14x9.5 Reinf. Box Culvert	CY	158	x	2,065.00	=	$	326,270
510092	Structural Concrete, Headwall	CY	3	x	3,600.00	=	$	10,800
510501	Minor Concrete	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
610108	18" Alternative Pipe Culvert	LF	614	x	190.00	=	$	116,660
610112	24" Alternative Pipe Culvert	LF	533	x	225.00	=	$	119,925
610117	30" Alternative Pipe Culvert	LF	169	x	250.00	=	$	42,250
610121	36" Alternative Pipe Culvert	LF	68	x	275.00	=	$	18,700
705309	18" Alternative Flared End Section	EA	9	x	2,000.00	=	$	18,000
705319	30" Alternative Flared End Section	EA	3	x	2,600.00	=	$	7,800
721018	Rock Slope Protection (Facing)	CY	29	x	447.00	=	$	12,963
721420	Concrete (Ditch Lining)	CY	16	x	1,500.00	=	$	24,000
	GD1 Inlet	EA	26	x	8,400.00	=	$	218,400
	OS Inlet	EA	3	x	8,400.00	=	$	25,200
	OL-7 Inlet	EA	6	x	9,000.00	=	$	54,000
	OL-10 Inlet	EA	2	x	9,000.00	=	$	18,000
	OL-14 Inlet	EA	2	x	13,000.00	=	$	26,000
	GMP Inlet	EA	7	x	6,400.00	=	$	44,800
	Remove Bioswale	LF	100	x	50.00		$	5,000
	Manhole No. 1	EA	1	x	6,500.00	=	$	6,500
	Junction Structure No.1	EA	1	x	3,000.00	=	$	3,000
	Junction Structure No.2	EA	1	x	4,500.00	=	$	4,500
	Permanent BMPs	LS	1	x	500,000.00	=	$	500,000

TOTAL DRAINAGE ITEMS $ 1,678,700

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
080050A	Progress Schedule (Critical Path Method)	LS	1	x	10,000.00	=	$	10,000
582001	Sound Wall (Masonry Block)	LF		x		=	$	-
510530	Minor Concrete (Wall)	CY		x		=	$	-
600051	Remove Sound Wall (LF)	LF	865	x	51.00	=	$	44,115
600017	Remove Retaining Wall (LF)	LF	490	x	180.00	=	$	88,200
070030	Lead Compliance Plan	LS	1	x	10,000.00	=	$	10,000
141120	Treated Wood Waste	LB		x		=	$	-
153221	Remove Concrete Barrier	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Flared End Section	EA		x		=	$	-
800360	Chain Link Fence (Type CL-6)	LF	2,477	x	46.00	=	$	113,942
802520	6' Chain Link Gate (Type CL-6)	EA	3	x	3,000.00	=	$	9,000
803050	Remove Chain Link Fence	LF	4,010	x	10.50	=	$	42,105
832005	Midwest Guard Rail System	LF	3,889	x	50.00	=	$	194,450
832070	Vegetation Control (Minor Concrete)	SQYD	1,267	x	85.00	=	$	107,695
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA	6	x	5,000.00	=	$	30,000
4906XX	CIDH Concrete Piling (Insert Diameter)	LF		x		=	$	-
839XXX	Crash Cushion (Insert Type)	EA		x		=	$	-
839640	Concrete Barrier (Type 60M)	LF	1,045	x	215.00	=	$	224,675
839736A	Concrete Barrier (Type 742A)	LF	1,603	x	230.00	=	$	368,690
520103	Bar Reinforced Steel (Retaining Wall)	LB	181,000	x	1.70	=	$	307,700
510060	Structural Concrete, Retaining Wall	CY	1,508	x	900.00	=	$	1,357,200
475010	Retaining Wall (Type 6B Masonry Wall)	SQFT	9,374	x	35.00	=	$	328,090
511035	Architectural Treatment	SQFT		x		=	$	-
598001	Anti-Graffiti Coating	SQFT		x		=	$	-
203070	Rock Stain	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT		x		=	$	-
83954X	Transition Railing (Type X)	EA		x		=	$	-
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
83958X	End Anchor Assembly (Type X)	EA		x		=	$	-
	Reconstruct Monument Sign	EA	1	x	15,000.00	=	$	15,000
	Reconstruct Commercial Sign	EA	2	x	10,000.00	=	$	20,000

TOTAL SPECIALTY ITEMS $ 3,270,900

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost		
	Biological Mitigation	LS	1	x	700,000.00	=	$	700,000		
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-		
141000	Temporary Fence (Type ESA)	LF		x		=	$	-		
146002	Contractor-Supplied Biologist (LS)	LS	1	x	50,000.00	=	$	50,000		
								Subtotal Environmental Mitigation	*$*	*750,000*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost		
20XXXX	Highway Planting	LS		x		=	$	-		
20XXXX	Irrigation System	LS		x		=	$	-		
204099	Plant Establishment Work	LS		x		=	$	-		
204101	Extend Plant Establishment Work	LS		x		=	$	-		
20XXXX	Follow-up Landscape Project	LS		x		=	$	-		
150685	Remove Irrigation Facility	LS		x		=	$	-		
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-		
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-		
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-		
200114	Rock Blanket	SQFT	12,495	x	18.00	=	$	224,910		
200113	Rock Mulch (raised medians)	SQFT		x		=	$	-		
200122	Weed Germination	SQYD		x		=	$	-		
208304	Water Meter	EA		x		=	$	-		
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-		
20890X	Extend X" Conduit (Use for Extension of Irrigation	LF		x		=	$	-		
	Irrigation and landscaping restoration, plant establ	LS	1	x	50,000.00	=	$	50,000		
								Subtotal Landscape and Irrigation	*$*	*274,910*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost		
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-		
210350	Fiber Rolls	LF		x		=	$	-		
210360	Compost Sock	LF		x		=	$	-		
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-		
21025X	Bonded Fiber Matrix	QFT/ACRE		x		=	$	-		
210300	Hydromulch	SQFT		x		=	$	-		
210420	Straw	SQFT		x		=	$	-		
210430	Hydroseed	SQFT	430,000	x	0.15	=	$	64,500		
210600	Compost	SQFT		x		=	$	-		
210630	Incorporate Materials	SQFT		x		=	$	-		
								Subtotal Erosion Control	*$*	*64,500*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost		
130300	Prepare SWPPP	LS	1	x	23,000.00	=	$	23,000		
130200	Prepare WPCP	LS		x		=	$	-		
130100	Job Site Management	LS	1	x	24,000.00	=	$	24,000		
130330	Storm Water Annual Report	EA	2	x	2,000.00	=	$	4,000		
130310	Rain Event Action Plan (REAP)	EA	24	x	500.00	=	$	12,000		
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-		
130520	Temporary Hydraulic Mulch	SQYD	14,969	x	9.00	=	$	134,721		
130550	Temporary Hydroseed	SQYD		x		=	$	-		
130560	Temporary Soil Binder	SQYD	14,969	x	1.00	=	$	14,969		
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$	-		
130640	Temporary Fiber Roll	LF	13,288	x	4.00	=	$	53,152		
130900	Temporary Concrete Washout	LS	1	x	24,000.00	=	$	24,000		
130710	Temporary Construction Entrance	EA	4	x	3,800.00	=	$	15,200		
130610	Temporary Check Dam	LF	300	x	6.00	=	$	1,800		
130620	Temporary Drainage Inlet Protection	EA	30	x	266.00	=	$	7,980		
130730	Street Sweeping	LS	1	x	32,500.00	=	$	32,500		
131103	Water Quality Sampling and Analysis Day	EA		x		=	$	-		
131104	Water Quality Monitoring Report	EA		x		=	$	-		
								Subtotal NPDES	*$*	*347,322*

TOTAL ENVIRONMENTAL	**$**	**1,436,800**

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS	1	x	23,000.00	=	$	23,000		
066596	Additional Water Pollution Control**	LS	1	x	6,000.00	=	$	6,000		
066597	Storm Water Sampling and Analysis***	LS	1	x	14,467.00	=	$	14,467		
066916	Annual Construction General Permit Fees	LS	1	x	1,870.00	=	$	1,870		
								Subtotal Supplemental Work for NPDES	*$*	*45,337*

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting and Sign Illumination	LS	1	x	110,000.00	=	$	110,000
870400	Signal and Lighting System	LS	2	x	350,000.00	=	$	700,000
	Half Traffic Signal	LS	1	x	250,000.00	=	$	250,000
	Traffic Signal Modifications	LS	5	x	160,000.00	=	$	800,000
871300	Camera Systems	LS	1	x	60,000.00	=	$	60,000
870510	Ramp Metering System	LS	1	x	350,000.00	=	$	350,000
871812	Interconnect Conduit and Cable (LS)	LS	1	x	75,000.00	=	$	75,000
86080X	Inductive Loop Detectors	EA/LS		x		=	$	-
8609XX	Traffic Monitoring Station (Type X)	LS		x		=	$	-
568046	Remove Sign Structure (EA)	EA	4	x	3,500.00	=	$	14,000
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
066860	Maintain Existing Electrical System	LS	1	x	20,000.00	=	$	20,000
871900	Fiber Optic Cable System	LS	1	x	150,000.00	=	$	150,000
XXXXX	Some Item	LS		x		=	$	-

Subtotal Traffic Electrical $ *2,529,000*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign - One Post	EA		x		=	$	-
566012	Roadside Sign - Two Post	EA		x		=	$	-
5602XX	Furnish Sign	SQFT		x		=	$	-
568016	Install Sign Panel on Existing Frame	SQFT		x		=	$	-
150711	Remove Painted Traffic Stripe	LF		x		=	$	-
141101	Remove Yellow Painted Traffic Stripe (Hazardous W	LF		x		=	$	-
150712	Remove Painted Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA		x		=	$	-
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
560213A	Furnish Sign Structure (Lightweight)	EA	6	x	120,000.00	=	$	720,000
560214A	Install Sign Structure (Lightweight)	EA	6	x	15,000.00	=	$	90,000
490605	36" Cast-in-drilled-holr Conc Piling (Sign Foundatior	LF	72	x	1,000.00	=	$	72,000
82010X	Delineator (Class X)	EA		x		=	$	-
840502	Thermoplastic Traffic Stripe (Enhanced Wet Night V	LF	105,702	x	1.05	=	$	110,987
846012	Thermoplastic Crosswalk and Pavement Marking (E	SQFT		x		=	$	-
120090	Construction Area Signs	LS		x		=	$	-
84XXXX	Permanent Pavement Delineation	LS		x		=	$	-

Subtotal Traffic Signing and Striping $ *992,987*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost
120204	Portable Radar Speed Feedback Sign System Day	EA	260	x	80.00	=	$	20,800
129152	Temporary Radar Speed Feedback Sign System	EA	2	x	12,000.00	=	$	24,000
128651	Portable Changeable Message Sign (EA)	EA	4	x	5,000.00	=	$	20,000
8609XX	Traffic Monitoring Station (X)	LS		x		=	$	-

Subtotal Traffic Management Plan $ *64,800*

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA		x		=	$	-
12016X	Channelizer (Type X)	EA		x		=	$	-
120120	Type III Barricade	EA		x		=	$	-
129100	Temporary Crash Cushion Module	EA		x		=	$	-
120100	Traffic Control System	LS		x		=	$	-
129110	Temporary Crash Cushion	EA		x		=	$	-
120320	Temporary Barrier System	LF	4,800	x	18.00	=	$	86,400
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
	Staging	LS	1	x	1,000,000.00	=	$	1,000,000

Subtotal Stage Construction and Traffic Handling $ *1,086,400*

TOTAL TRAFFIC ITEMS **$ 4,673,200**

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON		x		=	$	-
26020X	Class 2 Aggregate Base	TON/CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF		x		=	$	-
128601	Temporary Signal System	LS		x		=	$	-
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
80010X	Temporary Fence (Type X)	LF		x		=	$	-
	Adjust Signals	LS		x		=	$	-

TOTAL DETOURS	**$**	**-**
SUBTOTAL SECTIONS 1 through 7	$	21,522,900

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items							
ADA Items				1.0%	$	215,229	
8B - Bike Path Items							
Bike Path Items				1.0%	$	215,229	
8C - Other Minor Items							
Other Minor Items				0.0%	$	-	
Total of Section 1-7	$	21,522,900	x	2.0%	= $	430,458	

TOTAL MINOR ITEMS	**$**	**430,500**

SECTIONS 9: MOBILIZATION

Item code								
999990	Total Section 1-8	$	21,953,400	x	10%	= $	2,195,340	

TOTAL MOBILIZATION	**$**	**2,195,400**

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)			Cost
066670	Payment Adjustments For Price Index Fluctuations	LS	1	x	213,500.00	=	$	213,500
066094	Value Analysis	LS	1	x		=	$	-
066070	Maintain Traffic	LS	1	x	156,000.00	=	$	156,000
066919	Dispute Resolution Board	LS	1	x	15,000.00	=	$	15,000
066921	Dispute Resolution Advisor	LS	1	x	15,000.00	=	$	15,000
066015	Federal Trainee Program	LS	1	x	17,600.00	=	$	17,600
066610	Partnering	LS	1	x	50,000.00	=	$	50,000
066204	Remove Rock and Debris	LS		x		=	$	-
066222	Locate Existing Crossover	LS		x		=	$	-
	*Cost of **NPDES** Supplemental Work specified in Section 5D*					=	$	45,337
	Total Section 1-8	$	21,953,400		0%	=	$	-

TOTAL SUPPLEMENTAL WORK	**$**	**512,500**

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS	1	x	294,800.00	=	$294,800
066063	Traffic Management Plan - Public Information	LS	1	x	100,000.00	=	$100,000
066901	Water Expenses	LS		x		=	$0
066841	Traffic Controller Assembly	LS		x		=	$0
066840	Traffic Signal Controller Assembly	LS	3	x	30,000.00	=	$90,000
066062	COZEEP Contract	LS	1	x	192,000.00	=	$192,000
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066065	Tow Truck Service Patrol	LS		x		=	$0
066916	Annual Construction General Permit Fee	LS	1	x	22,475.00	=	$22,475
060660	Additional Traffic Control	LS	1	x	39,000.00	=	$39,000

Total Section 1-8 $ 21,953,400 = $ -

TOTAL STATE FURNISHED $738,300

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization $21,953,400 (used to calculate TRO)

Total Construction Cost (excluding TRO and Contingency) $25,399,600 (used to check if project is greater than $5 million excluding contingency)

Estiamted Time-Releated Overhead (TRO) Percentage (0% to 10%) = **5%**

Item code		Unit	Quantity		Unit Price ($)		Cost
070018	Time-Related Overhead	WD	260	X	$4,222	=	$1,097,700

TOTAL TIME-RELATED OVERHEAD $1,097,700

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-12 $ 26,497,300 x **20%** = $5,299,460

TOTAL CONTINGENCY $5,299,500

II. STRUCTURE ITEMS

DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Name	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Name	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$100		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

TOTAL COST OF BRIDGES		**$0**
TOTAL COST OF BUILDINGS		**$0**
Structures Mobilization Percentage	10%	**$0**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Structures Contingency Percentage	20%	**$0**
TOTAL COST OF STRUCTURES		**$0**

Estimate Prepared By: _____ _____

XXXXXXXXXXXXXXXX ------ Division of Structures — Date

EA: 0F310 PID: 08-00000124

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way data sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees		$	2,970,000
	A2)	SB-1210		$	0
B)	Acquisition of Offsite Mitigation			$	0
C)	C1)	Utility Relocation (State Share)		$	0
	C2)	Potholing (Design Phase)		$	60,000
D)	Railroad Acquisition			$	0
E)	Clearance / Demolition			$	0
F)	Relocation Assistance (RAP and/or Last Resort Housing Costs)			$	0
G)	Title and Escrow			$	0
H)	Environmental Review			$	0
I)	Condemnation Settlements		0%	$	0
J)	Design Appreciation Factor		0%	$	0
K)	Utility Relocation (Construction Cost)			$	335,000

L)	**TOTAL RIGHT OF WAY ESTIMATE**	**$3,365,000**
M)	**TOTAL R/W ESTIMATE: Escalated**	**$0.00**
N)	**RIGHT OF WAY SUPPORT**	**$230,000**

Support Cost Estimate Prepared By	Julian Hernandez, P.E. Project Coordinator[1]	(951)320-7325 Phone
Utility Estimate Prepared By	Julian Hernandez, P.E. Utiliy Coordinator[2]	(951)320-7325 Phone
R/W Acquistion Estimate Prepared By	Julian Hernandez, P.E. Right of Way Estimator[3]	(951)320-7325 Phone

Note: Items G & H applied to items A + B

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

Conceptual Signing Plans

Attachment 9

MAIN STREET

MAIN STREET

Exist SIGN STRUCTURE
STA 1121+73 FSBT
PROTECT IN PLACE

Main St ↗

Exist SIGN STRUCTURE
STA 1138+28 FSBT, PROTECT IN PLACE

Main Street	1/2
Railroad Canyon Rd	2
Bundy Canyon Rd	4

74 EXIT 77
Central Ave
1 MILE

Exist SIGN STRUCTURE
STA 1107+95 FNBT
MODIFY/OVERLAY TO:

EXIT 77A-B
74
Central Ave
NEXT TWO EXITS

Central Ave (74)		1/2
Nichols Rd		2
Lake Rd		5

Exist SIGN STRUCTURE
STA 1141+10 FNBT
REMOVE & REPLACE WITH:

Central Ave EAST		1/2
Central Ave WEST (74)		1
Nichols Road		2

NEW SIGN STRUCTURE
STA 1141+10 FNBT

Perris
San Juan Capistrano
NEXT EXIT

Exist ROADSIDE SIGN
STA 1149+05 FNBT
2 POST, MODIFY TO:

Perris
NEXT EXIT 77A
San Juan Capistrano
SECOND EXIT 77B

EXIT 77A-B
Central Ave EAST WEST (74)
EXIT ONLY

NEW SIGN STRUCTURE
STA 1153+50 FNBT

Exist SIGN STRUCTURE
STA 1174+30 FSBT
PROTECT IN PLACE

Main St
1 MILE

NEW CUSTOM
W-SIGN FACING
TRAFFIC

COLLIER AVENUE

74
Central Ave ↗

Exist SIGN STRUCTURE
STA 1161+70 FNBT
REMOVE & REPLACE
WITH:

EXIT 77B
Central Ave WEST (74)
1/2 MILE

EXIT 77A
Central Ave (74) EAST

NEW SIGN STRUCTURE
STA 1161+55 FNBT

NEW CUSTOM
W-SIGN FACING
TRAFFIC

TO
FROM

EXIT 77B
Central Ave WEST (74)
EXIT ONLY

NEW SIGN STRUCTURE
STA 1184+50 FNBT

Nichols Road
1 1/4 MILES

Exist SIGN STRUCTURE
STA 1176+40 FNBT
PROTECT IN PLACE

CENTRAL AVENUE (SR-74)

CAMBERN AVENUE

ARROYO DEL TORO CHANNEL

RIVERSIDE DRIVE (SR-74)

EXIT 77
Central Ave (74)
EXIT ONLY

NEW SIGN STRUCTURE
STA 1204+95 FSBT

Exist SIGN STRUCTURE
STA 1191+00 FSBT
REMOVE & REPLACE WITH:

EXIT 77
Central Ave (74)
EXIT ONLY

NEW SIGN STRUCTURE
STA 1192+45 FSBT

Exist SIGN STRUCTURE
STA 1207+05 FSBT
PROTECT IN PLACE

Perris
San Juan Capistrano
NEXT RIGHT

TO
FROM

Nichols Road		3/4
Lake Street		4
Indian Truck Tr		7

Exist SIGN STRUCTURE STA 1202+95
FNBT, REMOVE, OVERLAY, RELOCATE TO
STA 1212+00 FNBT

Nichols Road		1/2
Lake Street		4
Indian Truck Tr		7

Exist SIGN STRUCTURE
STA 1215+95 FSBT, PROTECT IN PLACE

Central Ave (74)		1/2
Main St		2
Railroad Canyon Rd		3

Exist SIGN ON BRIDGE
STRUCTURE STA 1258+95
FSBT, PROTECT IN PLACE

74 EXIT 77
Central Ave
1 1/4 MILES

Nichols
Road ↗

Exist SIGN STRUCTURE
STA 1240+90 FNBT
PROTECT IN PLACE

NICHOLS ROAD

SCALE: 1" = 1000'

CITY OF LAKE ELSINORE
Diamond Experience

Caltrans

HDR

I-15/SR-74 INTERCHANGE
HSM ANALYSIS SEGMENTS FOR ALTERNATIVE 2

DECEMBER 2022

MAIN STREET

MAIN STREET

Exist SIGN STRUCTURE
STA 1121+73 FSBT
PROTECT IN PLACE

Main St ↗

Exist SIGN STRUCTURE
STA 1138+28 FSBT, PROTECT IN PLACE

Main Street	1/2
Railroad Canyon Rd	2
Bundy Canyon Rd	4

74 EXIT 77
Central Ave
1 MILE

Exist SIGN STRUCTURE
STA 1107+95 FNBT
MODIFY/OVERLAY TO:

EXIT 77A-B
74
Central Ave
NEXT TWO EXITS

Central Ave (74)		1/2
Nichols Rd		2
Lake Rd		5

Exist SIGN STRUCTURE
STA 1141+10 FNBT
REMOVE & REPLACE WITH:

Central Ave EAST		1/2
Central Ave WEST (74)		3/4
Dexter Ave		1

NEW SIGN STRUCTURE
STA 1141+10 FNBT

Perris
San Juan Capistrano
NEXT EXIT

Exist ROADSIDE SIGN
STA 1149+05 FNBT
2 POST, MODIFY TO:

Perris
NEXT EXIT 77A
San Juan Capistrano
SECOND EXIT 77B

EXIT 77C
Dexter Ave
3/4 MILE

EXIT 77A-B
Central Ave EAST - WEST (74)
EXIT ↓ ONLY

NEW SIGN STRUCTURE
STA 1153+50 FNBT

74
Central Ave

Exist SIGN STRUCTURE
STA 1161+70 FNBT
REMOVE & REPLACE WITH:

EXIT 77B
Central Ave WEST (74)
1/4 MILE

EXIT 77A
Central Ave EAST (74)

NEW SIGN STRUCTURE
STA 1161+55 FNBT

Exist SIGN STRUCTURE
STA 1174+30 FSBT
PROTECT IN PLACE

Main St
1 MILE

NEW CUSTOM
W-SIGN FACING
TRAFFIC

COLLIER AVENUE

TO FROM

Nichols Road
1¼ MILES

Exist SIGN STRUCTURE
STA 1176+40 FNBT
REMOVE & REPLACE WITH:

EXIT 77C
Dexter Ave
1/4 MILE

EXIT 77B
Central Ave WEST (74)
20 MPH EXIT ↗ ONLY

NEW SIGN STRUCTURE STA 1176+40 FNBT

DEXTER AVENUE

EXIT 78
Nichols Road
1 MILE

EXIT 77C
Dexter Avenue ↗

NEW SIGN STRUCTURE
STA 1184+50 FNBT

CENTRAL AVENUE (SR-74)

ARROYO DEL TORO CHANNEL

CAMBERN AVENUE

RIVERSIDE DRIVE (SR-74)

74
Central Ave ↗

Exist SIGN STRUCTURE
STA 1191+00 FSBT
REMOVE & REPLACE WITH:

EXIT 77
Central Ave (74)
EXIT ↗ ONLY

NEW SIGN STRUCTURE
STA 1192+45 FSBT

EXIT 77
Central Ave (74)
EXIT ↓ ONLY

NEW SIGN STRUCTURE
STA 1204+95 FSBT

Exist SIGN STRUCTURE
STA 1207+05 FSBT
PROTECT IN PLACE

Perris
San Juan Capistrano
NEXT RIGHT

Nichols Road		3/4
Lake Street		4
Indian Truck Tr		7

Exist SIGN STRUCTURE STA 1202+95
FNBT, REMOVE, OVERLAY, RELOCATE TO
STA 1212+00 FNBT

Nichols Road		1/2
Lake Street		4
Indian Truck Tr		7

Exist SIGN STRUCTURE
STA 1215+95 FSBT, PROTECT IN PLACE

Central Ave (74)		1/2
Main St		2
Railroad Canyon Rd		3

Exist SIGN ON BRIDGE
STRUCTURE STA 1258+95
FSBT, PROTECT IN PLACE

74 EXIT 77
Central Ave
1¼ MILES

Nichols
Road ↗

Exist SIGN STRUCTURE
STA 1240+90 FNBT
PROTECT IN PLACE

NICHOLS ROAD

SCALE: 1" = 1000'

CITY OF LAKE ELSINORE
Diamond Experience

Caltrans

HDR

I-15/SR-74 INTERCHANGE
FREEWAY SIGN CONCEPT EXHIBIT
ALTERNATIVE 3

DECEMBER 2022