Water Quality Assessment Report

Interstate 15 Express Lanes Project Southern Extension

Riverside County, California

District 8—RIV–15 PM 20.3/40.1

EA: RIV 08-0J0820/ID: 08-18000063

November 2021

Prepared for

California Department of Transportation

in coordination with

Riverside County Transportation Commission

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15-RIV-08-PM 20.3 to PM 40.1

EA: RIV 08-0J0820

Traffic capacity and operational improvements would be constructed on Interstate 15 (I-15) between post miles (PM) 21.2 near Main Street in Lake Elsinore to PM 38.1 near El Cerrito Road in Corona. This area is referred to as the lane improvement limits. These lane improvements are located within Riverside County, California and run through the cities of Lake Elsinore, Corona and portions of unincorporated Riverside County including the Temescal Valley. Limits for the express lanes advance signage extend from PM 20.3 to PM 40.1 in Riverside County; these post miles constitute the overall Project limits.

Water Quality Assessment Report

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 U.S.C. 4332(2)(C) and 49 U.S.C. 303

STATE OF CALIFORNIA
Department of Transportation

in cooperation with

Riverside County Transportation Commission

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Water Quality Assessment Report

Interstate 15 Express Lanes Project Southern Extension
(ELPSE)

Riverside County, California

District 8—RIV–15 Project Mile 20.3 to Project Mile 40.1

EA: RIV 08-0J0820/ID: 08-18000063

November 2021

STATE OF CALIFORNIA
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Executive Summary

The Riverside County Transportation Commission (RCTC) and the California Department of Transportation (Caltrans) District 8 propose to construct the Interstate 15 (I-15) Express Lanes Project Southern Extension (I-15 ELPSE or Project). The proposed Project would extend the I-15 express lanes, which are currently under construction, for an additional 14.5 miles. The proposed new segment would extend from State Route 74 (SR-74) (Central Avenue) (post mile [PM] 22.3) in the City of Lake Elsinore, through the unincorporated Riverside County community of Temescal Valley, to El Cerrito Road (PM 38.1) in the City of Corona. The Project proposes to increase capacity by adding two tolled express lanes in both directions within the I-15 median to accommodate increasing traffic volumes in southwestern Riverside County. Associated improvements, including advance signage and transition striping, would extend 2 miles from each end of the Project limits to PM 20.3 in the south and PM 40.1 in the north, for a total of 19.8 miles. All proposed improvements would be constructed within the existing Caltrans right of way (ROW), with the majority of the improvements occurring within the existing I-15 median.

This water quality assessment report (WQAR) evaluates how the proposed Project may affect the water quality of surface and groundwater resources, and their beneficial uses. A total of 11 channels are located within the Project limits; Table ES-1 lists the locations of these channels. All 11 channels are tributaries to Temescal Creek, which are conveyed to the Santa Ana River and ultimately to the Pacific Ocean. These receiving waters are not listed on the 2016 Clean Water Act (CWA) Section 303(d)/305(b) Integrated List of impaired water bodies, and no total maximum daily loads (TMDL) have been established (State Water Resources Control Board [SWRCB] 2019). During construction of the Project, temporary erosion and sediment control measures would be implemented to retain soil and sediment. In addition, devices that would address Project post-construction primary pollutants of concern would be evaluated to mitigate impacts from the Project on downstream water bodies.

Table ES-1. Project Channel Crossing Locations

Channel	PM Location
Wasson Canyon Wash	PM 21.57
Arroyo Del Toro	PM 22.60
Stovepipe Canyon Wash	PM 23.50
Gavilan Wash	PM 25.55
Temescal Creek	PM 28.04
Horsethief Canyon Wash	PM 29.13
Indian Wash	PM 30.09
Mayhew Wash	PM 31.97
Coldwater Wash	PM 32.96
Brown Canyon Wash	PM 34.72
Bedford Wash	PM 36.58

Notes:
PM=post mile

This report assesses potential impacts the Project may have on the water quality of nearby receiving water bodies. It also evaluates development of the Project, and specifically the following:

- How the Project addresses water quality standards
- How the Project complies with National Pollutant Discharge Elimination System (NPDES) permit compliance for redevelopment in a Caltrans ROW per Order 2012-0011-DWQ as amended by Orders WQ 2014-0006-EXEC, WQ 2014-0077-DWQ, WQ 2015-0036-EXEC, and WQ 2017-0026-EXEC)

In addition, the Project would be evaluated for its compliance with the SWRCB NPDES Construction General Permit (CGP) (Order 2009-0009-DWQ, as amended by Orders 2010-0014-DWQ and 2012-0006-DWQ). The Project is anticipated to require regulatory permits from the United States Army Corps of Engineers (USACE) (per CWA Section 404), the Santa Ana Regional Water Quality Control Board (SARWQCB) (per CWA Section 401), and California Department of Fish and Wildlife (CDFW) (per Fish and Game Code Section 1602 via a Streambed Alteration Agreement) for improvements to channels and other drainage improvements.

The Project would also require a stormwater pollution prevention plan (SWPPP); the SWPPP would be implemented during Project construction and would identify specific best management practices (BMP) for implementation. These BMPs would be implemented to meet the best available technology economically achievable and best conventional pollutant control technology requirements stipulated in the CGP.

The Project would increase the impervious area within the Project limits by approximately 82 acres, which would increase the amount of runoff from the Project area. As described in Caltrans' *Statewide Stormwater Management Plan* (SWMP) (Caltrans 2016) and *Project Planning and Design Guide* (PPDG) (Caltrans 2019a), the Project would be required to incorporate a combination of structural and nonstructural source control BMPs (as applicable and feasible) the Project plans through conditions of approval or building/grading permit conditions in accordance with Section 4.2.1 of the SWMP. Implementation of these avoidance and minimization measures would minimize impacts on water resources and water quality.

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Appendices

Appendix A. Construction General Permit Risk Assessment Information

Acronyms and Abbreviations

Term	Definition
ASBS	area of special biological significance
BMP	best management practice
BSA	biological study area
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CLOMR	conditional letter of map revision
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
DSA	disturbed soil area
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FTIP	Federal Transportation Improvement Program
HOV	high-occupancy vehicle
I-15	Interstate 15
I-15 COP	I-15 Corridor Operations Project
I-15 ELPSE	I-15 Express Lanes Project Southern Extension
I-215	Interstate 215
ID	identification
JSA	jurisdictional study area
K	soil erodibility factor
KML	keyhole markup language
LHS	Location Hydraulic Study
LOMR	letter of map revision
LOS	level of service
MS4	Municipal Separate Storm Sewer Systems
MSHCP	Multiple Species Habitat Conservation Plan
NEPA	National Environmental Policy Act
NES	Natural Environment Study

Term	Definition
NFIP	National Flood Insurance Program
NIS	new impervious surface
NNI	new net impervious
NPDES	National Pollutant Discharge Elimination System
PCTA	post-construction treatment area
PM	post mile
PPDG	Project Planning and Design Guide
RCB	reinforced concrete box
RCTC	Riverside County Transportation Commission
RIS	replaced impervious surface
ROW	right of way
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SARWQCB	Santa Ana Regional Water Quality Control Board
SCAG	Southern California Association of Governments
SCS	Sustainable Communities Strategy
SFHA	Special Flood Hazard Area
SR-74	State Route 74
STGA	Significant Trash Generating Areas
SWMP	Stormwater Management Plan
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TMDL	total maximum daily load
U.S.	United States
USACE	United States Army Corps of Engineers
WDR	waste discharge requirement
WPCP	Water Pollution Control Program
WQAR	water quality assessment report

1 Introduction

1.1 Approach to Water Quality Assessment

This water quality assessment report (WQAR) fulfills the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) requirements and provides information for National Pollutant Discharge Elimination System (NPDES) permitting. This WQAR includes a discussion of the Interstate (I-15) Express Lanes Project Southern Extension (I-15 ELPSE or Project), the general environmental setting of the Project limits and surrounding area, and the regulatory framework with respect to water quality. This WQAR also provides data about surface water and groundwater resources within the Project limits and the quality of these waters; it describes water quality impairments and beneficial uses and identifies potential water quality impacts/benefits associated with the Project, as well as recommends avoidance and/or minimization measures for potentially adverse impacts.

To develop this WQAR, analysts reviewed the following information resources:

- *Water Quality Control Plan for the Santa Ana River Basin* (Basin Plan) (Santa Ana Regional Water Quality Control Board [SARWQCB] 2019)
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Riverside County
- Hydrology and hydraulic analysis and conceptual drainage plans prepared for the Project

To determine impacts on water quality, analysts calculated the increase in impervious surface area as described above and considered the construction activities impacts.

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2 Project Description

2.1 Approach to Water Quality Assessment

The purpose of the WQAR is to fulfill the requirements of NEPA and CEQA and provide information for NPDES permitting. The document includes a discussion of the proposed Project, the general environmental setting of the Project limits and surrounding area, and the regulatory framework with respect to water quality. The report also provides data on surface water and groundwater resources within the Project limits and the water quality of these waters, describes water quality impairments and beneficial uses, and identifies potential water quality impacts/benefits associated with the proposed Project, as well as recommends avoidance and/or minimization measures for potentially adverse impacts.

As part of this analysis, reviews were conducted of the Water Quality Control Plan (Basin Plan; SARWQCB 2019) for the Santa Ana River Basin, the FEMA FIRM for Riverside County, and of the hydrology and hydraulic analysis and the conceptual drainage plans that have been prepared for the Project. To determine the impacts on water quality, the increase in impervious surface area was calculated, and impacts of the construction activities were considered.

2.2 Project Description

The Riverside County Transportation Commission (RCTC), in cooperation with the California Department of Transportation (Caltrans), is proposing to construct new lanes along I-15 between post mile (PM) 21.2 and PM 38.1 in Riverside County, California. The regional location is shown on Figure 2-1. The primary component of the Project would be the addition of two tolled express lanes in both the northbound and southbound directions within the median of I-15 from State Route 74 (SR-74) (Central Avenue) (PM 22.3) in the City of Lake Elsinore, through the unincorporated Riverside County community of Temescal Valley, to El Cerrito Road (PM 38.1) in the City of Corona, for a distance of approximately 15.8 miles. The proposed Project would also add a southbound auxiliary lane between both the Main Street (PM 21.2) off-ramp and SR-74 (Central Avenue) on-ramp (approximately 0.75 mile), as well as the SR-74 (Central Avenue) off-ramp and Nichols Road on-ramp (PM 23.9) (approximately 1 mile), as shown on Figure 2-2. Along with the lane additions, which would extend from PM 21.2 to 38.1, the proposed Project would include widening of 14 bridges; potential construction of noise barriers, retaining walls, drainage systems; and implementation of electronic toll collection equipment and signs. In addition, due to the southbound express lanes access between the Cajalco Road and Weirick Road interchanges, the southbound I-15 Weirick Road off-ramp would be configured as a dual lane exit. Associated improvements for the toll lanes, including advance signage and transition striping, would extend approximately 2 miles from each end of the express lane limits to PM 20.3 in the south and PM 40.1 in the north. The proposed lane additions and supporting infrastructure are expected to be constructed primarily within the existing state right of way (ROW). There are existing treatment BMPs within the Project limits and their locations can be found in Table 5-2 in Section 5.3, Impact Assessment Methodology. This Project is included in the 2019 Federal Transportation Improvement Program (FTIP) as Project Identification (ID) RIV170901. It is also included in the Southern California Association of Governments' (SCAG) *Connect SoCal 2020–2045 Regional Transportation Plan* (RTP)/*Sustainable Communities Strategy* (SCS) as Project ID 3160001 (SCAG 2020).

The FTIP and RTP listings for this Project were amended in April 2021 to accurately reflect the scope and limits of the Project as currently proposed. The amended FTIP and RTP listings will state the following:

> IN WESTERN RIVERSIDE COUNTY - ON I-15, ADD 2 EXPRESS LANES IN EACH DIRECTION, GENERALLY IN THE MEDIAN, FROM SR-74 (CENTRAL AVENUE) (PM 22.3) IN THE CITY OF LAKE ELSINORE TO EL CERRITO ROAD (PM 38.1) IN THE CITY OF CORONA. CONSTRUCT SOUTHBOUND AUXILIARY LANE FROM MAIN STREET (PM 21.2) TO SR-74 (CENTRAL AVENUE) (PM 22.3) AND FROM SR-74 (CENTRAL AVENUE) (PM 22.3) TO NICHOLS ROAD (PM 23.9). SIGNAGE AND TRANSITION STRIPING EXTENDS TO PM 20.3 TO THE SOUTH AND PM 40.1 TO THE NORTH.

2.2.1 Project Purpose

The purpose of the proposed Project is to:

- Improve and manage traffic operations, congestion, and travel times along the corridor
- Expand travel mode choice along the corridor
- Provide an option for travel time reliability
- Provide a cost-effective mobility solution
- Expand and maintain compatibility with the express lane network in the region

2.2.2 Project Need

Existing traffic volumes often exceed current highway capacity along several segments of I-15 between SR-74 (Central Avenue) and El Cerrito Road. Due to forecast population growth and the continued development to support the projected growth in the region, the I-15 corridor is expected to continue to experience increased congestion and longer commute times that are projected to negatively affect traffic operations along the freeway mainline.

The adopted 2016 RTP (SCAG 2016) Growth Forecast estimates a 36.7 percent increase in population in Riverside County between 2015 and 2040. SCAG's recently adopted Connect SoCal (2020–2045 RTP/SCS; SCAG 2020) Growth Forecast estimates a 38.3 percent increase in population in Riverside County between 2020 and 2045, with the number of households and employment increasing by approximately 30.5 percent and 34.02 percent, respectively. In the City of Corona, the 2020–2045 RTP/SCS Growth Forecast estimates an 11.6 percent increase in population from 2016 to 2045 and an 11.7 percent increase in households. The 2020–2045 RTP/SCS also found of the top three counties where Los Angeles residents migrate, Riverside County places third. In 2017, the number of Los Angeles migrants to Riverside County was approximately 11,000. Additionally, based on the 2016–2040 RTP/SCS Final Growth Forecast by Jurisdiction, the City of Corona is estimated to experience a 3.7 percent increase in population between 2020 and 2045. According to the same source, the City of Lake Elsinore is projected to see a 76.8 percent increase in population. This projected growth is expected to place a high demand on existing transportation facilities and services.

Currently, north to south mobility options for motorists are limited through this portion of Riverside County. Besides local streets, the only parallel route for motorists is Interstate 215 (I-215), which is over 10 miles east of I-15 and generally serves a different region within Riverside County.

As demonstrated in the traffic analyses performed for the Project, northbound I-15 currently operates at an unacceptable level of service (LOS) (i.e., LOS E or F) during the AM and/or PM peak hour along 6 out

of the 15 segments evaluated between the Cajalco Road off-ramp and the Indian Truck Trail on-ramp. This is projected to climb to 8 of 18 segments evaluated by 2030 between the El Cerrito Road on-ramp and the Indian Truck Trail on-ramp, and to 19 of 20 locations evaluated within the Project limits by 2050. Southbound I-15 currently operates at an unacceptable LOS (i.e., LOS E or F) during the AM and/or PM peak periods at 3 of 15 mainline segment locations evaluated between the El Cerrito Road off-ramp and the Weirick Road/Dos Lagos Drive off-ramp. This is projected to increase to five locations by Opening Year (2030), and then decrease to four locations by Design Year (2050), also between the El Cerrito Road off-ramp and the Weirick Road/Dos Lagos Drive off-ramp.

The expected increase in congestion during peak periods and worsening traffic conditions, particularly during AM and PM peak periods, are expected to result in additional local and regional traffic congestion. Existing heavy peak-period congestion and traffic delays, as evidenced by the poor LOS, are expected to continue to negatively affect traffic operations along mainline I-15.

While LOS is typically used to gauge transportation facility performance, systemwide performance metrics have become effective measurements in evaluating transportation systems. The systemwide performance measures analyzed for the corridor include number of vehicles served by the study network, total travel time/vehicle hours traveled, average delay per vehicle, and total delay/vehicle hours delay.

Based on the traffic analyses performed, along both northbound and southbound I-15, vehicle volume served is projected to continue to increase during the AM and PM peak periods from the Existing Year (2019) through Design Year (2050), as is the total distance traveled. In addition, the total travel time during the PM peak period in particular is anticipated to more than double by the Design Year (2050), with total travel time during the PM peak period forecast to rise by 167 percent compared with the Existing Year (2019) travel time condition. Furthermore, average delay per vehicle and total delay are projected to increase from Existing Year (2019) to Design Year (2050) during the AM and PM peak periods, at least tripling on both northbound and southbound I-15 during this timeframe.

Under Existing Year (2019) conditions, average speeds for northbound and southbound I-15 during the AM and PM peak hours are projected to decrease between the Existing Year (2019) and Design Year (2050) conditions in all instances except during the PM peak hour in the southbound direction. These projected reductions are most pronounced on northbound I-15, ranging from a reduction of 25.5 miles per hour to 52.6 miles per hour. The projected average delay per vehicle during this same period is expected to increase, with the northbound I-15 delay projected to increase from 774 seconds and 102 seconds during the AM and PM peak hours, respectively, under Existing Year (2019) conditions, to 3,828 seconds and 6,224 seconds during the AM and PM peak hours, respectively, in the Design Year (2050).

Based on the above existing and forecast traffic data, recurring daily congestion due to continuing population growth, development, and travel demand exceeding available highway capacity is expected to continue to result in slower travel speeds, reduced throughput, and increased travel times along mainline I-15.

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Figure 2-1.
Regional Location

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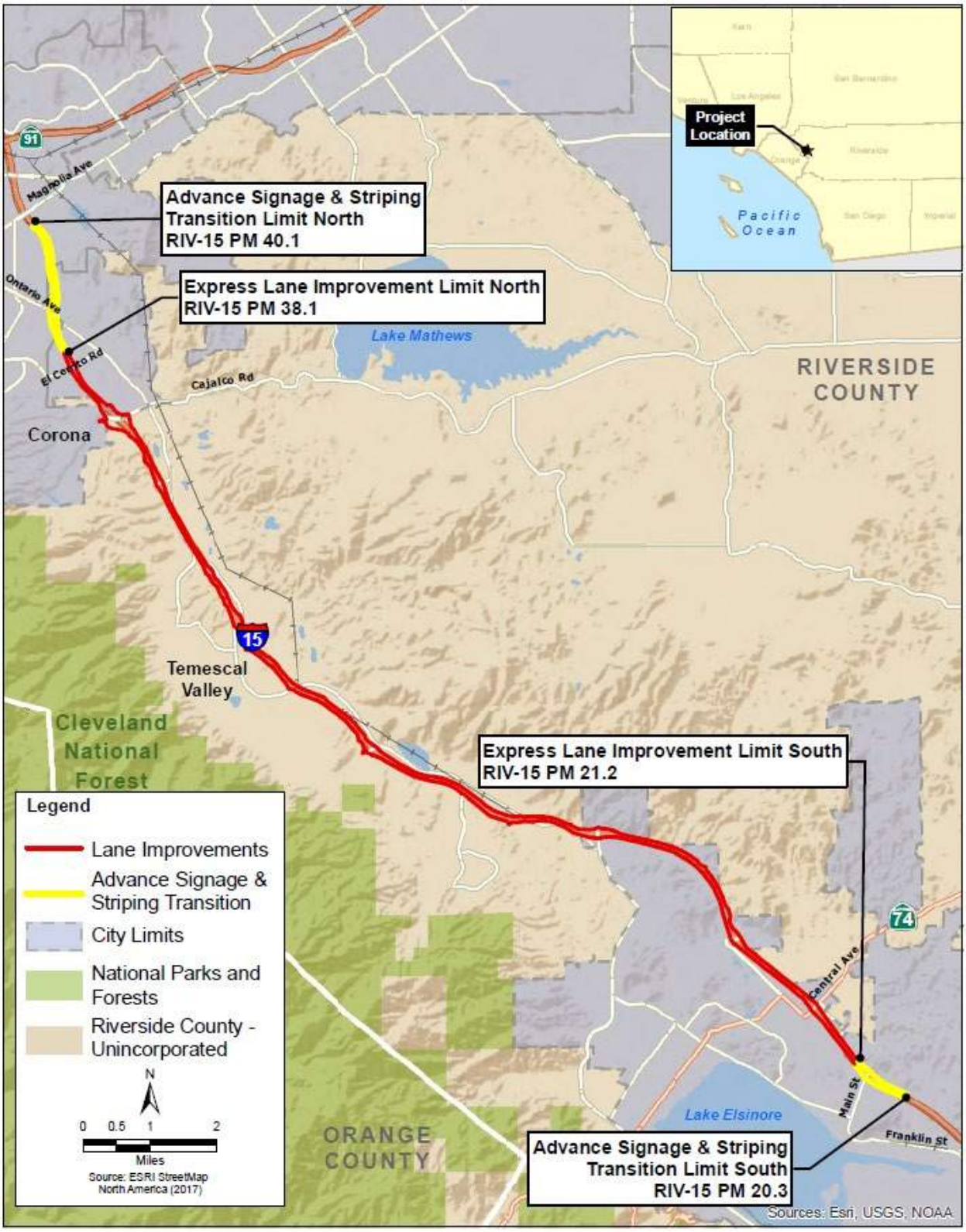

Figure 2-2.
Project Location

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2.2.3 Alternatives

Two alternatives are being evaluated as part of the Project, a No-Build Alternative and Build Alternative. The Build Alternative was designed to satisfy the Project purpose and need while avoiding and/or minimizing environmental impacts.

No-Build Alternative

Under the No-Build Alternative, the I-15 ELPSE would not be constructed; however, it would not preclude the construction of future improvements or general maintenance activities. Even without construction of the proposed I-15 ELPSE, limited improvements on I-15 associated with the constructed and currently operational I-15 Express Lanes Project. Describing and analyzing a No-Build Alternative helps both decision-makers and the public to compare the impacts of approving the proposed Project with the consequences of not approving the proposed Project.

Build Alternative

The proposed Project includes construction of two tolled express lanes in each direction on I-15 in Riverside County between PM 21.2 and PM 38.1. The proposed Project would be constructed within the existing ROW. The tolled express lanes would be used by vehicles for a toll and also serve as high-occupancy vehicle (HOV) lanes for HOV 3+ users for a reduced toll. The toll rate would be adjusted based on congestion. These improvements would enhance regional mobility and offer greater user flexibility of the regional transportation system. Sign modifications and the installation of new signs would also be included to support the new tolled express lanes. Advanced signage is required to be posted a minimum of 2 miles prior to the start of the tolled express lanes. Signage would be located within the Project limits between PM 20.3 and PM 40.1. The Build Alternative would not add any new connections and would not improve any existing ramps.

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3 Regulatory Setting

3.1 Federal Laws and Requirements

3.1.1 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 unlawful unless the discharge complies with a NPDES permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal and industrial/construction point sources to comply with the NPDES permit program. Important CWA sections include the following:

Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.

Section 401 requires an applicant for a federal license or permit to conduct any activity, which 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 (most frequently required in tandem with a Section 404 permit request [see below]).

Section 402 establishes the NPDES, a permitting program for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and municipal separate storm sewer systems (MS4).

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 United States Army Corps of Engineers (USACE).

The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

USACE issues two types of 404 permits: Standard and General permits. For General permits, there are two types: Regional permits and Nationwide permits. 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 authorize a variety of minor project activities with no more than minimal effects.

There are also two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (EPA) Section 404 (b)(1) Guidelines (U.S. EPA Code of Federal Regulations [CFR] 40 Part 230), and on whether permit approval is in the public interest. The 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and they allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have less adverse effects. The guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have less effects on waters of the U.S., and not have any other significant adverse environmental consequences. Documentation is needed that a sequence of avoidance, minimization, and compensation measures have been followed, in that order. The guidelines also restrict permitting activities that violate water quality or toxic effluent 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 USACE, even if not subject to the 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4.

3.2 State Laws and Requirements

3.2.1 Porter-Cologne Water Quality Control Act

California's Porter-Cologne Water Quality Control Act, enacted in 1969, provides the legal basis for water quality regulation in 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 are not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined in the California Water Code, and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Water Quality Control Act are permitted by waste discharge requirements (WDR) 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 regarding water quality standards in a project area are contained 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 these uses. Consequently, the water quality standards developed for particular water body segments are based on the designated use, and they vary depending on such use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants, which are then state listed in accordance with CWA Section 303(d). If the state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-source point controls (NPDES permits or WDRs), the CWA requires the establishment of total maximum daily loads (TMDL). TMDLs specify allowable pollutant loads from all sources (point, nonpoint, and natural) for a given segment of a water body.

3.2.2 State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB adjudicates 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.

3.2.3 National Pollution Discharge Elimination System Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of stormwater dischargers, including MS4s. The U.S. EPA defines an MS4 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 are designed or used for collecting or conveying storm water." The SWRCB has identified Caltrans as an owner/operator of an MS4 pursuant to federal regulations. Caltrans' MS4 permit (Order No. 2012-0011-DWQ) covers all Caltrans ROW, properties,

facilities, and activities in the state. The SWRCB or RWQCB issues NPDES permits for 5 years, and permit requirements remain active until a new permit has been adopted.

Caltrans' MS4 Permit, NPDES No. CAS000003, SWRCB Order No. 2012-0011-DWQ (adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order No. 2014-0006-EXEC (effective January 17, 2014), Order No. 2014-0077-DWQ (effective May 20, 2014) and Order No. 2015-0036-EXEC (conformed and effective April 7, 2015), contains three basic requirements:

- Caltrans must comply with the requirements of the Construction General Permit (CGP) (see below).
- Caltrans must implement a year-round program in all parts of the state to effectively control stormwater and non-stormwater discharges.
- Caltrans stormwater discharges must meet water quality standards through implementation of permanent and temporary construction best management practices (BMP) 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, Caltrans developed the *Statewide Stormwater Management Plan* (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing stormwater 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 Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The Caltrans' *Project Planning and Design Guide* (PPDG) describes the process and procedures to determine the feasibility of BMPs for projects (Caltrans 2019a). The Project will follow the guidelines and procedures outlined in the latest SWMP and PPDG to address stormwater runoff.

In addition, in 2019, the SWRCB amended the current Caltrans NPDES Permit (NPDES No. CAS000003) to include a "trash amendment," requiring trash capture devices on routes designated as "Significant Trash Generating Areas (STGA)." The entire I-15 corridor within the Project limits falls within a STGA. Therefore, the Project is required to evaluate the inclusion of trash capture devices.

Construction General Permit

The CGP (NPDES Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), was adopted on July 17, 2012 and became effective on July 17, 2012. The CGP regulates stormwater discharges from construction sites that result in a disturbed soil area (DSA) of 1 acre or greater and/or are smaller sites that are part of a larger common plan of development.

For all projects subject to the CGP, applicants are required to develop and implement an effective stormwater pollution prevention plan (SWPPP). In accordance with Caltrans' Standard Specifications (Caltrans n.d.), a Water Pollution Control Program (WPCP) is necessary for projects with a DSA less than 1 acre.

By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least 1 acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than 1 acre is subject to the CGP 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 SWPPPs; implement sediment, erosion, and pollution prevention control measures; and obtain coverage under the CGP.

The CGP classifies 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, Risk Level 3 (the highest risk) project would require compulsory stormwater runoff, pH and turbidity monitoring, and preconstruction and post-construction aquatic biological assessments during specified seasonal windows. A risk assessment was performed for the Project and the result is a Risk Level 2 (Appendix A).

Clean Water Act Section 401 and Section 404 Permitting

Under Section 401of 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 will be in compliance with state water quality standards. The most common federal permit triggering 401 Certification is a CWA Section 404 permit, issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on project location, and are required before 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 Water Quality Control 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 associated with the implementation of a project.

3.2.4 California Fish and Game Code Section 1602 Streambed Alteration Agreement

In compliance with California Fish and Game Code Section 1602, the California Department of Fish and Wildlife (CDFW) issues agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams and rivers are defined by the presence of a channel bed, banks, and perennial, intermittent, or ephemeral flow of water. CDFW typically extends the limits of their jurisdictional laterally beyond the channel banks for streams to the outer edges of riparian vegetation. The permit governs activities that modify the physical characteristics of the stream, as well as activities that may affect fish and wildlife that use the stream and surrounding habitat.

3.3 Regional and Local Requirements

The Project would include construction within the existing Caltrans ROW. During design, the Caltrans NPDES permit will be the guidance document for areas within and outside of the Caltrans ROW that fall within the Project limits. During construction of the Project, compliance with the CGP would be required. The area covered under the CGP would include the DSA within the Cities of Lake Elsinore and Corona and portions of the unincorporated Riverside County community of Temescal Valley. The Caltrans NPDES permit would cover all areas within Caltrans ROW. The city and county post-construction requirements (Cities of Lake Elsinore and Corona and County of Riverside NPDES Permit Order No. R8-2010-0033, as amended by R8-2013-0024, or existing approved order) would apply to the Project after construction is completed within those jurisdictions, and the Caltrans post-construction requirements (Caltrans Statewide NPDES Permit Order No. 2012-0011-DWQ, as amended by Order WQ 2014-0006-EXEC, Order WQ 2014-0077-DWQ, Order WQ 2015-0036-EXEC, and Order WQ

2017-0026-EXEC, or existing approved order) would apply to the Caltrans ROW. The SARWQCB Basin Plan describes the requirements for water bodies within the Santa Ana Region.

3.3.1 Antidegradation Policy

The SWRCB adopted an antidegradation policy (SWRCB Resolution No. 68-16) per the CWA (40 CFR 131.12), which requires that existing high-quality waters are maintained unless "there is a demonstration that: (1) allowing some degradation is consistent with the maximum benefit to the people of the state; and (2) that such degradation would not unreasonably affect existing or potential beneficial use" (SWRCB 1968). The federal and state policies require that the existing instream uses and the level of water quality necessary for protection of the uses is maintained and protected. A reduction in water quality is permitted only if the reduction is necessary to accommodate important economic or social development.

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4 Affected Environment

4.1 Introduction

The affected environment analysis describes the environmental characteristics within the Project limits, such as geography, topography, receiving water bodies, groundwater conditions, precipitation and climate, flood plain classification, erosion potential, biological, water quality standards, beneficial uses, and available existing water quality data.

4.2 General Setting

The Project is located along I-15 between PM 20.3 and PM 40.1 in Riverside County, California (Figure 2-1 and Figure 2-2). Improvements proposed consist of new toll lanes along I-15 between PM 21.2 and PM 38.1. Associated improvements for the toll lanes, including advance signage and transition striping, would extend approximately 2 miles from each end of the express lane limits to PM 20.3 in the south and PM 40.1 in the north. The Project is located within the existing Caltrans ROW.

4.2.1 Population and Land Use

The estimated population of Riverside County is 2,470,546, which consists of 69,283 people in the City of Lake Elsinore and 169,868 people in the City of Corona (U.S. Census Bureau 2019). Land use within the Project limits primarily consists of transportation and vacant uses. Land uses adjacent to the Project limits consist of agricultural, commercial, residential, manufacturing/industrial, light industrial, and mining. The Project limits have no parks, wildlife refuges, or ecological reserves identified within them.

4.2.2 Topography

The existing topography within the Project limits generally slopes from its southeast extent to its northwest extent. At the southern extent of the Project limits along I-15, the elevation is approximately 1,320 feet near the SR-74 (Central Avenue) interchange overpass and decreases to approximately 900 feet at the northern extent of the Project limits. No steep slopes that would be prone to erosion currently exist within the Project limits per the *Stormwater Management Program District 8 Work Plan, Fiscal Year 2020-2021* (District 8 Work Plan) (Caltrans 2019b).

4.2.3 Hydrology

Regional Hydrology

All of the runoff produced within the Project limits and vicinity ultimately discharge to Temescal Creek. Temescal Creek discharges to the Santa Ana River in the Santa Ana River watershed, which is classified as Santa Ana River Hydrologic Unit (HU 801.0). The Santa Ana watershed covers approximately 2,840 square miles over portions of Orange, Riverside, San Bernardino, and Los Angeles Counties and consists mainly of high mountain ranges that surround and divide large, dry alluvial valleys.

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 to confluence with the Santa Ana River. The Santa Ana River flows southwest from Riverside County into Orange County toward the Pacific Ocean.

Temescal Creek begins at the outlet from Lake Elsinore near the Seaport Boat Launch on West Lakeshore Drive. From the outlet, Temescal Creek flows northwest generally for about 23 miles before its confluence with Santa Ana River Reach 3 and Prado Dam near the Cities of Norco and Corona. The Project is located within the Terra Colta (801.35), Lee Lake (801.34), Bedford (801.32), Coldwater (801.31), and Temescal (801.25) hydrologic subareas. The Terra Colta (801.35) subarea is 14,217 acres and drains to Arroyo Del Toro and Temescal Creek. The Lee Lake (801.34), Bedford (801.32), Coldwater (801.31), and Temescal (801.25) sub-areas drain to Temescal Creek and are 25,729, 31,761 and 10,441, 35,737 acres, respectively. Figure 4-1 shows the Project's location in the Hydrologic Unit and the Hydrologic Sub-Areas.

Local Hydrology

Precipitation and Climate

Average annual precipitation near the Project limits is 16.57 inches (Caltrans 2019c). California's south inland region has a hot summer Mediterranean-type climate; the region typically has long summers with intense thunderstorms and brief, rainy winters. Most rainfall occurs in the region during winter and early spring. The average annual high temperature is 80.8 degrees Fahrenheit, and the average low temperature is 49.8 degrees Fahrenheit (National Oceanic and Atmospheric Association 2021).

Surface Channels

The Project crosses over 11 channels, which are tributary to Temescal Creek. Flows are then conveyed to the Santa Ana River and ultimately to the Pacific Ocean. A description for each channel crossing is provided below. The SARWQCB Basin Plan identifies beneficial uses for surface waters in the Santa Ana Region, which are discussed in Section 4.2.6.

Wasson Canyon Wash

Wasson Canyon Wash crosses I-15 at approximately PM 21.57. East of the Project, Wasson Canyon Wash is a natural meandering creek that crosses under an I-15 bridge through an earthen channel and then flows through a culvert box under Collier Avenue, which outlets onto Wasson Basin west of the Project.

Arroyo Del Toro

Arroyo Del Toro is located just north of SR-74 (Central Avenue) and crosses I-15 at approximately PM 22.60. East of the Project, Arroyo Del Toro is a concrete rectangular channel that crosses Dexter Avenue through a quintuple 14-foot by 10-foot reinforced concrete box (RCB). The RCB outlets into a detention basin between Dexter Avenue and the I-15 northbound roadway. From the detention basin, ten 36-inch and five 48-inch culverts convey the flow under I-15 to a rectangular channel parallel to the I-15 southbound roadway. From the concrete channel, Arroyo Del Toro outlets into Collier Marsh within Temescal Creek.

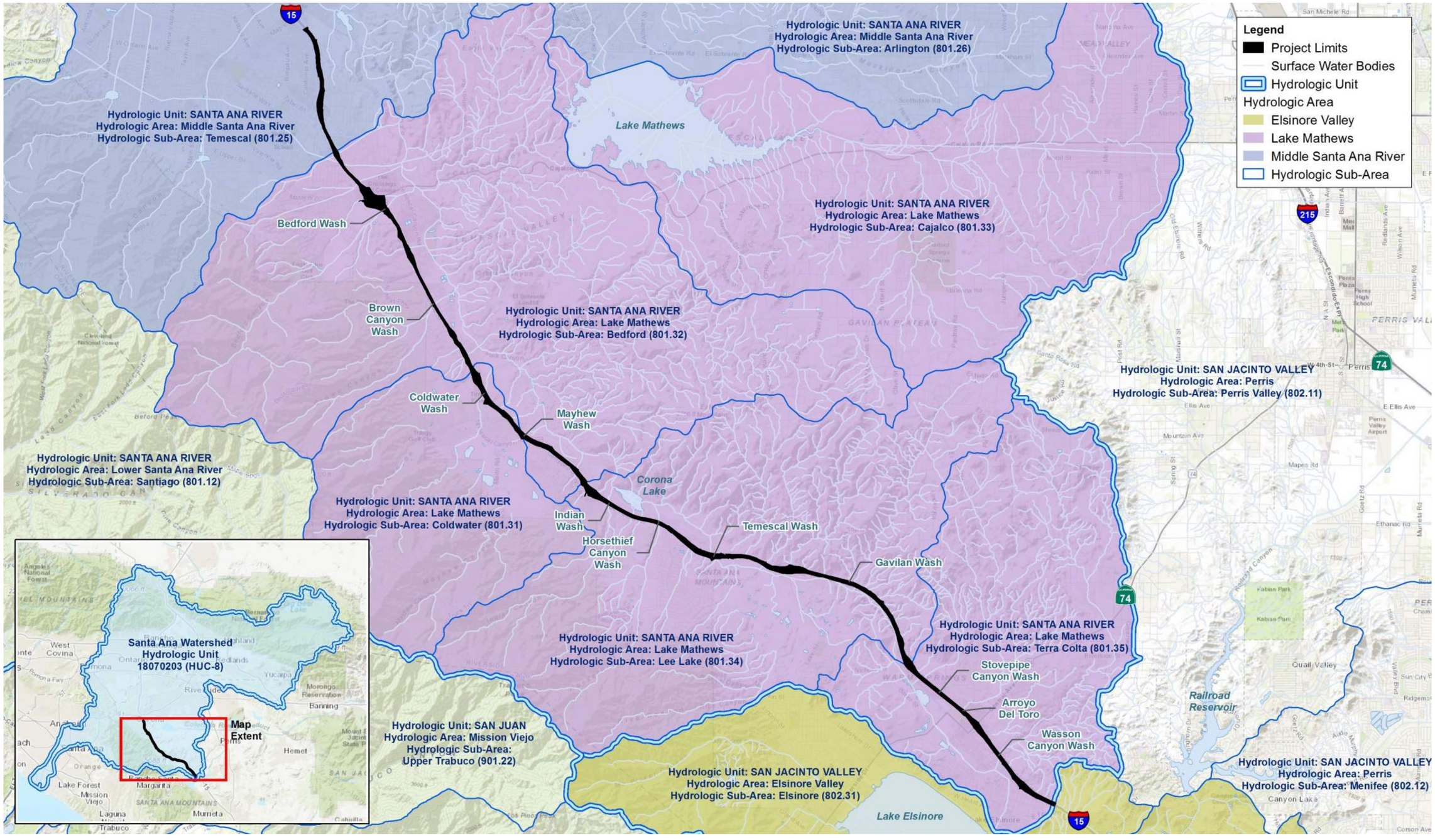

Figure 4-1. Hydrologic Subarea

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Stovepipe Canyon Wash

Stovepipe Canyon Creek crosses I-15 at approximately PM 23.50. East of the Project, Stovepipe Canyon Creek is a natural earthen channel that crosses I-15 through a 14-foot by 8-foot RCB. The RCB outlets into the Temescal Creek west of the Project.

Gavilan Wash

Gavilan Wash is located south of Lake Street and north of Cajalco Road within the City of Lake Elsinore and crosses under an I-15 bridge at approximately PM 25.55. Flowing westward, Gavilan Wash converges to Temescal Creek at approximately 450 feet west of I-15. In general, the Gavilan Wash Creek can be characterized as a natural channel with an earthen stream bed and banks with low vegetation. The channel's segment crossing at I-15 has both streambed and stream banks covered in riprap with no vegetation.

Temescal Creek

All runoff produced within the Project limits and vicinity ultimately discharge to Temescal Creek. Temescal Creek begins as the Elsinore Spillway Channel, an overflow channel for Lake Elsinore that now confines its upper reaches through the middle of downtown Lake Elsinore. The channel then turns and passes northwestward into Warm Springs Valley, past its confluence with Wasson Canyon Wash on the right until it is past the water treatment plant. From there, it is permitted to spread out into a natural creek.

Temescal Creek runs parallel to the I-15 alignment continuously until it crosses the freeway just south of Horsethief Canyon Road at approximately PM 28.04; it continues running parallel to I-15 past the Project limits, gathering all the channels that cross the Project limits. Throughout the alignment, Temescal Creek is characterized as a natural, meandering channel.

Horsethief Canyon Wash

Horsethief Canyon Wash is located just north of Horsethief Road within the unincorporated area of Riverside County and crosses under I-15 at approximately PM 29.13. Flowing north, Horsethief Canyon Wash converges to Temescal Creek at approximately 1,400 feet east of I-15. Horsethief Canyon Wash is characterized as a natural channel having both stream bed and banks composed of soil with low vegetation. The channel's segment crossing I-15 has a stream bed covered by soil with low vegetation, while the stream banks are covered in riprap.

Indian Wash

Indian Wash is located just south of Indian Truck Trail in the unincorporated area of Riverside County and crosses I-15 at approximately PM 30.09. Indian Wash flows north and converges to Temescal Creek approximately 1,500 feet west of I-15. Indian Wash is characterized as a natural channel having both stream bed and banks composed of soil with low vegetation and has the same characteristics for the segment crossing under the I-15 bridge. No armor cover exists on either stream bed or banks within the section.

Mayhew Wash

Mayhew Wash is located just north of Temescal Canyon Road and crosses an I-15 bridge at approximately PM 31.97. Mayhew Wash flows east and converges to Temescal Creek approximately 2,000 feet east of I-15. Mayhew Wash is characterized as a natural channel having both stream bed and

banks composed of soil with heavy vegetation consisting of low bushes in the segment crossing under the I-15 bridge. No armor cover exists on either stream bed or banks in this section, but both have natural vegetation cover.

Coldwater Wash

Coldwater Wash is located just south of Temescal Canyon Road, which is the third Temescal Canyon Road crossroad going north, and crosses the I-15 bridge at approximately PM 32.96. Coldwater Wash flows north and has an alignment parallel to Temescal Canyon Road until it converges with Temescal Creek. Coldwater Wash is characterized as a natural earthen channel densely vegetated with bushes and trees. The channel's segment that crosses I-15 has a stream bed covered in soil and stream banks covered in riprap; it is highly vegetated with bushes and trees.

Brown Canyon Wash

Brown Canyon Wash is a concrete channel located south of Weirick Road/Dos Lagos Drive within Riverside's unincorporated area and crosses an I-15 bridge at approximately PM 34.72. Brown Canyon Wash flows east and discharges onto Lee Lake at approximately 1,200 feet east of I-15, ultimately discharging to Temescal Creek.

Bedford Wash

Bedford Wash is located just south of Cajalco Road and passes under an I-15 bridge at approximately PM 36.58. The upstream reach of Bedford Canyon Wash west of I-15) is an earthen channel that transitions into a natural, meandering channel after crossing I-15 and continues downstream until it converges with the Temescal Creek.

Floodplains

The Project crosses over 11 channels, 6 of which have floodplains directly impacted by the proposed Project: Arroyo Del Toro, Stovepipe Canyon Wash, Temescal Creek, Mayhew Wash, Coldwater Wash, and Bedford Wash. These channels are tributary to Temescal Creek which is conveyed to the Santa Ana River and ultimately to the Pacific Ocean and are further discussed below.

Arroyo Del Toro

The portion of Arroyo Del Toro in the Project limits at PM 22.60 is in FEMA's 1 percent Annual Chance Special Flood Hazard Area (SFHA) Zone A (per FEMA Panel 06065C2029G)

Stovepipe Canyon Wash

The portion of Stovepipe Canyon Wash in the Project limits at PM 23.50 is in FEMA's 1 percent Annual Chance SFHA Zone AO and in the 0.2 percent Annual Chance Flood Hazard Zone X (per FEMA FIRM Panel 06065C2028G)

Temescal Creek

The portion of Temescal Creek in the Project limits at PM 28.04 is in FEMA's 1 percent Annual Chance SFHA Zone AE and is classified as a regulatory floodway (per FEMA FIRM Panel 06065C2006G); the area surrounding the channel and the SFHA Zone AE are in FEMA's 0.2 percent Annual Chance Flood

Hazard Zone X (per FEMA FIRM Panels 06065C1360G, 06065C1390G, 06065C2005G, 06065C2006G, 06065C2007G, 06065C2026G, 060652028G, and 06065C2029G)

Mayhew Wash

The portion of Mayhew Wash in the Project limits at PM 31.97 is in a FEMA Zone X region. The outlet of the channel onto Temescal Creek is a FEMA 1 percent Annual Chance SFHA Zone AE (per FEMA FIRM Panel 06065C1390G)

Coldwater Wash

The portion of Coldwater Wash in the Project limits at PM 32.96 is in a FEMA Zone X region. The outlet of the channel onto Temescal Creek is a FEMA 1 percent Annual Chance SFHA Zone AE (per FEMA FIRM Panel 06065C1390G)

Bedford Wash

The portion of Bedford Wash in the Project limits at PM 36.58 is designated by FEMA as a 1 percent Annual Chance SFHA Zone A (per FEMA FIRM Panel 06065C1360G)

Municipal Supply

According to the District 8 Work Plan, there are no high-risk areas within the Project limits (i.e., highway locations where spills or other releases from the Caltrans-owned ROW, roadways, or facilities may discharge directly to municipal or domestic water supply reservoirs or groundwater percolation facilities). Refer to Table 4-1 in the District 8 Work Plan for more information.

Groundwater Hydrology

The Project limits are located within the Elsinore–Elsinore Valley (HUC 8-004.01), Elsinore–Bedford–Coldwater (8-004.02), and Upper Santa Ana Valley–Temescal (HUC 8-002.09) groundwater subbasins. These subbasins are described below.

Elsinore Valley Subbasin

The Elsinore Valley Subbasin is located within the Elsinore Groundwater Basin, and it covers approximately 40 square miles. It is bounded on the east by consolidated rocks of the Gavilan Plateau and Estelle Mountain and on the south by the Elsinore watershed boundary. According to the California Department of Water Resources Water Data Library, the nearest groundwater well with current groundwater level data is located approximately 1.6 miles south of the Project. Moreover, it is an observation well that is operated by the Elsinore Valley Municipal Water District located on Wisconsin Street in the City of Lake Elsinore, between Lakeshore Drive to the north and Lehr Drive to the east. The depth to groundwater in November 2019 was approximately 299 feet (California Department of Water Resources 2021). Groundwater flows toward the center of the subbasin.

Bedford–Coldwater Subbasin

The Bedford–Coldwater Subbasin is located within the Elsinore Groundwater Basin, and it covers approximately 11 square miles. It is bounded on the northwest by Temescal Subbasin, with a groundwater divide near Bedford Wash, on the east and west by consolidated rocks of Estelle Mountain and the Santa Ana mountains, and on the south by the jurisdictional boundary of the Elsinore Valley Subbasin.

According to the California Department of Water Resources Water Data Library, the nearest groundwater well with current groundwater level data is located approximately 0.3 mile east of the Project. It is an irrigation well operated by the Temescal Valley Water District located adjacent to Leroy Road in the Temescal Valley. The depth to groundwater in April 2020 was approximately 32 feet (California Department of Water Resources 2021). Groundwater flows toward the center and northwest of the subbasin.

Upper Santa Ana Valley Subbasin

The Upper Santa Ana Valley Subbasin is located within the Temescal Groundwater Basin, and it covers approximately 36 square miles. It is bounded on the north by the Chino Subbasin, separated by low hills of crystalline rock near Norco and the Santa Ana River. The east side of the subbasin is bounded by nonwater-bearing crystalline rocks of the El Sobrante de San Jacinto and La Sierra Hills, and the west is bounded by the Santa Ana mountains. The south is bounded by the Elsinore Basin at a constriction of alluvium of Temescal Creek. According to the California Department of Water Resources Water Data Library, the nearest groundwater well with current groundwater level data is located approximately 3.5 miles north of the start of the Project. It is an observation well operated by Elsinore Valley Municipal Water District and is located on the corner of Tenth Street and Lincoln Avenue in the City of Corona. The depth of groundwater in April 2020 was approximately 196 feet (California Department of Water Resources 2021). Groundwater typically flows toward the center of the subbasin and then northeast toward the Santa Ana River.

The SARWQCB Basin Plan identifies beneficial uses for groundwater in the Santa Ana region, which are discussed in Section 4.2.6.

A geotechnical study of the groundwater hydrology within the Project area would be conducted during the Project design phase, and a more accurate depth to groundwater would be determined at that time.

4.2.4 Geology/Soils

Soil Erosion Potential

Soils within the Project limits are characterized by high infiltration capacity with gravelly and sandy loam. Most of the soil is sloped and well drained.

The soil erodibility factors (K) within the Project limits are 0.2, 0.24, 0.32, and 0.37 according to the keyhole markup language (KML) data set from the SWRCB. Soils within the Project limits are moderately susceptible to erosion. However, this is a planning-level tool, so a detailed site-specific survey would still be required for design-level analysis. A K factor represents the following:

- Susceptibility of soil or surface material to erosion
- Transportability of soil sediment
- The amount and rate of runoff given a particular rainfall input, as measured under a standard condition

Fine-textured soils that are high in clay have low K values (i.e., about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (i.e., about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (i.e., about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Refer to the SWRCB's website for the source of the data (SWRCB 2013) and Appendix A.

4.2.5 Biological Communities

In June 2021, Caltrans published the *I-15 Express Lanes Project Southern Extension Natural Environmental Study* (NES) (Caltrans 2021a). As described in the NES, the biological study area (BSA) was determined using the maximum disturbance limits associated with the Project and a 500-foot buffer around the Project limits. The jurisdictional study area (JSA) included proposed direct-impact areas with a 50-foot buffer around the Project limits.

Aquatic Habitat

The JSA includes 18 locations, which are both wetland and nonwetland waters of the U.S. that are subject to USACE jurisdiction pursuant to CWA Section 404. All features subject to USACE jurisdiction would also be subject to RWQCB jurisdiction under CWA Section 401. Additionally, 91 features in the JSA were identified to be subject to the CDFW jurisdiction pursuant to California Fish and Game Code Section 1602.

Special-Status Species

The California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) records searches identified 102 special-status plant species and 65 special-status wildlife species within the 15 quadrangles surrounding the BSA (i.e., Lake Elsinore, Wildomar, Alberhill, Sitton Peak, Murrieta, Romoland, Bachelor Mtn Mountain, Steele Peak, Lake Mathews, Perris, Corona South, Santiago Peak, Prado Dam, Riverside East, and Black Star Canyon, California, U.S. Geologic Survey 7.5' quadrangles). As described in the NES, 16 of the special-status plant species identified are federally listed and/or state-listed endangered or threatened plant species, while 86 nonlisted special-status plant species are known to occur within the vicinity of the BSA. Of the special-status wildlife species, 21 of the special status wildlife species are federally and/or state listed as endangered, threatened, or proposed endangered or threatened.

According to the NES, suitable habitat for five special-status plant species is present within the BSA, all of which are covered under the *Western Riverside County Multiple Species Habitat Conservation Plan* (MSHCP) (County of Riverside Transportation and Land Management Agency Environmental Programs Division 2003). During surveys conducted in 2020 in support of the NES, no Western Riverside County MSHCP threatened or endangered plant species were observed. Of the 21 special-status animal species, 14 have the potential to occur within the BSA; all except for the San Diego fairy shrimp (*Branchinecta sandiegonensis*) are covered species under the Western Riverside County MSHCP. No listed fairy shrimp were observed during surveys conducted in 2020.

Stream/Riparian Habitats

Six riparian sensitive natural communities were identified as being sensitive natural communities as defined by CDFW within the BSA with an estimated 125.79 acres of riparian sensitive natural communities. The overall habitat value of these communities is judged to be moderate, as they provide occupied habitat for federal and state-listed species and are also suitable for a number of other sensitive species.

Within the JSA, there are an estimated 26.37 acres of Western Riverside County MSHCP riparian-riverine resources. Within the BSA for jurisdictional resources, there are 14.69 acres of riparian habitats (i.e., Arrow Weed Thickets, Coast Live Oak Woodland and Forest, Fremont Cottonwood Forest and Woodland, Willow–Red Willow Riparian). A large portion of the riparian-riverine resources in the

JSA occur within Temescal Creek and along its tributaries. Quality of habitat within Temescal Creek ranges from moderate to high value. At Temescal Creek (west of I-15), the riparian resources support a large population of least Bell's vireo (*Vireo bellii pusillus*), as well as many other Western Riverside County MSHCP covered species of birds and amphibians that need moist soils and riparian vegetation and would be considered high quality. Other areas of Temescal Creek are more degraded and are considered moderate quality due to disturbances from humans, domestic predators, vehicular noise from I-15, and general vicinity to I-15. All riparian-riverine resources in the JSA occur in state jurisdictional streambeds. However, there are state streambeds that are man-made features that are constructed in upland areas, which generally do not qualify as Western Riverside County MSHCP riparian riverine.

Wetlands

Eighteen of the 146 features within the JSA were determined to be potentially subject to USACE jurisdiction pursuant to CWA Section 404 based on the presence of intermittent or perennial water flow, location within a historical flowline or 100-year floodplain, and downstream connection to a traditional navigable water (i.e., Santa Ana River via Temescal Creek). Both wetland and nonwetland waters of the U.S. occur within the JSA. All other features were determined to not be subject to USACE jurisdiction pursuant to CWA Section 404 based on USACE guidance following the Navigable Waters Protection Rule (Title 33 CFR Sections 328.3(b)3 and (b)5). These findings would be verified by USACE.

Fish Passage

No water bodies within the Project limits were identified as California Fish Passage. No impacts on fish passages would occur as a result of the proposed Project.

4.2.6 Surface Water and Groundwater Beneficial Uses

Surface Water Beneficial Uses

The beneficial uses of water are defined in the SARWQCB Basin Plan as those necessary for the survival or well-being of humans, plants, and wildlife. Examples of beneficial uses include drinking water supplies, swimming, industrial and agricultural water supply, and the support of freshwater and marine habitats and their organisms. A beneficial use may be classified as intermittent when water conditions do not allow the beneficial use to occur year-round. The Santa Ana Region recognizes 23 beneficial uses as follows:

- **Municipal and Domestic Supply (MUN)** – Includes uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
- **Agricultural Supply (AGR)** – Includes uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
- **Industrial Process Supply (PROC)** – Includes uses of water for industrial activities that depend primarily on water quality.
- **Industrial Service Supply (IND)** – Includes uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.
- **Groundwater Recharge (GWR)** – Includes uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

- **Freshwater Replenishment (FRSH)** – Includes uses of water for natural or artificial maintenance of surface water quantity or quality.
- **Navigation (NAV)** – Includes uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.
- **Hydropower Generation (POW)** – Includes uses of water for hydropower generation.
- **Contact Water Recreation (REC1)** – Includes uses of water 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, or use of natural hot springs.
- **Non-contact Water Recreation (REC2)** – Includes uses of water for recreational activities involving proximity to water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
- **Commercial and Sport Fishing (COMM)** – Includes uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.
- **Aquaculture (AQUA)** – Includes uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.
- **Warm Freshwater Habitat (WARM)** – Includes uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.
- **Limited Warm Freshwater Habitat (LWRM)** – Includes use of water that support warmwater ecosystems which are severely limited in diversity and abundance as the result of concrete-lined watercourses and low, shallow dry weather flows which result in extreme temperature, pH, and/or dissolved oxygen conditions. Naturally reproducing finfish populations are not expected to occur in LWRM waters.
- **Cold Freshwater Habitat (COLD)** – Includes uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.
- **Inland Saline Water Habitat (SAL)** – Includes uses of water that support inland saline water ecosystems including, but not limited to, preservation or enhancement of aquatic saline habitats, vegetation, fish or wildlife, including invertebrates.
- **Estuarine Habitat (EST)** – Includes uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, wildlife, mammals, or waterfowl.
- **Marine Habitat (MAR)** – Includes uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife.
- **Wildlife Habitat (WILD)** – Includes uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife, or wildlife water and food sources.

- **Preservation of Biological Habitats of Special Significance (BIOL)** – Includes uses of water that support designated areas or habitat, such as established refuges, parks, sanctuaries, ecological reserves, or areas of special biological significance (ASBS), where the preservation or enhancement of natural resources requires special protection.
- **Migration of Aquatic Organisms (MIGR)** – Includes uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish.
- **Spawning, Reproduction, and/or Early Development (SPWN)** – Includes uses of water that support high quality habitats suitable for reproduction, early development, and sustenance of marine fish and/or cold freshwater fish.
- **Shellfish Harvesting (SHELL)** – Includes uses of water that support habitats suitable for the collection of filter-feeding shellfish for human consumption, commercial, or sport purposes.
- **Rare, Threatened, or Endangered Species (RARE)** – Includes uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered.

Table 4-1 lists the beneficial uses for the nearest-named water bodies that the Project discharges into.

Table 4-1. Beneficial Use Designations for Surface Waters

Water Body Name	Beneficial Uses
Wasson Canyon Wash	None[a]
Arroyo Del Toro	None[a]
Stovepipe Canyon Wash	GWR[b], REC1[b], REC2[b], WARM[b], WILD[b]
Gavilan Wash	None[a]
Temescal Creek Reach 2	AGR, IND, GWR, REC1, REC2, WARM, WILD, RARE
Temescal Creek Reach 4	AGR, GWR, REC1, REC2, WARM, WILD, RARE
Temescal Creek Reach 5	AGR, GWR, REC1, REC2, WARM, WILD, RARE
Horsethief Canyon Wash	None[a]
Indian Wash	None[a]
Mayhew Wash	AGR[b], IND[b], GWR[b], REC1[b], REC2[b], LWRM[b], WILD[b]
Coldwater Wash	MUN, AGR, GWR, REC1, REC2, WARM, WILD, SPWN
Brown Canyon Wash	None[a]
Bedford Wash	GWR[b], REC1[b], REC2[b], WARM[b], WILD[b]
Santa Ana River Reach 3— Prado Dam to Mission Boulevard in Riverside	AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN

Source: Caltrans 2021b; SARWQCB 2019

Notes:

[a] The SARWQCB Basin Plan does not identify any beneficial uses; however, it states that all other Tributaries to the creeks listed under Temescal Creek have the following intermittent beneficial uses: GWR, REC 1, REC 2, WARM, WILD

[b] Intermittent beneficial uses

GWR=Groundwater Recharge; AGR=Agricultural Supply; IND=Industrial Supply; REC 1=Contact Water Recreation; REC2=Non-Contact Water Recreation; WARM=Warm Freshwater Habitat; WILD=Wildlife Habitat; RARE=Rare, Threatened, or Endangered Species; SPWN=Spawning, Reproduction, and/or Early Development

Groundwater Beneficial Uses

The SARWQCB Basin Plan identifies beneficial uses for groundwater where the Project is located in the Warm Spring Valley, Lee Lake, Temescal, and Bedford Groundwater Management Zones, which are in the Lake Mathews and Middle Santa Ana River hydrologic areas of the Middle Santa Ana River Basin. Groundwater beneficial uses are as follows:

- **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 re-pressurization.
- **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.

List of Impaired Water Bodies

The flow path from the Project to Prado Dam was used to determine what water bodies could potentially be impacted by the Project. Precipitation that falls within the Project limits would discharge into the various streams and creeks listed in Table 4-2. Table 4-2 also identifies the 2016 CWA Section 303(d)/305(b) Integrated List constituents with TMDLs established, if any, that could potentially be impacted by the Project in their order of contact from the Project to Prado Dam.

Table 4-2. Summary of 2016 Clean Water Act Section 303(d)-Listed Constituents and Total Maximum Daily Load Constituents

Water Body Name	CWA Section 303(d) List Constituent	TMDL Constituent
Wasson Canyon Wash	Not listed	Not listed
Arroyo Del Toro	Not listed	Not listed
Stovepipe Canyon Wash	Not listed	Not listed
Gavilan Wash	Not listed	Not listed
Temescal Creek Reach 2	None	Arsenic, chromium, copper, mercury, nickel, selenium, silver, zinc
Temescal Creek Reach 4	Not listed	Not listed
Temescal Creek Reach 5	Not listed	Not listed
Horsethief Canyon Wash	Not listed	Not listed
Indian Wash	Not listed	Not listed
Mayhew Wash	Not listed	Not listed
Coldwater Wash	Not listed	Not listed
Brown Canyon Wash	Not listed	Not listed
Bedford Wash	Not listed	Not listed

Table 4-2. Summary of 2016 Clean Water Act Section 303(d)-Listed Constituents and Total Maximum Daily Load Constituents

Water Body Name	CWA Section 303(d) List Constituent	TMDL Constituent
Santa Ana River Reach 3– Prado Dam to Mission Boulevard in Riverside	Copper and lead	Indicator bacteria and nitrate

Source: SWRCB 2019
Notes:
Additional CWA Section 303(d) and TMDL information may become available upon completion of the Stormwater Data Report for this Project.
CWA=Clean Water Act; TMDL=total maximum daily load

Areas of Special Biological Significance

The Project does not discharge directly or indirectly to an areas of special biological significance (ASBS).

5 Environmental Consequences

5.1 Introduction

This chapter discusses the potential impacts the Project may have on water quality and the measures that would apply to potential water quality impacts. The Build Alternative would construct two tolled express lanes in each direction on I-15 within the existing Caltrans ROW and result in approximately 844 acres of disturbed soil, approximately 125 acres of new impervious surface (NIS) with a total of approximately 82 acres of new net impervious (NNI) surface, and approximately 43 acres replaced impervious surface (RIS).

5.2 Potential Impacts on Water Quality

5.2.1 Anticipated Changes to the Physical/Chemical Characteristics of the Aquatic Environment

Substrate

The proposed Project crosses nine washes, seven of which are natural bottom. Brown Canyon Wash is a concrete channelized wash, and Wasson Canyon Wash is a combination of natural bottom and concrete channel. Construction of the proposed Project is anticipated to require new bents in the streambed of Temescal Creek. Short-term impacts to the substrate may occur during construction to Wasson Canyon Wash, Coldwater Wash, Bedford Wash, and Mayhew Wash.

Currents, Circulations, or Drainage Patterns

As discussed in the *I-15 Express Lanes Project Southern Extension Preliminary Drainage Report* (Caltrans 2021c), the overall proposed drainage condition concept would remain similar to the existing drainage condition with respect to direction of flow. The proposed Project would result in removal of the center median channel that currently collects stormwater runoff and direct flow downstream. Under the proposed Project, the median would no longer contain a native soil median but rather a concrete barrier between the northbound and southbound travel ways with paved toll express lanes and shoulder. Additionally, the proposed Project would remove existing storm drain inlets, construct new inlets, and result in new storm drains that would run parallel to the roadway to connect the new proposed inlets.

Project improvements would also involve the construction of about 0.85 mile of continuous outer shoulder dike on the southbound roadway segment located 0.25 mile north of Dos Lagos Road and 0.09 mile south of Cajalco Road. Additionally, because of the proposed geometry, some of the surface runoff previously collected by the median ditch under existing conditions would be directed toward the outer shoulders. For most of the Project limits, runoff would be directed toward the outer shoulders as sheet flow onto existing roadside swales and shoulder dikes.

It is anticipated that runoff collected on the widened bridges as a result of the Project would be collected by storm drain inlets downstream of the bridge and eventually discharged to treatment BMPs implemented by the Project.

No diversion from watersheds is anticipated.

Suspended Particulates (Turbidity)

Due to the construction and operation of the Project, erosion of sediment or suspended particles are likely to occur, especially during construction activities. During operation, turbidity in downstream water bodies may increase due to the increase in additional impervious areas.

Oil, Grease, and Chemical Pollutants

During construction and operation of the Project, oil, grease, metals, and chemical pollutants may be present and may enter downstream water bodies. As a result, the proposed Project is proposing treatment BMPs such as swales that are traditionally vegetated that may result in a source of herbicides or pesticides that may enter downstream water bodies.

Temperature, Oxygen, Depletion, and Other Parameters

The Project would include naturally vegetated slopes and vegetated treatment BMPs that may require application of fertilizers to encourage the establishment of vegetation. Therefore, nutrients in fertilizers associated with the implementation of proposed vegetation may cause oxygen depletion and a rise in temperature in surface streams and waterbodies.

Flood Control Functions

As discussed previously and in the *I 15 Express Lanes Project Southern Extension Location Hydraulic Study* (LHS) (Caltrans 2021b) prepared for the Project, the Project limits contain FEMA flood Zones A, AE, AO, and X. Arroyo Del Toro, Stovepipe Canyon Wash, Temescal Creek, and Bedford Wash are in and have surrounding 100-year floodplains. Work in watercourses would require encroachment permits prior to starting construction for the Project.

Additionally, the Project crosses a mapped regulatory floodway for Temescal Creek and a Special Studies/Department of Water Resources Awareness mapped floodplain for Coldwater Wash and Mayhew Wash. The Project would result in additional runoff to these watercourses, which would have a potential to increase flows. The LHS determined that Temescal Creek would experience approximately a 0.51-foot water surface elevation increase, which exceeds the 0.0 allowance for a Regulatory Floodway. Changed conditions in Temescal Canyon would require preparation of a conditional letter of map revision (CLOMR) during final design, a hydraulic analysis, and remapping the floodplain. Upon completion of construction, the Project would also process a letter of map revision (LOMR) with FEMA for official notification that the current flood map has been revised consistent with the changes identified as a result of the Project. Coldwater Wash is anticipated to experience a 0.13-foot decrease in water surface as a result of the Project. Mayhew Wash is anticipated to experience an 0.02-foot increase in water surface elevation as a result of the Project. It is anticipated that the flood hazard risks and flood depths in Temescal Creek, Coldwater Wash, and Mayhew Wash would not result in significant adverse effects as a result of the Project.

Erosion and Accretion Patterns

It is not anticipated that the Project would cause a change to erosion and accretion patterns. The Project would be subject to the CGP and other stormwater regulatory requirements that would require temporary pollution BMPs during construction to avoid or minimize erosion potential. Additionally, the CGP would require stabilization measures or practices to complete permit closeout to avoid and minimize impacts during operation.

Aquifer Recharge/Groundwater

Although dewatering activities would be required for the Project, these activities are subject to the requirements of the SARWQCB. Dewatering activities would be short term and cease upon completion of construction. No aquifer recharge basins are within the Project limits. During final design, a geotechnical report would be conducted to determine the location and depth of groundwater within the Project limits. The *I-15 Express Lanes Project Southern Extension Preliminary Geotechnical Report* (Caltrans 2020a) states that the depth to groundwater within the Project limits is anticipated to be 5 feet below ground surface when seasonal flows are not present.

Baseflow

Baseflow is the result of groundwater entering mountain and desert washes that cross many geologic strata. The Project does not have a baseflow condition, and the Riverside County Flood Control and Water Conservation District's *Hydrology Manual* (Riverside County Flood Control and Water Conservation District 2020) states the following:

> "Base flow is usually a minor factor in developing flood hydrographs for relatively rare flood events in western Riverside County. For this reason, baseflow can generally be neglected."

No baseflow changes are anticipated as a result of Project implementation.

5.2.2 Anticipated Changes to the Biological Characteristics of the Aquatic Environment

Special Aquatic Sites

A *Jurisdictional Delineation Report* prepared in April 2021 assessed the waters of the U.S. and the waters of the state. The proposed Project is anticipated to permanently impact less than 0.01 acre of nonwetland waters of the U.S. and temporarily impact 1.15 acre of nonwetland and 1.97 acre of potential CWA Section 404/401 jurisdictional wetland waters. Impacts on waters of the state, which are subject to CDFW jurisdiction under Section 1602 of the California Fish and Game Code include 0.40 acre of permanent nonwetland waters, 2.58 acres of nonwetland waters, and 0.02 acre of wetland.

Additionally, the proposed Project is anticipated to result in 0.22 acre of shaded impact on nonwetland waters of the state, subject to CDFW jurisdiction.

Habitat for Fish and Other Aquatic Organisms

The BSA does not include habitat for fish passage. There are no identified California Fish Passage impediments or barriers on streams within the BSA as discussed in the NES. No impacts would occur as a result of the proposed Project.

Stream/Riparian

Impacts on riparian sensitive natural communities as a result of the proposed Project may occur during construction and operation. As stated in the NES, approximately 12.43 acres of riparian sensitive natural communities are located within the BSA, including Fremont Cottonwood Forest and Woodland Alliance, Goodding's Willow–Red Willow Riparian Woodland Alliance, Hardstem and California Bulrush Marshes, Scale Broom Scrub, and California Sycamore Woodland Alliance. The proposed Project is expected to result in 0.04 acre of long-term impact on California Sycamore Woodland Alliance. However,

because these impacts on species would occur within the existing Caltrans ROW, which is subject to existing maintenance and vegetation clearing, the quality of habitat for species is low.

Wildlife Habitat

Seven of the nine watercourses that cross the Project limits are natural bottom that may provide riparian habitat and/or serve as wildlife passages. No fish passages are present within the Project limits or the BSA. During construction, work would occur within these watercourses, and vegetation removal would be required. These improvements may reduce potential riparian habitat, as well as deter wildlife from using the watercourses as a passage or corridor to safely move to the opposite side of I-15. To minimize disturbance to wildlife habitat, the work area would be minimized to the extent feasible, and construction BMPs would be implemented. During operation, improvements to bridges and the I-15 roadway surface may result in the loss of some riparian habitat due to new bents and/or footings or the result of additional shaded areas within the watercourses. However, the reduction in area would not result in a significant loss of wildlife habitat. Therefore, operation of the Project is not anticipated to result in significant adverse impacts on wildlife habitat.

Endangered, Threatened, or Special-Status Species

As previously discussed, 102 special-status plant species and 65 special-status wildlife species were identified within the BSA. As described in the NES, 16 special-status plant species are federally listed and/or state-listed endangered or threatened plant species, while 86 nonlisted special-status plant species are known to occur within the vicinity of the BSA. Of these, 21 special-status wildlife species are federally and/or state listed as endangered, threatened, or proposed endangered or threatened.

During surveys conducted in 2020, no Western Riverside County MSHCP threatened or endangered plant species were observed. As a part of the proposed Project, additional surveys would be conducted in 2021. In 2020, no threatened or endangered plant species were observed during rare plant surveys in the rare plant study area. Designated critical habitat for San Diego ambrosia (*Ambrosia pumila*) occurs in the BSA at Nichols Road and Lake Street in Lake Elsinore and overlaps slightly with the Project limits. Additional analysis would be required if these species are found during the 2021 surveys. However, given the Project limits occur within the existing Caltrans ROW that experiences routine maintenance and other disturbances from vehicles and does not occur in a conservation area, the presence of one or more of these species would not trigger the 90 percent threshold requiring mitigation. If individuals are found, then they would be avoided to the extent feasible.

Impacts on special-status wildlife species are shown in Table 5-1. As previously mentioned, additional 2021 surveys may be required for some of the species listed below.

Table 5-1. Potential Impacts of the Build Alternative on Special-Status Wildlife Species

Wildlife Species	Impact (acres)			
	Permanent	Temporary	Shading	Total
Fairy shrimp *(Branchinecta lynchi)*	Not present (2020)			
Quino checkerspot butterfly (*Euphydryas editha quino*)[a]	18.22	252.68	0.29	271.19
Arroyo toad (*Anaxyrus californicus*)[a]	0.04	14.3	0.22	14.56
Least Bell's vireo (*Vireo bellii pusillus*)	0.04	14.09	0.19	14.32
Southwestern willow flycatcher (*Empidonax trailii extimus*)	Not present (2020)			

Table 5-1. Potential Impacts of the Build Alternative on Special-Status Wildlife Species

Wildlife Species	Impact (acres)			
	Permanent	Temporary	Shading	Total
Tricolored blackbird (*Agelaius tricolor*)[a]	0.04	13.95	0.19	14.18
Coastal California gnatcatcher (*Polioptila californica californica*)[a]	9.13	144.08	0.07	153.28
Stephens' kangaroo rat (*Dipodomys stephensi*)[a]	18.22	254.12	0.47	272.81
San Bernardino kangaroo rat (*Dipodomys merriami parvus*)	17.32	214.32	0.47	232.11
Mountain lion (*Puma concolor*)[a]	18.27	274.95	0.66	293.88
Dulzura kangaroo rat (*Dipodomys simulans*)	18.22	255.39	0.47	274.08
American badger (*Taxidea taxus*)	17.71	246.26	0.47	264.44
California glossy snake (*Arizona elegans occidentalis*)	18.22	256.63	0.51	275.36
Coastal whiptail snake (*Cnemidophorus tigris*)	9.18	167.62	0.44	177.24
California legless lizard (*Anniella pulchra*)	0.04	11.17	0.04	11.25
Coronado skink (*Plestiodon skiltonianus*)	18.22	255.39	0.47	274.08
Coast western patch nosed-snake (*Salvadora hexalepis*)	9.13	148.06	0.25	157.44
Burrowing owl (*Athene cunicularia*)	98.85	317.13	2.64	418.62
Long-eared owl (*Asio otus*)	0.04	3.14	0.04	3.22
Grasshopper sparrow (*Ammodramus savannarum*)	9.09	107.33	0.22	116.64
Pallid bat (*Antrozous pallidus*)	0.05	10.44	0.29	10.78
Western mastiff bat (*Eumops perotis*)	0.05	9.52	0.04	9.61
Western red bat (*Lasiurus blossevillii*)	0.04	1.9	0	1.94
Western yellow bat (*Lasiurus xanthinus*)	0.05	9.52	0.04	9.61
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	0.00	1.69	0.25	1.94
Big free-tailed bat (*Nyctinomops macrotis*)	0.05	10.44	0.29	10.78
Bat (foraging)	98.9	337.96	2.83	439.69
Nonlisted Western Riverside County MSHCP fully covered species[a]	18.27	274.95	0.66	293.88

Notes:
[a] MSHCP fully covered species
MSHCP=Multiple Species Habitat Conservation Plan

Invasive Species

A total of 40 plant species were observed in the BSA that are classified as invasive, according to the California Invasive Plant Council classifications (California Invasive Plant Council n.d.). Six species are listed with a high rating (i.e., giant reed [*Arundo donax*], brome grass [*Bromus madritensis* ssp. *Rubens*], yellow star-thistle [*Centaurea solstitialis*], stinknet [*Oncosiphon piluliferum*], smallflower tamarisk [*Tamarix parviflora*], and saltcedar [*Tamarix ramosissima*]), 16 species are listed with a limited rating, and 18 species are listed with a moderate rating. Invasive species with a high rating can have severe ecological effects on 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 species observed are widely distributed. The seeds of invasive species could inadvertently be transported to the proposed Project or surrounding native habitat by way of construction equipment.

5.2.3 Anticipated Changes to the Human Use Characteristics of the Aquatic Environment

Existing and Potential Water Supplies; Water Conservation

Water consumption is anticipated to occur during construction of the proposed Project. Additionally, dewatering activities are anticipated to occur during construction. The Project limits do not contain locations where spills or other releases from Caltrans ROW, roadways, or facilities may discharge directly to municipal or domestic water supply reservoirs or groundwater percolation facilities. The proposed Project would be subject to the CGP and require regulatory permits from USACE (CWA Section 404), the SARWQCB (CWA Sections 401 and 402), and CDFW (Fish and Game Code Section 1602 Streambed Alteration Agreement).

Recreational or Commercial Fisheries

No recreational or commercial fisheries are located within or near the Project. Therefore, no changes to the human uses of the aquatic environment are anticipated.

Other Water-Related Recreation

No changes to the human uses of other water-related recreation in the aquatic environment are anticipated.

Aesthetics of the Aquatic Ecosystem

No changes to the aesthetics of the aquatic ecosystem are proposed as part of the Project.

Parks, National and Historical Monuments, National Seashores, Wild and Scenic Rivers, Wilderness Areas

No parks, national monuments, historical monuments, national seashores, wilderness areas, or wild and scenic rivers are located within the Project limits. Therefore, no changes to the human uses of these location types are anticipated.

Traffic/Transportation Patterns

During the construction period, short-term lane closures may be required, which could result in delays on I-15 and arterial roads. However, because of the limited duration of construction activities in a given area along the Project alignment, such closures would affect only a small portion of the Project limits at a particular time. Additionally, work that requires roadway and freeway closures, such as falsework and demolition, would occur mostly during off peak hours. Freeway access would be maintained at all times during construction. Furthermore, at least one lane would remain open on I-15 and arterial roads in both directions for the duration of construction. As such, delays are not expected to be substantial. Access to all properties in the Project limits would be maintained throughout the construction period. No impacts on parking would occur, as there is no parking with the Project limits. A transportation management plan

would be prepared that describes how traffic would be handled during construction of the proposed Project.

Energy Consumption of Generation

The Project would construct two express toll lanes that would need displayed electronic signs, requiring the direct consumption of energy during operation of the Project. The signs would be installed and operated per Caltrans standards to limit energy consumption. The Project is a transportation project and would not require the direct consumption of fuel. During construction, the Project would involve short-term fuel usage associated with construction vehicles and equipment. Since the Project does not include any facilities to generate energy, nor are there facilities near the Project for this purpose, no significant adverse impacts on the human use of energy consumption or generation are anticipated.

Navigation

No changes to navigation in the aquatic environment are anticipated.

5.2.4 Short-Term Impacts on Water Quality

No-Build Alternative

Since the No-Build Alternative does not include any construction activities within the Project limits, no short-term impacts during construction activities were identified for this alternative.

Build Alternative

Physical/Chemical Characteristics of the Aquatic Environment

Oil, Grease, and Chemical Pollutants

During construction, the proposed Project's DSA is estimated to be 844 acres. Common construction-related pollutants include, but are not limited to sediment, metals, trash, petroleum products, chemicals, concrete and asphalt waste and/or slurries, concrete curing compounds, sanitary waste, and pesticides/herbicides for vegetation control. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. Petroleum-based products, chemicals, or other toxic compounds may enter streambeds or surface waters that have the potential to alter oxygen diffusion rates. Wash water can easily introduce pollutants to surface waters or seep into groundwater. Any spills within the Project limits have the potential to enter nearby storm drains or watercourses. The impact of toxic construction-related materials on water quality would vary, depending on the quantity spilled. The Project would implement Measure WQ-1, which will require compliance with the regulations and standards set forth in the NPDES CGP, and Measure WQ-2, which would require the preparation and implementation of a SWPPP during construction.

The NPDES permit sets discharge limits and identifies monitoring and reporting requirements, as well as other provisions to minimize potential water quality impacts to ensure that there would be no substantial adverse impacts on water quality and human health. The Project would also comply with the NPDES CGP, required by the SWRCB, including preparation of a SWPPP. The SWPPP would implement non-stormwater management and material management BMPs to prevent chemical pollutants from entering surface waters and/or minimize the amount of chemical pollutants. Non-stormwater management BMPs or source control BMPs would also be implemented and identified within the SWPPP, which

would prevent pollution by limiting or reducing potential pollutants at their source, or eliminating off-site discharges, such as 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. With the implementation of Measures WQ-1 and WQ-2, these impacts would be avoided and minimized; thus, no substantial short-term adverse impacts are anticipated on the physical/chemical characteristics of the aquatic environment during Project construction.

Suspended Particles and Erosion and Accretion Patterns

As stated previously, the Project would disturb more than 1 acre of soil and require compliance with the Caltrans NPDES Statewide Stormwater Permit and NPDES CGP (Measure WQ-1), and the CGP requires the preparation and implementation of a SWPPP (Measure WQ-2). The SWPPP would help minimize short-term impacts through the implementation of erosion and sediment control BMPs during construction that would prevent sediment and suspended solids from discharging to surface waters or minimizing the amount of sediment and suspended solids discharging from the Project limits and into watercourses. Additionally, the SWPPP would identify waste management BMPs for construction that would implement 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. With the implementation of Measures WQ-1 and WQ-2, these impacts would be avoided and/or minimized, and no substantial short-term adverse impacts on the suspended particles and erosion and accretion patterns are anticipated during Project construction.

Dewatering Activities

Dewatering would be required during construction of the Project. To minimize these impacts from dewatering, groundwater and any other non-stormwater dewatering activities would be subject to the requirements of the SARWQCB, which includes a dewatering permit, WDRs, and dewatering BMPs (Measure WQ-3). The Project would require regulatory permits from USACE (Section 404), the SARWQCB (Sections 401 and 402), and CDFW (1602 Streambed Alteration Agreement) for the required work and drainage system improvements.

With the implementation of Measure WQ-3, these impacts would be minimized; thus, no substantial short-term adverse impacts are anticipated to groundwater during Project construction.

Floodplains

As previously discussed, the proposed Project would construct additional bents within Temescal Creek, a mapped Regulatory Floodway within the Project limits. The additional bents required as part of the Project would require construction elements, such as temporary bridge falsework, that would cause a temporary water surface elevation increase of approximately 0.51 feet within Temescal Creek, which would exceed the allowance set by FEMA, a 0.0-foot change. However, with the implementation of Measure WQ-4, which would process a CLOMR to ensure consistency with the designations set by FEMA, no substantial short-term adverse impacts are anticipated on floodplains during Project construction.

Biological Characteristics of the Aquatic Environment

The NES contains information regarding short-term impacts on the biological characteristics of the aquatic environment. The measures described in the NES (Measures BIO-1 through BIO-15, BIO-18

through BIO-22, and BIO-23 through BIO-30) would further avoid or minimize the potential for construction-related substantial short-term adverse impacts on biological resources of aquatic environment within the Project limits.

Human Use Characteristics of the Aquatic Environment

As discussed in Section 5.2.3, water consumption and dewatering activities would occur during construction of the Project. The Project would be subject to the CGP, as well as the following regulatory permits: USACE Section 404, SARWQCB Sections 401 and 402, CDFW 1602 Streambed Alteration Agreement, and floodplain encroachment permit. Drainage patterns are anticipated to remain similar to the existing setting and would continue to support the beneficial uses to the water bodies within the Project limits. Therefore, the proposed Project would not result in substantial short-term adverse effects on human uses, including designated beneficial uses, of Wasson Canyon Wash, Arroyo Del Toro, Stovepipe Canyon Wash, Gavilan Wash, Temescal Creek, Horsethief Canyon Wash, Indian Wash, Mayhew Wash, Coldwater Wash, Brown Canyon Wash, Bedford Wash, and Santa Ana River Reach 3 during Project construction.

5.2.5 Long-Term Impacts During Operation and Maintenance

No-Build Alternative

The No-Build Alternative would not result in the improvements proposed within the Build Alternative. Therefore, no long-term impacts during operation and maintenance would occur as a result of the No-Build Alternative.

Build Alternative

The Project is anticipated to add a total of 125 acres of impervious surface, which includes replacing 43 acres of impervious surface and adding 82 acres of NIS. Adding 82 acres of NIS as a result of the Project may contribute to long-term impacts during operation and maintenance, as discussed below.

Physical/Chemical Characteristics of the Aquatic Environment

Oil, Grease, and Chemical Pollutants

As previously discussed, the proposed Project would result in an additional 82 acres of impervious surface. Impervious surfaces can be a source of pollutants of concern. Pollutants of concern include, but are not limited to, the following, as defined in the Caltrans PPDG (Caltrans 2019a):

- Total suspended solids
- Nutrients
- Particulate metals
- Dissolved metals
- Turbidity

Caltrans has developed a system outlined in the PPDG that identifies pollutants that have been identified during runoff characterization studies as discharging with a load or concentration that "commonly exceeds allowable standards and which is considered treatable by currently available [Caltrans]-approved Treatment BMPs" (Caltrans 2019a). These pollutants are known as targeted design constituents. Once

identified, the targeted design constituents are then compared with the receiving water bodies CWA Section 303(d) impairments and TMDL requirements. If a pollutant is identified on both lists, the pollutant is classified as a primary pollutant of concern. These pollutants of concern are to be treated by the Caltrans-approved treatment BMPs as applicable for a specific project. The Project would implement Measure WQ-5, which would minimize impacts by requiring the Project to examine and evaluate long-term treatment control BMPs, which may include biofiltration strips and swales and trash capturing devices, consistent with the requirements of the NPDES permit. In addition, Measure WQ-6, which would require the Project to implement maintenance BMPs, such as drain inlet stenciling to address additional stormwater created by the increase in impervious surfaces and collect flows previously collected and convey by earthen medians that have been removed, would be implemented to further minimize potential long-term impacts within the Project area. With the implementation of Measures WQ-5 and WQ-6, no substantial long-term adverse impacts are anticipated on the chemical characteristics of the aquatic environment during Project operation and maintenance.

Suspended Particles and Erosion and Accretion Patterns

The Project would be completed within the existing Caltrans ROW and result in the addition of 82 acres of impervious surface. The proposed drainage would be similar to existing drainage patterns, with the exception of direction of flow with regard to the existing natural center median. The Project would also install additional inlets along the new edge of the shoulder to collect and convey stormwater throughout the Project limits. These storm drain inlets would be connected by new storm drainpipes, paralleling I-15.

The Project would construct, along the outside shoulder of I-15, approximately 0.85 mile of shoulder dike along the southbound portion of I-15 from 0.25 mile north of Dos Lagos Rd and 0.09 mile south of Cajalco Road. During operation of the Project, some of the stormwater previously collected by the center median may be directed to the outer shoulders as sheet flow and conveyed into existing roadside swales. Two hillsides, the first located approximately 0.5 mile south of Temescal Canyon Road adjacent to northbound I-15 and the second located approximately 0.6 mile north of Horsethief Canyon Road adjacent to southbound I-15, create stormwater that flows as surface flows from their respective hillsides onto I-15. Once the stormwater enters I-15 as surface flow, the stormwater is conveyed into the existing center median. Since the Project would remove the existing natural center median and replace it with impervious surfaces, long-term design BMPs (Measure WQ-7) would be incorporated to minimize these impacts. Long-term design BMPs may require such as areas to be slightly modified or remain vegetated to reduce soil erosion or create flatter slopes that will collect and divert surface flows from entering the I-15 mainline.

As stated earlier, the Project would construct new bridge decks over the following watercourses: Gavilan Wash, Temescal Creek, Horsethief Canyon Wash, Indian Wash, Mayhew Wash, and Coldwater Wash. Stormwater runoff from the additional impervious surfaces as a result of the Project is anticipated and would be collected via upstream drainages for Temescal Creek and Mayhew Wash bridges. The other four bridge decks currently drain directly into the watercourse below and would require further analysis during final design to maintain NPDES and SARWQCB compliance. However, with the implementation of Measures WQ-5 through WQ-7, these impacts would be minimized, and no substantial long-term adverse impacts on the suspended particles and erosion and accretion patterns are anticipated during Project operation and maintenance.

Floodplains

The Project is anticipated to have long-term impacts on the streambed sediment located within Temescal Creek, as discussed in the LHS and the Preliminary Drainage Report prepared for the Project. Although the addition of the new bents within the streambed would not result in a substantial long-term adverse impact on hydraulics when compared with existing creek conditions, changes to the existing FEMA floodplain through a LOMR would be required to ensure consistency with proposed Project modifications under Measure WQ-8. With the implementation of Measure WQ-8, long-term impacts on floodplains within Temescal Creek would not result in substantial adverse effects as a result of the Project during operation and maintenance.

In addition, Coldwater Wash is anticipated to experience a long-term 0.13-foot decrease in water surface as a result of the Project improvements. Mayhew Wash is anticipated to experience an 0.02-foot long-term increase in water surface elevation as a result of the Project. Unlike Temescal Creek, Mayhew Wash is not a regulatory floodway and does not have the same restrictions for changes in water surface elevations. The LHS identified that the change in the water surface elevation for Mayhew Wash would provide sufficient clearance for water to travel under the bridge without impacting the bridge for 100-year flood conditions and would meet requirements listed in Caltrans' *Highway Design Manual* (Caltrans 2020b) in Section 821, Section 3(1). It is anticipated that the flood hazard and flood depths in Coldwater Wash and Mayhew Wash would not result in substantial adverse effects as a result of the Project during operation and maintenance.

Biological Characteristics of the Aquatic Environment

The NES contains information about the Project's long-term impacts on biological communities and species in the aquatic environment. Measures described in the NES (Measures BIO-16, BIO-17, and BIO-23) would further avoid, minimize, and/or mitigate long-term impacts as a result of the Project. Therefore, no substantial long-term adverse effects on biological resources would occur within the Project limits during Project operation and maintenance.

Human Use Characteristics of the Aquatic Environment

The Project would not result in substantial long-term adverse effects on human uses, including designated beneficial uses of Wasson Canyon Wash, Arroyo Del Toro, Stovepipe Canyon Wash, Gavilan Wash, Temescal Creek, Horsethief Canyon Wash, Indian Wash, Mayhew Wash, Coldwater Wash, Brown Canyon Wash, Bedford Wash, and Santa Ana River Reach 3 during the proposed Project operation and maintenance.

5.3 Impact Assessment Methodology

The Project would construct two tolled express lanes in each direction on I-15 within the existing Caltrans ROW. During construction, it is anticipated that the Project would have a DSA of approximately 844 acres and be subject to the CGP. The Project would include Measures WQ-1 through WQ-4 that would minimize construction-related impacts consistent with the CGP, state, and local requirements. Upon completion of construction, the Project is anticipated to result in a net NIS of approximately 82 acres. Increases in impervious surfaces have the potential to increase typical pollutants generated during the operation of a transportation facility (sediment/turbidity, nutrients, trash, and debris, bacteria and viruses, oxygen-demanding substances, organic compounds, oil and grease, pesticides, and metals). The Project

would also implement design and/or treatment BMPs to address potential impacts of stormwater runoff from the NNI areas.

As the Project is anticipated to create more than 1 acre of NIS, the Project is subject to post-construction treatment control requirements of Caltrans' Statewide MS4 NPDES Permit No. S000003. As a result, the Project would implement avoidance and minimization measures that incorporate a combination of structural treatment control BMPs and nonstructural source control BMPs as applicable and feasible during final design. Treatment BMPs are used to treat runoff generated from the contributing drainage area. When a project is required to provide post-construction treatment, such as the proposed Project, the BMPs must treat an impervious area equal to the post-construction treatment area (PCTA), as required by the Caltrans NPDES permit. As discussed in the *I-15 Express Lanes Project Southern Extension Stormwater Data Report* (Caltrans 2021d), the PCTA for the proposed Project is 124.92 acres. The PCTA will be achieved by implementing biofiltration swales and strips. The total area treated by the biofiltration swales and strips would be approximately 80.87and 43.71 acres, respectively.

In addition, there are eight existing treatment BMPs that are within the Project limits (Table 5-2). These treatment BMPs must be protected in place.

Table 5-2. Existing Treatment BMPs

BMP ID	BMP Type	Postmile	EA Number	Project Name
BSW_N-1170	Bioswale	22.17	EA 08-0F3100	I-15/SR-74 Interchange Improvement Project
BSW_N-1173	Bioswale	22.23	EA 08-0F3100	I-15/SR-74 Interchange Improvement Project
BSW_N-1177	Bioswale	22.30	EA 08-0F3100	I-15/SR-74 Interchange Improvement Project
BSW_S-1177	Bioswale	22.30	EA 08-0F3100	I-15/SR-74 Interchange Improvement Project
BST_N-1197	Biostrip	22.70	EA 08-0F3100	I-15/SR-74 Interchange Improvement Project
BASIN A	Infiltration Basin	36.90	EA 08-0J6104	Cajaclo Rd Interchange Improvement Project
BASIN B	Infiltration Basin	36.80	EA 08-0J6104	Cajalco Rd Interchange Improvement Project
BSW_N-1953	Bioswale	37.00	EA 08-0J6104	Cajalco Rd Interchange Improvement Project

Source: Caltrans 2021d

Any design, treatment, or maintenance BMPs located within the Caltrans ROW as a part of the Project would be selected from the Caltrans SWMP guidance and its PPDG-approved BMP list. Where feasible, the avoidance and minimization measures would include treatment control BMPs (Measure WQ-5), maintenance BMPs (Measure WQ-6), and design BMPs (Measure WQ-7) that would be incorporated into the Project to minimize potential long-term water quality impacts.

During final design, the proposed Project would be required to coordinate with FEMA and SARWQCB to ensure compliance with the water surface elevation levels for work within the watercourses and any changes in water surface elevation. With the implementation of Measures WQ-4 and WQ-8, the Project would avoid and minimize any potential short- and long-term impacts on floodplains as a result of the proposed Project during construction and operation.

5.4 Cumulative Impacts

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the 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. The cumulative study area has been defined as the Santa Ana River watershed.

The Project discharges to Temescal Creek, which then discharges into the Santa Ana River Reach 3, a part of the Santa Ana River watershed. The Santa Ana River watershed covers approximately 2,840 square miles over portions of Orange, Riverside, San Bernardino, and Los Angeles Counties, and consists mainly of high mountain ranges that surround and divide large, dry alluvial valleys. The Project limits comprise approximately 0.0004 percent of the watershed.

The construction and operation of the Project would result in an increase in impervious surface that could contribute to exceeding the waste load allocations in approved TMDLs and impairments in CWA Section 303(d) listed downstream water bodies. The implementation of Measures WQ-5 through WQ-7, which would require design, treatment, and maintenance BMPs to treat the primary pollutants of concern and surface flows within the Project limits, would avoid and minimize any potential for substantial cumulative impacts due to construction or during maintenance and operation of the Project.

Two projects, the I-15 Corridor Operations Project (I-15 COP) and I-15/SR-74 Interchange Improvement Project, are located within the Project limits. However, these two projects are anticipated to be constructed and in operation prior to the start of construction of this Project. With the implementation of Measures WQ-1 through WQ-8, as well as Measure WQ-9 which would require water quality monitoring during construction, and Measure WQ-10 which would require coverage under the Industrial NPDES permit, Order No. 2014-0057-DWQ, CAS000001, for the installation of any needed batch plant or crushing plant, potential impacts on water quality would be avoided and minimized. As a result, the Project would not cause any substantial adverse cumulative effects on receiving waters within the Project limits and adjacent areas that would not have cumulative impacts on water resource characteristics or beneficial uses.

Although the I-15 COP and the I-15/SR-74 Interchange Improvement Project would result in an increase in impervious surfaces, these two projects would also be subject to the same water quality rules and regulations as the Project and would be required to be constructed and maintained in compliance with water quality regulations to avoid short-term or long-term impacts on water resources within the cumulative study area. Therefore, the Project, when combined with other projects, would not result in substantial adverse short-term or long-term cumulative effects related to water quality and, thus, would not result in significant cumulative impacts.

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6 Avoidance and Minimization Measures

The following measures have been identified to minimize impacts on water resources and water quality for the Project under the Build Alternative:

WQ-1 **Comply with CGP.** During construction, RCTC will ensure that the Project is in compliance with the requirements prescribed in the Caltrans NPDES Statewide Stormwater Permit (Order No. 2012-0011-DWQ, as amended by Order WQ 2014-0006-EXEC, Order WQ 2014-0077-DWQ, Order WQ 2015-0036-EXEC, and Order WQ 2017-0026-EXEC, NPDES No. CAS000003), the NPDES General Permit for Stormwater Discharges of Stormwater Runoff Associated with Construction Activities (Order No. 2009-0009-DWQ, as amended by Order 2010-0014-DWQ and Order 2012-0006-DWQ), and any subsequent permit in effect at the time of construction.

WQ-2 **Prepare a SWPPP.** During final design, RCTC will ensure that a SWPPP will be prepared and implemented to address all construction-related activities, equipment, and materials with 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 PPDG (Caltrans 2019a) and Construction Manual (Caltrans 2020c). These BMPs include, but are not limited to, temporary sediment control, temporary soil stabilization, scheduling, waste management, materials handling, and other non-stormwater BMPs.

WQ-3 **Dewatering.** During construction, RCTC will ensure that construction site dewatering will comply with the General WDRs for Discharges to Surface Waters That Pose an Insignificant (de minimis) Threat to Water Quality (Order No. R8-2015-0004, 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 will be used to control sediment and pollutants, and the discharges will comply with the WDRs issued by the SARWQCB.

WQ-4 **CLOMR.** During final design, RCTC will ensure that a CLOMR is initiated for the designated Temescal Creek 100-year floodplain and floodway through the Riverside County Flood Control and Water Conservation District and FEMA. RCTC will ensure that the improvements proposed will not occur within the Temescal Creek FEMA-designated 100-year floodplain and floodway until the CLOMR is approved by FEMA.

WQ-5 **Treatment Prevention BMPs.** During construction, RCTC will ensure that Caltrans-approved treatment BMPs will be implemented and will operate as designed, consistent with the requirements of NPDES Permit and WDRs for the Caltrans, (Order 2012-0011-DWQ, NPDES No. CAS00003), and any subsequent permits in effect at the time of construction. Treatment BMPs may include, but are not limited to, design pollution prevention infiltration areas, biofiltration strips and swales, trash capturing devices, media filters, and pervious pavement.

WQ-6 **Maintenance BMPs.** During construction, RCTC will ensure that maintenance BMPs will be implemented. These BMPs will include, but are not limited to, drain inlet stenciling and any others identified by the Caltrans Maintenance Department and consistent with those shown in the PPDG (Caltrans 2019a) and Maintenance Manual (Caltrans 2017).

WQ-7 **Design Pollution Prevention BMPs.** During construction, RCTC will ensure that design pollution prevention BMPs are implemented. These BMPs will include, but are not limited to, preserving existing vegetation and slope/surface protection systems (benching/terracing, slope rounding, and reducing gradients [incorporate 4:1 slopes or flatter]).

WQ-8 **LOMR.** Upon completion of construction, RCTC will ensure that a LOMR for the Temescal Creek 100-year floodplain and floodway will be processed with FEMA. The LOMR will provide verification that FEMA has officially revised the current National Flood Insurance Program (NFIP) map to show changes to floodplains, regulatory floodways, or flood elevations of Temescal Creek as a result of the Project.

WQ-9 **Water Quality Monitoring During Construction.** As a requirement of a Risk Level 2, RCTC will ensure that water quality will be monitored by including a Rain Event Action Plan, Stormwater Annual Report, and a Sampling and Analysis Plan as directed by the CGP.

WQ-10 **Batch Plant.** If a batch plant or crushing plant is needed for this Project, and will be located off site or within the State right of way, then RCTC will obtain coverage under the Industrial NPDES permit, Order No. 2014-0057-DWQ, CAS000001, to address discharges from these manufacturing facilities.

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8 Preparer(s) Qualifications

Uyenlan Vu, Environmental Project Manager

Master of Science, Water Resources Management and Urban & Regional Planning

Bachelor of Arts, Environmental Analysis & Design/Social Ecology

16 years of experience in environmental documentation and water quality assessment

Natalie Brim, Environmental Planner 2

Bachelor of Science, Earth Science

6 years of experience in environmental documentation and water quality assessment

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Appendix A. Construction General Permit Risk Assessment Information

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Rainfall Erosivity Factor Calculator for Small Construction Sites

EPA's stormwater regulations allow NPDES permitting authorities to waive NPDES permitting requirements for stormwater discharges from small construction sites if:

- the construction site disturbs less than five acres, and
- the rainfall erosivity factor ("R" in the revised universal soil loss equation, or RUSLE) value is less than five during the period of construction activity.

If your small construction project is located in an area where EPA is the permitting authority and your R factor is less than five, you qualify for a low erosivity waiver (LEW) from NPDES stormwater permitting. If your small construction project does not qualify for a waiver, then NPDES stormwater permit coverage is required. Follow the steps below to calculate your R-Factor.

LEW certifications are submitted through the NPDES eReporting Tool or "CGP-NeT". Several states that are authorized to implement the NPDES permitting program also accept LEWs. Check with your state NPDES permitting authority for more information.

- Submit your LEW through EPA's eReporting Tool
- List of states, Indian country, and territories where EPA is the permitting authority
- Construction Rainfall Erosivity Waiver Fact Sheet
- Appendix C of the 2017 CGP – Small Construction Waivers and Instructions

The R-factor calculation can also be integrated directly into custom applications using the R-Factor web service.

For questions or comments, email EPA's CGP staff at cgp@epa.gov.

● Select the estimated start and end dates of construction by clicking the boxes and using the dropdown calendar.

The period of construction activity begins at initial earth disturbance and ends with final stabilization.

Start Date: 06/01/2025 **End Date:** 06/01/2027

● Locate your small construction project using the search box below or by clicking on the map.

Location: -117.48586649139388 , 33.77359837730127 **Search**

Click the "Calculate R Factor" button below to calculate an R Factor for your small construction project.

Calculate R Factor

Facility Information

Start Date: 06/01/2025	**Latitude:** 33.7736
End Date: 06/01/2027	**Longitude:** -117.4859

Calculation Results

Rainfall erosivity factor (R Factor) = **35.55**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority, you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

RUSLE K Factor Watershed Map Methodology

Objective:
To provide guidance for determining the Revised Universal Soil Loss Equation (RUSLE) K Factor with regards to the Construction General Permit. The K factor represents the combination of detachability of the soil, runoff potential of the soil, and the transportability of the sediment eroded from the soil. Using the methodology, a discharger will be able to identify the appropriate, areally-weighted K Factor value for a construction project.

Background:
The soil-erodibility factor (K) represents: (1) the susceptibility of soil or surface material to erosion, (2) the transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff, although these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high runoff rates and large runoff volumes. For more information on the Construction General Permit and references for the RUSLE, please visit:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml

Data and Method:
Soil data was acquired from the Natural Resources Conservation Service (NRCS) and was used in conjunction with an NRCS Microsoft Access template and the NRCS Soil Data Viewer. The Microsoft Access template was used in conjunction with the data received from the Soil Data Mart to produce the background data needed to create the K Factor values (for whole soil) in ArcMap.

- The California subset of the U.S. General Soils Map dataset can be downloaded from: http://soildatamart.nrcs.usda.gov/Default.aspx
- The Microsoft Access template needed to produce K Factor values can be downloaded from: http://soildatamart.nrcs.usda.gov/Templates.aspx
- The GIS extension “Soil Data Viewer” used in creating this data can be downloaded from: http://soils.usda.gov/sdv/download.html

For a complete list of NRCS soil survey data and methods please visit:

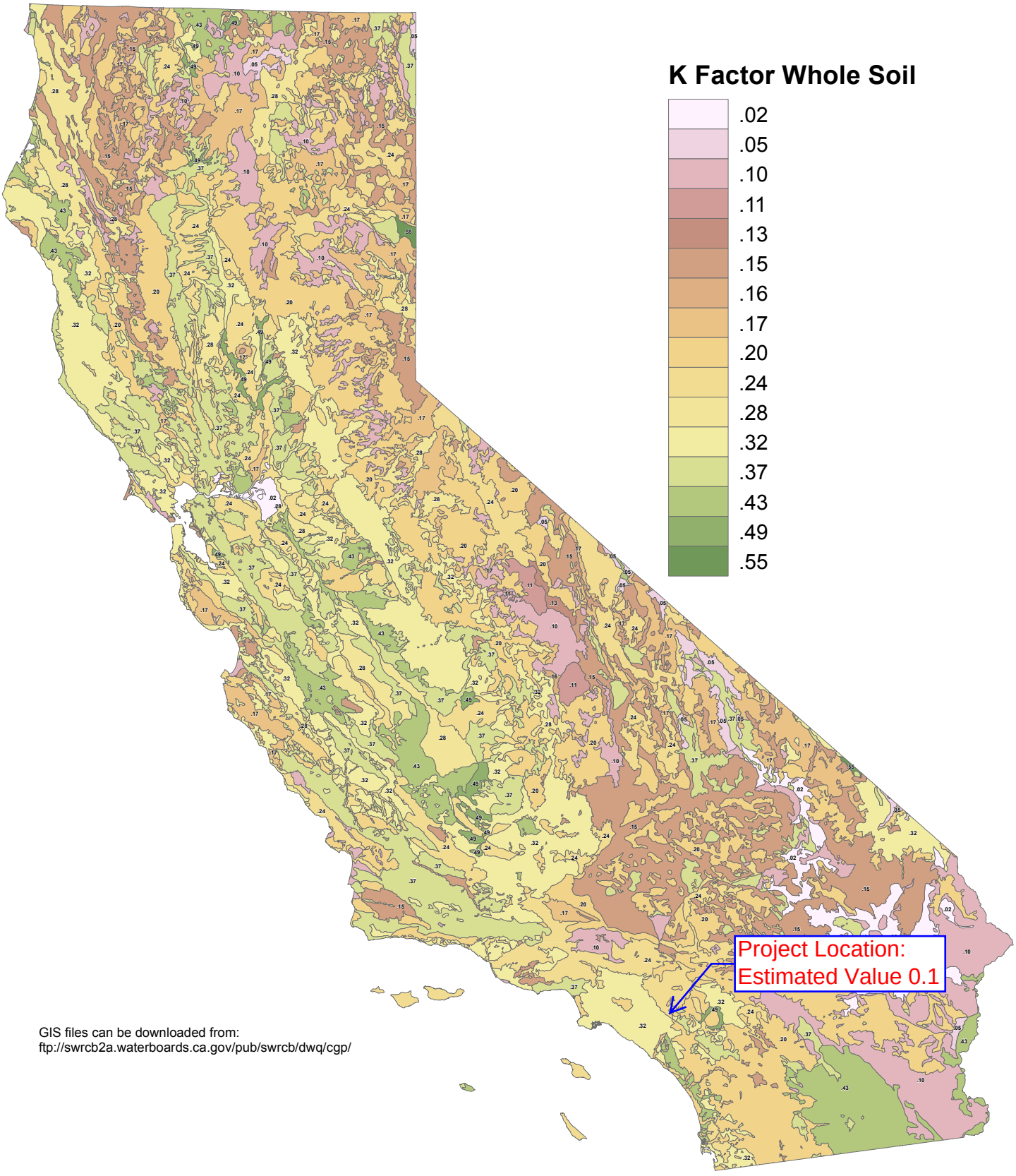
- http://soildatamart.nrcs.usda.gov/SSURGOMetadata.aspx

Contact:
Please contact the Storm Water help desk with any questions or comments:

- Phone: 916-341-5537
- Email: stormwater@waterboards.ca.gov

Geographic Information System (GIS) Data can be accessed at:
ftp://swrcb2a.waterboards.ca.gov/pub/swrcb/dwq/cgp/Risk/

RUSLE K Values



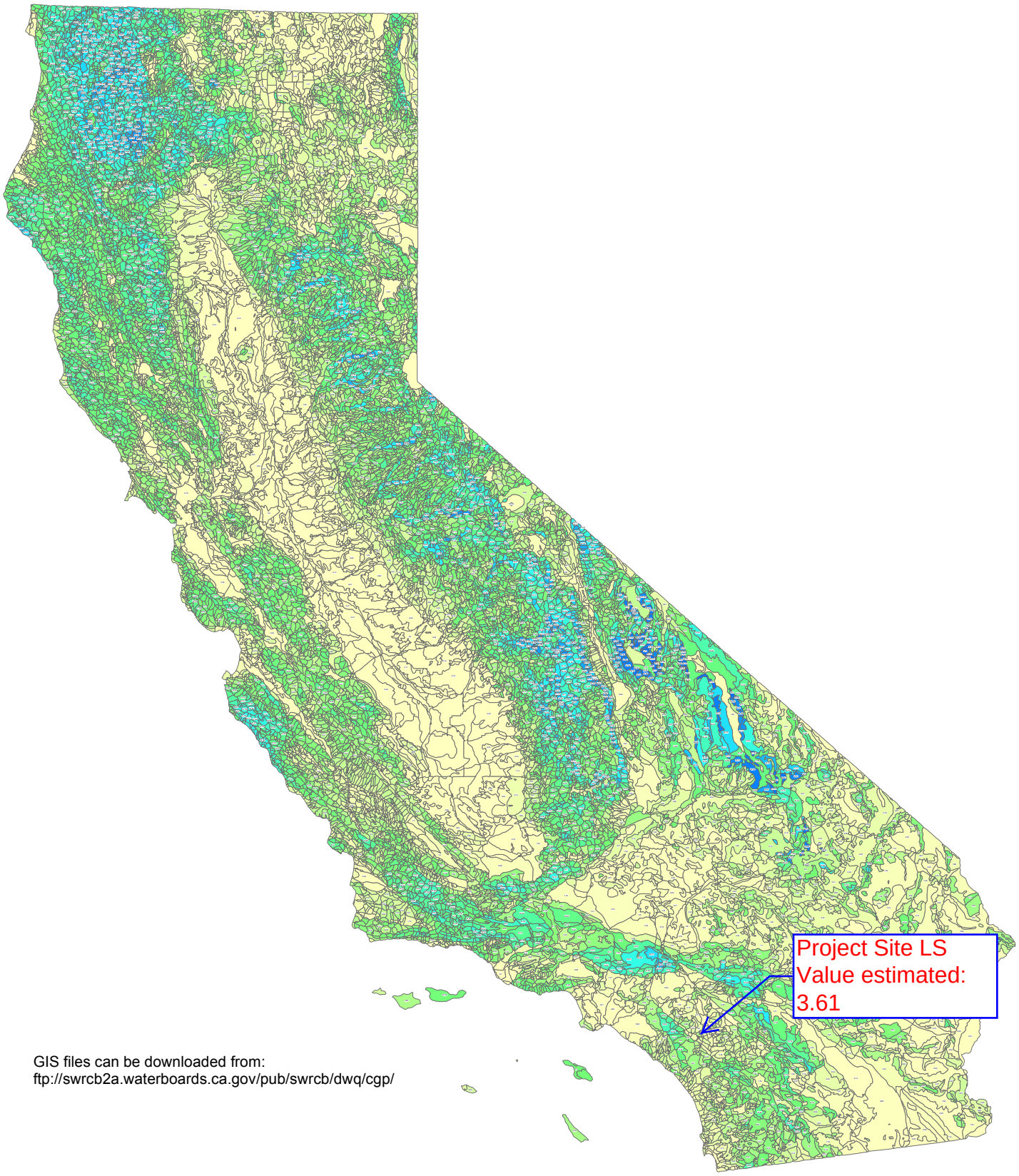
GIS files can be downloaded from:
ftp://swrcb2a.waterboards.ca.gov/pub/swrcb/dwq/cgp/

Water Boards

Data Source: *Natural Resources Conservation Service, U.S. Dept. of Agriculture and State Water Resources Control Board*

K Factor from Google Earth

RUSLE LS Values



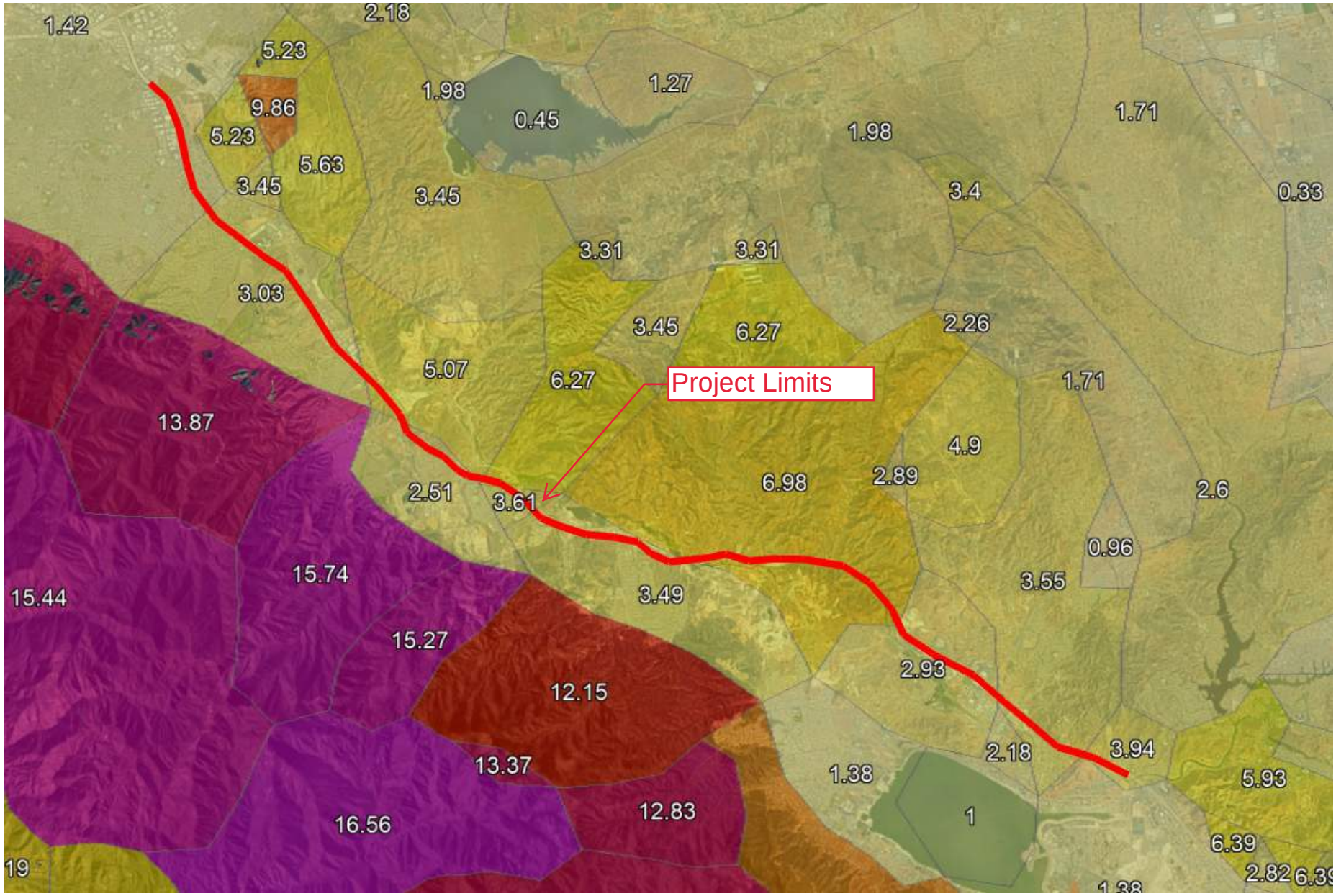
GIS files can be downloaded from:
ftp://swrcb2a.waterboards.ca.gov/pub/swrcb/dwq/cgp/

Water Boards

0 25 50 100 Miles

Data Source:*State Water Resources Control Board*

LS Factor

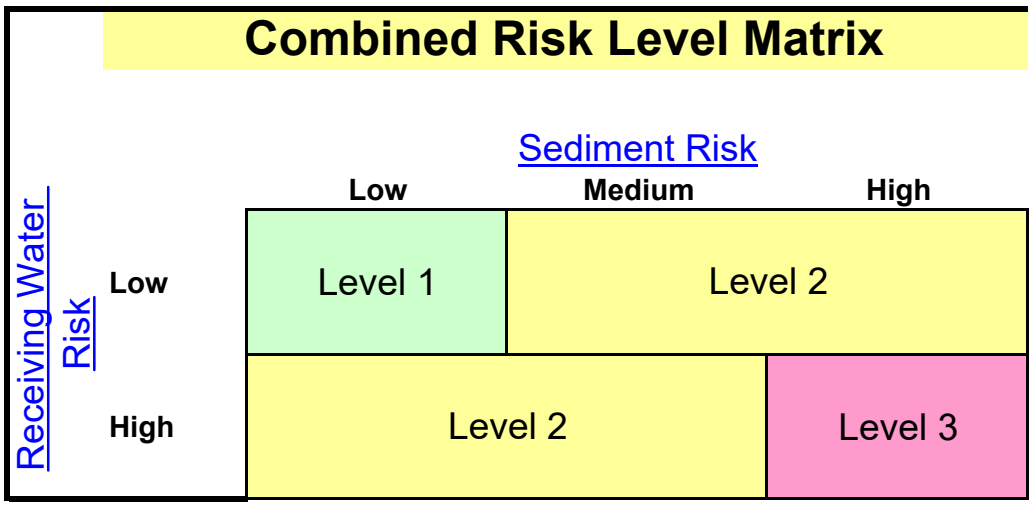

1.42
2.18
5.23
1.98
1.27
9.86
0.45
1.71
5.23
1.98
5.63
3.45
3.45
3.4
0.33
3.31
3.31
3.03
3.45
6.27
2.26
5.07
6.27
Project Limits
1.71
13.87
4.9
6.98
2.89
2.51
3.61
2.6
0.96
15.74
3.55
15.44
3.49
15.27
2.93
12.15
2.18
3.94
13.37
1.38
5.93
12.83
1
16.56
6.39
19
2.82

Receiving Water Risk

	A	B	C
1	**Sediment Risk Factor Worksheet**		**Entry**
2	**A) R Factor**		
3	Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
4	http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm		
5	**R Factor Value**		35.55
6	**B) K Factor (weighted average, by area, for all site soils)**		
7	The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
8	Site-specific K factor guidance		
9	**K Factor Value**		0.32
10	**C) LS Factor (weighted average, by area, for all slopes)**		
11	The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
12	LS Table		
13	**LS Factor Value**		3.61
14			
15	**Watershed Erosion Estimate (=RxKxLS) in tons/acre**		41.06736
16	**Site Sediment Risk Factor**		**Medium**
17	Low Sediment Risk: < 15 tons/acre		
18	Medium Sediment Risk: >=15 and <75 tons/acre		
19	High Sediment Risk: >= 75 tons/acre		
20			

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	**yes/no**	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment** (For help with impaired waterbodies please check the attached worksheet or visit the link below) or has a **USEPA approved TMDL implementation plan for sediment**?:	**no**	**Low**
2006 Approved Sediment-impared WBs Worksheet - OLD		
https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml		
OR		
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY?		
http://www.ice.ucdavis.edu/geowbs/asp/wbquse.asp		

Combined Risk Level Matrix



Project Sediment Risk:	**Medium**
Project RW Risk:	**Low**
Project Combined Risk:	**Level 2**

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