State Route 91/State Route 71 Interchange Improvement Proposal

Riverside County, California

Draft
Environmental Assessment

Prepared for

United States Army Corps of Engineers

Los Angeles District

and

Riverside County Transportation Commission

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Abbreviations and Acronyms

°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AADT	average annual daily trips
AAM	annual arithmetic mean
AAQS	ambient air quality standards
ACHP	Advisory Council on Historic Preservation
ACMs	asbestos-containing materials
ADA	Americans with Disabilities Act
ADL	aerially deposited lead
ADT	average daily traffic
AM	morning
AMSL	above mean sea level
a/mvm	accidents per million vehicle miles
APE	area of potential effects
APN	Assessor's Parcel Number
AQMD	Air Quality Management District
ARPA	Archaeological Resources Protection Act
ASR	Archaeological Survey Report
BMP	Best Management Practice
BO	Biological Opinion
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standards
CAGN	California gnatcatcher
Cal/OSHA	California Division of Occupational Safety and Health
Cal-EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CE	Categorical Exclusion
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
cfs	cubic feet per second
CHRIS	California Historic Resources Information System
CHSP	Chino Hills State Park
CIDH	cast-in-drilled-hole
CIP	cast-in-place
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO_2	carbon dioxide
COZEEP	Construction Zone Enhanced Enforcement Program
CRHR	California Register of Historic Resources
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel

DBESP	Determination of Biological Equivalent or Superior Preservation
DNAC	District 8 Native American Coordinator
DOT	Department of Transportation
DPM	diesel particulate matter
EA	Environmental Assessment
EB	eastbound
EIC	Eastern Information Center
EIS	Environmental Impact Statement
EO	Executive Order
EPA	United States Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
Fps	feet per second
FR	*Federal Register*
FTIP	Federal Transportation Improvement Program
FY	fiscal year
GHG	greenhouse gas
GP	general purpose
GSRDs	gross solids removal devices
HAPs	hazardous air pollutants
HCM	Highway Capacity Manual
HEC-RAS	Hydraulic Engineering Centers River Analysis System
HOT	high-occupancy toll
HOV	high-occupancy vehicle
HPSR	Historic Property Survey Report
HWCL	Hazardous Waste Control Law
I-15	Interstate 15
IS	Initial Study
ISA	Initial Site Assessment
JPR	Joint Project Review
LBP	lead-based paint
lbs/day	pounds per day
LBV	least Bell's vireo
LEDPA	least environmentally damaging practicable alternative
LOS	Level of Service
LUST	leaking underground storage tank
LWCF	Land and Water Conservation Fund
LWCF PD/ESF	Land and Water Conservation Fund Project Description and Environmental Screening Form
MBTA	Migratory Bird Treaty Act
MEP	Maximum Extent Practicable
mg/m^3	milligrams per cubic meter
MLD	Most Likely Descendent
MMS	Moment Magnitude Scale
MND	Mitigated Negative Declaration
mph	miles per hour
MPO	Metropolitan Planning Organization

MSHCP	Multiple Species Habitat Conservation Plan
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NB	northbound
NCCP	Natural Communities Conservation Plan
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NOI	Notice of Intent
NOIS	Notice of Initiation of Studies
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	non-point source
NPS	National Park Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
O_3	ozone
OCFCD	Orange County Flood Control District
OCTAM	Orange County Transportation Analysis Model
OCWD	Orange County Water District
OHP	Office of Historic Preservation
O&M	operation and maintenance
PA	Programmatic Agreement
PCB	polychlorinated biphenyl
PCL	Proposed Constrained Linkage
PDT	Project Development Team/Proposal Development Team
PFR	Preliminary Foundation Report
PIR/PER	Paleontological Identification Report/Paleontological Evaluation Report
PM	evening
PM	Post Mile
PM_{10}	particulate matter with a diameter less than 10 microns
$PM_{2.5}$	particulate matter with a diameter less than 2.5 microns
PMP	Paleontological Mitigation Plan
PMR	Paleontological Mitigation Report
POAQC	Project of Air Quality Concern
ppm	parts per million
PQP	public, quasi-public
PRC	Public Resources Code
PS&E	Plans, Specifications, and Estimate
RCA	Regional Conservation Authority
RCRA	Resource Conservation and Recovery Act
RCRA GEN	Resource Conservation and Recovery Act Information System Sites/Quantity Generators
RCTC	Riverside County Transportation Commission
RECs	recognized environmental conditions
ROW	right-of-way
RRS	Reservoir Regulation Section
RTIP	Regional Transportation Improvement Program

RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SARI	Santa Ana River Interceptor
SARP	Santa Ana River Mainstem Flood Control Project
SART	Santa Ana River Trail and Parkway
SAWA	Santa Ana Watershed Association
SAWPA	Santa Ana Watershed Project Authority
SB	southbound
SBAIC	San Bernardino Archaeological Information Center
SBCM	San Bernardino County Museum
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCG	Southern California Gas
SDC	Seismic Design Criteria
SER	Standard Environmental Reference
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	sulfur dioxide
SR	State Route
STAA	Surface Transportation Assistance Act
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TASAS	Traffic Accident Surveillance and Analysis Systems
TCE	Temporary Construction Easement
TCWG	Transportation Conformity Working Group
TMDLs	total maximum daily loads
TMP	Transportation Management Plan
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VA	Value Analysis
V/C	volume to capacity
VIA	Visual Impact Assessment
VOC	volatile organic compound
vphpmpl	vehicles per hour per mile per lane
WB	westbound

1.0 INTRODUCTION

1.1 Project Authority

The United States Army Corps of Engineers (USACE) is the federal agency responsible for the Santa Ana River Mainstem Flood Control Project (SARP). The SARP was federally authorized by the 74th Congress on June 22, 1936. The purpose of the SARP is to provide flood risk management to areas within San Bernardino, Riverside, and Orange counties that are currently susceptible to flooding. Any proposed land use within Federal lands must be compatible with the SARP purposes of flood risk management as determined by USACE. As such, USACE is the lead agency for compliance with the National Environmental Policy Act (NEPA).

The SARP is located along a 75-mile reach of the Santa Ana River in Orange, Riverside, and San Bernardino counties. The plan for flood risk management improvements includes three principal features:

- Lower river channel modification for flood risk management along the 30 miles of the Santa Ana River from Prado Dam to the Pacific Ocean.
- Construction of Seven Oaks Dam (approximately 38 miles upstream of the existing Prado Dam) with a gross reservoir storage of 145,600 acre-feet.
- Enlargement of Prado Dam to increase reservoir storage capacity from 217,000 acre-feet to 362,000 acre-feet.

The State Route (SR)-91/SR-71 Interchange Improvement Proposal (Interchange Proposal) proposes to modify certain features of the SARP, particularly constructing bridge columns on the Prado Dam spillway levee, which would be compatible with the function and features of the Prado Dam. The proponent of the Interchange Proposal is the Riverside County Transportation Commission (RCTC).

USACE, pursuant to 10 United States Code (U.S.C.) 2668, is authorized to issue easements to non-Federal agencies for the right to use Federal lands if the proposed use is determined to be compatible with the Federal project, laws, and regulations, and will not be against the public interest. USACE controls Federal lands downstream of the Prado Basin, Riverside County, California, on behalf of the United States for the primary purpose of flood risk management. RCTC is requesting to use federal land in this location for construction and operation and maintenance (O&M) of components of the Interchange Proposal.

Pursuant to 33 U.S.C. 408, any proposed alterations/modifications to an authorized USACE project requires a determination by the Secretary of the Army that such proposed alteration or permanent occupation or use of a Federal project is not injurious to the public interest and will not impair the usefulness of such work. An approval issued under 33 U.S.C. 408 is referred to as a Section 408 permit. In addition, the authority to approve relatively minor, low-impact alterations/ modifications related to the O&M responsibilities of the non-Federal sponsors has been further delegated to the District Engineer for approval in accordance with 33 *Code of Federal Regulations* (CFR) 208.10.

Pursuant to 33 U.S.C. 1344 (Clean Water Act [CWA] Section 404), permits are required for discharges of dredged or fill material into waters of the United States at specified disposal sites. When there is an associated Section 404 permit action, the required public interest and technical evaluations under 33 U.S.C. 408 can be performed concurrently with that action. A CWA Section 404 permit may not be issued until after a Section 408 permit is granted.

This draft Environmental Assessment will be available for public review and comment during April 25-May 27, 2014. During this period, please address any comments or questions to the Corps of Engineers, Los Angeles District, at carvel.h.bass@usace.army.mil.

1.2 Background

RCTC and the California Department of Transportation (Caltrans) (hereinafter "the Proponents") are submitting a request to USACE to access and construct an authorized Federal Highway Administration (FHWA) Proposal located in Riverside County, California, on Federal land managed by USACE, which is identified as Riverside County Assessor's Parcel Numbers (APN) 101-140-006, 101-040-004, and 101-040-010. Through this request, the Proponents seek to alter/modify a completed USACE flood risk management project (acquire a Section 408 permit), occupy SARP land, and acquire a Section 404 permit.

The Proponents propose to improve the SR-91/SR-71 interchange by constructing a new direct flyover connector from eastbound (EB) SR-91 to northbound (NB) SR-71. The Interchange Proposal includes the following proposed components: flyover connector ramp, bridge widening, restriping of SR-91 EB lanes, modification or construction of new drainage facilities, grading of hillside slopes, retaining walls, and modification of access driveways. The Interchange Proposal would improve the current and future operational efficiency and enhance the capacity of the EB SR-91 to NB SR-71 connector. The general location and portion of the Interchange Proposal that would be constructed on Federal lands are illustrated in Figure 1-1. In addition, some components of the proposed SR-91/SR-71 interchange are proposed to be sited on Federal lands acquired for a flood risk management project (SARP). Caltrans currently holds an easement for a portion of the land required for the Interchange Proposal. As determined by USACE, siting of any components of the SR-91/SR-71 interchange on lands acquired by the United States for SARP project purposes must be compatible with the SARP project. Furthermore, any alteration or modification to SARP features requires a Section 408 permit, which is a condition precedent to acquiring a Section 404 permit.

On June 30, 2011, Caltrans, with RCTC, completed the environmental documentation requirements of the California Environmental Quality Act (CEQA) and NEPA, as delegated by FHWA, for the Interchange Proposal. A CEQA draft Initial Study (IS) was completed and circulated for public review, culminating in approval of the Mitigated Negative Declaration (MND). Subsequent to that action, Caltrans, as delegated by FHWA, prepared a NEPA Categorical Exclusion (CE) for the proposed Interchange Proposal and received a CE determination on June 29, 2011. While FHWA, through delegation to the Proponents, may have identified an applicable CE for the greater Interchange Proposal, there is no such applicable CE contained in the USACE civil works NEPA implementation regulations (33 CFR Part 230). USACE does not recognize a CE to cover the proposed action; hence, this environmental document has been prepared to obtain the necessary Federal environmental approval for USACE to comply with NEPA. As such, USACE determined that an Environmental Assessment (EA) would need to be prepared to consider the potential environmental effects of issuing approvals associated with alteration, modification, and occupation of the SARP project and associated Federal lands managed by USACE.

Based on preliminary design plans of the Interchange Proposal, it is anticipated that modifications and alterations to the Santa Ana River Channel Spillway (a part of the Prado Dam flood risk management facility) would be required to construct the Interchange Proposal. This flood risk management facility is part of the Federal levee system and requires USACE approval under 33 U.S.C. 408. Initial discussions with USACE acknowledged that a minor Section 408 permit would adequately address the proposed alterations to the flood risk management facility because the changes are considered relatively minor and would not adversely impact the system's performance. This EA and technical analyses conducted for the Interchange Proposal support the initial Minor Section 408 determination issued by USACE in April 2013 (provided in Appendix H).

This EA was prepared to comply with USACE NEPA requirements to evaluate the impacts to the human environment of allowing access to Federal lands that involves potential modifications to USACE-constructed structures for the Interchange Proposal and the issuance of a Section 404 permit. The

Proposed Action discussed in this EA specifically analyzes the environmental effects of the Interchange Proposal *within* Federal lands.

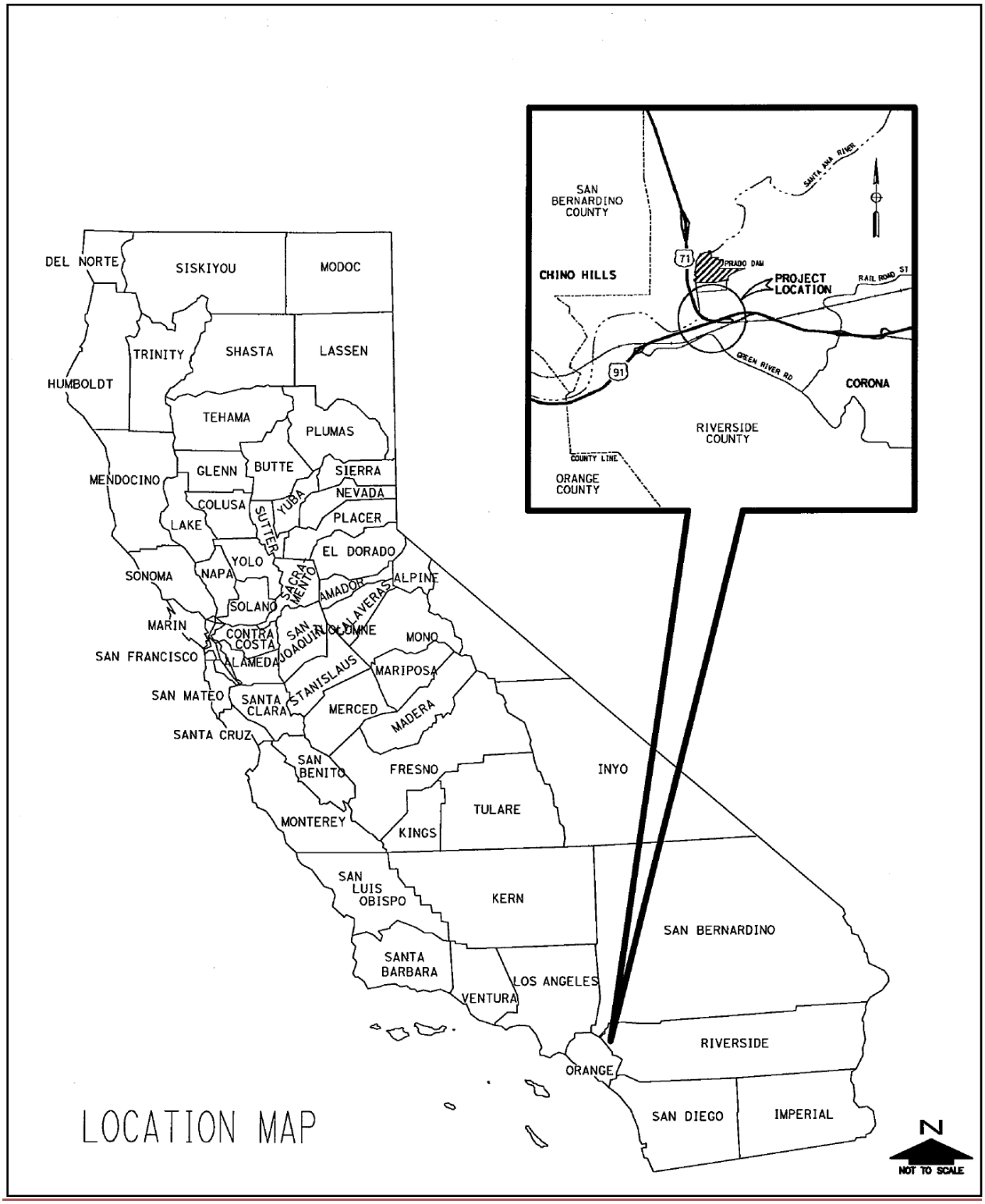

Figure 1-1: Interchange Proposal Location Map

1.3 Purpose and Need

Need for Overall Improvements to the SR-91/SR-71 Interchange

RCTC's need for the Interchange Proposal is to address current and projected future traffic operational deficiencies. A traffic study (Parsons 2010) was prepared to evaluate existing traffic conditions and forecasted traffic for the Interchange Proposal opening year and the Interchange Proposal design horizon year. The traffic study report results indicate an increase in traffic volumes between the present year, the Interchange Proposal opening year, and the Interchange Proposal design horizon, resulting in future operational deficiencies at the EB SR-91 to the NB SR-71 connector.

Levels of Service

Traffic operation conditions at the freeway mainline are evaluated on the level of congestion and delay during the morning (AM) and evening (PM) peak-hour periods. All level of service (LOS) analyses use procedures documented in the Highway Capacity Manual 2000 Edition (HCM). LOS is a qualitative measure on a defined scale of A to F. LOS A represents the optimum operating conditions, characterized as free-flowing traffic conditions without restrictions on maneuvering or operating speeds. Conversely, LOS F represents the worst operating conditions, characterized as having forced flow with many stoppages and low operating speeds. LOS E and F are typically considered unsatisfactory traffic operating conditions. The HCM procedures for freeway segments are used to determine vehicle density or the amount of vehicles per lane per mile utilizing the facility and to describe how well traffic is flowing on freeways. A corresponding LOS is assigned to a specific density range.

Existing Capacity and Level of Service (2007)

According to the traffic study, all SR-91 mainline segments in the traffic study area operate at acceptable levels of LOS D or better. Table 1-1 provides the mainline LOS levels in the traffic study area.

Table 1-1: Year 2007 Existing Conditions Freeway Mainline Peak-Hour Level of Service

Direction	Mainline Segment	Density[1]		LOS	
		AM	PM	AM	PM
SR-71 SB	North of SR-91	20.5	26.9	C	D
SR-71 NB	North of SR-91	21.4	24.0	C	C

[1]Density is defined as the amount of vehicles per lane per mile.

Source: SR-71/SR-91 Interchange Improvement Project Traffic Study, March 2010.

Although the SR-71 mainline is operating at acceptable LOS during the peak hours, the existing SR-91/SR-71 interchange configuration is causing a backup of SR-91 EB to SR-71 NB traffic. The traffic study conducted for the Project analyzed the operational characteristics of this interchange ramp. Table 1-2 shows the results of the interchange ramp analysis and the respective LOS for existing conditions. According to the traffic study, the EB SR-91 to NB SR-71 interchange connector operates at an unacceptable LOS F during the PM peak hour.

Table 1-2: Year 2007 Existing Conditions Freeway Merge and Diverge Peak-Hour Level of Service

Direction	Ramp Location	Density[1]		LOS	
		AM	PM	AM	PM
SR-91 EB	SR-71 EB Off-Ramp (Diverge)	26.5	37.7	C	F

[1]Density is defined as the amount of vehicles per lane per mile.

Source: SR-71/SR-91 Interchange Improvement Project Traffic Study, March 2010.

In addition to the traffic congestion at the EB SR-91 to NB SR-71 connector, the ramp is currently designed as a nonstandard tight loop ramp with a posted speed limit of 20 miles per hour (mph). This design feature restricts the speed of vehicles and traffic flow, which may cause a backup to the SR-91 EB mainline during periods of high transportation demand. The constricting configuration of the SR-71 NB ramp, compounded with the current transportation demand, necessitates improvements to the SR-91 to NB SR-71 connector. Regional growth is anticipated to further degrade traffic operations along the SR-91 and SR-71 ramp junction facilities.

Projected Growth

According to the Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) (2008), Orange County's population is projected to grow from 3 million (2003) to 3.7 million by 2035. Larger increases in population are anticipated for Riverside County, with an estimated growth of 1.7 million (2003) to 3.7 million by 2035. San Bernardino County's growth is expected to increase from 1.9 million (2003) to 3.9 million by 2035. Population increases in these regions are anticipated to contribute to the transportation demand and strain regional roadway facilities. In addition to population increases, traffic volumes derived from the RCTC long-range model suggests an increase in transportation demand within the study area between 2007 and 2035. The RCTC model is a regional transportation forecasting tool that combines components of the SCAG RTP 2004 model and the Orange County Transportation Analysis Model (OCTAM) 3.2 model. The base year for the model is 2000, with a horizon year of 2030.

The findings of the traffic study indicate a substantial increase in traffic volumes between 2007 and the Project design horizon year (2035). Within the Project area limits, the 2007 average daily traffic (ADT) of approximately 131,600 vehicles per day utilizing SR-91 is expected to increase to 156,300 in 2035. An increase in traffic volumes within the study area will subsequently exacerbate current 2007 operational deficiencies at the SR-91/SR-71 interchange for future conditions if improvement measures are not implemented.

Project Opening Year – No-Build Traffic Conditions

Opening year no-build traffic conditions indicate that the current configuration of the EB SR-91 connector to the NB SR-71 traffic volumes is expected to exceed operational capacity. By opening year, the ramp is expected to carry 1,966 vehicles during the evening peak hour – a volume that would exceed the 1,500-vehicle-per-hour-per-mile-per-lane (vphpmpl) capacity of the existing loop ramp design, which is projected to result in a backup on the SR-91 EB mainline.

Opening year no-build freeway mainline operations at the study locations are projected to operate at LOS D or better during the AM and PM peak hours, except for the SR-71 southbound (SB) segment north of SR-91. As indicated in Table 1-3, this segment is expected to operate at LOS E during the PM peak hour.

Table 1-3: Opening Year No-Build Conditions Freeway Mainline Peak-Hour Level of Service

Direction	Mainline Segment	Density[1]		LOS	
		AM	PM	AM	PM
SR-71 SB	North of SR-91	29.3	35.7	D	E
SR-71 NB	North of SR-91	29.1	27.5	D	D

[1]Density is defined as the amount of vehicles per lane per mile.

Source: SR-71/SR-91 Interchange Improvement Project Traffic Study, March 2010.

Year 2035 Conditions – No-Build Conditions

To quantify operations of the EB SR-91 connector to SR-71, volume to capacity (V/C) calculations have been conducted to determine the level of saturation of the connector. The capacity of the existing SR-91/SR-71 EB connector is 1,500 vehicles per hour. Based on the existing traffic volume of 1,480 vehicles during the PM

peak-hour, the ramp is operating near full capacity with a V/C ratio of 0.99. The ratio derived from the V/C calculation is indicative of its operations. A ratio value close to 1.00 is typically described as congested traffic operations. Opening year traffic volume at the connector is projected at 1,966 vehicles during the PM peak hour, with a calculated V/C ratio of 1.3, which substantially exceeds current capacity. Considering the traffic-reducing potential through completion of other planned RTP projects by Year 2035, projected Year 2035 traffic volumes indicate that the EB connector is operating over capacity, with 1,930 vehicles utilizing the connector during the PM peak period. This equates to an over-capacity V/C ratio of 1.3.

Modal Inter-relationships and System Linkages

The Interchange Proposal as proposed would be part of the overall regional transportation strategy in reducing congestion and enhancing traffic operations along the SR-91 corridor. Specifically, the Interchange Proposal aims to improve traffic operations at the SR-91/SR-71 junction, enhancing travel north via SR-71 towards San Bernardino County and connectivity east of the Interchange Proposal to nearby Interstate 15 (I-15) and SR-241 to the west. The anticipated reduction in congestion is anticipated to enhance mobility to and from other modal facilities: Corona Municipal Airport, approximately 2 miles north of the Interchange Proposal; Chino Airport, approximately 6 miles north of the Interchange Proposal; Ontario International Airport, approximately 12 miles northwest of the Interchange Proposal; and the West Corona Metrolink Station, approximately 1.5 miles east of the Project.

The Interchange Proposal would serve as a direct connecting link to SR-71 to accommodate north-south travel to San Bernardino, Riverside, and Orange counties. SR-91 is listed on the Federal Surface Transportation Assistance Act (STAA) as a designated route for oversized trucks, and SR-71 (within the Proposal area) is included in the State Highway Terminal Access Routes System. Enhancing the SR-91/SR-71 interchange facility through construction of the flyover structure is anticipated to benefit regional goods movement. The increase in vehicle capacity and the elimination of the existing tight-loop ramp enhances access and mobility of oversize trucks to and from SR-91 and SR-71.

Accident Analysis

Traffic Accident Surveillance and Analysis Systems (TASAS) Table B data for the Proposal area were provided by the Department. The accident data for the 3-year period (April 1, 2005, to March 31, 2008) were compared to the statewide average accident rates for similar facilities.

SR-71 Mainline

There were 5 accidents in the SB direction and 24 accidents in the NB direction between Post Mile (PM) R1.5 and R3.030. As shown in Table 1-4, the actual total accident rates were 0.37 accidents per million vehicle miles (a/mvm) in the NB direction and 1.84 a/mvm in the SB direction, compared to the statewide average of 0.90 a/mvm. Statistically, the accident rate in the SB direction was approximately twice the statewide average for similar facilities.

Table 1-4: Mainline Accident Rates (April 1, 2005, to March 31, 2008)

Location	Number of Accidents			Accident Rate (a/mvm)					
				Actual Rate			Average Rate		
	FAT	F+I	Total	FAT	F+I	Total	FAT	F+I	Total
NB SR-71 (PM 1.5 to R3.030)	1	5	24	0.000	0.00	0.37	0.050	0.43	0.90
SB SR-71 (PM 1.5 to R3.030)	0	3	5	0.000	1.10	1.84	0.050	0.43	0.90

FAT = Fatal Accidents
F+I = Fatal and Injury Accidents
Total = All Accidents, Fatal, Injury, and Property Damage
a/mvm = Accidents per million vehicle miles

Source: Traffic Accident Surveillance and Analysis Systems, Caltrans, April 2005 - March 2008.

Based on analysis of existing accident and traffic data, it is anticipated that the improved geometric alignment of the flyover connector would reduce the potential for rear-end and sideswipe type accidents that are common under existing stop-and-go traffic conditions along EB SR-91. The increased capacity of the connector ramp should eliminate backups onto the EB SR-91 mainline, thereby improving mainline operations and reducing lane changes that may lead to rear-end and sideswipe accidents.

The need for the Interchange Proposal is reflected in the conformity of the Project with regional transportation area plans. The Interchange Proposal would enhance regional transportation linkages to avoid impairment of regional connectivity to San Bernardino County via SR-71. Moreover, the Project is needed to improve operational deficiencies for existing and future conditions. Existing conditions at the SR-91 EB connector to the NB SR-71 are operating with a high density of vehicles at LOS F during the PM peak hour. Regional growth projections anticipate an increase in transportation demand, which will strain and exacerbate the current facility if improvements within the study area are not implemented. The proposed RTP improvement projects are anticipated to enhance traffic operations at the ramp junctions and the SR-91 freeway mainline for future conditions; however, the current EB SR-91 connector to the NB SR-71 traffic volumes are expected to operate at the upper limits of the existing loop ramp design capacity of 1,500 vehicles per hour with 1,380 vehicles for opening year during the evening peak hour, which is projected to result in a backup on the SR-91 EB mainline. Assuming that the planned improvements along SR-91 have been implemented by Year 2035, these SR-91 mainline enhancements do not entirely address the PM peak-period demand for the EB SR-91 to NB SR-71; Year 2035 conditions project 1,436 vehicles to utilize the SR-91 EB connector to SR-71, which is anticipated to exacerbate congested conditions at the existing loop ramp.

1.3.1 Need for the Proposed Action

Existing and future traffic congestion is anticipated to occur at the SR-91/SR-71 interchange because of projected increases in traffic volumes and the existing configuration of the nonstandard tight-loop ramp. To address traffic operational deficiencies, the existing interchange is needed to be improved, and a direct connector linking SR-91 and SR-71 and roadway widening along SR-71 would need to be constructed. Improvements to this freeway-to-freeway interchange facility would require alterations/modifications to the SARP and construction within Federal lands managed by USACE. To construct the Interchange Proposal, additional easements and permits from USACE to construct roadway features and structures would be required.

USACE's need for the Proposed Action is to provide a determination regarding the SARP impact from the Interchange Proposal per its delegated authority under 33 U.S.C. 408, which would permanently alter/ modify the SARP from its original design. USACE's determination is based on whether temporary or permanent occupation and/or use of any component of the SARP flood risk management project for the Interchange Proposal would adversely impact the SARP operations or construction activities.

In addition to approvals, USACE must determine whether there is a justified need for an expanded permanent and temporary easement to accommodate widening SR-71, grading hillside slopes, and modifying existing access driveways and maintenance easements to maintain features of the Onsite Alternative, as well as assessing the environmental impacts of such an approval and whether a Section 404 permit could be issued.

1.3.2 Purpose of the Proposed Action

RCTC's purpose for the Proposed Action is to improve the operational efficiency of the EB SR-91 to NB SR-71 connector and minimize future congestion and delay in the EB direction of SR-91 between Green River Road and the SR-91/SR-71 interchange with construction of an expanded freeway-to-freeway interchange. The purpose of requesting occupation to construct, operate, and maintain the Interchange

Proposal on Federal land is to provide the general public an efficient and safe flyover bridge structure that satisfies seismic and roadway design standards.

The USACE purpose is to ensure that the Proposed Action:

- Is not adverse to the public interest
- Is compatible with Federal flood risk management projects
- Avoids adverse effects to the Federal flood risk management project, including changes to increased water surface elevation and hydrology
- Does not interfere with O&M or reduce the accessibility to SARP
- Assesses whether the request to occupy Federal land is justified and, if so, the lands necessary for the requested use
- The least environmentally damaging practicable alternative to accomplish RCTC's objectives

1.4 Scope of Analysis

In accordance with the Council on Environmental Quality (CEQ) regulations (40 CFR § 0502.16), this EA addresses potential impacts on the affected environment within the Proposal area for the two alternatives outlined in Section 2.0 of this document. An EA is prepared when a proposed action is anticipated to potentially produce environmental effects or a proposed action is environmentally controversial. An impact (i.e., consequence or effect) is defined as a modification to the human or natural environmental that would result from implementation of an action. The effects can be either beneficial or adverse, and they can be either directly related to the action or indirectly caused by the action. These effects can be temporary, short-term, long-term, or permanent. As such, the period of analysis for potential effects in this EA ranges from temporary impacts (e.g., lasting the duration of construction activities [approximately 2 years]) to permanent impacts. The analysis conducted in this EA compares existing baseline conditions and Post-Onsite Alternative conditions. Within this framework, it is anticipated that environmental impacts at Interchange Proposal opening year would be similar to horizon year conditions; therefore, the permanent impact analyses outlined for each environmental resource considers permanent impacts for the near term and the foreseeable future, up to a period of 15 years after construction of the Interchange Proposal (2035).

The Proposed Action would require additional easement from USACE to implement the Proposed Action. The real estate instrument associated with the Proposed Action is an amended easement along the west side of SR-71. The SR-71 portion of the existing SR-91/SR-71 interchange is located on Federal lands by virtue of an easement from USACE to Caltrans; however, this existing easement would be insufficient to construct the Proposed Action. An amended expanded easement for an additional 21 years, terminating in 2035, from USACE would be necessary along the west side of SR-71 on Federal lands (identified as Riverside County Assessor's Office APN 101-040-004) for the purposes of providing access to Caltrans for the maintenance of the drainage and hillside slopes to be implemented as part of the Onsite Alternative. Caltrans is also requesting to relinquish a portion of its current roadway easement back to USACE. A detailed discussion of easements is provided in Section 2.2.1.

This EA focuses on analyzing the effects of: the proposed two bridge columns within the Federal flood risk management facility (SARP), four bridge columns within Federal lands, realignment of SR-71, enhancement of existing wildlife crossing, hillside slope grading and access driveway modification, construction activities and mobilization of equipment, construction of bridge columns within the Federal flood risk management facility, construction of bridge spanning over the Santa Ana River Channel, construction of bridge columns within Federal lands, and construction activities associated with the hillside slopes and access modification. Operational effects of the SR-91 freeway mainline, SR-71

mainline, and the freeway to freeway interchange facility are outside the scope of the analysis provided in this document. The scope of analysis in this EA limits the "study area" to the area within USACE property (Federal lands) in the vicinity of the SR-71 and SR-91 where physical alterations and/or modifications to the existing flood risk management facility and surrounding land (Proposal area) would occur.

USACE's NEPA regulations state the scope of analysis under NEPA should address the "specific activity requiring a [Corps] permit/real estate grant or permission and those portions of the entire project over which the [Corps] has sufficient control and responsibility to warrant Federal review" (33 CFR pt. 325 App. B § 7(b) (1). Additionally, this document will also consider the past, ongoing, and future projects in the area to gain a better understanding of the potential cumulative impacts within the Proposal area.

Within the framework of environmental impacts analysis under NEPA, Federal regulations that are applicable to the Proposed Action include the CWA (including a Section 404 Permit) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 408). A summary of laws, regulations, and Executive Orders (EOs) that might be applicable to the Proposed Action are shown in Section 4.0 of this document.

This analysis is offered to the interested public to solicit input on the Proposal and will be made available for review and public input for 30 days. Comments regarding this Proposal should be addressed to USACE at the address provided on the accompanying public notice. Following the 30-day review period, the USACE Asset Management Division will determine if an Environmental Impact Statement (EIS) will be required or if a Finding of No Significant Impact (FONSI) can be issued.

1.5 Location

The Proposal area is generally located in the inland region of southern California, north of the Cleveland National Forest, south of SR-60, northeast of SR-241, and west of I-15 in unincorporated Riverside County, California. More specifically, the Proposal area is located north of SR-91 within the general area of the existing SR-91 and SR-71 interchange within Federal land. A Proposal location map is provided in Figure 1-1. The Proposal area is within the Prado Dam, California United States Geological Survey (USGS) 7.5-minute topographic quadrangle, in unsectioned Township 3 South, Range 7 West.

1.6 USACE Non-Recreational Outgrant Policy Compliance

In executing the USACE mission, USACE Districts receive numerous and diverse proposals for use of lands and waters at Civil Works water resources projects, such as the Federal SARP Project. In evaluating these numerous non-recreational and use development requests on USACE-managed lands and waters, USACE's intent under this policy is to meet legitimate needs for the use of USACE Project lands and waters while sustaining natural resources and protecting authorized USACE Project purposes. Depending on specific project legislation, project purposes may include navigation, hydropower, flood risk management, recreation, water supply, and low-flow augmentation. With regard to this EA, the project that would be altered/modified by the Interchange Proposal is the SARP, which is a Federal flood risk management project.

In accordance with USACE's Non-Recreational Outgrant Development Policy, the primary rationale for justifying any future non-recreational outgrant requests for use on Federal lands or waters will be one of two reasons:

- There is no viable alternative to the activity or structure being located on Civil Works land or waters; or
- There is a direct benefit to the government.

Examples of instances of no viable alternative include, but are not limited to, cross-country utilities, pipelines, or roadways that must cross projects; public water intakes; or commercial mooring cells in a navigable waterway. If a proposal meets one of these two criteria, it must be evaluated in light of compatibility with authorized project purposes, compliance with statutory and regulatory requirements, including environmental and cultural resource laws, cumulative impacts, and overall long-term public interest factors. The impacts associated with an individual action or the accumulated impact of a series of actions must not adversely impact the capability of the project to generate the benefits for which the project was congressionally authorized, constructed, and is operated. USACE shall coordinate and/or consult with American Indian/Alaska Native Governments when reservation lands are involved.

Accordingly, the Interchange Proposal analyzed in this EA is a roadway proposal to modify a currently existing structure for the purpose of increasing the safety of the SR-91/SR-71 interchange and improving traffic flow. Portions of the existing structure currently occupy SARP land by virtue of an easement. USACE has determined that expansion of the existing structure to connect to a roadway located adjacent to SARP land eliminates the possibility of any other viable location for the Interchange Proposal. In accordance with USACE's Non-Recreational Development Outgrant Policy, the Interchange Proposal analyzed in this EA is evaluated within the context of compatibility with SARP Project purposes, compliance with statutory and regulatory requirements, including environmental and cultural resource laws, cumulative impacts, and overall long-term public interest factors.

Under the Non-Recreational Outgrant Development Policy, public or private structures or activities that are not dependent on use of, or location on, Civil Works lands and waters, such as schools, fire houses, and hospitals, are prohibited unless no viable alternative is proven available. SR-91 and SR-71 are built-out highway corridors connecting Riverside, San Bernardino, and Orange counties, with an existing nonstandard, constrained interchange at the respective junction, which crosses the Federal SARP Project. Given these geographic characteristics and the need for improvements at this highway junction, no viable alternative to this Proposal exists other than the No Action Alternative, as described in this EA.

2.0 ALTERNATIVES

2.1 No Action Alternative

Under the No Action Alternative, Federal lands within the Proposal area would continue to be utilized for flood risk management project purposes, and USACE would continue to operate and construct other features of the SARP downstream. This area would also continue to be utilized for other existing uses such as recreational, transportation, and other uses; under the No Action Alternative. In addition, the No Action Alternative would not provide access to the Proponents on Federal lands to construct the direct flyover bridge connector structure, associated bridge footings for the proposed bridge structure, hillside slope grading, and other roadway features to be constructed as part of the greater Interchange Proposal. The Proponents would not be able to complete the final design and construction of the Interchange Proposal.

If no modification to the existing SR-91/SR-71 interchange occurs, traffic conditions within the Proposal area will worsen in the near future. Traffic volumes are expected to continue to increase. The existing SR-91/SR-71 interchange does not have adequate capacity to accommodate existing and forecasted traffic volumes for opening year through 2035 conditions, and the nonstandard tight loop ramp configuration would continue to hinder traffic flow. This condition would negatively impact traffic operations, resulting in lengthy queues spilling back on the EB SR-91 mainline. SR-91 is a major east-west transportation corridor between Riverside County and Orange and Los Angeles counties. Traffic congestion in this corridor affects regional commute and goods movement.

2.2 RCTC's Preferred Alternative

The Preferred Alternative is presented below as the Onsite Alternative. The alternative focuses on areas within the Prado Dam flood risk management facility and Federal lands (Proposal area) adjacent to the general area of SR-71 and SR-91. Approval of the Onsite Alternative would grant representatives of the Proponents access to Federal lands to construct the proposed Interchange Proposal and its associated features. Federal lands that would be affected by the Onsite Alternative are identified by the Riverside County Assessor's Office as APNs 101-140-006, 101-040-004, and 101-040-010.

As discussed in Section 1.1, Project Authority, some components of the proposed SR-91/SR-71 interchange are proposed to be sited on Federal lands acquired for a flood risk management project (SARP). As determined by USACE's Chief of Engineers, siting of any components of the SR-91/SR-71 interchange on lands acquired by the United States for SARP project purposes must be compatible with the SARP project. Any alteration or modification to SARP features requires a Section 408 permit pursuant to 33 U.S.C. 408. As mentioned previously, the Proponents have coordinated with USACE towards obtaining a Section 408 permit, which the Proponents must ensure that the Onsite Alternative is compatible with the SARP and that the O&M would not be adversely affected. The proposed Onsite Alternative discussed in this EA was reviewed by USACE and issued an Initial Minor Section 408 Action Determination in April 2013 (provided in Appendix H). The following subsections provide a detailed narrative of the features associated with the Onsite Alternative that qualified for the Initial 408 Minor Action Determination.

2.2.1 Description of Preferred Alternative (Onsite Alternative)

The Onsite Alternative would require access onto and use of Federal lands to construct the direct connector bridge from EB SR-91 to NB SR-71. The Onsite Alternative consists of construction of a direct flyover bridge connector structure from EB SR-91 to NB SR-71, construction of six bridge columns, hillside slope grading west of SR-71, enhancement of the existing wildlife crossing and modification of an existing USACE access road off SB SR-71 (for USACE access to the Federal Flood Risk Management

Facility and access to the adjacent Sukut property). The Proponents are requesting an amended permanent easement of approximately 7.84 acres from USACE to construct portions of the Interchange Proposal and grade hillside slopes to accommodate the realignment of SR-71. Temporary access to Federal lands, identified as APNs 101-140-006, 101-140-0004, and 101-040-010, would be required to implement the Onsite Alternative (Proposed Action) and mobilize the necessary construction equipment to and from the construction areas. Figure 2-1 illustrates the proposed column locations, alignment of the EB SR-91 to NB SR-71 bridge connector, and associated access driveway modification and hillside grading improvements.

The period of analysis for normal O&M activities under RCTC's preferred alternative would be a minimum of 21 years and/or in perpetuity (through 2035). O&M activities during this 21-year period would include inspection of structures such as bridge columns, as well as periodic graffiti removal (if discovered on bridge columns within Federal lands). The preferred alternative is anticipated to open to the public in 2020. The subsections below provide detailed descriptions of the various features that comprise the Onsite Alternative.

Description of Bridge Columns

Specifications for the proposed bridge footings, including area, perimeter, and latitude/longitude, are provided in Table 2-1. Six bridge footings, identified as Footings #5 through #10, would affect Federal lands. A total of 675 square feet, or 0.015-acre area, of Federal lands would be permanently affected with construction of the proposed Onsite Alternative. Footings #1 through #4 would be constructed outside of Federal lands and are outside the scope of this EA.

Table 2-1: Proposed Onsite Alternative Bridge Footing Specifications

Footing #	Area (Sq. Ft.)*	Perimeter (Ft.)*	Latitude (DMS)	Longitude (DMS)	On Federal Lands?
5	112.5	37.7	33° 52' 58.169" N	117° 38' 43.726" W	Yes
6	112.5	37.7	33° 53' 0.613" N	117° 38' 42.412" W	Yes
7	112.5	37.7	33° 53' 3.661" N	117° 38' 41.697" W	Yes
8	112.5	37.7	33° 53' 6.140" N	117° 38' 41.775" W	Yes
9	112.5	37.7	33° 53' 7.901" N	117° 38' 42.191" W	Yes
10	112.5	37.7	33° 53' 10.668" N	117° 38' 43.102" W	Yes

* Area and perimeter of bridge columns are preliminary estimates and are subject to change.

The Proponents conducted three coordination meetings with USACE to understand their concerns with construction of the proposed Onsite Alternative through the Federal flood risk management facility. USACE has indicated that no new bridge columns would be permitted within the existing channel and that USACE prefers no columns be placed within the existing levee; however, USACE recognizes that the bridge structure would not be feasible if columns had to be constructed outside of the levee due to exceeding span length design standards. As a result, permanent and temporary measures have been incorporated into the bridge column design and construction methods to minimize potential impacts to the existing channel levee.

Temporary measures include constructing the portion of the bridge spanning the channel within the 6-month-long dry season from March 10 to October 1 through the construction of temporary falsework within the Santa Ana River Channel to withstand the maximum USACE-controlled dam release. To ensure that the falsework does not affect the operations of the SARP, the falsework would be removed prior to the start of the rainy season (October 2 through March 9).

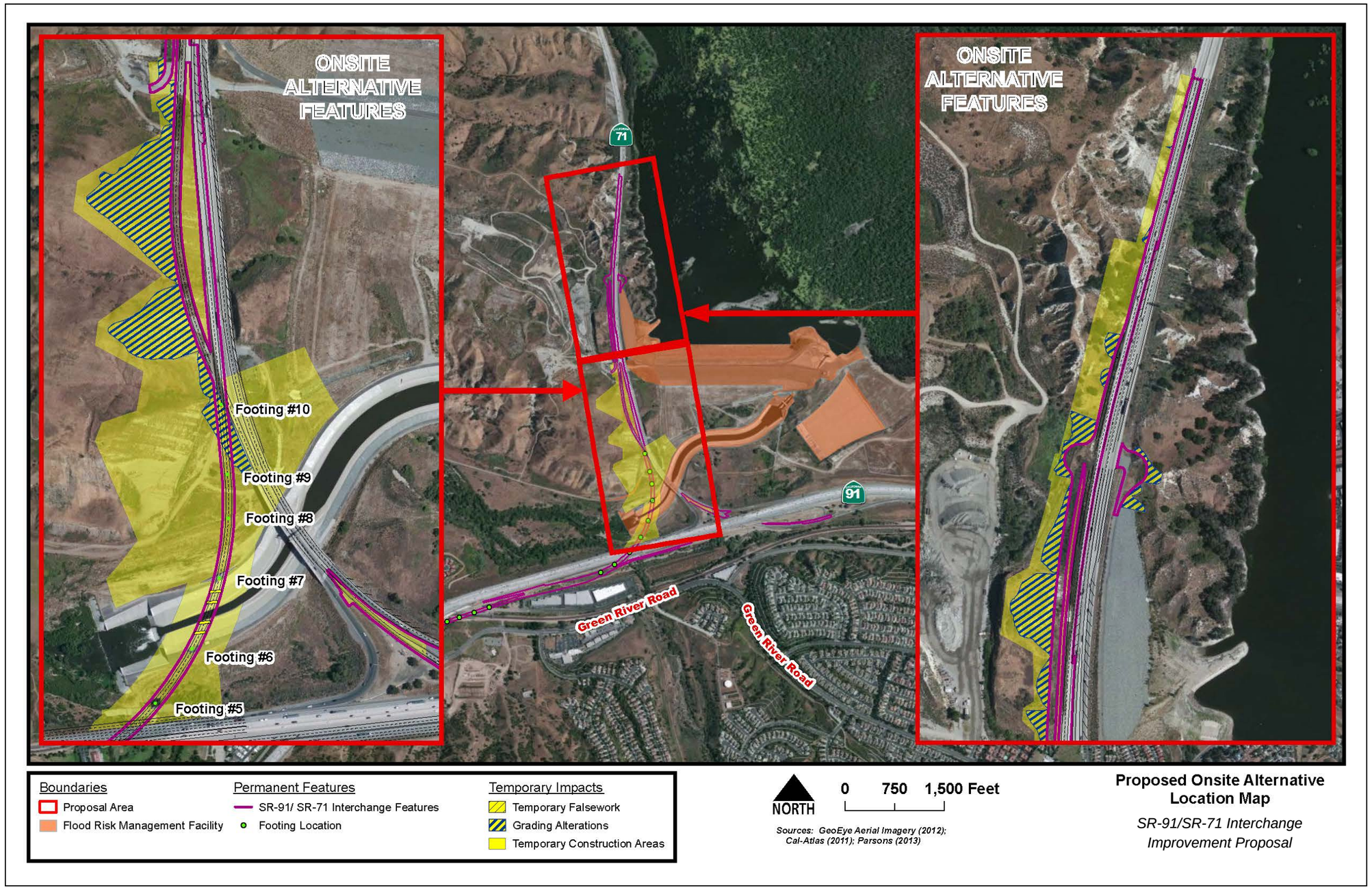

Figure 2-1: Overview Alignment Map of Proposed Onsite Alternative

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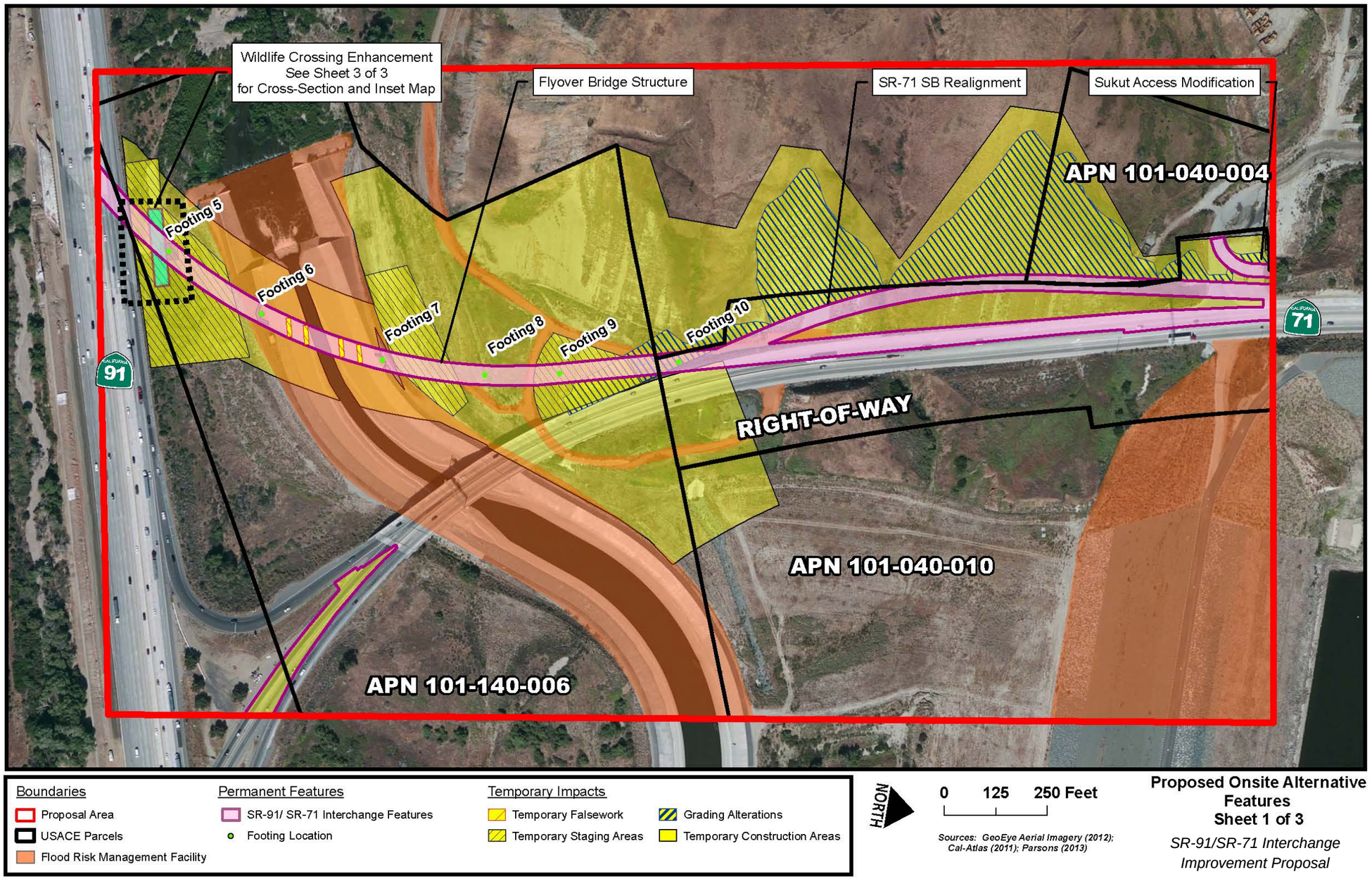

Figure 2-2: Onsite Alternative Features (page 1 of 3)

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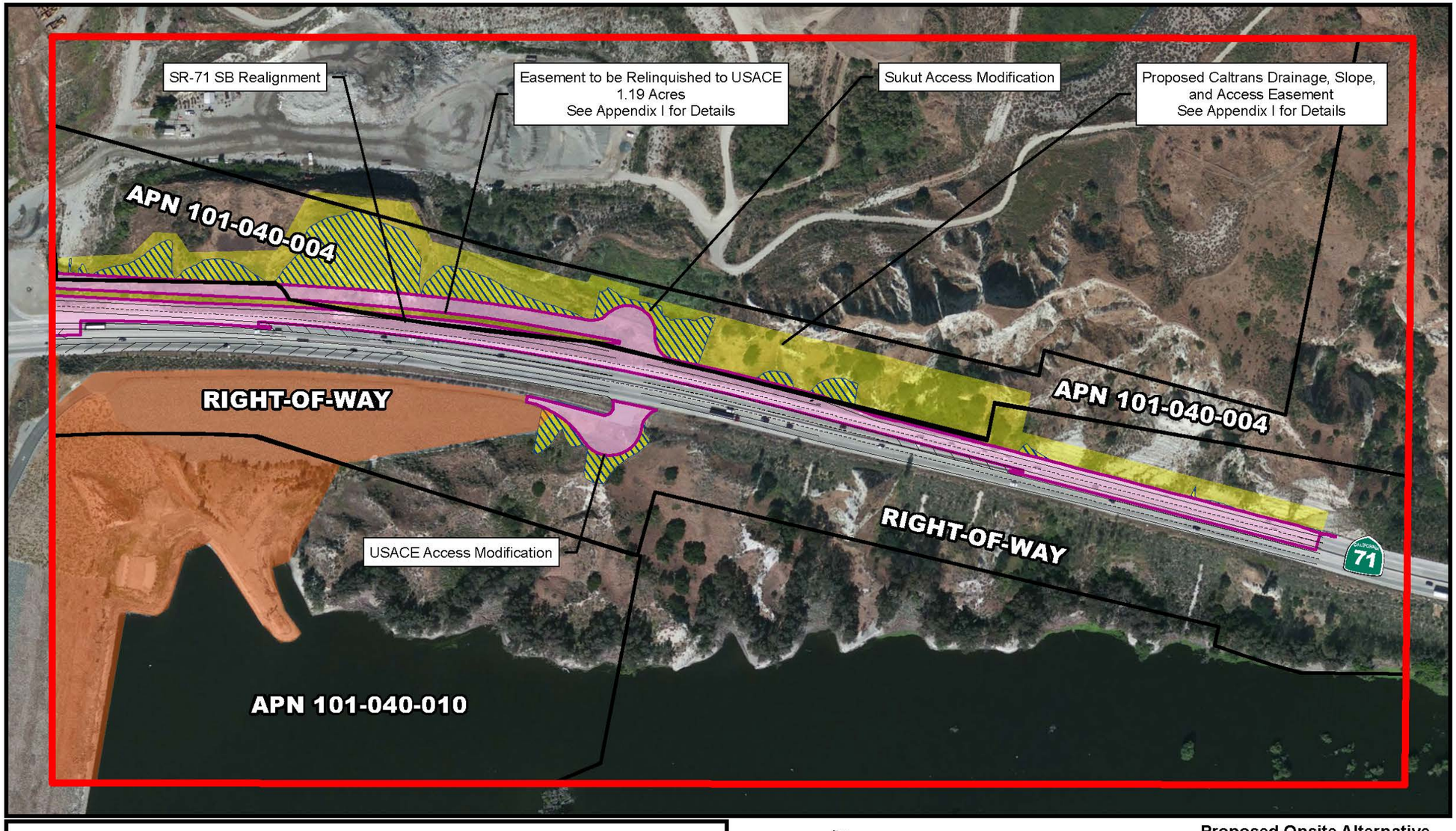

Figure 2-2: Onsite Alternative Features (page 2 of 3)

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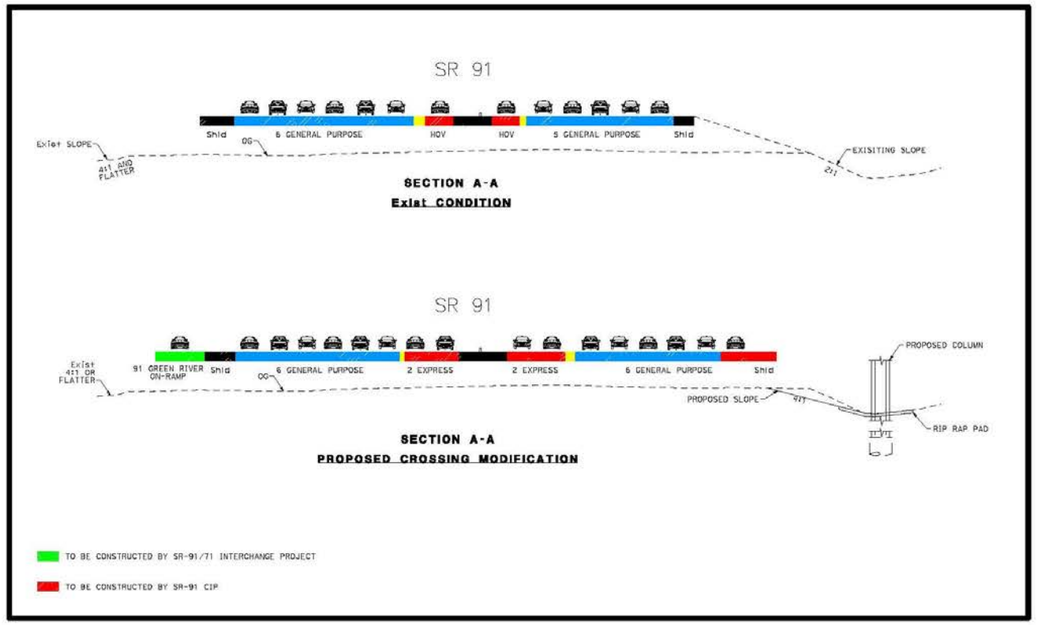
Proposed Onsite Alternative
Feature
Sheet 3 of 3
SR-91/SR-71 Interchange
Improvement Proposal



Legend
- Flyover Structure
- Rip Rap Pad and Footing
- Limits of Concrete Removal and Slope Grading
- SR-91 CIP Retaining Wall
- SR-91 CIP Pavement Widening

INSET A:

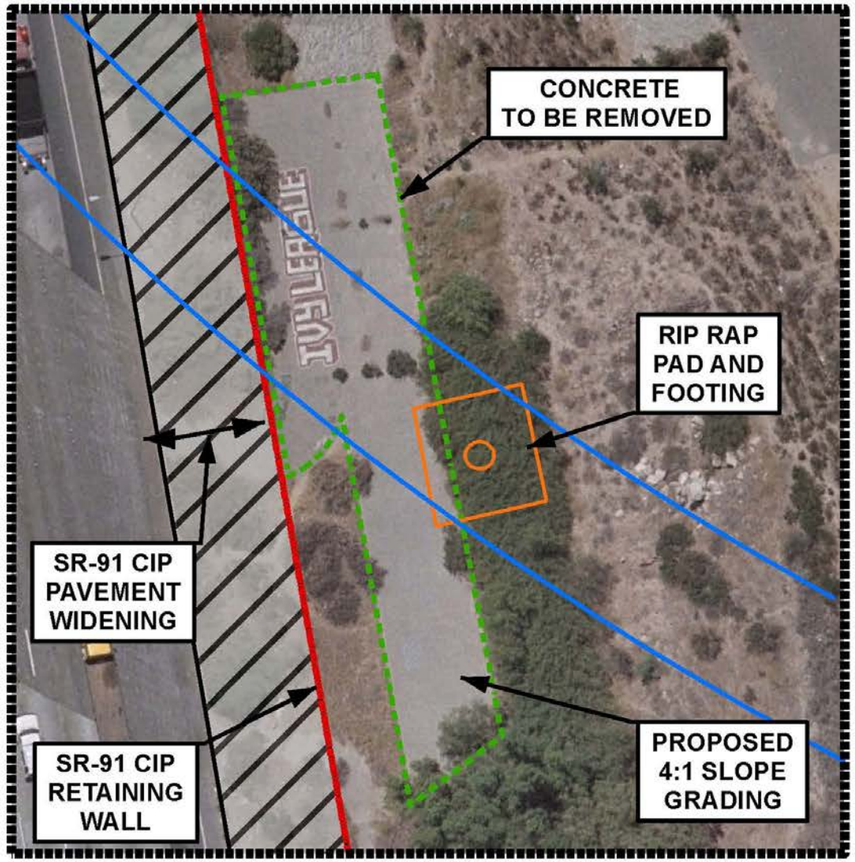


Figure 2-2: Onsite Alternative Features (page 3 of 3)

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Permanent measures that would be included in the design of the structures to minimize and avoid impacts to the operations of the SARP include siting the supporting bridge columns 2 feet back from the edge of the concrete channel lining to minimize potential impacts to the existing channel, its concrete lining, levees, and spillway. In addition, to address USACE's concerns regarding bridge column design, design features to address seismic concerns and flood risk management would be incorporated into the column design. To address these concerns, a permanent steel isolation casing through the levee is also proposed to isolate the levee from potential column movement during a seismic event.

Bridge Columns within Flood Risk Management Facility

Two of the proposed six bridge footings that would be constructed within Federal lands are located within a flood risk management facility along the Santa Ana River Channel levee (Footings #6 and #7, as shown in Figure 2-2). These two bridge columns would be located on top of the levee adjacent to the maintenance road. A 12-foot-diameter cast-in-drilled-hole (CIDH) pile would be constructed and may include a temporary steel casing during construction. A permanent steel isolation casing through the levee is also proposed to isolate the levee from potential column movement during a seismic event. A cross section of the proposed column within the flood risk management facility is provided in Figure 2-3. The bridge column structures would permanently occupy approximately 112.5 square feet on either side of the levee after construction. A total of approximately 225 square feet on top of the levee would be required to construct both bridge columns.

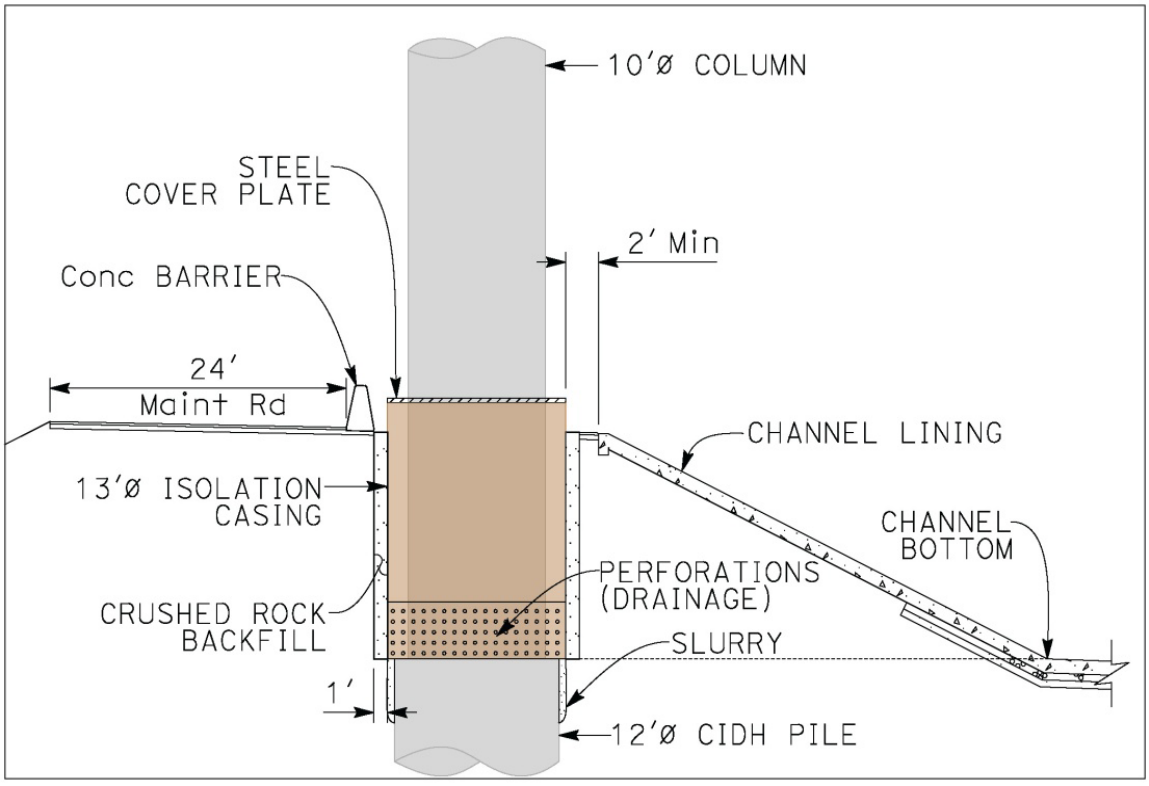

Figure 2-3: Proposed Typical Bridge Column Cross Section within Flood Risk Management Facility

These bridge columns would need to be constructed on top of the levee because the maximum span allowed by the Caltrans Seismic Design Criteria (SDC) for a Caltrans Standard Bridge is 300 feet. The proposed span over the Santa Ana River Channel has been extended to 312 feet with columns in the levees but outside of the channel lining limits. Caltrans has granted a design exception to the SDC for the

proposed span length of 312 feet, which is slightly longer than the maximum 300 foot span criterion provided in the SDC. A longer span to move one or both columns farther outside of the levees would require a span of approximately 450 feet. This would no longer qualify as a Caltrans standard structure type and would require a variable depth segmental box girder or cable-supported structure. These structure types are much more expensive, generate more environmental impacts and typically used on long-span "signature" structures where topography and site constraints preclude the standard structure type. As such, two bridge footings would need to be constructed on top of the levee to construct and operate the proposed interchange facility, as illustrated in Figure 2-3.

Bridge Columns within Federal lands

Four other bridge columns proposed to be constructed within Federal lands are outside the flood risk management facility. These are identified as Footings #5 and #8 through #10 on Figure 2-2. As previously shown in Table 2-1, each proposed bridge column would require an approximate 112.5-square-foot area to be constructed. The proposed four bridge columns would encompass an approximate total area of 450 square feet or 0.01-acre within Federal lands.

Realignment of SR-71

The existing SB SR-71 lanes would be realigned to the west to allow adequate spacing for the SR-91/ SR-71 flyover bridge structure to touch down and form the inside lanes of NB SR-71. As a result of the reconfiguration of the NB SR-71 lanes, the SB SR-71 lanes would be realigned to the west, which would require an amended easement from USACE. It should be noted that the existing SR-91/SR-71 interchange is located on Federal lands by virtue of an easement to Caltrans. Because of the realignment, approximately 4.5 acres of new pavement would be required within an amended easement on Federal lands, along the western edge of SB SR-71. The approximate limits of realignment of the existing SB SR-71 lanes would be from Station 334+00, the northern end of the SR-71 Santa Ana River Bridge (Bridge No. 56-0379), to Station 373+35 at the north end of the realignment. Furthermore, existing slopes within the Proposal area fit the criteria for a gradient of 2:1 (horizontal to vertical) or flatter, or are reinforced with engineered retaining walls. A gradient of 2:1 or flatter is considered stable for embankment slope construction. As such, slopes that would require grading west of SR-71 would be graded to at least a 2:1 gradient.

Hillside Slope Grading, Access Modifications/Improvements and Easements

Hillside Slope Grading

The area adjacent to SR-71 consists of large hillside slopes and valleys. Grading of hillside slopes generally located north of SR-91 and west of SR-71 would be required to accommodate the flyover bridge structure and realignment of the SR-71 SB connector to EB SR-91. Most of the SR-71 realignment would be constructed within existing Caltrans right-of-way (ROW); however, hillside slope grading would be required to construct these features and provide a permanent roadway/slope easement. Preliminary design plans indicate that an additional 10.3 acres of permanent easement would be required from USACE to construct and maintain the hillside slopes. The proposed hillside slope grading and the proposed access modifications are illustrated in Figure 2-2.

Access Modification/Improvements

Four existing access driveways along SR-71 are located within the jurisdiction of USACE, which provides access to areas within the Prado Dam, Santa Ana River, and the surrounding area. These access points are illustrated in Figure 2-4 and are discussed below.

Access Point #1 is located approximately 0.28-mile north of SR-91 and provides access east of SR-71 to the general area of the Santa Ana River Channel and the Prado Dam. This access point would be maintained in its current location as part of the Onsite Alternative.

Figure 2-4: Access Points within Proposal Area

Access Point #2 is located approximately 0.33-mile north of SR-91 and provides access to areas west of SR-71, the Santa Ana River, and channel spillway. The Onsite Alternative would require vacating this access to accommodate the proposed roadway geometrics and structural features of the flyover structure.

Access Point #3 is located approximately 0.5-mile north of SR-91 and provides access to the west and east of SR-71. The existing western access provides access to the Sukut property, which is a rock crushing and mining company. The existing eastern access provides access directly to the Prado Dam. Access to the Prado Dam at this access point would be maintained as part of the Onsite Alternative; however, direct access to the Sukut property at this existing location would be modified by relocating the entrance to the driveway 0.25-mile to the north to accommodate the flyover structure and proposed roadway geometrics.

Access Point #4 is located approximately 0.75-mile north of SR-91 and provides access to the east of SR-71 to the Prado Flood Control Basin and the Prado Dam. The Onsite Alternative would maintain access to Federal lands to the east and proposes to provide access to the Sukut property by constructing an access point to the west of SR-71. The Proponents would construct a driveway parallel to SB SR-71 from Access Point #4 to the existing Sukut property entrance (located 0.25-mile north of the proposed modified Access Point #4) as shown in Figure 2-4. It is anticipated that construction of the proposed Sukut property access driveway would require an additional 1.19 acres to construct.

The Onsite Alternative is also proposing to improve Access Point #4 by providing the modified USACE driveway an exclusive right-turn lane into and an acceleration lane out of the driveway. These improvements would enhance safety along the NB SR-71 mainline by providing vehicles and large trucks transitional lanes for ingress and egress movements at the modified USACE driveway. Preliminary plans indicate that approximately 0.36-acre within Federal lands would be required to construct the modified driveway.

Proposed Relinquishment and Additional Easements

USACE granted Caltrans a roadway easement within Federal lands in 1950 for SR-91 and SR-71; however, the proposed Sukut property access roadway would be partially constructed outside of the existing Caltrans roadway easement along SR-71. The proposed Sukut property driveway is anticipated to be utilized primarily by vehicular and truck traffic generated by current mining and rock crushing operations. The Proponents and the owner of the Sukut property agreed that Caltrans would relinquish its current roadway easement within the limits of the proposed driveway to USACE after construction of the modified Sukut property access driveway. The easement to be relinquished to USACE is approximately 1.55 acres and is located along the western side of SB SR-71 (APN 101-040-004) as illustrated in Exhibit 1 of Appendix I. Sukut would obtain a new easement from USACE west of SR-71 (APN 101-040-004) to include the area of the proposed Sukut driveway of approximately 1.19 acres for access to and from the existing site, as illustrated in Exhibit 2 of Appendix I. Maintenance and utility access easements would also be requested from USACE for the following existing utilities located within the same 1.19 acre easement: Southern California Edison (SCE), Riverside County (Cell Tower), Southern California Gas (SCG), and AT&T.

Caltrans would also request a drainage, slope, and access easement from USACE west of SR-71 at APN 101-040-004, as illustrated in Exhibit 3 of Appendix I. The new Caltrans easement would require approximately 7.84 acres of Federal lands. Table 2-2 summarizes the easements to be relinquished and proposed additional easements from USACE.

Table 2-2: Summary of Easements to be Relinquished and Proposed Additional Easements

APN	Current Easement to be Relinquished (Entities)	Relinquished Easement Area (Acres)	New Easements (Entities)	Proposed Easement Area (Acres)
101-040-004	Caltrans	1.55	N/A	N/A
101-040-004	N/A	N/A	Sukut, SCE, Riverside County, SCG and AT&T	1.19
101-040-004	N/A	N/A	Caltrans	7.84

N/A: Not Applicable

The Proponents are also seeking additional drainage, slope and access easements from USACE to allow Caltrans to maintain the hillside slopes and other features of the Onsite Alternative that are proposed to be constructed within Federal lands. The additional easement required from USACE is approximately 10.3 acres. Temporary construction easements would also be required for the Proponents to construct the Onsite Alternative. These additional easements are mostly located west of SR-71. Appendix I provides an illustration of easements proposed to be relinquished and added to Caltrans ROW. The long-term easement sought by the proponents would be a minimum of 21 years (through 2035), given the period of analysis, and/or in perpetuity.

Removal of Concrete Revetment and Wildlife Crossing Enhancement

The existing undercrossing bridge generally located south of the Santa Ana River Spillway and north of SR-91 would be enhanced to accommodate wildlife crossing across SR-91 per the United States Fish and Wildlife Service (USFWS). A discussion regarding the need for this improvement is provided in Section 4.5. The function of the undercrossing bridge would be improved as a wildlife crossing through the removal of the existing concrete revetment and regrading the existing 2:1 slope to a flatter 4:1 slope to facilitate north-south wildlife movement across SR-91. Native vegetation would also be planted to within the area to provide habitat continuity. Figure 2-5 illustrates the location of this wildlife corridor improvement and conceptual plans for this area.

Construction Activities and Mobilization of Equipment

Construction activities would begin in January 2018. During construction of the Interchange Proposal, the proposed bridge column sites, construction of the flyover bridge structure, and hillside slope grading within Federal lands would be accessed via USACE-approved access points, routes, and staging areas. Four access points are proposed to facilitate the mobilization of construction equipment to implement the Onsite Alternative, as illustrated in Figure 2-5. The designated access points would be utilized to mobilize construction equipment to various construction areas to minimize further ground disturbance of other areas on Federal lands. Construction Access Point #1 is located along SR-91 at the existing wildlife crossing near the Santa Ana River Channel Spillway. This access point would provide access to construction areas south of the Santa Ana River Channel. East and west of SR-71, two other access points are proposed. Construction Access Point #2, located west of SR-71, would provide access to construction areas north of the Santa Ana River Channel, hillside slope grading areas, and the new Sukut access roadway. Construction Access Point #3 would provide access for construction areas east of SR-71 and the north side of the Santa Ana River Channel.

It is also anticipated that the existing roadway access to Prado Dam (Construction Access Point #4), located east of SR-71 and 0.5-mile north of SR-91, would be utilized to mobilize construction equipment. Construction equipment would travel on the road on top of the Prado Dam towards the Santa Ana River Channel. An existing bridge spans across both sides of the levee, which would be utilized to mobilize construction equipment downstream on either side of the levee. The existing levee maintenance road

would be used to mobilize equipment near the proposed flood risk management construction areas where the two bridge columns, temporary falsework, and flyover bridge structure would be constructed.

Construction equipment generally utilized to construct roadway projects consists of standard construction machinery and vehicles with heavy-duty capabilities. Refer to Appendix G for representative photos of construction equipment that would be used for construction of the Onsite Alternative. Typical construction equipment for roadway projects includes the following:

- Tractor (crawler) with dozer
- Tractor (wheel) with backhoe and loader
- Drill rig
- Excavator
- Front-end loader
- Cement truck
- Bucket truck (for transport of construction materials)
- Baker tanks
- Rubber tired dozer
- Scrapers
- Cranes
- Graders
- Signal boards
- Plate compactors
- Trenchers
- Pavers
- Paving equipment
- Rollers
- Pumps
- Cement and mortar mixers
- Rough terrain fork lifts
- Air compressors

During mobilization of construction equipment, existing access roads (USACE access roads on Federal lands), and/or previously disturbed areas would be utilized to the greatest extent feasible, thereby reducing potential effects to undisturbed resources, such as vegetation; however, much of the area near the proposed access points and routes has been previously disturbed as a result of past and ongoing USACE projects pertaining to flood risk management facilities on Federal lands. To accommodate the mobilization of equipment on Federal lands, certain areas may be graded to create a path and covered with crushed gravel. Designated paths would minimize ground disturbance as construction vehicles would use existing paths. All disturbed areas would be restored to Pre-Onsite Alternative conditions. Access paths are illustrated in Figure 2-5, along with the proposed access points.

Additionally, staging of construction equipment would be located at three areas within Federal lands at APN #101-140-006. Temporary construction staging areas are proposed near the locations of the proposed bridge columns and flyover bridge structure. Staging within Federal lands is proposed in the general area of both sides of the Santa Ana River Channel Spillway and west of SR-71. Temporary construction staging areas are illustrated in Figure 2-5, along with the proposed access points and paths. Staging areas and access paths would be temporarily graded to flatten the general area to allow mobilization of construction equipment. These areas would be covered with crushed gravel to accommodate the use of heavy construction equipment on alluvium soils.

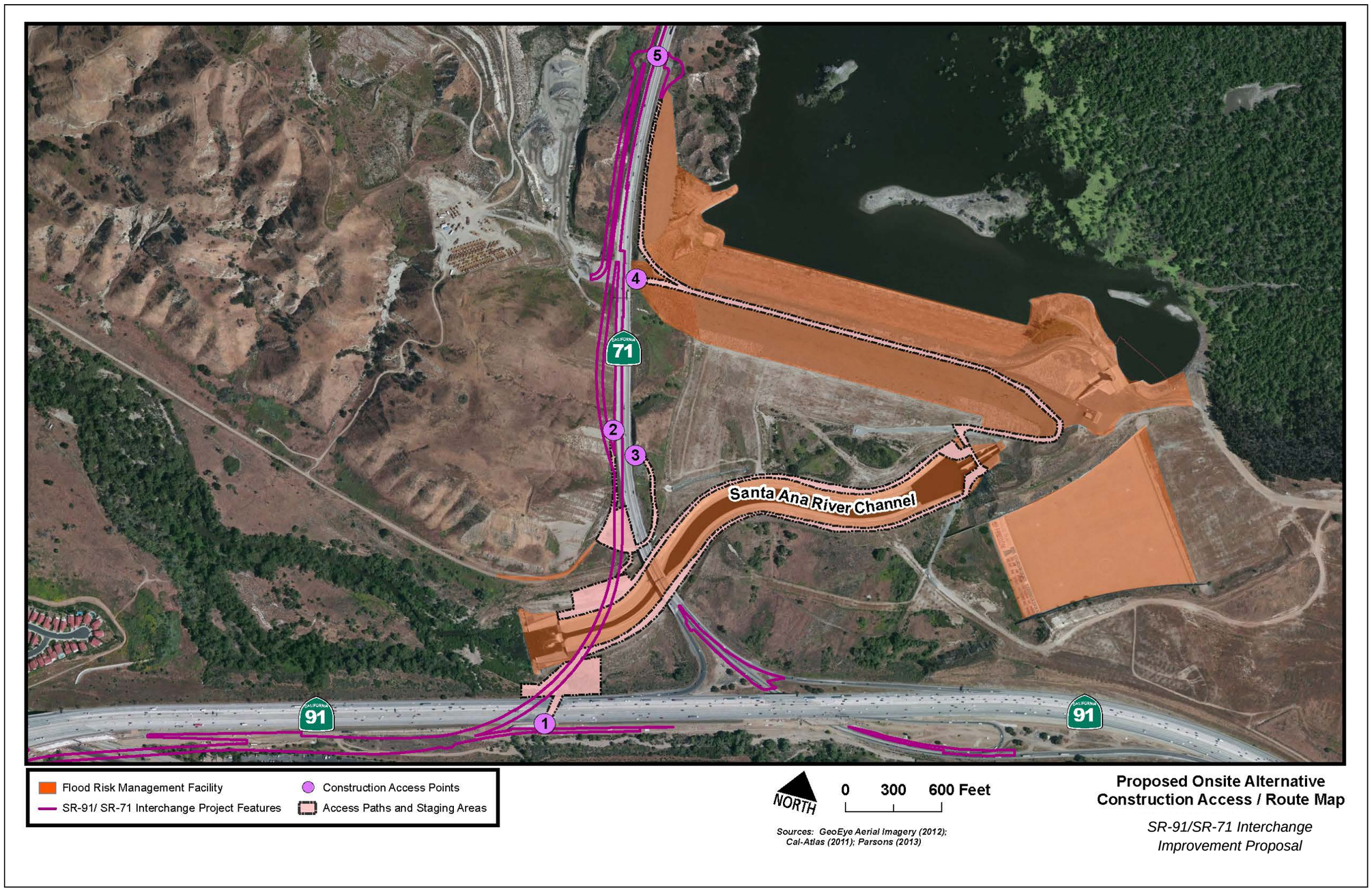

Figure 2-5: Proposed Construction Access and Route Map

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Foundation Construction

The first phase of construction is the installation of the deep foundations. The proponent has designed large-diameter single-shaft, CIDH piles to optimize foundations and eliminate the need for large pile caps. This is intended to minimize the impact to the levee. Typical construction would use a temporarily oscillated steel casing to ensure the quality of the CIDH constructed piles. The temporarily cased oscillated method (Figure 2-6) provides the safest construction method for CIDH piles while eliminating the risks associated with groundwater, caving due to loose material and vibrations caused by driven piles. This installation method typically uses the following construction equipment:

- A crane with casing oscillator attachment.
- A 250-ton support crane.
- A rebar template launcher used to support rebar cage.
- Concrete boom trucks.

Figure 2-6: Oscillated Casing Method

The execution phases of a cast-in-place (CIP) concrete pile with recoverable casing are:

- Installation of an oversized 15-foot temporary steel casing to support the top of the hole.
- Set up of a crane with casing oscillator to place the temporary 12-foot CIDH casing to the final tip elevation. While oscillating the casing down, the soils are excavated from within the casing with a spherical grab.
- Installation of reinforcing steel using the launcher.
- Placing concrete with a tremie pipe where the end of the pipe is continuously below the fresh concrete to protect the concrete from being damaged by the water in the drilled casing. While the concrete is being placed, the temporary CIDH casing is oscillated out of the hole progressively. This operation can take 3 to 4 days per bent.
- Testing the CIDH piles for anomalies using the Gamma-Gamma method prescribed by Caltrans.
- The tips of the piles may be grouted post-construction to firm up the tip of the pile.

Columns

Once the CIDH pile is constructed up to the bottom of the column rebar cage elevation (construction joint), the column will be constructed with the following sequence:

- Fabricate the rebar cage onsite or prefabricate the cage.
- Place the rebar cage on the pile construction joint and tie down.
- Pour the rest of the CIDH pile to cut-off elevation.
- Place the column forms on top of the pile and make a monolithic pour of the entire column.
- Alternatively, slip forms can be used to cast the column in stages for tall columns.
- Column formwork would be stripped after approximately 5 days.

Flyover Direct Connector

The direct connector structure spanning the Santa Ana River Channel would be constructed on falsework supported on specially designed temporary bents within and outside of the channel, as illustrated in Figure 2-7.

Figure 2-7: Typical Columns Construction

Construction of Bridge Columns within Flood Risk Management Facility

Construction of the bridge columns (Footings #6 and #7) within the flood risk management facility would involve mobilizing the necessary construction equipment and personnel. Prior to conducting construction activities on the flood risk management facility, the Proponents would coordinate with USACE to approve details of the construction activities, such as design plans, construction methods, and access/staging areas with regards to construction within a flood risk management facility. Construction of the bridge columns would last up to 24 months. As-built drawings will be provided by Proponents to USACE within 60 days of construction completion.

Construction of Bridge Spanning over the Santa Ana River Channel

The Onsite Alternative includes construction of the direct flyover bridge connector structure spanning over the Santa Ana River Channel. Within Federal lands, this structure is approximately 1,400 feet in length and would not cause any permanent effects to environmental resources within Federal lands. To construct the flyover structure, falsework would be required to construct the bridge spanning over the Santa Ana River Channel. Four 4-foot-diameter steel pipe bents would be erected within the Santa Ana River Channel. Traditional falsework construction has been discussed with USACE, and it has been determined that the portion of the bridge spanning the channel could be constructed within the 6-month-long dry season from March 10 to October 1, which may extend to the next dry season if construction is delayed. Falsework within the Santa Ana River Channel would be removed after the end of the dry season and reconstructed for the next dry season if additional work within the levee is necessary. The proposed temporary falsework cross section within the Santa Ana River Channel is illustrated in Figure 2-8.

Falsework supports can be accommodated by anchoring the falsework supports into the channel lining and would not require penetration of the temporary supports through the channel lining. The vertical load would be spread at the bottom to a wide enough area to keep the pressure on the channel subgrade and under drains to a minimum. The channel lining would be returned to its original state once the falsework is removed. USACE has established controlled dam release parameters of 30,000 cubic feet per second (cfs) to be accommodated by design of the falsework in the channel.

Vehicular traffic and other construction equipment would be confined to existing access roads to the greatest extent feasible. All disturbed areas that are not disturbed permanently would be restored to Pre-Onsite Alternative conditions.

Construction of Bridge Columns within Federal Lands

Construction activities within Federal lands include construction of four bridge columns (outside the levees) identified as Footings #5 and #8 through #10. It is anticipated that construction of these columns would be completed within 24 months. Construction of the Onsite Alternative would be confined to predetermined locations as approved by USACE. Access to and from the construction site would utilize existing roads and/or areas that are previously disturbed to the greatest extent feasible. Any areas disturbed by these construction activities would be restored to Pre-Onsite Alternative conditions.

Construction Activities Associated with the Hillside Slopes and Access Modification

The general area west of SR-71 would be contour graded with benching at a 2:1 slope. The cut slopes along the hillside would be approximately 2,600 feet in length and would result in the removal of approximately 430 cubic yards of soil. In addition, approximately 680 cubic yards of soil would be used to fill in two valleys, ranging in depth from 10 to 14 feet. These activities would occur within Federal lands for which Caltrans has an easement and outside the easement on Federal lands, identified as APN 101-040-004.

Existing access roads to the Sukut Property and Federal lands would be modified as previously discussed earlier in this section. The modified access driveways would require minor hillside cuts, fill areas, and grading.

Any disturbed areas associated with construction of the access roadways and hillside grading would be revegetated to Pre-Onsite Alternative conditions.

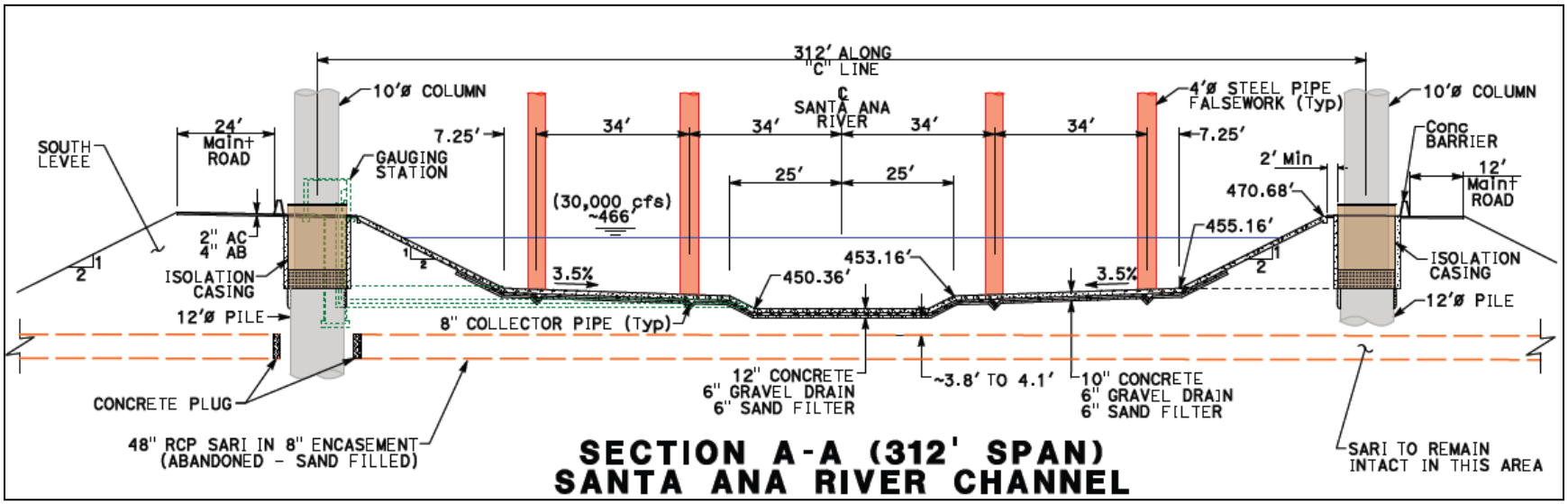

Figure 2-8: Proposed Temporary Falsework within the Santa Ana River Channel

2.2.2 Duration of Construction Activities

Construction activities associated with the Onsite Alternative would be temporary and would last the duration of Project construction, which is anticipated to be 24 months. Construction within Federal lands is planned to commence in January 2018. The proposed flyover bridge structure over the flood risk management facility would require construction of temporary falsework, which would be implemented during the dry season between March 10 and October 1. Construction activities within the flood risk management facility may extend into the next dry season if construction of the bridge columns and superstructure are delayed.

2.3 Identification of a Preferred Alternative

Two alternatives, consisting of a No Action Alternative and one Build Alternative (Onsite Alternative), were evaluated in this report. During the alternatives development and subsequent screening process, the Project Development Team (PDT) used several criteria to evaluate a range of alternatives. Each alternative was evaluated to determine its practicability, including environmental impacts, ROW acquisition, traffic operations and driver expectations, safety, cost, and compatibility with future projects.

2.4 Alternatives Eliminated from Further Consideration

In the environmental document prepared for the overall Interchange Improvement Project, various design alternatives were evaluated throughout the project development process since 2006. During this process, several alternatives and design changes were considered throughout the various phases of the Interchange Proposal in determining a preferred alternative. In selecting a preferred alternative, several criteria (consistent with RCTC and USACE's purpose for the Proposed Action) were utilized to evaluate each alternative and determine its practicability, constructability, and constraints/limitations. Of these criterion, one addresses RCTC's purpose for the Proposed Action, which considers the extent to which RCTC is providing the general public with an efficient and safe flyover bridge structure that satisfies seismic and roadway design standards. Other criterion addresses USACE's purpose for the Proposed Action, which considers the extent to which the Proposed Action ensures that it: is in the interest of the general public and USACE; is compatible with Federal flood risk management projects; avoids adverse effects to the Federal flood risk management project (SARP), including changes to increased water surface elevation and hydrology; and does not interfere with O&M or reduce the accessibility to SARP.

Following evaluation of the (potential) impacts associated with all feasible alternatives, a preferred alternative (RCTC's Preferred Alternative) was selected as the proposed Onsite Alternative and is presented as the Proposed Action analyzed in this EA. During the selection process for the Onsite Alternative, the following three other alternatives were considered and eliminated from further consideration in this EA:

- Alternative 1A: Direct Connector with Two-Span Section Crossing the Santa Ana River Channel (One Column within Channel)
- Alternative 1B: Direct Connector with Two-Span Section Crossing the Santa Ana River Channel (One Column on Channel Levee)
- Alternative 1C: Direct Connector with Single-Span Section Crossing the Santa Ana River Channel (No Columns within Channel)

The following sections describe the alternatives that have been eliminated from further consideration, which are identified as Alternatives 1A, 1B, and 1C. Exhibits illustrating bridge footing placement alternatives are provided in Appendix A.

2.4.1 Alternative 1A: Direct Connector with Two-Span Section Crossing the Santa Ana River Channel (One Column within Channel)

Alternative 1A would be located within the same general area of the Onsite Alternative and affect the same parcels on Federal lands; however, eight bridge footings are proposed to be constructed on Federal lands, compared to six columns proposed under the Onsite Alternative, which could result in additional permanent impacts within Federal lands. Construction of bridge footings under Alternative 1A would result in two footings to the south of the existing channel, four footings to the north of the channel, and one footing in the center of the concrete channel (west of SR-71), as illustrated in Appendix A. The primary feature that distinguishes this alternative from the proposed Onsite Alternative is the single column within the Santa Ana River Channel concrete channel compared to two columns on top of both sides of the channel levee. Under Alternative 1A, the bridge proposed within the concrete channel is identified as Footing #7, as illustrated in Appendix A. The discussion below provides the reasons for the elimination of Alternative 1A from further consideration, including the magnitude of impacts to the SARP, engineering constraints, constructability, and inconsistency with USACE and RCTC's purpose and need.

Under Alternative 1A, the type of bridge structure that would be necessary to span over the Santa Ana River Channel would require a single bridge column in the center of the channel's concrete outlet. Alternative 1A would require a single column within the concrete channel and could result in adverse effects to operations by obstructing channel hydrology and increasing water surface elevations due to water displacement caused by the column. Construction of the bridge columns within the channel could also compromise the structural integrity of the bridge column because it would be subjected to prolonged erosion and maximum volume water releases of approximately 30,000 cfs. This would conflict with RCTC's purpose for the Proposed Action in providing the general public with an efficient and safe flyover bridge structure that satisfies seismic and roadway design standards. Compromising the structural integrity of the column could potentially affect its ability to safely and effectively support the adjoining flyover bridge structure connector during future seismic events. Although recent significant seismic events have not occurred, the Proposal area is located within a seismically active zone, as discussed in Section 3.2, Geology and Soil Quality, Stability, and Moisture. In consideration of these structural, seismic/geologic, and hydrologic risks, exposure to such conditions could lead to structural failure resulting in the flyover structure collapsing into the Santa Ana River Channel.

Constructing a direct flyover interchange structure with a single bridge column in the concrete outlet channel would conflict with avoiding potential effects to the Federal flood risk management project, including, but not limited to, changes in water surface elevations and hydrology downstream of the Prado Dam. According to USACE's Reservoir Regulation Section (RRS) (June 2013), the RRS indicated that the SARP project is currently in a hybrid state where Prado Dam has been raised but the spillway below the dam has not; the current configuration of the Santa Ana River Channel does not represent the hydrologic characteristics of the ultimate future project (SARP). According to RRS, the "hybrid" configuration of the SARP will likely remain in place at least until the mid-2020s, and in this hybrid condition, the dam would likely spill in a 100-year flood event. When the ultimate dam configuration is in place with a raised spillway, the flood area would no longer be subject to 100-year inundation. Given the current interim configuration of Prado Dam and its respective spillway, it is anticipated that placement of a bridge column within the concrete channel would further exacerbate the vulnerability of the flood risk management facility to a potential 100-year flood event by increasing water surface elevations within the channel. Alternative 1A would not be compatible with the existing configuration and the future improvements to the SARP because of the increase in water surface elevations. Alternative 1A would not be in the best interest of the general public and USACE because it would interfere with the O&M of the SARP. Alternative 1A is an incompatible land use because it interferes with SARP operations; therefore, it is eliminated from consideration.

As previously discussed, the maximum span allowed by the Caltrans SDC for a Caltrans Standard Bridge is 300 linear feet. A longer span to move one or both columns farther outside of the levees would require a two-span section totaling approximately 625 linear feet in length to cross the Santa Ana River Channel, which is more than two times the maximum allowable span length. This would no longer qualify as a Caltrans standard structure type and require a variable-depth segmental box girder or cable-supported structure to construct a longer-span bridge structure. These structures could potentially produce more environmental effects compared to a shorter bridge segment due to the additional amount of land required to construct the structure. Variable-depth segmental box girder or cable-supported structures are typically used on long-span "signature" structures when site constraints preclude the standard structure type; and no site conditions or constraints have been observed within the Proposal area that would preclude the construction of the standard structure type as proposed under the Onsite Alternative. Alternative 1A is eliminated from further consideration because it fails to comply with Caltrans standard design requirements, which are dictated by best practices and health and safety considerations.

If a variable-depth segmental box girder or cable-supported structure is not constructed for this alternative, several design exceptions would be required to construct a nonstandard two-span section (approximately 625 feet in length) crossing the Santa Ana River Channel. It is unlikely that Caltrans would grant the necessary design exceptions because it is anticipated that the structure would not be able to withstand significant seismic events; which could affect SARP operations if the structural integrity of the bridge was to be compromised. As a result, Alternative 1A would not meet USACE's purpose for the Proposed Action of ensuring the O&M of the SARP, and it would also not meet RCTC's purpose for the Proposed Action of providing the general public an efficient and safe flyover bridge structure that satisfies seismic and roadway design standards; hence, Alternative 1A has been eliminated from further consideration.

2.4.2 Alternative 1B: Direct Connector with Three-Span Section Crossing the Santa Ana River Channel (Two Columns within Channel Lining)

Alternative 1B would generally follow the same flyover bridge alignment and affect the same parcels on Federal lands as the Onsite Alternative; however, eight bridge footings are proposed to be constructed within the Proposal area compared to six columns proposed under the Onsite Alternative. Construction of Alternative 1B would result in two bridge footings south of the existing concrete channel, five footings north of the channel, and one footing on the channel's southern concrete levee (west of SR-71), as illustrated in Appendix A. Compared to the proposed Onsite Alternative, the main distinguishing characteristic of Alternative 1B is the placement of a column on top of the channel's southern concrete levee, instead of a column on top of both the southern and northern levees. The column proposed on the southern levee is identified as Footing #7, as illustrated in Appendix A. The discussion below provides the reasons for the elimination of Alternative 1B from further consideration, including engineering constraints, constructability, and inconsistency with both USACE and RCTC's purpose and need.

Implementation of Alternative 1B would require a single bridge column on top of the Santa Ana River Channel's southern concrete levee to support the flyover bridge structure. In consideration of the maximum span allowed by the Caltrans SDC for a Caltrans Standard Bridge (300 feet), a longer span to allow for a single column atop the southern levee would require a two-span section totaling approximately 525 linear feet in length to cross the channel (as illustrated in Appendix A); which is beyond the maximum allowable span length of 300 feet. This 525-foot span could not be adequately supported by the 12-foot-wide columns and would require a variable-depth segmental box girder or cable-supported structure. These structure types are infeasible because of constructability issues.

Alternative 1B would also require several design exceptions from Caltrans to construct a nonstandard two-span 525-foot section crossing the Santa Ana River Channel. Caltrans would not approve such nonstandard structure design exceptions because the columns may not adequately support the flyover

bridge, especially during seismic events of significant magnitude (6.5 and above on the Moment Magnitude Scale [MMS], according to the USGS). If this design exception is approved and a seismic event is to occur, the flood risk management facility would be affected if the structure's two-span section were to fail and collapse onto vital SARP features such as the concrete channel and spillway downstream of Prado Dam. Given these considerations, Alternative 1B would not be in the best interest of the general public and USACE because it could interfere with the operation of the SARP through potential direct effects to channel hydrology. Alternative 1B would also not meet RCTC's purpose for the Proposed Action, which includes providing the general public an efficient and safe flyover bridge structure that satisfies seismic and roadway design standards. As such, Alternative 1B has been eliminated from further consideration because it does not meet USACE and RCTC's purpose for the Proposed Action.

2.4.3 Alternative 1C: Direct Connector with Single-Span Section Crossing Santa River Channel (No Columns within Channel)

Alternative 1C would be located within the same general area as the Onsite Alternative; however, seven bridge footings would be constructed on Federal lands (illustrated in Appendix A), compared to six columns under the Onsite Alternative; which could potentially result in additional environmental effects within Federal lands. Construction of Alternative 1C would result in two bridge footings south of the SARP concrete outlet channel, and five footings north of the channel. The discussion below characterizes the constraints of Alternative 1C, including potential effects on the SARP flood risk management facility, as well as engineering and constructability constraints.

The direct flyover bridge connector under Alternative 1C would not require bridge columns to be constructed on top of the channel levees or within the concrete channel. Nevertheless, Alternative 1C would require seven columns to be constructed on Federal lands, to avoid column construction atop the levees or within the outlet channel. However, the maximum span length allowed by the Caltrans SDC for a Caltrans Standard Bridge is 300 linear feet, and a longer span to avoid construction of bridge footings within the channel or top of the levees would require a single-span segment of approximately 450 linear feet to cross over the SARP Channel. As illustrated in Appendix A, this section of the flyover structure would be supported by two columns that would be constructed approximately 20 feet outside of the channel levees; however, the required length for this section of the flyover structure would be 450 feet. A 450-foot single-span segment, the direct flyover bridge connector would no longer qualify as a Caltrans Standard Bridge and could not be adequately supported by the 12-foot-wide columns and would require a variable-depth segmental box girder or cable-supported structure. The structure types proposed by Alternative 1C do not meet RCTC's purpose and need or comply with Caltrans standard design requirements, which are dictated by best practices and health and safety considerations.

The interchange configuration proposed under Alternative 1C would require several design exceptions from Caltrans to construct a nonstandard 450-foot single-span bridge segment crossing the Santa Ana River Channel; however, approving the necessary design exceptions would not provide a structurally sound flyover structure for the public. A 450-foot single-span segment is susceptible to potential earthquake-related hazards, which could potentially affect the flood risk management and general O&M activities when the structure collapses onto vital SARP features (e.g., levees, outlet channel, and spillway). This potential event could reduce USACE's capacity to provide effective flood risk management for Orange and Riverside counties; therefore, the type of bridge structure required under Alternative 1C would not be compatible with the SARP due to the risk of structural failure.

Given the constraints discussed above, the interchange structure proposed under Alternative 1C would not meet USACE's purpose for the Proposed Action due to the risks associated with a nonstandard structure collapsing into the SARP Channel during a seismic event, which would not be in the best interest of the general public and USACE. Additionally, Alternative 1C would not meet RCTC's purpose for the Proposed Action because the Proponents would not provide the general public with an efficient and safe

flyover bridge structure that satisfies seismic and roadway design standards. Thus, in light of the aforementioned constraints and limitations, Alternative 1C has been eliminated from further consideration because its design is not consistent with the requirements of USACE and RCTC's purpose for the Proposed Action.

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3.0 ENVIRONMENTAL IMPACTS AND ANALYSIS

3.1 Geology and Soil Quality, Stability, and Moisture

3.1.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment to geological resources were derived from the reports and resources listed in Section 8.0, References. These reports analyzed geological resources within the general location of the Proposal area and were utilized to independently analyze and determine the impacts for the proposed Onsite Alternative. Geology reports analyzed geological resources within the Proposal area as defined in Section 1.5, Location.

Site Geology

The Proposal area is in the southern part of the Chino Basin, which is a broad alluvial area that is drained by the Santa Ana River, approximately 25 miles southeast of the northern boundary of the Peninsular Ranges Geomorphic Province of southern California, which runs several hundred miles south into Baja California.

Basement rocks in the site region are mostly granitic and metamorphic rock, have a wide exposure in the highlands southwest of the site, and are overlaid with sedimentary rocks in many areas. The Proposal area geology is characterized by reddish-brown alluvial fan deposits. No unusual geologic features are present within the area.

Geologic units within Federal lands consist of young axial-channel deposits (Holocene and late Pleistocene) – Slightly to moderately consolidated silt, sand, and gravel deposits. Units are distinctive based on soil profile development and degree of local dissection.

Faults

Like most areas of southern California, the Proposal area is located in a seismically active region. Nearby active faults that may potentially produce significant ground shaking during a major earthquake include the Chino-Central Avenue Fault to the northeast and the Elsinore-Whittier Fault Zone to the southwest. Active faults are defined as those that have had surface displacement within the last 11,000 years. The location of the Onsite Alternative is not located in a currently designated State of California Fault Rupture Hazard Zone.

Site Seismicity

The Proposal area is located within a seismically active region. Several active faults in the region could produce significant ground shaking at the Proposal area. The Chino Section of the Elsinore Fault Zone with a maximum earthquake magnitude of 6.6 is approximately 0.3-mile northeast of the Proposal corridor; the Glen Ivy Section of the Elsinore Fault Zone with a maximum earthquake magnitude of 7.7 is located approximately 0.7-mile southwest of the Project corridor; and the Whittier Section of the Elsinore Fault Zone with a maximum magnitude of 6.9 is located approximately 2 miles west of the Project corridor.

Liquefaction

Liquefaction occurs during ground vibration, such as those from an earthquake, when the increased pore water pressure and reduced inter-particulate effective stress are reduced to zero. Soil will temporarily behave as a viscous fluid and lose its capacity to support structures founded upon it. Existing SARP features within the site are located on dense to very dense underlying soils with the absence of groundwater.

Seiches, Tsunamis, and Mudflows

The Proposal area is approximately 25 miles inland from the Pacific Ocean and is at or above 400 feet above mean sea level (AMSL). Accordingly, the potential for inundation due to tsunamis to affect the Proposal area is considered negligible; therefore, impacts associated with the potential for tsunamis are considered negligible.

The potential for mudflows within drainages located adjacent to SR-91 or SR-71 does exist due to the steep topography and sandy and fine particle soils.

The Santa Ana River no longer poses a major flooding hazard to Corona due to several upstream flood risk management projects, including the Seven Oaks Dam; therefore, the Proposal area has a low potential for a seiche occurrence.

Slope Instability

Slope instability is defined by the potential impacts from seismic shaking. Caltrans Guidelines for Structure Foundation Reports (March 2006) states a seismic coefficient Kh = 1/3 X Horizontal PGA, and no more than 0.2g should be used in a pseudo-static slope stability analysis. A gradient of 2:1 (horizontal to vertical) or flatter is considered stable for embankment slope construction. Hillside slopes borders the existing SR-71.

3.1.2 Potential Geological Impacts

3.1.2.1 Onsite Alternative

Excavated areas within Federal lands affected by the proposed bridge columns are relatively minor and consist of six proposed bridge footing columns at various locations, shown in Figure 2-2 (Footings #5 through #10). Hillside slope grading west of SR-71 would be required to accommodate the realignment of the SB SR-71 and the modification of access driveways, which consists of the removal of 430 cubic yards of soil. Additionally, approximately 678 cubic yards of soil would be used to fill in two valleys, ranging in depth from 10 to 14 feet. These hillside cuts and fills would be made into 2:1 slopes, with benches at appropriate intervals. Retaining walls along the northern Project segment of the SB SR-71 would also be constructed to ensure the stability of the hillside slopes. Potential effects associated with these excavated and fill areas are not anticipated to be significant for the following geological-related conditions.

Faults

Although many active faults that may potentially produce significant ground shaking during a major earthquake are in the Proposal area, the Proposal area is not located in a currently designated State of California Fault Rupture Hazard Zone. Based on known information, the potential of surface fault rupture through the proposed bridge structure is anticipated to be low. The current Proposal footprint is not located on or adjacent to an active fault; nevertheless, Onsite Alternative structures and temporary falsework would be designed in compliance with current Seismic Design Parameters. Therefore, permanent or temporary effects associated with faults are not anticipated to be significant.

Seismicity

Damage could potentially occur in the Proposal area because it is within a zone of major historic earthquakes and relatively high levels of seismicity, corresponding to intensity levels of VIII or higher on the Modified Mercalli Intensity Scale. The Mercalli Scale ranges from an intensity of I (weakest) to a rating of XII (catastrophic). The intensity rating of VIII represents a range of damage for poorly built structures to only slight damage for specially designed structures. Although the Onsite Alternative would be subject to seismicity, the design of roadway features and structures associated with the Onsite Alternative would address any seismic activity effects through compliance with Seismic Design

Parameters. In accordance with those parameters, a permanent steel isolation casing through the levee is also proposed to isolate the levee from potential column movement during a seismic event. This design feature, which serves as a mitigation measure to address potential effects related to seismicity (provided in Appendix B), is illustrated in Figure 2-3. As such, potential effects related to seismicity are not anticipated to be significant.

Liquefaction

Liquefaction occurs during ground vibration, such as those from an earthquake, when the increased pore water pressure and reduced inter-particulate effective stress are reduced to zero. As a result, soil will temporarily behave as a viscous fluid and lose its capacity to support structure founded upon it. Based on the Preliminary Foundation Report (PFR) prepared for the proposed bridge connector structure, the subsurface data indicate medium-dense and dense coarse-grained soils below the historic high groundwater elevations have a low and unlikely potential for liquefaction, respectively; therefore, impacts associated with liquefaction are not anticipated as a result of the Onsite Alternative and temporary falsework.

Seiches, Tsunamis, and Mudflows

Federal lands are located approximately 25 miles inland from the Pacific Ocean and lies at approximately 400 feet AMSL. The potential for inundation due to a tsunami to affect the Proposal area is negligible; therefore, impacts associated with the potential for tsunamis are considered negligible.

Due to the steep topography adjacent to Federal lands and sandy and fine particle soils, the potential for mudflows exists. Due to these conditions, the potential for mudflows within drainages located adjacent to SR-91 or SR-71 does exist. Drainages abutting these freeways could experience high-velocity flows and associated debris; however, drainage improvements, including biofiltration strips/swales, infiltration basins, detention devices, traction sand traps, dry weather flow diversion, and gross solids removal devices (GSRDs), would be implemented where appropriate to ensure that the potential for mudflows would be negligible. Therefore, impacts associated with mudflow are anticipated to be less than significant.

As noted previously, the Santa Ana River no longer poses a major flooding hazard to Corona due to several upstream flood risk management projects, including the Seven Oaks Dam; therefore, the Proposal area has a low potential for a seiche occurrence.

Slope Instability

The Onsite Alternative includes slope-grading work on Federal lands (APN #101-040-004) to accommodate the realignment of SB SR-71. Slope instability is defined by the potential adverse effects from seismic shaking. Caltrans Guidelines for Structure Foundation Reports (March 2006) states a gradient of 2:1 (horizontal to vertical) or flatter is considered stable for embankment slope construction. Existing slopes within the Proposal area fit the criteria for a gradient of 2:1 or flatter or are reinforced with engineered walls. Graded embankments consisting of retaining walls and fill slopes would be constructed as part of the Onsite Alternative. Graded embankments are expected to be stable at a gradient of 2:1. As a result, potential slope instability effects are not anticipated to be significant.

Slope grading activities would be temporary and potential effects are not anticipated to be significant. Minor (less than significant) temporary effects related to slope instability may occur during slope grading activities as slopes are graded at a 2:1 gradient; however, these activities would be temporary, and potential effects related to slope instability are not anticipated to be significant.

Potential permanent or temporary effects associated with the Onsite Alternative and related construction activities are not anticipated to be significant for geology and soil quality, slope stability, or moisture within the Proposal area.

No known fragile, compactable, or unstable soils, or unusual geologic features are present within the proposed Onsite Alternative, nor are special reclamation considerations required. Furthermore, the location of the Onsite Alternative is not on a fault zone. No direct or indirect effects are expected for geology and soil quality, including faults, seismicity, liquefaction, seiches, tsunamis, mudflows, and slope stability, because of the location of the Onsite Alternative, which is found in a stable geologic area.

3.1.2.2 No Action Alternative

Under the No Action Alternative, disturbance of geological resources would not occur on Federal lands because improvements to the SR-91/SR-71 interchange would not be implemented. Because no excavation would take place and no slope-grading would be required to accommodate the realignment of SB SR-71, the No Action Alternative would not result in potential impacts to geological resources. Geological resources on Federal lands would remain in their present condition, and no new structures would be subject to the aforementioned geologic conditions. Moreover, current conditions relating to faults and seismicity would remain the same as existing conditions. Liquefaction would also not pose a hazard because no new bridge footing columns and structures would be constructed on Federal lands. The potential for seiches, tsunamis, and mudflows would also remain negligible with the No Action Alternative. Finally, the degree of slope instability would not be affected because slope-grading activities would not occur. Therefore, the No Action Alternative would not result in potential effects on geological resources.

3.1.3 Avoidance/Minimization Measures

3.1.3.1 Onsite Alternative

Column design shall conform to current seismic design requirements to minimize potential effects to the flood risk management facility (SARP) and geologic conditions. To minimize potential effects associated with seismicity, a permanent steel isolation casing surrounding each of the two columns proposed to be sited on top of the levees is proposed to isolate the levee from potential column movement during a seismic event. Permanent effects would be minimized through the implementation of this design feature, as provided in Appendix B (Measure GEO-9) and as illustrated in Figure 2-3.

3.1.3.2 No Action Alternative

The No Action Alternative would have no effects on geological resources. Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands; therefore, avoidance and minimization measures would not be required.

3.2 Water Resources

Hydrology and Floodplain

Hydrology

The Proposal area is located within the Santa Ana Watershed within the lower Santa Ana River Hydrological Area and within the Santa Ana Narrows hydrologic subarea (801.13). The Santa Ana River Basin is the largest watershed in southern California, with a drainage area of approximately 2,670 square miles with more than 50 contributing tributaries and an annual average rainfall ranging from 12 to 18 inches. The Santa Ana River extends approximately 96 miles from its headwaters to where it drains into the Pacific Ocean. The headwaters of the Santa Ana River and tributaries are located in the San Gabriel and San Bernardino mountains to the north and the San Gorgonio and San Jacinto mountains to the east.

From the San Bernardino and San Gabriel mountains, the Santa Ana River flows through the Santa Ana Valley, then through the Prado Basin and a narrow pass in the Santa Ana Mountains. The Santa Ana River Watershed is divided into an upper and lower watershed at Prado Dam. From the Santa Ana Mountains, the Santa Ana River flows in a southwesterly direction to the Pacific Ocean.

The Santa Ana River, Reach 2, from 17th Street in Santa Ana to Prado Dam, parallels SR-91 to the north. Drainages that enter the Santa Ana River north of the Proposal area include Aliso and Brush canyons from the Chino Hills to the north, Wardlow Wash from the east, and Fresno, Coal, and Gypsum canyons, as well as Green River Creek, from the south. These drainages contribute low amounts of flow to the Santa Ana River due to limited amounts of rainfall and soils with high infiltration rates.

Prado Dam is located approximately 950 feet to the northeast side of the Proposal area and regulates flow between the upper and lower watersheds, reducing the chance of floods by storing and releasing stormwater over a longer period of time. The Prado Dam is operated under a complex set of procedures agreed to by many agencies tasked to minimize downstream flood damage while maximizing available surface water for groundwater recharge program efforts and to minimize environmental effects to endangered species in wetland areas located above the dam. Prado Dam was originally completed in 1941. As part of the Prado Dam Project the existing dam embankment was raised 28.4 feet to an elevation of 594.4 feet. In addition, new outlet works have been constructed, which increase the maximum discharge capacity from 9,000 to 30,000 cfs. Once completed, Prado Dam improvements would also include a raised spillway crest; new levees and dikes; and increased reservoir area.

The main stem of the Santa Ana River is divided into six reaches. The Proposal area is located in Reach 2, which is responsible for carrying all of the upstream flow from the Santa Ana Canyon to Orange County. Annual flows through Reach 2 vary greatly in any given year. There is a limited winter/spring season when flows are at their peak, and the flow control operations at Prado Dam and the new Seven Oaks Dam lower the flood peaks below the 100-year flood levels. These flows are then released over a period of several days after the flood runoff has subsided. A 10-year (1988-1998) average monthly base flow is estimated at 175 cfs during the months of August to October. Maximum daily flow is estimated at 6,210 cfs during those months. The peak flow for the period of record (1941-2001), from the USGS gauge 11-0740.00 below Prado Dam, was 7,440 cfs on February 21, 1980.

Receiving water bodies near the Proposal area are the Santa Ana River, Aliso Creek, Fresno Wash, Wardlow Wash, and the Prado Basin. The Santa Ana River and adjacent areas are known to be part of the 100-year floodplain that is controlled by the Prado Dam.

Wetlands and Other Waters

The CWA (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The CWA regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purpose of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (i.e., water-loving) vegetation, wetland hydrology, and hydric soils (i.e., soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Within the Proposal area, thirteen (13) features are potentially jurisdictional non-wetland or wetland waters. These thirteen features total 4.30 acres of non-wetland waters and 22.60 acres of wetland waters within Federal lands. Non-wetland and wetland features are illustrated in Figure 3-1. Table 3-1 summarizes the acreages of potential non-wetland and wetland waters of the U.S. within Federal lands in the Proposal area.

Table 3-1: Waters of the United States within Federal Lands (APNs 101-140-006, 101-040-010, and 101-040-004)

Jurisdictional Feature Identification	Non-Wetland Waters (Acres)	Wetland Waters (Acres)
Feature D (Santa Ana River)	3.07	0.75
Feature E	n/a	0.33
Feature I	0.24	n/a
Feature J	0.12	n/a
Feature K	0.08	n/a
Feature L	0.04	n/a
Feature M (Prado Basin)	n/a	21.52
Feature N	0.11	n/a
Feature O	0.20	n/a
Feature P	0.33	n/a
Feature Q	0.04	n/a
Feature R	0.05	n/a
Feature S	0.02	n/a
TOTAL	4.30	22.60

Source: Parsons. 2013.

Water Quality and Stormwater Runoff

The Santa Ana Regional Water Quality Control Board (RWQCB) designates beneficial uses for waters in the Santa Ana River, Reach 2, in its Basin Plan (RWQCB, Updated February 2008). Existing designated beneficial uses for the Santa Ana River, Reach 2, include municipal and domestic supply, agricultural supply, industrial supply, groundwater recharge, hydropower generation, water contact recreation, non-contact water recreation, warm freshwater habitat, limited warm freshwater habitat, wildlife habitat, protection of rare and endangered species, spawning, and cold freshwater habitat. Existing designated beneficial uses for Aliso Creek include municipal and domestic supply, groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat, and protection of rare and endangered species, spawning, and cold freshwater habitat. As identified in the Basin Plan, neither the Santa Ana River, Reach 2, nor Aliso Creek are identified as areas of Specific Biological Significance.

Within the area of the Onsite Alternative, there are no water bodies designated as being impaired under Section 303(d) of the CWA by the SWRCB, nor are there any water bodies with established total maximum daily loads (TMDLs) in effect at this time; however, stormwater running off of SR-91 discharges directly to the Santa Ana River near the Onsite Alternative.

Surface and Groundwater Pollution Sources

Surface water quality in the Santa Ana River and tributary drainages exhibit degraded surface quality due to uncontrolled pollutants from non-point sources (NPS). NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, depositing them into lakes, rivers, wetlands, coastal waters, and even underground sources of drinking water. These pollutants include:

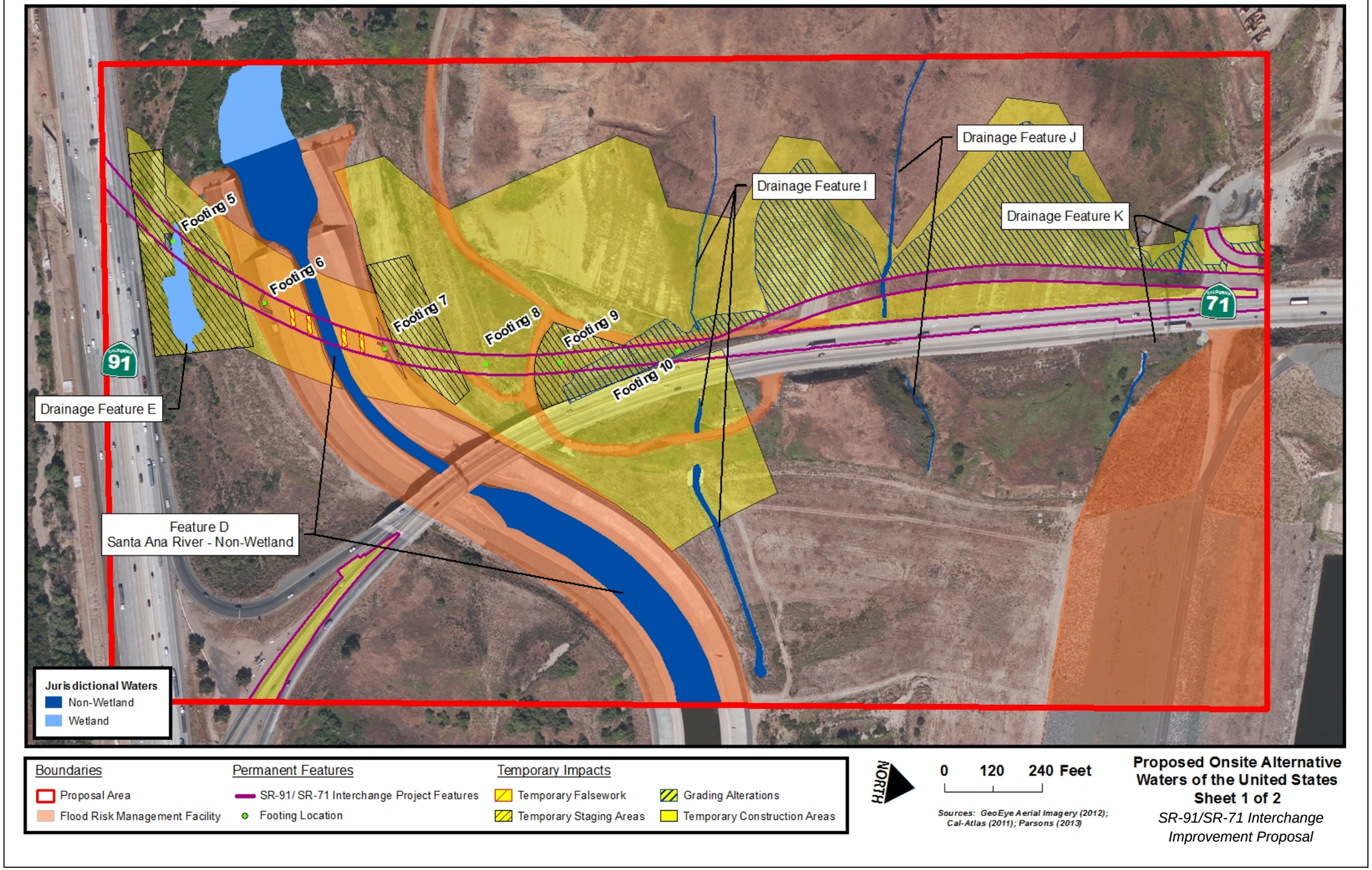

Figure 3-1: Waters of the United States (page 1 of 2)

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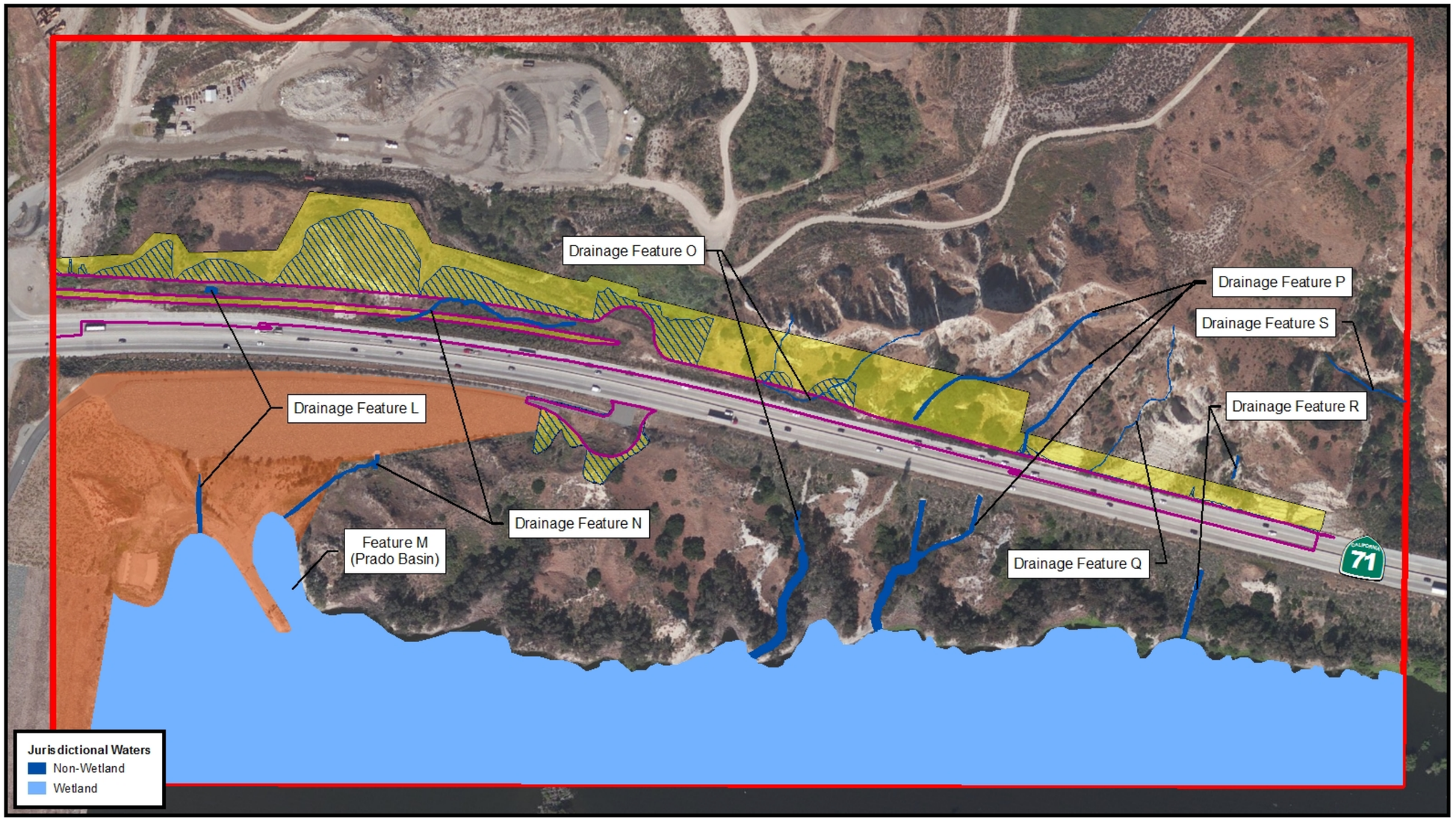

Figure 3-1: Waters of the United States (page 2 of 2)

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- Excess fertilizers, herbicides, and insecticides from agricultural lands and residential areas
- Oil, grease, and toxic chemicals from urban runoff and energy production
- Sediment from improperly managed construction sites, crop and forest lands, and eroding stream bank
- Salt from irrigation practices and acid drainage from abandoned mines
- Bacteria and nutrients from livestock, pet wastes, and faulty septic systems

Atmospheric deposition and hydro-modification are also sources of NPS pollution. Surface waters on and in the immediate area of the Proposal area experience similar NPS effects from urbanized and agricultural land uses located both upstream and onsite.

Point-Source Pollution

The National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Individual residences that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. In California, the NPDES permit program is administered by the local RWQCB.

Groundwater

Groundwater in the Santa Ana Watershed is highly controlled by the geology of the area, both by the configuration of bedrock and by the extensive faulting. Most groundwater basins in this area are unconfined; however, the variable depth to bedrock, and the presence of faults cause pressure zones where water flows towards (or to) the ground surface. In general, groundwater flows in the same direction as surface waters from the mountains in the east/north to the Pacific Ocean in the west.

The primary source of groundwater in the Proposal area is the Santa Ana River, which feeds the underground aquifers in the area. Secondary sources of groundwater include springs and runoff generated from the hills south of SR-91. The aquifer nearest the Proposal area is the Talbert Aquifer, which extends through Santa Ana Canyon, to a depth of approximately 100 feet below ground surface. This area is the primary groundwater recharge zone for the central area of the Santa Ana River Basin.

The groundwater quality is directly affected by surface water from Prado Basin. The water from Prado Basin is not used directly for drinking water, but it is recharged into the regional aquifer for groundwater withdrawal. Dissolved metal concentrations are generally low, with the exception of iron and manganese. Values for nitrogen are sometimes high as a consequence of fertilizer use and Wastewater Treatment Plant discharges.

3.2.1 Potential Environmental Impacts

3.2.1.1 Onsite Alternative

Hydrology

The proposed Onsite Alternative is anticipated to result in minor permanent modifications to onsite hydrology and surface flows, and would increase the amount of impervious surface area within Federal lands. According to the engineering and mapping data, the bridge columns, access driveway modifications and other features of the Onsite Alternative are anticipated to result in a 4.2-acre total increase of impervious surface on Federal lands.

The two proposed bridge columns located within the flood risk management facility would be constructed on top of the Santa Ana River Channel levee. These two columns are not anticipated to increase the total impervious surface area because the top of the existing levees, where the columns are proposed to be constructed, are currently constructed with concrete. The four other proposed bridge columns and its adjoining features (bridge Footings #5 and #8 through #10) are anticipated to marginally increase the total

impervious surface by 0.08-acre. In addition, the proposed realignment of SR-71 and the modification of access driveways would result in 4.1 acres of additional pavement.

Note that the total area of the Lower Santa Ana River Watershed is 32,112 acres. An increase of 4.2 acres is not considered significant relative to the large size of the watershed. Furthermore, with implementation of treatment best management practices (BMPs), as described in Appendix B, storage capacity of runoff from impervious surfaces would be provided, and the change in flow velocity in Pre- and Post-Onsite Alternative conditions would be minimal. There would be no exceedance of the capacity of the existing or planned stormwater drainage systems, and effects to the stormwater drainage system are not anticipated to be significant. Additionally, with the implementation of various design pollution prevention BMPs in conjunction with treatment BMPs, the existing drainage pattern of the area would not be altered in a manner that would result in substantial erosion, sedimentation, or flooding within or downstream of the Proposal area; therefore, permanent effects associated with surface hydrology are not anticipated to be significant.

Temporary Falsework Construction

Temporary falsework construction would be required to construct a portion of the bridge spanning over the flood risk management facility. The portion of the bridge spanning the channel could be constructed within the 6-month-long dry season from March 10 to October 1. USACE has established controlled dam release parameters (30,000 cfs) to be accommodated by the design of the falsework in the channel. A preliminary falsework layout has been developed, accompanied by preliminary hydraulic calculations to confirm the layout feasibility of constructing the flyover, as shown in Figure 3-2.

The results of the two preliminary Hydraulic Engineering Centers River Analysis System (HEC-RAS) hydraulic analyses based on this preliminary layout using 4-foot temporary steel pipe bents are shown in Table 3-2.

Table 3-2: Hydraulic Analysis Results

Discharge (cfs)	Water Surface Elevation (ft)	Channel Invert Elevation (ft)	Water Height (ft)	Water Velocity (ft/s)	Pressure on Falsework (ksf)	Force on Temporary Bent (Kip)
30,000	467.39	453.16	14.23	12.44	0.154	8.80
10,000	460.45	453.16	7.29	8.93	0.079	2.32

The temporary lateral loads on the falsework supports can be accommodated by anchoring the falsework supports into the channel lining and would not require penetration of the temporary supports through the channel lining. The vertical load would be spread at the bottom to a wide enough area to keep the pressure on the channel subgrade and under drains to a minimum. The channel lining would be returned to its original state once the falsework is removed.

Summary of Hydraulic Analyses for Temporary Falsework Construction

Concrete Channel: The results of the hydraulic analyses for existing (Pre-Onsite Alternative) and post-construction (Post-Onsite Alternative) conditions within the concrete trapezoidal channel were compared to assess the water surface impacts. The comparison indicates that the temporary falsework would result in an increase in water surface of 0.8 and 2 feet on the upstream side of the bridge for the 10,000 and 30,000 cfs flow rates, respectively. Design storm flow velocities with the proposed falsework placed in the channel vary from 9 to 12 feet per second (fps). The top of channel in this section is at elevation 472, while the water surface for the 30,000-cfs flow is at 465.3 and 467.4 feet (with freeboard of 6.7 and 4.6 feet) upstream of the proposed bridge crossing for the existing condition and construction condition, respectively. This is well within the freeboard requirements set forth by USACE for structures of this type. The results are provided in Appendix F.

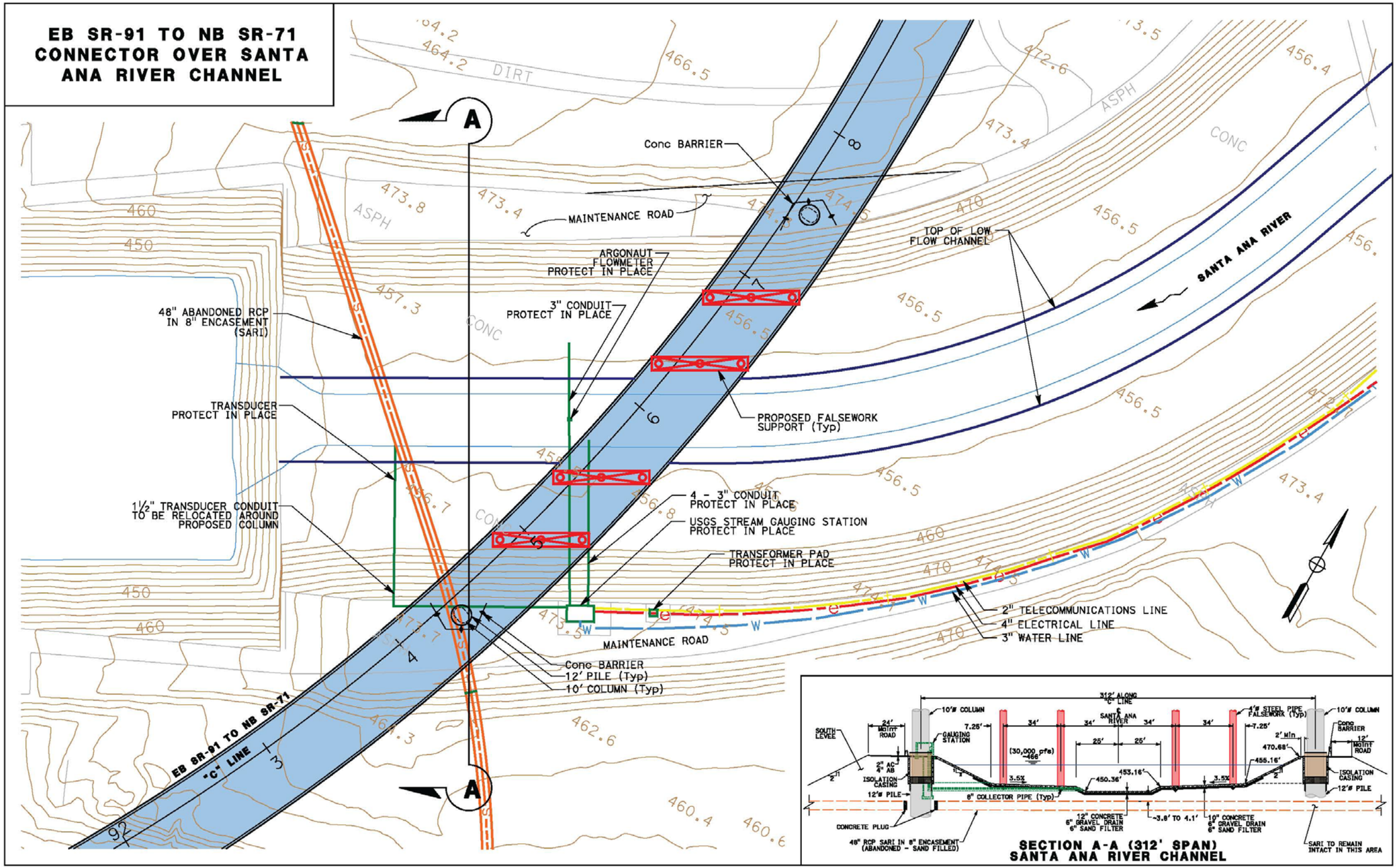

Figure 3-2: Proposed Temporary Falsework within the Santa Ana River Channel Hydraulics

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Natural Channel: The results of the hydraulic analyses for Pre-Onsite Alternative and Post-Onsite Alternative conditions within the natural low-flow channel were compared to assess the water surface impacts and scour. The comparison indicates that the 10-foot-diameter column would result in an increase in water surface of 0.19-foot on the upstream side of the bridge for the maximum 300-cfs flow rate (see Section 1.3 for flow rate estimations). This increase diminishes to zero within 175 feet upstream of the bridge. Design storm flow velocities in the vicinity of the bridge vary from 2 to 7 fps. Total scour is estimated at approximately 7.7 feet. The overall width of scour is estimated at 40 feet. Proposed mitigation would be placement of a 40- by 40-foot rip rap pad around the foundation of the pier to eliminate scour potential at Bent #5. The results are provided in Appendix F.

A preliminary schedule indicates that construction of the portion of the bridge spanning the channel is feasible during the dry season (see Appendix F). Work within the channel would be completed within the dry season (March 10 through October 1). If construction of the span over the Santa Ana River cannot be completed within a single dry season, then the falsework would be designed to withstand the maximum discharge rate of 30,000 cfs. The schedule to construct the full length of the EB SR-91 to NB SR-71 connector would encompass two dry seasons, allowing for construction of the superstructure in the second dry season if there are any delays associated with the column foundation construction.

The results of the hydrology analyses for the temporary falsework indicate that the structure could withstand flow rates up to 30,000 cfs. Once construction of the bridge structure spanning over the flood risk management facility is completed, the falsework would be removed, and the area would be restored to Pre-Onsite Alternative conditions; therefore, temporary effects to the hydrology of the Santa Ana River Channel are not anticipated to be significant.

Wetlands and Other Waters

During construction of the Onsite Alternative, USACE jurisdictional waters and wetlands would be temporarily impacted within Federal lands. As indicated in Table 3-3 and Figure 3-3, construction of the Interchange Proposal would result in temporary impacts to 0.18-acre of non-wetland waters and 0.30-acre of wetland waters. Total permanent effects to wetland waters consist of 0.02-acre and 0.22-acre of non-wetland waters.

Table 3-3: Impacts to Jurisdictional Waters within Federal Lands (APNs 101-140-006, 101-040-010 and 101-040-004)

Jurisdictional Feature Identification	Temporary Impacts (Acres)	Permanent Impacts (Acres)
Feature E	0.30	0.02
Feature I	0.03	0.08
Feature J	0.02	0.03
Feature K	0.01	0.02
Feature L	n/a	0.01
Feature N	0.02	0.07
Feature O	0.03	0.01
Feature P	0.06	n/a

The Interchange Proposal is anticipated to produce minor discharge of fill materials into waters of the U.S., which requires a Nationwide permit (NWP) prior to construction of the Onsite Alternative. Based on these findings, the Onsite Alternative would require an NWP from USACE pursuant to Section 404 of the CWA, Section 401 Water Quality Certification from the RWQCB, and a Section 1600 Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW) pursuant to Section

1600 of the California Fish and Game Code. All three permits would be requested by RCTC for the overall SR-91/SR-71 Interchange Improvement Project, which includes the features and activities associated with the Onsite Alternative.

To offset impacts to jurisdictional resources, the Proponents would adhere to the mitigation conditions of the approved USACE Section 404 NWP permit, which would include mitigation of impacts to wetland and non-wetland waters.

Water Quality and Stormwater Runoff

With a permanent increase in impervious surface area, the long-term potential for pollutants, such as oil and grease, to enter receiving waters also increases. Stormwater treatment BMPs are proposed to be incorporated into the Onsite Alternative design to minimize impacts to water quality from Post-Onsite Alternative conditions. Treatment devices would be sized to capture runoff generated by the total impervious surface area within the Proposal area. All nine of the Caltrans-approved treatments BMPs have been considered for this Onsite Alternative. These include biofiltration strips/swales, infiltration devices, media filters, detention devices, traction sand traps, dry weather flow diversion, GSRDs, wet basins, and multi-chambered treatment trains. These treatment BMPs would be incorporated into the Onsite Alternative design, as appropriate, to the maximum extent practicable (MEP). With the implementation of treatment BMPs, potential effects on the water quality of receiving waters are not anticipated to be significant, and the Onsite Alternative would not affect beneficial uses of downstream receiving water bodies.

In the short term, excavation, grading, paving, and other construction activities would expose disturbed and loosened soils to erosion by wind and runoff; therefore, construction could result in increased erosion and siltation. Grading, paving, and construction associated with this Onsite Alternative could create additional sources of polluted runoff because of pollution and waste discharge that can result from construction. Pollutants associated with these activities may include gasoline, oil, rubber particles, herbicides, pesticide, paint, adhesives, tar, other chemicals, and other construction-related waste materials. These contaminants could affect surface water quality downstream of the Onsite Alternative construction site. Given these considerations, construction activities would pose a potentially adverse, although likely minor, impact to water quality if appropriate preventive measures are not employed to avoid and minimize impacts.

Construction in the area could also result in adverse water quality effects related to dewatering. Construction associated with this Onsite Alternative may involve dewatering activities during excavation of the new footings, which in turn could affect surface water quality in the area. Dewatering discharge typically contains a high sediment concentration; thus, there is the potential for significant adverse effects to water quality if appropriate preventive measures are not employed. With the implementation of BMPs during construction however, effects to water resources are not anticipated to be significant.

With implementation of minimization measures, as discussed in Appendix B, potential effects of the Onsite Alternative are not anticipated to be significant with regard to hydrology, floodplain, jurisdictional waters, water quality, or stormwater runoff within the Proposal area.

Surface Hydrology

The Onsite Alternative would result in modifications to onsite hydrology and surface flows, and increase impervious surface by a total of 4.2-acres. Note that the total area of the Lower Santa Ana River Watershed is 32,112 acres. With the implementation of treatment BMPs, storage capacity for runoff would be provided, and the change in flow velocity in Pre- and Post-Onsite Alternative conditions would be minimal. As a result, there would be no exceedance of the capacity of stormwater drainage systems. Additionally, with the implementation of various design pollution prevention BMPs in conjunction with treatment BMPs, the existing drainage pattern of the area would not be altered in a manner that would result in substantial erosion, sedimentation, or flooding within or downstream of the Proposal area. As such, potential effects related to surface hydrology are not anticipated to be significant.

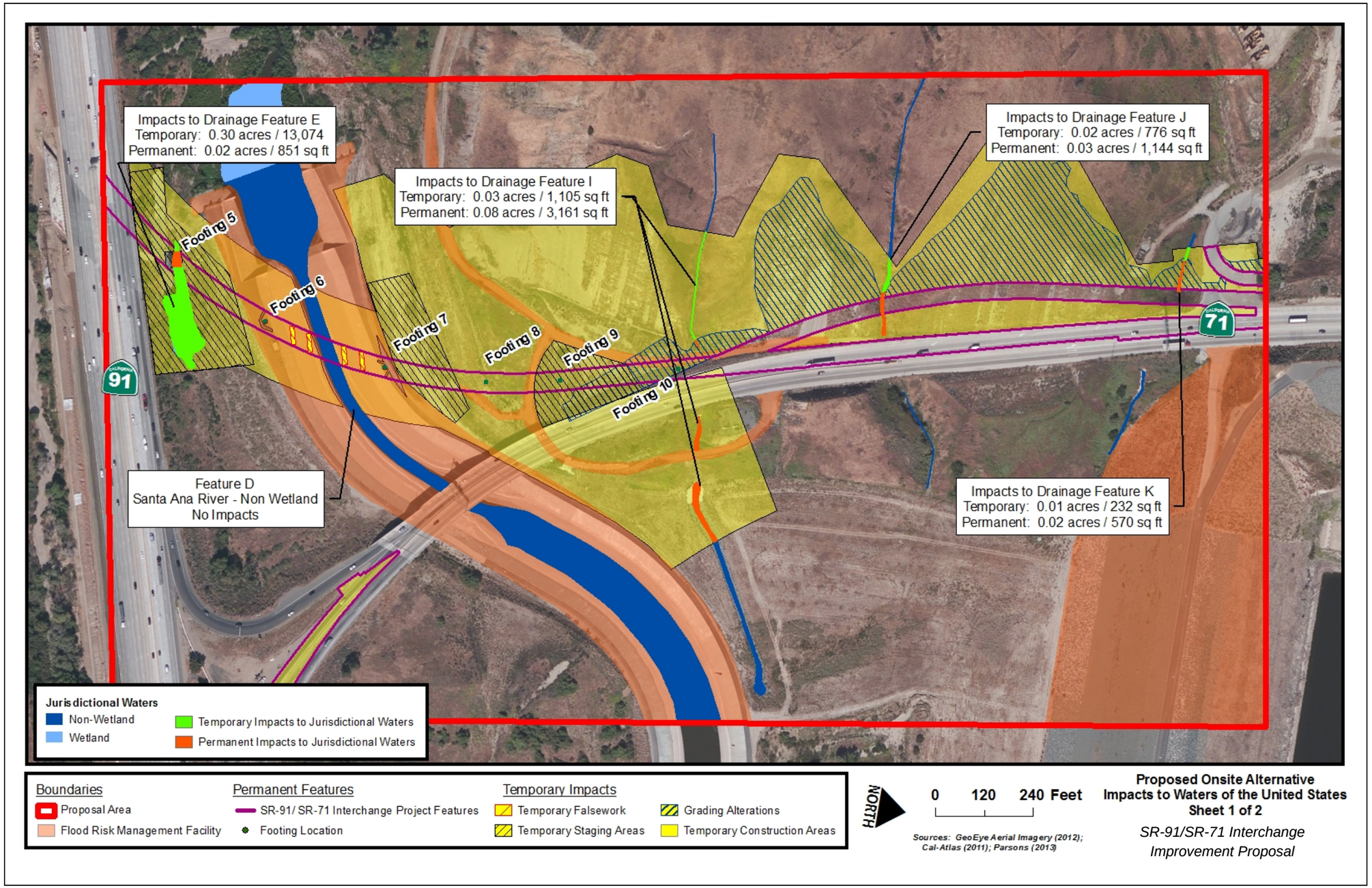

Figure 3-3: Potential Temporary and Permanent Impacts to Waters of the United States (page 1 of 2)

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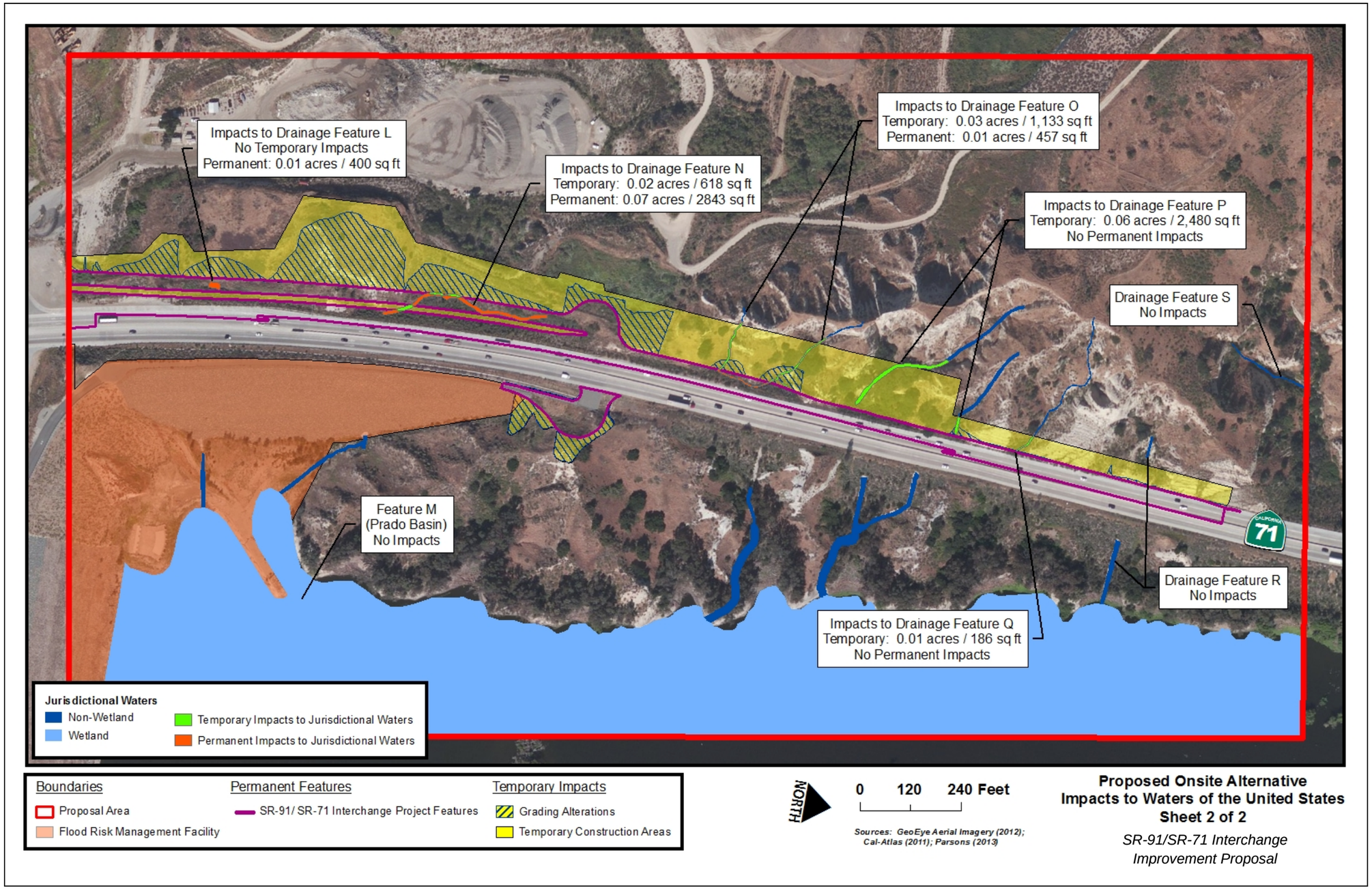

Figure 3-3: Potential Temporary and Permanent Impacts to Waters of the United States (page 2 of 2)

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Wetlands and Other Waters

Permanent and temporary effects to wetlands and non-wetland waters would be mitigated through the conditions of the Section 404 permit from USACE pursuant to Section 404 of the CWA, which would be applied for the overall Interchange Proposal. The Proponents would adhere to the conditions indicated on the permit and implement the appropriate avoidance/minimization measures during construction activities, as well as provide the appropriate mitigation measures to address permanent effects to wetlands and non-wetland waters. Therefore, effects to wetlands and other waters are not anticipated to be significant.

Water Quality/Stormwater Runoff

The Onsite Alternative would also attain a Section 401 Water Quality Certification from the RWQCB and comply with the conditions of the permit to mitigate and minimize potential permanent and/or temporary effects to water quality, which would also be applied for under the overall Interchange Proposal. Additionally, stormwater treatment BMPs are proposed to be incorporated into the design to minimize impacts to water quality from Post-Onsite Alternative conditions. Therefore, effects related to water quality and stormwater runoff are not anticipated to be significant.

Minor Temporary Effects

Minor temporary effects are anticipated to occur within the Santa Ana River Channel due to construction of the falsework; however, the hydraulics analysis indicates that the falsework could withstand the maximum flow of 30,000 cfs. Once construction of the bridge structure spanning over the flood risk management facility is completed, the falsework would be removed, and the area would be restored to Post-Onsite Alternative conditions. Although temporary impacts are anticipated to occur due to construction activities, they are not anticipated to be significant for the flood risk management facility. Additionally, temporary effects to the channel lining or channel itself are not anticipated to be significant.

3.2.1.2 No Action Alternative

Under the No Action Alternative, no direct or indirect effects on water resources would occur because no construction would take place on Federal lands. Baseline conditions for hydrology would be similar as existing conditions. There would be no modifications to onsite hydrology and surface flows and no increase in the amount of impervious surface area that could result in discharge of potential pollutants from stormwater runoff. There would be no changes to existing and/or planned stormwater drainage systems. Because there would be no construction of temporary falsework, changes to the existing flood control channel and/or flow rates would not occur within the Santa Ana River Channel. There would be no temporary impacts to USACE jurisdictional waters and wetlands. The No Action Alternative would have no effects on water resources because proposed improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands.

3.2.2 Avoidance/Minimization Measures

3.2.2.1 Onsite Alternative

The RCTC contractor shall obtain and conform to current Federal, State, and local regulatory requirements to minimize potential impacts to water resources and water quality. Permanent effects would be minimized through construction of maintenance BMPs, pollution BMPs, and treatment BMPs to meet MEP requirements and as detailed in Appendix B.

3.2.2.2 No Action Alternative

Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands; therefore, avoidance and minimization measures would not be required.

3.3 Air Quality

3.3.1 Description of Resource and Baseline Conditions

The air quality analysis provided in this section analyzes effects related to construction of the six bridge columns. The permanent operational air quality effects of the overhead bridge spanning over the flood risk management facility were previously analyzed in the *SR-91 and SR-71 Interchange Improvement Project Air Quality Technical Study.*

Air Quality Conformity

The Federal Clean Air Act (CAA) requires that states produce improvements in air quality over time. This means reducing air pollution to healthful levels in nonattainment areas and developing controls to ensure the air remains healthful in subsequent years. The State Implementation Plan (SIP) process is the means by which states develop a collection of regulations and plans to demonstrate this effort to the Federal government. To meet their transportation planning goals, Metropolitan Planning Organizations (MPO) and Regional Transportation Agencies create long-range plans and programs, such as Regional Transportation Plans (RTP) and Federal Transportation Improvement Programs (FTIP), which include proposed transportation projects. The projects included in these plans and programs must be consistent with (or conform to) the approved SIP, and hence the requirements of the CAA. This process is called Transportation Conformity. If a project would contribute to the violation of a standard, it cannot be included in the conforming plan and cannot be built.

A further demonstration of transportation conformity, at the project level, is required if a project is located in a nonattainment or maintenance area. The basic demonstration of conformity consists of showing that the project is listed in and consistent with a conforming RTP and FTIP. In addition, a microscale or "hot-spot" analysis for conformity is required if a project is located in a nonattainment area for carbon monoxide (CO), and/or particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) and particulate matter less than 10 microns in diameter (PM_{10}). Emission reduction measures may be required to ensure that the project would not cause or contribute to new violations of a standard.

An Air Quality Conformity Analysis, which is incorporated herein by reference for the Interchange Proposal, was completed and forwarded to FHWA on April 19, 2011. The Air Quality Conformity Analysis contains the information that is required by FHWA to make a project-level air quality conformity determination for the greater SR-91/SR-71 Interchange Improvement Project pursuant to Section 6005 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The Proposal area is subject to regional conformity analysis requirements. The results of the analysis indicate that the Interchange Proposal has attained project-level conformity for CO. The Interchange Proposal is also listed in the conforming SCAG 2008 RTP and the 2011 FTIP; therefore, it meets regional conformity requirements. FHWA issued the conformity determination letter on May 10, 2011, indicating that the “SR-91/SR-71 Interchange Improvement Project conforms to the SIP in accordance with 40 CFR Part 93.” The conformity determination includes all features of the Interchange Proposal, including the bridge spanning across the Santa Ana River Channel.

Climatic Conditions

The Proposal area is located in the northwestern portion of Riverside County within the South Coast Air Basin (SCAB), which includes all of Orange County and the non-desert parts of Los Angeles, Riverside, and San Bernardino counties. Air quality regulation in the SCAB is administered by the South Coast Air Quality Management District (SCAQMD). The Basin climate is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills.

Southern California lies in a semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. Warm, dry summers, low precipitation, and mild winters characterize

the overall climate in the SCAB. In the Proposal area, the average daily winter temperature is 54 degrees Fahrenheit (°F), and the average daily summer temperature is 80°F. More than two-thirds of the annual rainfall occurs from December through March, with 90 percent occurring between November and April.

Topography is a major factor influencing wind direction over the Proposal area. The predominant wind direction in the Proposal area is determined by the land-sea breeze circulations. Regional wind patterns are dominated by daytime onshore sea breezes. At night, the wind generally slows and reverses direction, traveling toward the sea. Wind directions are also affected by local canyons, with wind tending to flow parallel to the canyons. Average wind speed in the Proposal area ranges between 4 and 6 mph. There is little seasonal variability in the wind patterns. Occasionally, however, during autumn and winter, “Santa Ana” conditions develop from a high-pressure zone to the east to bring dry, high-velocity winds from the deserts over the Cajon Pass to the coastal region. These winds, gusting to more than 80 mph, can reduce relative humidity to below 10 percent.

The SCAB experiences frequent temperature inversions (i.e., increasing air temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, which allows vertical mixing with the lower layer. This phenomenon is observed in mid to late afternoon on hot summer days, when visible air pollution appears to clear up suddenly. Winter inversions frequently break by mid morning.

The greatest air pollution impacts throughout the Basin occur from June through September. This condition is generally attributed to the large amount of pollutant emissions, increased sunshine, light winds, and shallow vertical atmospheric mixing. This frequently reduces pollutant dispersion, thus causing elevated air pollution levels. Pollutant concentrations in the Basin vary with location, season, and time of day. Ozone (O_3) concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the Basin and adjacent desert. Over the past 30 years, substantial progress has been made in reducing air pollution levels in southern California.

Air Quality Standards

The Federal CAA was passed in 1970 and last amended in 1990. The U.S. EPA administers the CAA, sets the specific air quality and emissions standards and delegates certain responsibilities to other Federal agencies and to the states. The CAA forms the basis for the national air pollution control effort. Basic elements of the act include National Ambient Air Quality Standards (NAAQS) for criteria air pollutants, hazardous air pollutants (HAPs) emissions standards, state attainment plans, motor vehicle emissions standards, stationary source emission standards and permits, acid rain control measures, stratospheric O_3 protection, and enforcement provisions.

The NAAQS have two tiers: primary standards to protect public health and secondary standards to prevent environmental degradation (e.g., damage to vegetation and property, visibility impairment). The EPA has set both primary and secondary standards for the six criteria pollutants: CO, lead, nitrogen dioxide (NO_2), particulate matter (PM10 and PM2.5), and sulfur dioxide (SO_2). Air quality standards that are currently in effect for criteria pollutants are illustrated in Table 3-4. Table 3-5 summarizes potential health effects resulting from exposure to these pollutants.

Under the CAA, EPA has designated planning areas throughout the country. Areas are classified as being in "attainment" for a given pollutant if they meet the prescribed standards. If an area does not meet the standard, it is designated as a "nonattainment" area for that pollutant. Areas that were previously designated as nonattainment areas but have now met the standard–with EPA approval of a suitable air quality plan–are called "maintenance" areas. Table 3-6 provides the Basin’s attainment status with respect to Federal and State standards.

Table 3-4: Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standards [a,b]	
		Primary	Secondary
Respirable Particulate Matter (PM_{10})	24 Hour	150 µg/m³	Same as Primary
	Annual (AAM)	— [d]	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	35 µg/m³ [e]	Same as Primary
	Annual (AAM)	15 µg/m³	
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m³)	—
	1 Hour	35 ppm (40 mg/m³)	
Nitrogen Dioxide (NO_2)	Annual (AAM)	0.053 ppm (100 µg/m³)	Same as Primary
	1 Hour	—	
Sulfur Dioxide (SO_2)	Annual (AAM)	0.030 ppm (80 µg/m³)	—
	24 Hour	0.14 ppm (365 µg/m³)	—
	3 Hour	—	0.5 ppm (1,300 µg/m³)
	1 Hour	—	—
Visibility-Reducing Particles	8 Hour	No Federal Standards	
Sulfates	24 Hour		
Hydrogen Sulfide	1 Hour		
Vinyl Chloride	24 Hour		

[a] National standards (other than O_3, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[b] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to these reference conditions; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[c] The new standard of 0.075 ppm (previously 0.08 ppm) was adopted on March 12, 2008, and became effective in June 2008.

[d] The annual standard of 50 µg/m³ was revoked by the United States Environmental Protection Agency (EPA) in December 2006 due to lack of evidence linking health problems to long-term exposure to coarse particulate pollution.

[e] Based on 2004-2006 monitored data, EPA tightened the 24-hour standard of $PM_{2.5}$ from the previous level of 65 µg/m³. The updated area designation will become effective in early 2010.

[f] Final rule for the new Federal standard was signed October 15, 2008.

AAM – annual arithmetic mean; mg/m³ – milligrams per cubic meter; µg/m³ – micrograms per cubic meter; ppm – parts per million

Source: CARB, 2008.

Table 3-5: Health Effects Summary for Air Pollutants

Pollutant	Sources	Primary Effects
Nitrogen Dioxide (NO_2)	Motor vehicle exhaust; high temperature; stationary combustion; atmospheric reactions.	Aggravation of respiratory illness; reduced visibility; reduced plant growth; formation of acid rain.
Carbon Monoxide (CO)	Incomplete combustion of fuels and other carbon-containing substances, such as motor vehicle exhaust; and natural events, such as decomposition of organic matter.	Reduced tolerance for exercise; impairment of mental function; impairment of fetal development; impairment of learning ability; death at high levels of exposure; aggravation of some cardiovascular diseases (angina).
Particulate Matter (PM_{10} and $PM_{2.5}$)	Fuel combustion in motor vehicles, equipment, and industrial sources; construction activities; industrial processes; residential and agricultural burning; atmospheric chemical reactions.	Reduced lung function; aggravation of the effects of gaseous pollutants; aggravation of respiratory and cardio-respiratory diseases; increased cough and chest discomfort; soiling; reduced visibility.
Sulfur Dioxide (SO_2)	Combustion of sulfur-containing fossil fuels; smelting of sulfur-bearing metal ores; industrial processes.	Aggravation of respiratory and cardiovascular diseases; reduced lung function; carcinogenesis; irritation of eyes; reduced visibility; plant injury; deterioration of materials (e.g., textiles, leather, finishes, coating).

Source: EPA, 2006.

Table 3-6: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 (1-hour)	Nonattainment	Revoked June 2005
O_3 (8-hour)	Nonattainment	Extreme Nonattainment[1]
PM_{10}	Nonattainment	Serious Nonattainment[2]
$PM_{2.5}$	Nonattainment	Nonattainment[3]
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance
All others	Attainment/Unclassified	Attainment/Unclassified

[1] Effective June 2010, the federal 8-hour O_3 nonattainment status was changed to extreme with an attainment date of 2024.

[2] In October 2006, the EPA, in its final rule revision, eliminated the annual PM_{10} standard.

[3] The $PM_{2.5}$ nonattainment designation is based on the 1997 standard. In 2006, the EPA revised the 24-hour standard. The 2006 $PM_{2.5}$ new standard of 35 $\mu g/m^3$ applies 1 year after the effective date of the new designation (April 2010).

$\mu g/m^3$ = micrograms per cubic meter

CO = carbon monoxide

EPA = United States Environmental Protection Agency

NO_2 = nitrogen dioxide

O_3 = ozone

$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter

PM_{10} = particulate matter less than 10 microns in diameter

SCAQMD = South Coast Air Quality Management District

Source: California Air Resources Board (ARB), http://www.arb.ca.gov/desig/desig.htm (2010).

Sensitive Receptors

Some population groups, such as children, the elderly, and acutely and chronically ill persons, especially those with cardiorespiratory problems, are considered more sensitive to air pollution than others. Sensitive receptor locations, as defined by SCAQMD (2006), include schools, residential areas, day-care centers, convalescent homes, hospitals, and rehabilitation centers. Residential areas are considered

sensitive to air pollution because residents, including children and the elderly, tend to be at home for extended periods of time, resulting in sustained exposure to pollutants. The nearest residential land uses adjacent to the Onsite Alternative include the following:

- North of SR-91: East of the Green River Road ramps, there are residential uses, the closest of which to the field investigation site is located approximately 220 feet north of the SR-91 off-ramp to Green River Road. Farther east, west of SR-71, the land is undeveloped, while east of SR-71, the land consists of the Prado Dam flood risk management area (Federal lands).
- South of SR-91: Along the top of the hills, the land use is primarily residential. The closest residences to the Proposal area are located approximately 650 feet south of the EB SR-91 on-ramp from SR-71.

The closest school to the Proposal area is Prado View Elementary School, which is located approximately 0.8-mile southeast of the Federal lands. The nearest child-care facility is Children's Montessori Center, which is located approximately 0.87-mile southeast of the Federal lands. The nearest hospital/medical clinic is Corona Regional Medical Center, which is located approximately 3.5 miles southeast of Federal lands. The nearest park is Ridgeline Park, which is located approximately 0.7-mile south of Federal lands.

3.3.2 Potential Air Quality Impacts

3.3.2.1 Onsite Alternative

Air Quality Analysis

Results of Air Quality Analysis Conducted for the Greater Interchange Proposal

According to the Air Quality Technical Study conducted for the greater Interchange Proposal, the primary source of air pollutant emissions generated will be from motor vehicles traveling along the Interchange Proposal segments on SR-91, SR-71, and the connector ramps within the Proposal area. To determine the regional direct operational impact, criteria pollutant emissions from vehicles traveling in the area were estimated and compared with the No Build Alternative for opening year and horizon year 2035. Average annual daily trips (AADT), average speed on each segment, and peak-hour traffic data for the No Build and Build Alternatives were provided by the overall interchange Traffic Study (Parsons, 2008). Emission factors were obtained using EMFAC2007 model (CARB, 2007). The emission factors selected from the EMFAC2007 results were based on the projected average speed for each of the considered scenarios, per the traffic study. The results are summarized in Table 3-7. As shown, the net increase of Project operational emissions relative to the no-build conditions would be below the SCAQMD daily thresholds for all criteria pollutants, except for CO and nitrogen oxides (NO_X) daily emissions during opening year. During the horizon year 2035, the net change in daily emissions would be below the SCAQMD thresholds for all criteria pollutants.

Table 3-7 also shows that the Interchange Proposal's emissions compared to the existing condition (i.e., 2007 emissions) decrease for CO, NO_X, and VOC; and slightly increases for SO_2 during the future analyzed years. Because the re-entrained road dust emissions are considered in calculation of directly emitted particulates, emissions of PM_{10} and $PM_{2.5}$ show a relatively small increase in the future analyzed years compared with the 2007 emissions (approximately 18 tons PM_{10} and 4 tons $PM_{2.5}$, compared with 2007 emissions). The increases compared with the 2007 base year are well below the NEPA-based threshold of 100 tons per year (established under 40 CFR 93.153, required for conformity finding), as well as SCAQMD daily operational thresholds; therefore, the air quality effects of Project operation are not anticipated to be significant with regard to regional air quality. Furthermore, because the Project has been included in the regional emission budget calculations for the FTIP, the Project operational emissions remain within the regional acceptable levels through the horizon year and will not cause violation of ambient air quality standards (AAQS) and will not delay SIP attainment goals.

Table 3-7: Summary of Operational Emissions

Year	Alternative	ROG	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Daily Average (lbs/day)							
2007	Existing	124	2,483	620	3	170	45
Opening Year	No Build	74	1,398	359	3	200	49
	Build	107	2,028	513	4	281	69
	Project Increment	33	630	153	1	81	20
	Net change from 2007	-17	-455	-108	2	110	23
Horizon Year 2035	No Build	36	656	133	4	220	50
	Build	44	815	167	4	281	64
	Project Increment	8	159	34	1	61	14
	Net change from 2007	-80	-1,668	-454	2	110	19
	SCAQMD Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*
Annual Average (tons/year)							
2007	Existing	20.5	411.1	102.7	0.4	28.2	7.4
Opening Year	No Build	12.2	231.5	59.5	0.5	33.1	8.1
	Build	17.7	335.7	84.9	0.7	46.6	11.4
	Project Increment	5.5	104.2	25.4	0.2	13.5	3.3
	Net Change from 2007	-2.8	-75.4	-17.9	0.3	18.4	4.0
Horizon Year 2035	No Build	6.0	108.5	22.0	0.6	36.4	8.4
	Build	7.3	134.9	27.6	0.7	46.5	10.6
	Project Increment	1.3	26.4	5.6	0.1	10.0	2.2
	Net Change from 2007	-13.2	-276.2	-75.1	0.3	18.3	3.2

Notes: Exceedance from SCAQMD Threshold is shown in **bold**.

Exhaust emissions are calculated using emission factors from EMFAC2007, at the projected average speed of each roadway segment within the study area (from Traffic Study).

ADT and average speed data are summarized in Appendix A of the Air Quality Report.

The calculation worksheets are included in Appendix B of the Air Quality Report.

Source: Parsons 2010.

Air Quality Analysis for the Onsite Alternative

The operational analysis completed for the greater Interchange Proposal indicates that air quality effects associated with the SR-91/SR-71 interchange improvements are not anticipated to be significant. The overall realignment of the SR-91/SR-71 interchange is anticipated to reduce operational emissions by enhancing traffic operations within the Proposal area by reducing vehicle idling along SR-91 and SR-71.

A qualitative air quality analysis is provided below to analyze potential effects of specific features of the Onsite Alternative. Adverse effects on air quality are determined if they would exceed any ambient air quality standard, contribute substantially to an existing air quality violation, or expose sensitive receptors to substantial pollutant concentrations.

Permanent Air Quality Effects of Onsite Alternative

The features of the Onsite Alternative are not anticipated to exceed any ambient air quality standard, contribute substantially to an existing air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The proposed six flyover bridge columns would not generate operational

emissions; therefore, this feature of the Onsite Alternative would not result in permanent air quality effects. Other permanent features of the Interchange Proposal, such as hillside grading, driveway access modification, and wildlife corridor enhancement, would not produce operational emissions; hence, no permanent air quality impacts are anticipated.

Temporary Air Quality Effects of Onsite Alternative

Construction activities have the potential to create air quality impacts through the use of heavy-duty construction equipment within the construction site and through vehicle trips by construction workers traveling to and from the Proposal area. In addition, fugitive dust emissions would result from earthwork (e.g., excavation, demolition) and onsite construction activities. Off-road (onsite) mobile source emissions include CO, NO_X, VOCs, directly emitted particulate matter (PM_{10} and $PM_{2.5}$), and toxic air contaminants (TACs) such as diesel exhaust particulate matter. O_3 is a regional pollutant that is derived from NO_X and VOCs in the presence of sunlight and heat, and it would result from the use of construction equipment such as excavators, bulldozers, and loaders. During the finishing phase, paving operations and the application of architectural coatings and other building materials would release reactive organic compounds and off-gassing products (e.g., paints, and asphalt). Construction activities associated with the Onsite Alternative would be temporary and would last the duration of construction (24 months).

SCAQMD is the air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties; therefore, the significance thresholds provided by SCAQMD in the *CEQA Air Quality Handbook* (Handbook) serve as the primary basis for evaluating potential air quality construction impacts. Based on criteria set forth in the Handbook, the following significance thresholds were used in this study to determine the significance of the air quality impacts of the Interchange Proposal.

Table 3-8 outlines the threshold criteria recommended by SCAQMD for use in evaluating the effects of generated emissions on existing air quality and potential violations of standards and plans.

The Roadway Construction Emissions Model (Version 7.1.2, 2012), provided by the Air Quality Management District (AQMD) was used to calculate the predicted emissions during construction of the Onsite Alternative. Construction emissions are based on assumptions on the type of machinery that would be utilized during construction of the entire Interchange Proposal, which includes activities within the Proposal area. Calculations of construction emissions within the Proposal area could not be accurately isolated by itself due to equipment being utilized in other areas outside of the Proposal area. Based on the latest design plans of the Interchange Proposal, the following construction equipment are assumed to be utilized for construction of the Interchange Proposal:

- Tractor (crawler) with dozer
- Tractor (wheel) with backhoe and loader
- Drill rig
- Excavator
- Front-end loader
- Cement truck
- Bucket truck (for transport of construction materials)
- Baker tanks
- Rubber tired dozer
- Scrapers
- Cranes
- Graders
- Signal boards
- Plate compactors
- Trenchers
- Pavers
- Paving equipment
- Rollers
- Pumps
- Cement and mortar mixers
- Rough terrain fork lifts
- Air compressors

Table 3-8: SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds[1]	
Pollutant	Construction[1]
NO_2	100 lbs/day
VOC	75 lbs/day
PM_{10}	150 lbs/day
$PM_{2.5}$	55 lbs/day
SO_2	150 lbs/day
CO	550 lbs/day
Toxic Air Contaminants (TACs) and Odor	
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (Project increment)
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402
Ambient Air Quality Standards for Criteria Pollutants[2]	
NO2 1-hour average annual arithmetic mean	SCAQMD is in attainment; Project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)
PM_{10} 24-hour average annual average	 10.4 μg/m³ (construction)[3] & 2.5 μg/m³ 1.0 μg/m³
$PM_{2.5}$ 24-hour average	 10.4 μg/m³ (construction)[3] & 2.5 μg/m³ (operation)
SO_2 1-hour average 24-hour average	 0.25 ppm (state) & 0.075 ppm (federal - 99th percentile) 0.04 ppm (state)
Sulfate 24-hour average	 25 μg/m³ (state)
CO 1-hour average 8-hour average	SCQMD is in attainment; Project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)

[1] Construction Thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).
[2] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[3] Ambient air quality threshold based on SCAQMD Rule 403
KEY:
lbs/day = pounds per day ≥ = greater than or equal to μg/m³ = microgram per cubic meter
ppm = parts per million > = greater than
Source: SCAQMD CEQA Handbook (SCAQMD, 1993).

To determine whether construction activities would produce impacts to air quality, the construction emissions are compared to SCAQMD significance thresholds. If the predicted Onsite Alternative construction emissions exceed the SCAQMD daily construction emissions significance thresholds for any criteria pollutant, then an air quality impact is anticipated to occur. Table 3-9 presents the proposed predicted construction emissions pertaining to NAAQS criteria air pollutants (NO_2, PM_{10}, $PM_{2.5}$, SO_2, and CO), as well as volatile organic compounds (VOC) and compared with SCAQMD significant thresholds for these pollutants (previously presented in Table 3-8).

Table 3-9: Construction Emissions of Criteria Air Pollutants: Compared with SCAQMD Significant Thresholds

	Emissions Pounds Per Day					
	NO_x	VOC	PM_{10}	$PM_{2.5}$	SO_x	CO
Significant Threshold	100	75	150	55	150	550
Predicted Emissions	78	7	54	14	0.1	36
Exceeds Significant Criteria?	No	No	No	No	No	No

Source: Parsons, 2013.

Based on the data presented in Table 3-8, the Onsite Alternative does not exceed any ambient air quality standards, contribute substantially to existing air quality violations, or expose sensitive receptors to substantial pollutant concentrations. Although emissions are predicted for the identified criteria air pollutants as a result of the Interchange Proposal's construction activities, daily predicted emissions are well below the SCAQMD significant thresholds; therefore, there is no predicted exceedance of the significant thresholds under SCAQMD with regard to the Onsite Alternative's construction emissions, and effects on air quality during construction are not anticipated to be significant. Additionally, there would be no anticipated significant air quality impacts to nearby sensitive receptors due to the Interchange Proposal's construction activities because the emission predictions are below the significance threshold and the previously noted distance of sensitive receptors from the Proposal area.

Odors

During construction of the Interchange Proposal, objectionable odors would be mainly related to the operation of diesel-powered equipment and to off-gas emissions during road-building activities, such as paving and asphalting. While construction equipment onsite would generate some objectionable odors primarily arising from diesel exhaust, these emissions would generally be limited to the Onsite Alternative area and would be temporary in nature. Most of the potential sensitive receptors are located at a sufficient distance (approximately 0.5-mile) from the Onsite Alternative area such that objectionable odors would not be experienced. These areas include residential homes to the south and west of the Onsite Alternative area. As such, effects on sensitive receptors due to odors are not anticipated to be significant because receptors are not located within the immediate area of construction machinery.

Toxic Air Contaminants

The potential for TAC emissions during construction of the Onsite Alternative would be related to diesel particulate matter (DPM) emissions associated with heavy equipment operations; however, the significance of health effects from carcinogenic air toxics is based on long-term (70-year lifetime) exposure. According to the United States Environmental Protection Agency (EPA), a lifetime cancer risk is defined as the probability of contracting cancer over the course of a lifetime, which is assumed to be 70 years for purposes of air toxics assessment (EPA, 2013). Given the construction schedule of 2 years, the Onsite Alternative would not result in a long-term (i.e., 70 years) substantial exposure to TAC emissions. As such, potential impacts related to TAC emissions during construction would be less than significant given that sensitive receptors are: not within the immediate area of construction machinery, 0.5-mile away from the Onsite Alternative area, and direct exposure to TAC by these receptors would not occur because the Onsite Alternative area could not be easily accessed by the public.

Mechanized equipment would be used to conduct construction of the Onsite Alternative; however, the operation of heavy machinery is not anticipated to significantly produce effects to air quality or expose sensitive receptors to significant amounts of mobile source emissions. Because of the relatively short duration of construction activities, an incremental increase in emissions is anticipated. This qualitative

construction emissions analysis has concluded that the Interchange Proposal construction would not create significant pollutant emissions. Minimal short-term impacts to air quality may occur during excavation and construction activities; however, minimization measures would be implemented to ensure potential effects to air quality are not significant. Minimization measures are provided in Appendix B.

Asbestos

Although asbestos was identified at three bridge locations in the Onsite Alternative area, these materials are not expected to be disturbed during construction activities. It is unlikely that other construction activities would result in the release of naturally occurring asbestos (NOA). Asbestos sheet packing materials are not expected to be disturbed during construction activities; therefore, potential effects are not anticipated to be significant.

Greenhouse Gas Construction Emissions

Construction of the Onsite Alternative would temporarily contribute locally to greenhouse gas (GHG) emissions (Table 3-10). The increase of local GHG emissions is associated with the combustion of fossil fuel and energy demand related to water conveyance required to facilitate construction activities (e.g., for dust control and for compacting embankment material, subbase, base, and surfacing material). Construction-related emissions and the rate at which water is used can vary substantially from day to day over the construction period depending on the level of activity, the specific mix of construction equipment, and the prevailing weather conditions.

Table 3-10: Greenhouse Gas Construction Emissions

Greenhouse Gas Emissions	Pounds per Day	Total during Construction (Tons)
Methane (CH_4)	0.63	0.39
Carbon Dioxide (CO_2)	7,795	4,849
Nitrous Oxide(N_2O)	0.2	0.12

Source: EMFAC, 2011.

GHG emissions for the Onsite Alternative involve those produced during construction of the Onsite Alternative. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as improved traffic management plans and changes in materials, the GHG emissions produced during construction can be minimized to some degree by longer intervals between maintenance and rehabilitation events.

As discussed above, there may be minor effects to climate change associated with the Interchange Proposal, and there are still many uncertainties with climate change impact assessment; therefore, it is the Proponents' determination that in the absence of further regulatory or scientific information related to GHG emissions and significance thresholds, it is too speculative to make a determination regarding significance of the Interchange Proposal's direct impact and its contribution on the cumulative scale to climate change. The Onsite Alternative is not anticipated to produce operational GHG emissions; therefore, the Onsite Alternative's GHG contribution would only occur within the 2-year construction window. Nevertheless, the Proponents are firmly committed to implementing measures to help reduce the potential effects of the Onsite Alternative. These measures are provided in Appendix B.

Ultimately, the Proponents recognize the concern that carbon dioxide (CO_2) emissions raise for climate change; however, accurate modeling of GHG emissions levels, including CO_2, at the project level is not currently available. No Federal, State, or regional regulatory agency has provided methodology or criteria for GHG emission and climate change impact analysis; therefore, the Proponents are unable to provide a scientific or regulatory-based conclusion regarding whether the Interchange Proposal's contribution to climate change and GHG emissions is cumulatively considerable.

The proposed Onsite Alternative is not anticipated to generate long-term and/or operational air quality effects; however, minor temporary construction air quality effects may occur during construction within Federal lands. Temporary minor effects to air quality resulting from construction would be associated with emissions from construction equipment operations. By complying with all relevant federal, California Air Resources Board (CARB), and SCAQMD rules, regulations, ordinances, and statutes, and by incorporating Caltrans' specifications for addressing construction-related air pollution control, construction air quality effects are not anticipated to be significant. In addition to compliance with regulations and implementation of minimization measures, construction of the Interchange Proposal is not anticipated to exceed SCAQMD criteria air pollutant thresholds. The proposed Onsite Alternative is not anticipated to produce significant effects to air quality and GHG emissions.

3.3.2.2 No Action Alternative

The No Action Alternative would not result in measurable effects on the region's air quality because no construction would occur on Federal lands; therefore, there would be no temporary or permanent effects to air quality resulting from construction activities associated with construction of bridge columns and slope grading west of SR-71. Furthermore, there would be no increase in the emissions of criteria air pollutants, odors, TACs, asbestos, or GHGs that could be attributed to construction activities.

3.3.3 Avoidance/Minimization Measures

3.3.3.1 Onsite Alternative

Most of the construction air quality effects are short term in duration (approximately 2 years), and are not anticipated to be significant. Implementation of the appropriate measures would reduce any potential air quality impacts resulting from construction activities. Compliance with applicable rules and regulations, as presented in Appendix B, is considered part of the Interchange Proposal. In addition to the SCAQMD rules presented in Appendix B, the mitigation measures AQ-1 and AQ-2 set forth a program of air pollution control strategies that would ensure that construction emissions would not exceed any applicable standard. All "AQ" measures provided in Appendix B and SCAQMD Rules that are applicable to construction activities shall be implemented to the extent feasible to avoid adverse short-term air quality impacts. Additionally, mitigation measures are not required with regard to permanent impacts.

3.4 Biological Resources

3.4.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment to wildlife species were derived from the biological reports and resources listed in Section 8.0, References. These reports analyzed biological resources within the general location of the Onsite Alternative, including potential impacts to resources within Federal lands. The analysis provided in this section utilizes biological data prepared for the SR-91/SR-71 Interchange Improvement Project to determine the potential effects of the Onsite Alternative to biological resources within the Federal lands. Recent biological surveys for jurisdictional resources, burrowing owl, and rare plant species were conducted during spring 2013. The data gathered for these surveys included the Proposal area and were also incorporated in the analysis provided in this section.

Vegetation

Vegetation communities found in the Proposal area consist of riparian riverine, coastal sage scrub, coastal sage chaparral scrub, southern cottonwood willow riparian forest, mule fat scrub, eucalyptus/ornamental woodland, non-native grassland, and disturbed habitat, as illustrated in Figure 3-4. Vegetation within the Proposal area consists of coastal sage scrub, riparian riverine, southern cottonwood willow riparian forest, non-native grassland, and disturbed habitat. The vegetation within this parcel is potentially suitable habitat for Santa Ana sucker (riparian), least Bell's vireo (LBV) (riparian), and coastal California gnatcatcher (CAGN) (coastal sage scrub). Due to several previous and ongoing disturbances within the Proposal area, vegetation on these parcels is interrupted by a mix of native and non-native vegetation, which diminishes the integrity of the vegetation communities near the Interchange Proposal.

USACE recently completed habitat restoration activities within the general area of the Santa Ana River, as indicated in Figure 3-5. The restoration activities were required as a result of vegetation impacts associated with the Santa Ana River Mainstem/Prado Dam Project. Table 3-11 provides a summary of the plant species within the area.

Table 3-11: Wildlife Corridor Upland Seed Mix Species

Common Name	Botanical Name	Pounds per acre	Plant Type
California sagebrush	*Artemisia californicus*	2	Perennial
Black sage	*Salvia mellifera*	3	Perennial
White sage	*Salvia apiana*	2	Perennial
Coyote brush	*Baccharis pilularis*	2	Perennial
California bush sunflower	*Encelia californica*	4	Perennial
California buckwheat	*Eriogonum fasciculatum*	8	Perennial
Coast goldenbush	*Isocoma menziesii*	3	Perennial
Deerweed	*Lotus scoparius*	5	Bi-annual
Arroyo lupine	*Lupinus succulentus*	1	Annual
California poppy	*Eschscholtzia californica*	1	Perennial herb/Annual
Plantain	*Plantago ovata*	5	Annual
Purple needle grass	*Nassella pulchra*	1.5	Perennial grass
Foothill needle grass	*Nassella lepida*	1.5	Perennial grass
Nodding needle grass	*Nassella cernua*	1.5	Perennial grass
Foxtail fescue	*Vulpia (Festuca) megalura*	1	Annual
Total Pounds per Acre		41.5	

Wildlife Species

The Santa Ana River Canyon and the surrounding area provide suitable habitat for several migratory and nonmigratory wildlife species that are known to occur in the region and are identified in the wildlife corridor study (LSA, 2010). Based on the habitat assessment and jurisdictional delineation studies conducted for the overall SR-91/SR-71 Interchange Improvement Project, the Federal lands support a resident population of small to large mammal species, including coyote and mountain lion. According to the overall SR-91/SR-71 Interchange Improvement Project *Natural Environmental Study* (2010) incorporated herein by reference, the Proposal area provides habitat for wildlife species that commonly occur in disturbed and developed communities, as well as riparian and scrub habitats. No amphibian or reptilian species were observed onsite during the habitat assessment survey. Commonly found avian and mammalian species observed within the Proposal area include, but are not limited to:

- California towhee (*Pipilo crissalis*)
- Nuttall's woodpecker (*Picoides nuttallii*)
- House finch (*Carpodacus mexicanus*)
- Mourning dove (*Zenaida macroura*)
- Bewick's wren (*Thryomanes bewickii*)
- White-throated swift (*Aeronautes saxatalis*)
- Black phoebe (*Sayornis nigricans*)
- California ground squirrel (*Spermophilus beecheyi*)
- Desert cottontail (*Sylvilagus audubonii*)
- Bobcat *(Felis rufus)*

A complete list of wildlife species observed during the habitat assessment survey is included in Appendix D.

Wildlife Crossing and Constrained Linkages

The Proposal area is located within the Multiple Species Habitat Conservation Plan (MSHCP) Conservation Area, which is comprised of a variety of existing and proposed cores, extensions of existing cores. According to the MSHCP, a core is defined as "a block of habitat of appropriate size, configuration, and vegetation characteristics to generally support the life history requirements of one or more covered species." As indicated in Figure 3-6, two cores are present within the proximity of the Proposal area: Existing Core A (Prado Basin/Santa Ana River) is located north of SR-91 within the general area of the Prado Dam and Chino Hills State Park (CHSP). Existing Core B (Cleveland National Forest) is located approximately 1-mile south of SR-91.

According to the MSHCP, linkages are connections "between core areas with adequate size, configuration, and vegetation characteristics to generally provide for 'live-in' habitat and/or provide for genetic flow...areas identified as linkages in MSHCP may provide movement habitat but not live-in habitat for some species, thereby functioning more as movement corridors." As depicted in Figure 3-6, two linkages connect existing Core A with existing Core B within the Proposal area; however, these linkages provide constricted connections for movement of species between the two identified core areas. A constrained linkage is defined by the MSHCP as "a constricted connection expected to provide for movement of identified species between core areas, where options for assembly of the connection are limited due to existing patterns of use."

The general area of the greater Interchange Proposal contains several areas that promote the movement of wildlife from the Santa Ana River and Prado Basin in the north to the Cleveland National Forest in the south. Out of the several potential crossings are two major crossings recognized by the Western Riverside County MSHCP as Proposed Constrained Linkage 1 (PCL 1) and Proposed Constrained Linkage 2 (PCL 2), which serve as a wildlife linkage between Cores A and B.

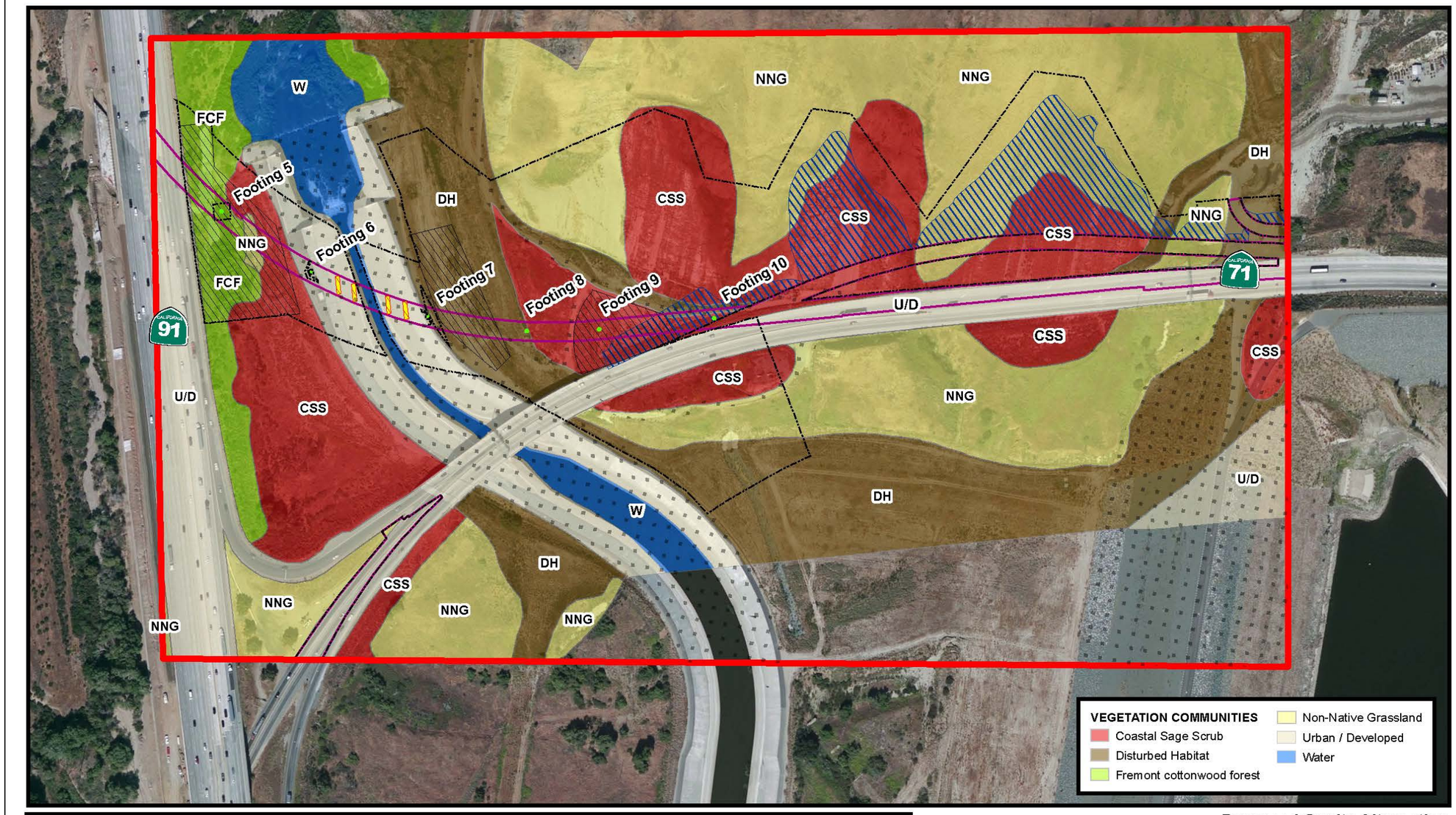

Figure 3-4: Vegetation Communities on Federal Lands (page 1 of 2)

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Figure 3-4: Vegetation Communities on Federal Lands (page 2 of 2)

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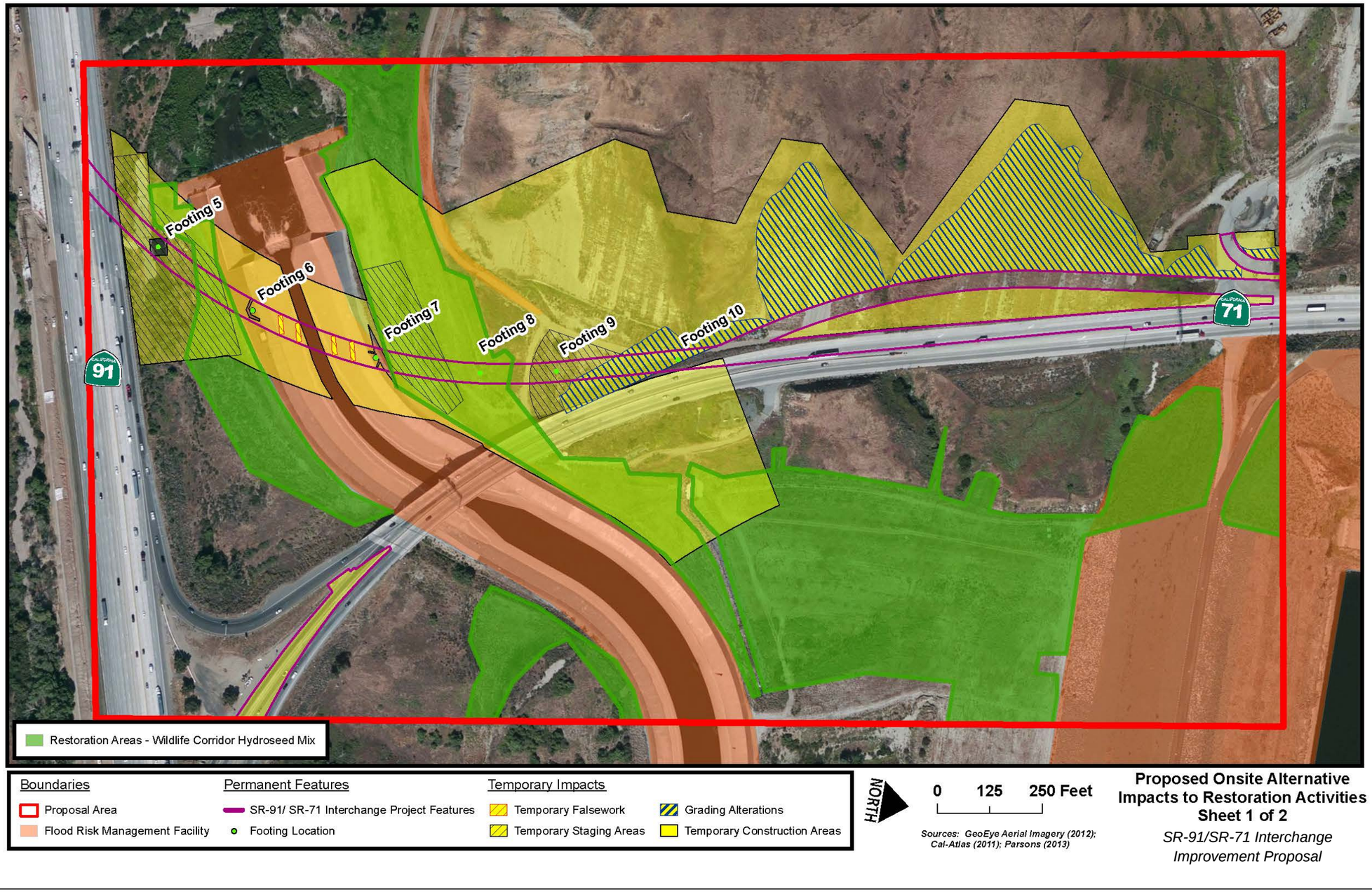

Figure 3-5: Restoration Activities on Federal Lands (page 1 of 2)

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Figure 3-5: Restoration Activities on Federal Lands (page 2 of 2)

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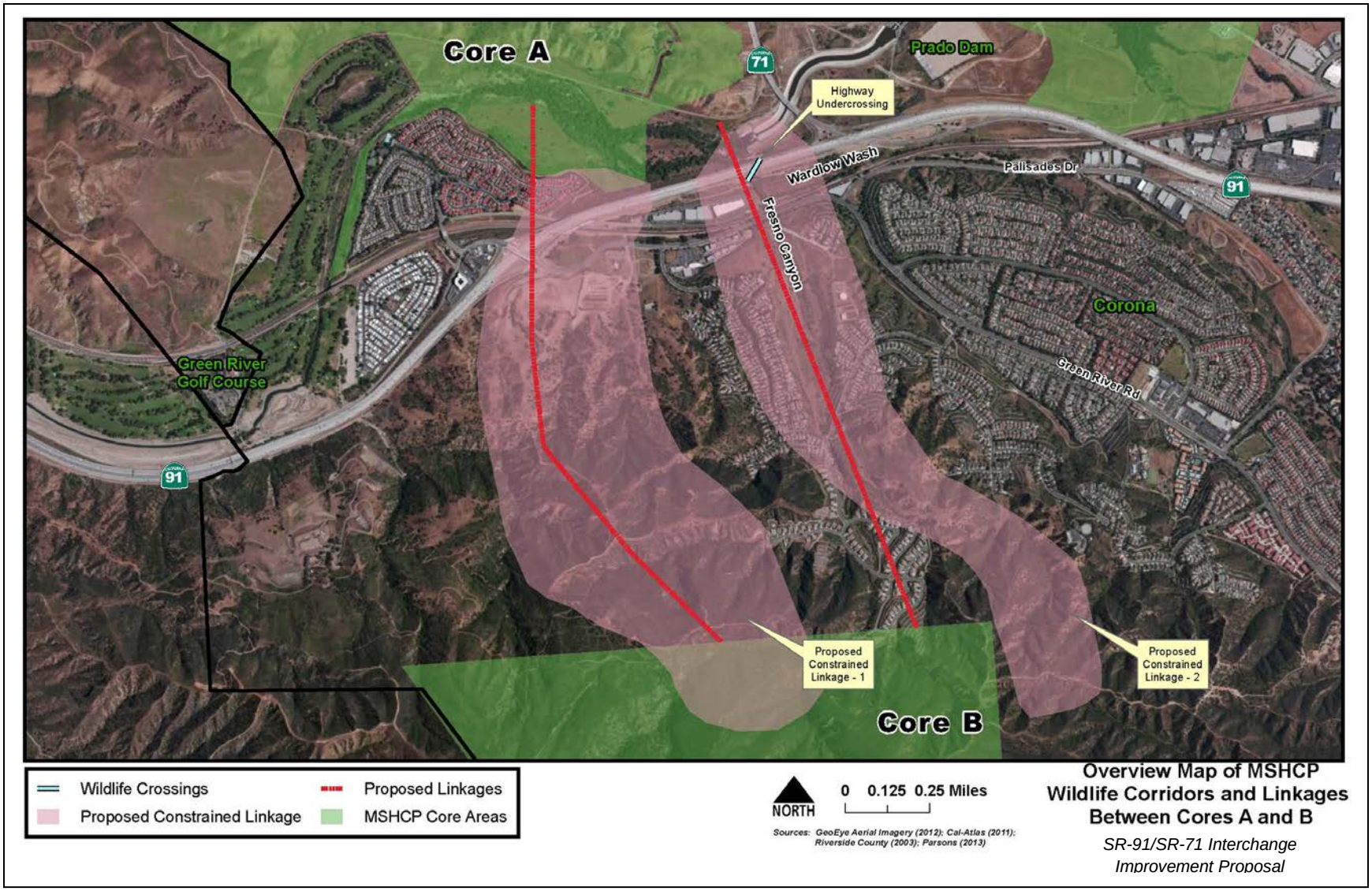

Figure 3-6: Wildlife Corridors and Linkages

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Of the two constrained linkages identified by the MSHCP, PCL 2 is located just west of the SR-91/SR-71 junction within the Proposal area. This corridor facilitates the important exchange of wildlife to cross three imposing barriers: SR-91, railroad tracks, and the Santa Ana River. PCL 2 consists of an undercrossing located south of the Santa Ana River spillway that allows north-south wildlife movement across SR-91. PCL 2 also provides a riparian connection from the Prado Basin and Santa Ana River to the Cleveland National Forest, thus allowing for movement of species such as coast range newt and western pond turtle. This linkage is also important for the movement of larger mammals such as coyote and mountain lion, which have been observed to utilize these corridors to cross SR-91 between the Santa Ana Mountains and Chino Hills. Immediately south of SR-91 within PCL 2, Fresno Canyon and Wardlow Wash are located at the western edge of the city of Corona, just west of the junction of SR-91 and SR-71. Fresno Canyon/Wardlow Wash connects to the Prado Basin via a bridged undercrossing and a double box culvert under SR-91. The area immediately north of the undercrossing is federally owned land and considered part of the SARP. This area is currently sloped to a 2:1 grade, which is a steep grade leading in and out of the undercrossing.

Improvements to wildlife linkages within the Proposal area require enhancements to PCL 2, which include removal of the concrete revetment located between the northern opening of the SR-91 undercrossing bridge structure and south of the Santa Ana River Spillway, and regrading the general area from its current 2:1 slope to a flatter slope of 4:1. Native vegetation would be planted within the general area of the opening to provide habitat continuity.

Threatened and Endangered Species

According to the biological studies, the Proposal area has a moderate or high potential to contain habitat to support 22 sensitive wildlife species, which are listed below:

- Arroyo chub
- Arroyo toad
- Burrowing owl
- Coastal western whiptail
- Coast horned lizard
- Coast range newt
- Coastal California gnatcatcher
- Cooper's hawk
- Golden eagle
- Least Bell's vireo
- Long-eared owl
- Pallid bat
- Santa Ana sucker
- Southern California rufous-crown sparrow
- Southwestern willow flycatcher
- Tricolored blackbird
- Two-striped garter snake
- Western mastiff bat
- Western yellow-billed cuckoo
- Yellow warbler
- Yellow-breasted chat
- Orange-throated whiptail

Of the 22 sensitive wildlife species identified above, 3 of these, the Santa Ana sucker, LBV, and CAGN are federally listed as threatened/endangered species and are present near or within the area of the Onsite Alternative; however, LBV is the only threatened/endangered species that was observed within the Onsite Alternative Proposal area. The California Natural Diversity Database (CNDDB) indicated that there are no occurrences of CAGN within the Proposal area, and biological surveys conducted identified no CAGN critical habitat within the Proposal area.

Santa Ana Sucker: The Santa Ana sucker is federally listed as threatened and a CDFW Species of Special Concern. It is endemic to the south coastal stream of the Los Angeles basin, including the Santa Ana River. The area for the proposed action provides suitable habitat for the Santa Ana sucker within portions of the Santa Ana River. The area does not contain any critical habitat for the Santa Ana sucker, as designated by USFWS; however, critical habitat does exist immediately to the west of the Proposal area at APN 101-140-005. Based on the CNDDB, there is a recorded occurrence of this species within the general area of the Santa Ana River; therefore, the Santa Ana Sucker has a potential to occur within the Proposal area.

Least Bell's Vireo: The LBV is both federally and state listed as an endangered species. Suitable habitat for this species occurs within the riparian woodlands within the Proposal area; however, USFWS-designated critical habitat does not exist within Federal lands. LBV was previously recorded as occurring within the area as a result of focused surveys conducted by the Santa Ana Watershed Association (SAWA) and Caltrans in 2005. Because suitable habitat remains undisturbed within the area, the species is assumed to be present.

Coastal California Gnatcatcher: The CAGN is federally listed as threatened and a CDFW Species of Special Concern. The gnatcatcher is a species with restricted habitat requirements, being an obligate resident of coastal sage scrub habitats that are dominated by coastal sagebrush. Coastal sage scrub communities dominated by California sagebrush, California buckwheat, white sage, and black sage are preferred by the species. CAGN was previously recorded as occurring within the vicinity of the Interchange Proposal. Because suitable habitat remains undisturbed, the species has a potential to occur within the Proposal area.

3.4.2 Potential Environmental Impacts

3.4.2.1 Onsite Alternative

Vegetation

Activities associated with construction of the Onsite Alternative may produce temporary impacts to vegetation on Federal lands (#101-140-006, #101-040-010, and #101-040-004) due to the mobilization of heavy machinery to construct the proposed bridge columns and flyover bridge structure spanning over the Santa Ana River Channel and during proposed grading activities on Federal lands. Existing vegetation may be uprooted and crushed during construction; however, these vegetation disturbances would be minimized through the use of designated access routes to and from the construction areas located in the least environmentally sensitive locations feasible, which would avoid and/or minimize impacts to vegetation. All vegetation disturbed by construction activities would be restored to Pre-Onsite Alternative conditions, which may include replanting or hydroseeding with native plant species. Furthermore, preconstruction surveys for sensitive plants would be conducted. All sensitive plants would be tagged and moved to appropriate offsite locations before grading begins. To the extent feasible, these sensitive plants would be salvaged, stored, and replanted within disturbed areas after construction.

Temporary impacts to vegetation associated with construction of the Onsite Alternative are provided in Table 3-12 and Figure 3-7. A total of 34.146 acres are anticipated to be temporarily affected during construction of the Onsite Alternative.

Table 3-12: Temporary Impacts to Vegetation within Federal Lands

Vegetation Type	Temporary Impacts (acres)	Temporary Impacts (square feet)
Coastal Sage Scrub	13.475	586,973
Disturbed Habitat	5.904	257,172
Freemont Cottonwood Forest	1.943	84,618
Mulefat Thickets	0.077	3,366
Non-Native Grassland	8.234	358,666
Oak Woodland	1.289	56,126
Urban / Developed	3.224	140,444
Water	0.221	9,618
Total Impacts	34.146	1,487,365

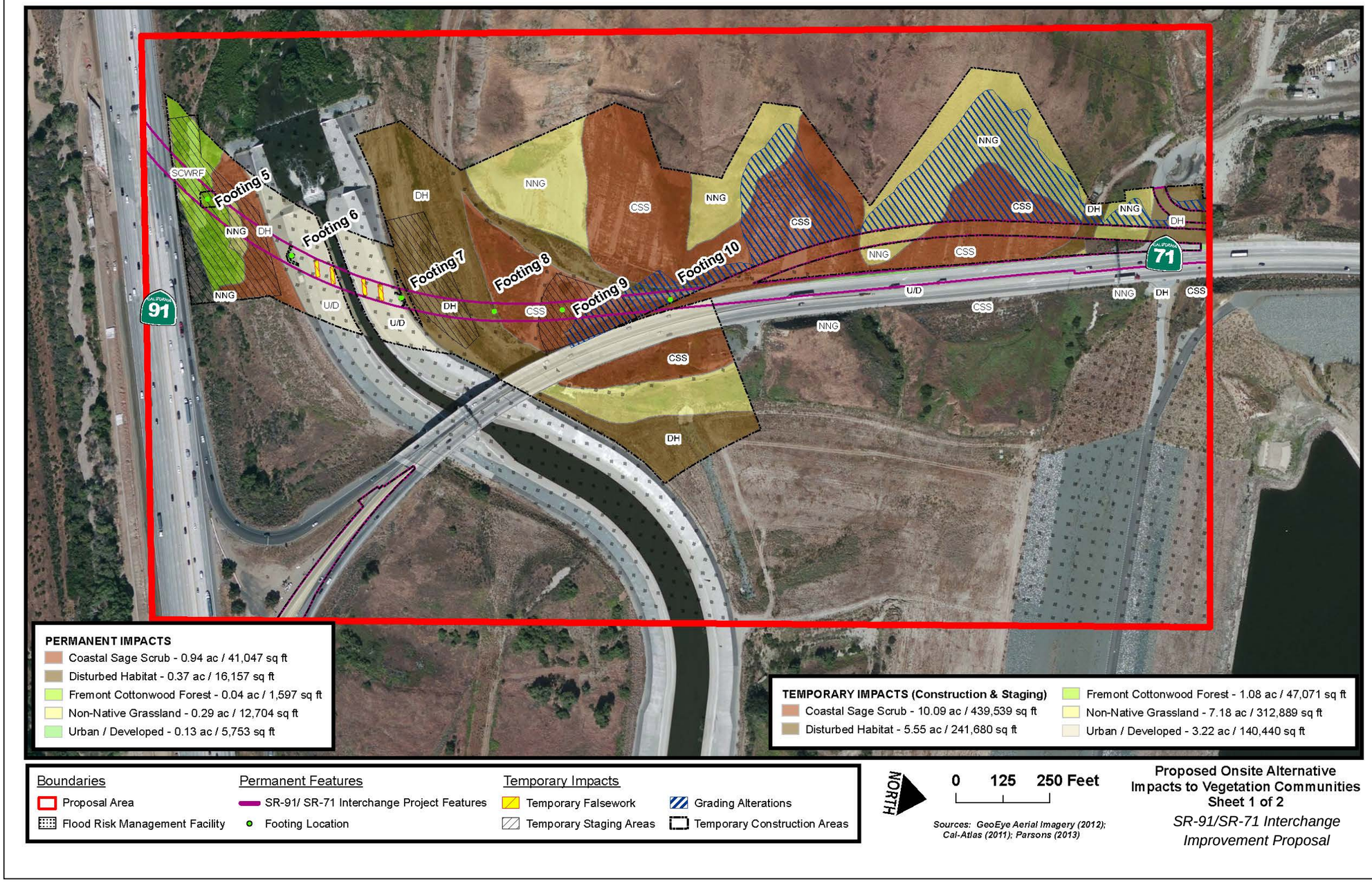

Figure 3-7: Temporary and Permanent Impacts to Vegetation on Federal Lands (page 1 of 2)

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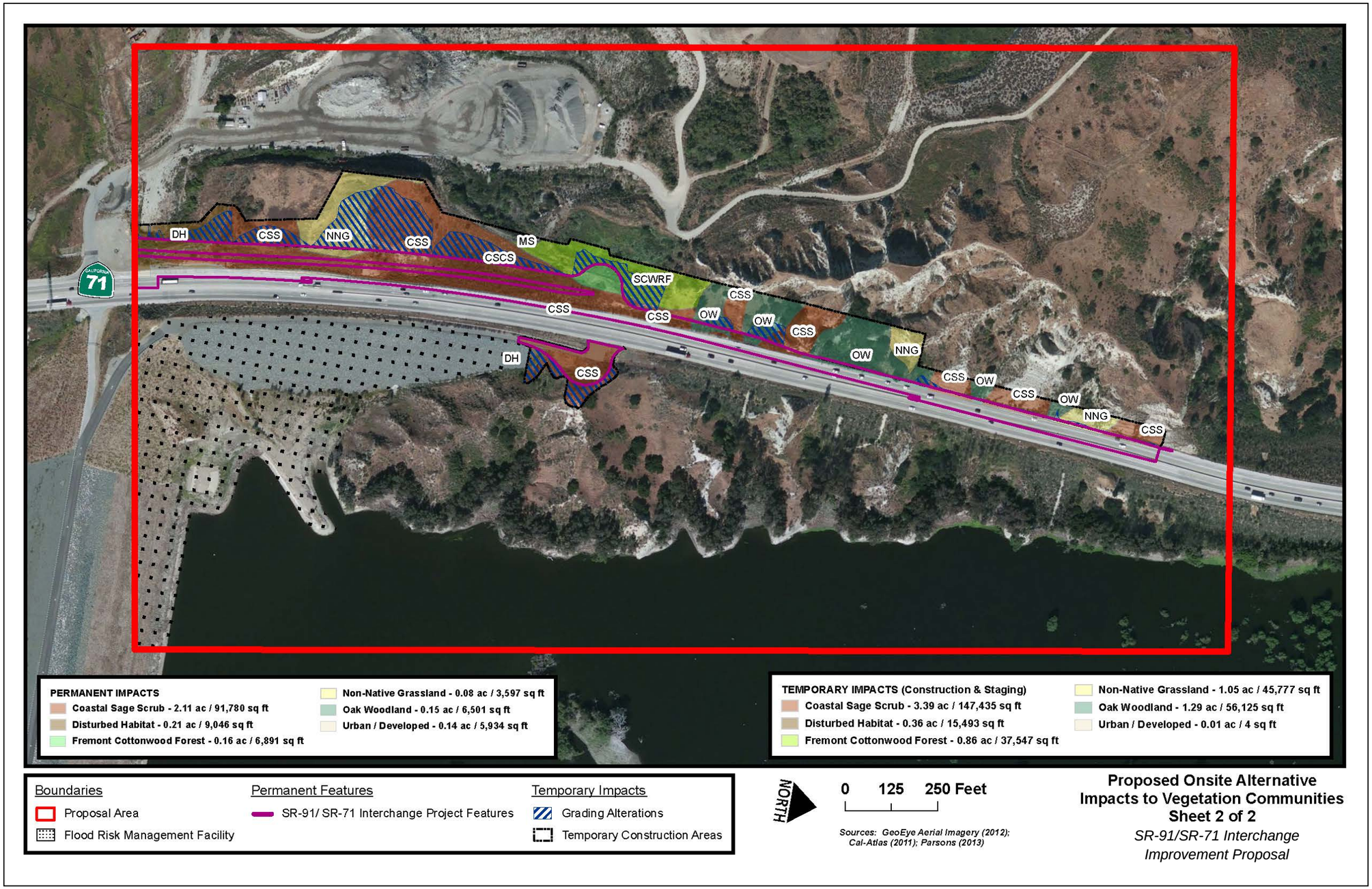

Figure 3-7: Temporary and Permanent Impacts to Vegetation on Federal Lands (page 2 of 2)

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Permanent features of the Onsite Alternative would permanently affect vegetation within the immediate Proposal area. The flyover structure is not anticipated to result in permanent impacts to vegetation on Federal lands once constructed; however, permanent impacts to vegetation are anticipated to result from the construction of the six bridge columns/footings, realignment of the SB SR-71, wildlife corridor enhancement and access driveway modification. The expected permanent impacts as a result of these features are specified in Table 3-13 and illustrated in Figure 3-7. A total of 4.614 acres of vegetation is anticipated to be permanently impacted by the Onsite Alternative. The majority of these permanent impacts would affect portions of Federal lands already disturbed by invasive and exotic plant species. The proposed hillside grading activities are not anticipated to permanently affect vegetation within Federal lands, as these activities would be temporary, and vegetation would be restored to Pre-Onsite Alternative conditions following construction activities.

Table 3-13: Permanent Impacts to Vegetation within Federal Lands

Vegetation Type	Permanent Impacts (acres)	Permanent Impacts (square feet)
Coastal Sage Scrub	3.049	132,857
Disturbed Habitat	0.579	25,203
Freemont Cottonwood Forest	0.195	8,487
Non-Native Grassland	0.374	16,301
Oak Woodland	0.149	6,502
Urban / Developed	0.268	11,688
Total Impacts	4.614	201,038

Due to the mobilization of heavy equipment and excavations during construction, it is also anticipated that the USACE Restoration Project may be temporarily affected due to vegetation disturbance as illustrated in Figure 3-8. Newly planted vegetation and hydroseeded areas within the USACE restoration area could be potentially uprooted and crushed due to construction activities; however, these activities are short term, and by implementing minimization measures, potential construction effects on vegetation and hydroseeded areas are not anticipated to be significant. These measures include determining a construction access route to and from the restoration site with the least impacts on the restoration area, hydroseeding disturbed areas with USACE-approved seed-mix, and restoring the area to Pre-Onsite Alternative conditions after construction activities have been completed.

Given the temporary nature of construction activities and lack of substantial permanent loss of vegetation within Federal lands, effects on vegetation communities are not anticipated to be significant.

Wildlife Species

Mobilization of heavy machinery to construct the Onsite Alternative on Federal lands may produce temporary effects to wildlife species and their habitat. It is anticipated that noise from the operation of heavy machinery during construction activities may intermittently exceed the existing noise levels, which may temporarily affect wildlife adjacent to construction locations.

To avoid temporary effects, construction activities would be conducted outside bird breeding season (February through August), and noise control measures would be implemented during the operation of heavy machinery or other noise-generating activities. All equipment would have sound-control devices, and no equipment would have an unmuffled exhaust. Heavy machinery operation would be limited to not exceed 86 A-weighted decibels (dBA) at 50 feet from the Proposal area limits from 7:00 p.m. to 7:00 a.m. Engines on construction equipment would not be run from 7:00 p.m. to 7:00 a.m. In addition, night lighting would be directed away from the MSHCP Conservation Area to protect species from direct night lighting.

To further ensure wildlife species are not impacted by construction activities, appropriate biological surveys would be conducted by a qualified biologist prior to the start of construction to determine whether wildlife species are present within the general construction area. If wildlife is present within the general location of the construction activities, appropriate avoidance/minimization measures would be implemented for each wildlife species as described in avoidance/minimization measures in Appendix B.

To permanently maintain the integrity of wildlife corridors in the Proposal area, design of the Onsite Alternative would enhance the movement requirements of local wildlife species. PCL 1 would be improved by utilizing an open channel instead of a traditional pipe extension and installing wildlife fencing to funnel into the crossing. PCL 2 would be improved through removing existing concrete revetment, re-grading the existing 2:1 slopes to a flatter 4:1 grade, installing wildlife fencing, and planting native vegetation. In addition, wildlife fencing on SR-91 and SR-71 would be disturbed as little as possible, and fencing that would be removed would be replaced after construction. The Onsite Alternative would not further fragment wildlife habitat, or movement, because SR-91 and SR-71 are existing facilities.

Because the construction activities are temporary and avoidance/minimization measures would be implemented to reduce potential permanent impacts, no direct or indirect effects to wildlife species are anticipated as a result of the Onsite Alternative. With the implementation of the minimization measures identified in Appendix B, potential effects to wildlife species are not anticipated to be significant.

Threatened and Endangered Species

A Biological Opinion (BO) was issued by USFWS for LBV and CAGN in June 2011 for the overall SR-91/SR-71 Interchange Improvement Project (Appendix C). The BO included the area within the proposed construction activities on Federal lands. According to the BO, USFWS does "not anticipate any adverse effects to vireo or gnatcatcher" as a result of the Onsite Alternative with the implementation of avoidance and minimization measures.

Construction activities may produce temporary impacts to threatened and endangered species due to mobilization and excavation activities within Federal lands. As discussed earlier in this section, vegetation found on Federal lands consists of riparian and coastal sage scrub, which are potentially suitable habitat for Santa Ana sucker (riparian), LBV (riparian), and CAGN (coastal sage scrub). Mobilization of construction equipment could potentially result in temporary effects because heavy equipment may uproot and destroy potential habitat for these endangered species. In addition, noise associated with the operation of heavy machinery during construction may intermittently exceed the existing noise levels, which may temporarily affect sensitive wildlife species adjacent to the construction locations.

To avoid these temporary effects to the greatest extent practicable, avoidance and minimization measures similar to those described for wildlife species would be implemented, including the scheduling of construction activities outside of bird breeding season, conducting biological surveys, avoiding sensitive habitat, restoring disturbed areas to Pre-Onsite Alternative conditions, redirecting night lighting from sensitive areas, and implementing noise control measures.

To further minimize impacts to avian species, the proponent would review the latest annual data from SAWA on LBV occurrences to ensure that nesting birds have not recently been recorded within the Proposal area. Figure 3-9 illustrates the latest information available from SAWA and the CNDDB regarding recorded incidences of LBV, CAGN, and Santa Ana Sucker near the Federal lands. SAWA recorded three occurrences of LBV in APN 101-140-006. Additionally, as indicated in the figure, the SAWA and CNDDB records show occurrences of LBV, CAGN, and Santa Ana Sucker outside Federal lands but within close proximity of the Proposal area. None of these locations would be directly impacted by temporary construction or permanent interchange features associated with the Onsite Alternative. Furthermore, no critical habitat, as designated by USFWS, would be compromised by construction or operation of the Onsite Alternative.

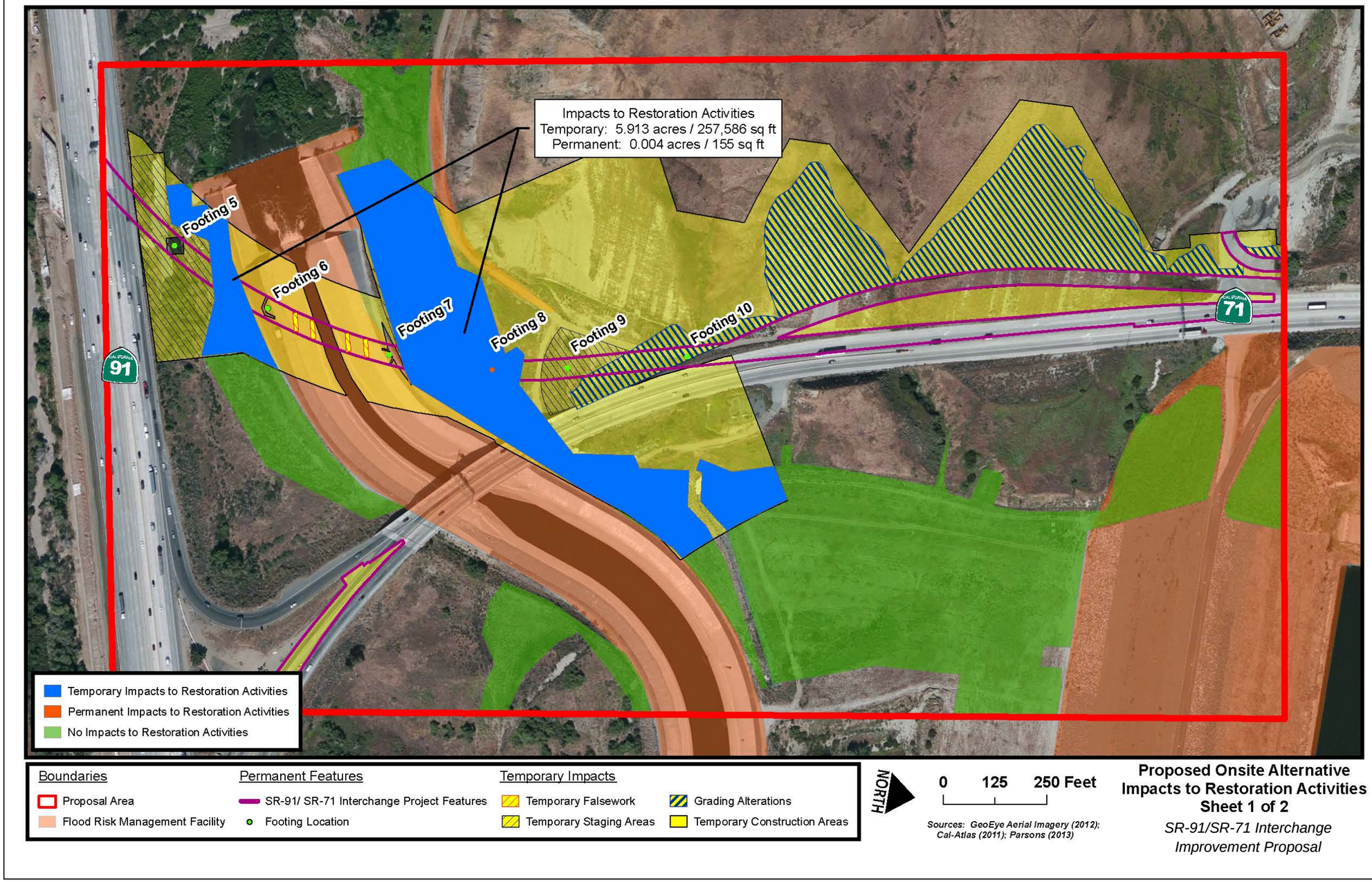

Figure 3-8: Temporary and Permanent Impacts to USACE Restoration Areas (page 1 of 2)

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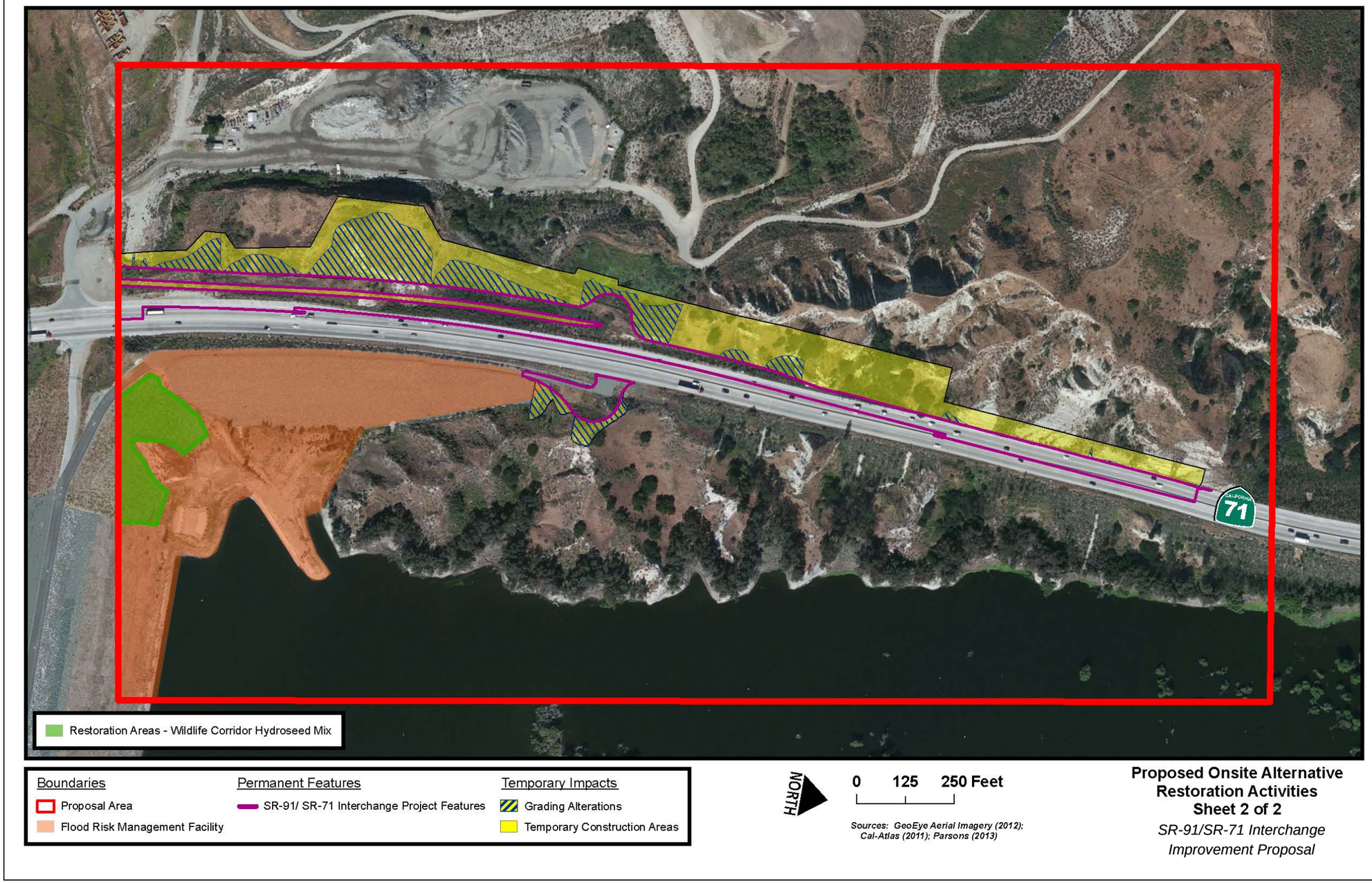

Figure 3-8: Temporary and Permanent Impacts to USACE Restoration Areas (page 2 of 2)

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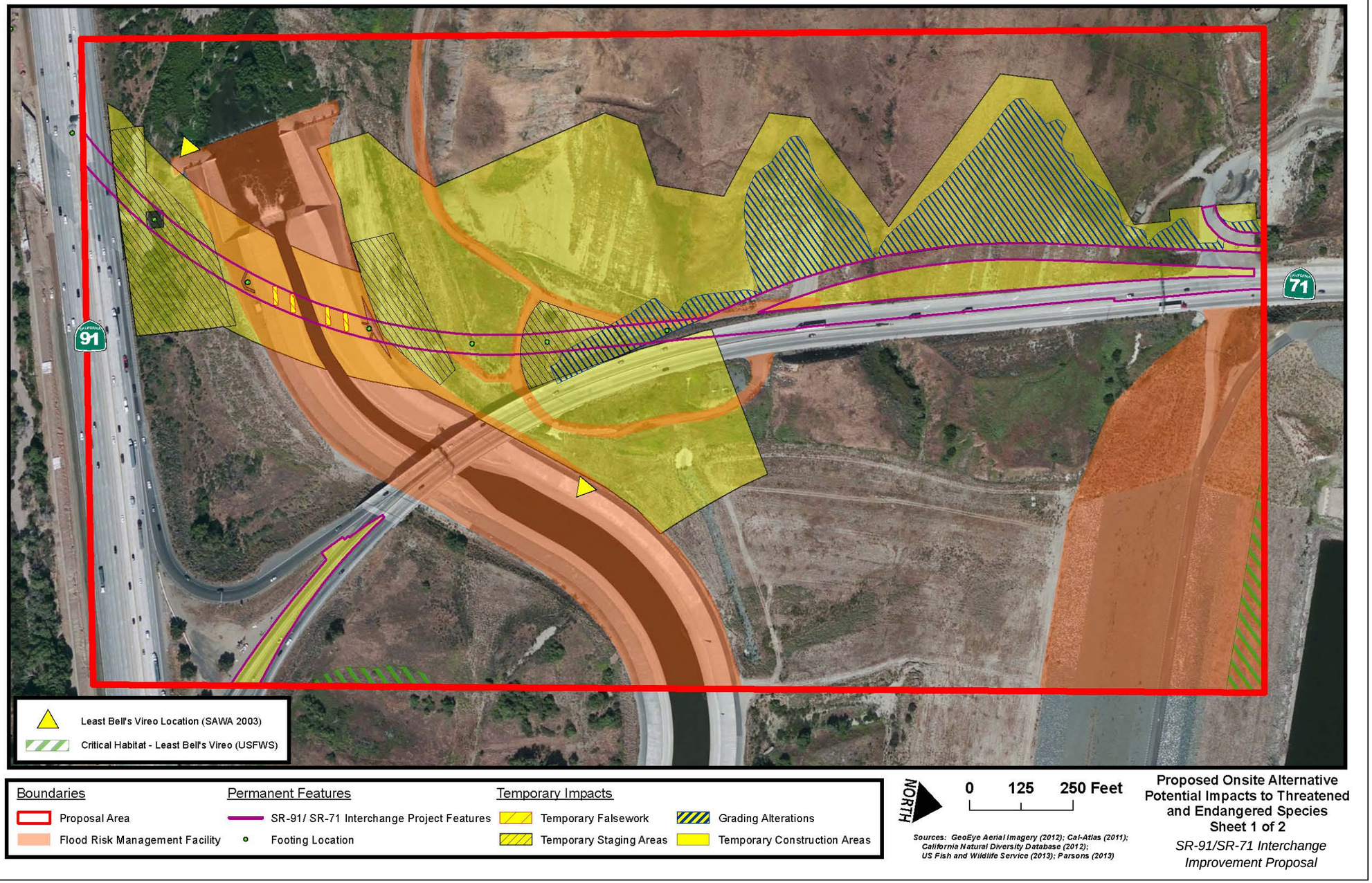

Figure 3-9: Critical Habitat and Recent Occurrences of Threatened and Endangered Species near Federal Lands (page 1 of 2)

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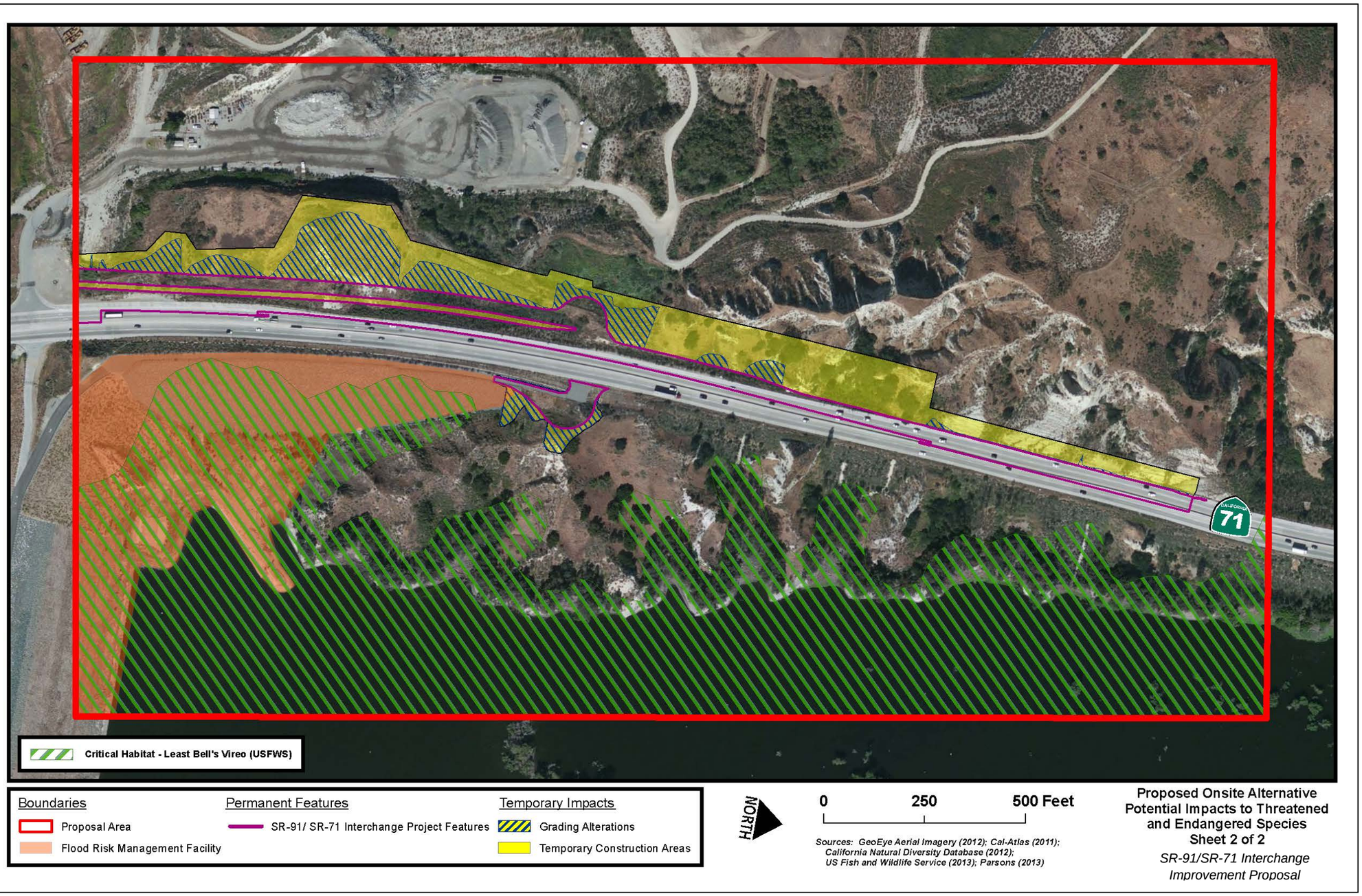

Figure 3-9: Critical Habitat and Recent Occurrences of Threatened and Endangered Species near Federal Lands (page 2 of 2)

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Because the construction activities are temporary and minimization measures would be implemented, no direct or indirect effects to threatened and endangered species (Santa Ana sucker, LBV, or CAGN) are anticipated as part of the Onsite Alternative. Potential permanent effects to threatened and endangered species would be minimized through implementation of minimization measures identified in Appendix B.

Wildlife Crossing and Constrained Linkages

As shown previously in Figure 2-2, the Onsite Alternative would include modifications to the undercrossing for PCL 2, located immediately north of SR-91 and south of the Santa Ana River Spillway. Per the USFWS Biological Opinion, dated June 22, 2011 (Appendix C), USFWS identifies PCL 2 as an area that would benefit from enhancement and has conditioned RCTC to enhance this area as part of the Interchange Proposal and mitigate potential impacts to wildlife linkages between Cores A and B. Similarly, the implementing entity for the MSHCP, the Regional Conservation Authority (RCA), has also acknowledged the need for wildlife corridor improvement, as indicated in RCA's Joint Project Review (JPR), dated June 8, 2011. The RCA's JPR is provided in Appendix J.

Temporary Effects on Biological Resources

Construction of the Onsite Alternative may result in temporary minor effects on vegetation, wildlife species, and threatened and endangered species. Temporary effects to the USACE restoration project are also anticipated. These effects are mainly due to activities associated with construction of the Onsite Alternative, such as equipment mobilization and machinery noise. Construction of the direct flyover bridge connector spanning the Santa Ana River may produce minor temporary effects on biological resources, especially on vegetation due to construction equipment mobilization. Additionally, construction of the two proposed bridge footings within the flood risk management facility and the four proposed bridge footings within Federal lands may produce temporary minor effects on biological resources as a result of construction activities and equipment mobilization. In addition, the proposed hillside slope-grading activities on Federal lands may produce temporary minor effects on biological resources due to temporary construction activities associated with the proposed Onsite Alternative. These impacts may include effects to vegetation from construction equipment mobilization and construction noise from construction equipment affecting wildlife; however, these effects would be temporary and effects on biological resources such as vegetation, wildlife species, and threatened/endangered species are not anticipated to be significant. Any vegetation temporarily affected during construction would be restored to Pre-Onsite Alternative conditions to the greatest extent feasible. Additionally, avoidance and minimization measures to wildlife species and threatened/endangered species would be implemented during construction.

Minor Permanent Effects on Biological Resources

Four of the six bridge columns would be constructed on Federal lands, which would require permanent removal of the existing vegetation; however, the bridge footings are located in previously disturbed areas and the total impact area is relatively minor (0.01-acre). Additionally, to the west of SR-71, the realignment of SB SR-71 would require the removal of 2.5 acres of non-native vegetation and disturbed vegetation and coastal sage scrub to accommodate the additional pavement. An additional 1.23 acres of disturbed habitat and coastal sage scrub would also be permanently removed for the modification of the access driveway to the Sukut property. It should be noted that most of the activities related to these two features of the Onsite Alternative would occur within Federal lands for which Caltrans has an easement, and that the condition of the vegetation within areas adjacent to SR-71 are considered poor-quality habitat. Any vegetation removed within Federal lands would be replaced with native vegetation as selected by USACE. With the implementation of avoidance and minimization measures, permanent or temporary effects on biological resources are not anticipated to be significant as a result of the Onsite Alternative.

3.4.2.2 No Action Alternative

The No Action Alternative would not result in any substantial changes in the baseline conditions of existing vegetation because no improvements and associated construction would be conducted within the Proposal area on Federal lands. Without the implementation of the flyover superstructure and bridge footings on Federal lands, existing vegetation would not be uprooted and/or crushed as a result of construction-related activities.

Moreover, without construction, there would be no impacts on the USACE Restoration Project or physical modifications to the SARP. Under the No Action Alternative, the existing O&M of the SARP would continue with the purpose of providing Federal flood risk management for Orange, San Bernardino and Riverside counties. As a result, there would not be any temporary or permanent effects (direct or indirect) to the Federal flood risk management project (SARP).

Additionally, invasive species would not be expected to spread rapidly unless other Proposals that result in major land disturbances are implemented on Federal lands. As such, disturbed and degraded areas within the Proposal area would likely remain under the existing baseline conditions.

Lastly, the No Action Alternative would not change the baseline conditions of wildlife species and threatened and endangered species in the proposed Proposal area because no improvements or construction would be conducted on Federal lands. There would be no additional noise from construction equipment, and wildlife corridors would not be improved. There would also be no disturbance of habitats that are critical to threatened or endangered species because there would be no uprooting and/or destruction of potential habitats for these endangered species. As a result, existing habitats within the Proposal area would remain unaffected due to the absence of improvements and construction activities; therefore, under the No Action Alternative, there would be no effects on biological resources, including vegetation, wildlife, and threatened and endangered species.

3.4.3 Avoidance/Minimization Measures

3.4.3.1 Onsite Alternative

Minimization measures BIO-1 through BIO-37 would be implemented to avoid adverse effects to biological resources, as described in Appendix B. As such, effects to biological resources are not anticipated to be significant.

3.4.3.2 No Action Alternative

Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands. No minimization measures would be required.

3.5 Cultural Resources

3.5.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment to cultural resources were derived from the reports and resources listed in Section 8.0, References. These reports have included the general area of the Onsite Alternative. The analysis below focuses on cultural resources within the general location of the Onsite Alternative.

Areas of Potential Effects

The area of potential affect (APE) includes areas of direct and indirect effects, covering all anticipated Interchange Proposal-related activities, including utility relocation, access driveways, construction easements, work areas, storage areas, and staging areas. The APE also includes all known boundaries of

documented archaeological sites and potential historic properties indirectly or directly affected by the Interchange Proposal.

The APE includes Federal land parcels APN #101-140-006, #101-040-010, and #101-040-004. These parcels were included in the previously conducted cultural reports and pedestrian archaeological surveys from August 2008. The APE map for the Interchange Proposal is provided in Appendix K

Record Searches

A cultural resources literature and records search was conducted for a 1-mile radius of the APE, including Federal lands. The analysis required literature and record searches at three different offices of the California Historical Resources Information System (CHRIS). Records searches at the Eastern Information Center (EIC), San Bernardino Archaeological Information Center (SBAIC), and the South Central Coastal Information Center (SCCIC) were conducted June 18, June 13, and July 9, 2010, respectively.

In summary, the cultural resources literature and records search conducted at these repositories indicated that 55 area-specific cultural resources studies have been completed previously within a 1-mile radius of the Proposal area. These previous studies resulted in the identification and documentation of 19 archaeological resources, including 18 historical-period sites and 1 prehistoric site. Of these, 1 historical-period site, the extant Prado Dam and its appurtenant features (CA-RIV-4730H), is located within and adjacent to the Proposal APE. Prado Dam is located partly within Federal lands (APN 101-040-010), which includes Caltrans' easement area at SR-71.

The Prado Dam is a large man-made structure located outside the APE, except for a modern spillway that extends into the APE on APN 101-040-010. The actual National Register of Historic Places (NRHP) status of the property is unclear, but the dam has been assumed in the past to be a Historic Property under National Historic Preservation Act (NHPA) Section 106; therefore, it is also considered a historical resource under CEQA. Our analysis exempted the spillway in accordance with the FHWA/ Caltrans/State Historic Preservation Officer (SHPO)/Advisory Council on Historic Preservation (ACHP) Section 106 Programmatic Agreement (PA) because it is a modern noncontributing element of a larger historic property. Given this determination, the "historic" part of the property is located outside the APE and beyond the limits of APN 101-040-010.

In addition, two historical-period sites, the former location of a railroad grade (CA-RIV- 5522H) and the remains of the historical-period town of Alta Vista/Green River Camp (CARIV- 6532H), are/were located immediately adjacent to but not located within the APE or Federal lands. Established sometime between 1910 and 1920, Alta Vista/Green River Camp was recorded and subjected to subsurface testing in 2000. Although approximately 1,400 historic-period artifacts were recovered during testing, the integrity of the cultural deposits at the site was described as very poor. As mentioned, CA-RIV- 6532H was formally evaluated and determined ineligible for listing in the NRHP by USACE. SHPO concurred with this determination in 2001. In addition, the site no longer exists within the paved segment of SR-91 that would be used for Interchange Proposal-related signage during construction. The remaining 16 cultural resources recorded near the Proposal area are all located north of the APE and beyond the limits of the Federal lands being analyzed.

Other sources consulted by the CHRIS Information Centers include NRHP; National Register of Eligible Properties; the California Register of Historic Resources (CRHR); Survey of Surveys: A Summary of California's Historical and Architectural Resources; Five Views: An Ethnic Sites Survey for California; California Historical Landmarks; California Points of Historical Interest; and Historical Landmarks of San Bernardino County, as well as the listing in the Determinations of Eligibility Records and Directory of Historic Properties entered into the Office of Historic Preservation (OHP) computer files. No additional cultural resources are listed in these data sources.

Field Surveys

A pedestrian archaeological survey of the APE was performed in 2008. A Native American Monitor from the Soboba Band of Mission Indians participated in the archaeological survey. A Native American Monitor from the Pechanga Band of Mission Indians was also invited to participate; however, the Pechanga did not respond to the invitation.

The survey entailed crew members walking parallel transects ranging from 33 to 50 feet apart. Only those portions of the APE that have not been extensively disturbed (e.g., cut embankments) or paved over by the existing SR-91 and SR-71, as well as by construction and maintenance of the Prado Dam and its appurtenant features, were intensively surveyed. In addition, a reconnaissance survey was conducted on portions of the APE to verify the lack of potential for containing intact surficial archaeological deposits. Three segments of the APE along SR-91 were inspected either by a pedestrian survey or by car. In addition, the APE north of SR-91 and along and adjacent to SR-71 was inspected.

The surveys uncovered no further evidence of the previously recorded sites CA-RIV-5522H (historical-period railroad grade) or CA-RIV-6532H (remains of the historical-period town of Alta Vista/Green River Camp). In addition, no contributing elements to CA-RIV- 4730H (Prado Dam) were identified within the APE. The only portion of the Prado Dam located within the APE consists of the modern spillway constructed in the 1990s, which is not considered "historic" as discussed above.

Native American Consultation

In accordance with Section 106 of the NHPA, a request was made to the Native American Heritage Commission (NAHC) for a review of the Sacred Lands Inventory in June 2008 to determine if any known cultural properties are present within or adjacent to the APE. The NAHC responded, stating that Native American cultural resources are known to exist in the immediate Proposal area. The NAHC also stated that the APE is shared by four tribal cultures: The Gabrielino/Tongva, the Luiseno, the Juaneno, and to a lesser extent, the Cahuilla; however, the NAHC response indicated that their data suggest a strong Gabrielino/Tongva presence. The NAHC requested that eight Native American individuals and organizations be contacted to solicit any information or concerns regarding cultural resources issues related to the Interchange Proposal. Therefore, the following individuals and organizations were contacted by letter in July 2008 during preparation of the overall *SR-91/SR-71 Interchange Improvement Project IS/MND*.

- Cahuilla Band of Indians; Attn.: Anthony Madrigal, Jr., Chairperson
- Pechanga Band of Mission Indians; Attn.: Paul Macarro, Cultural Resource Center
- Ti'At Society; Attn: Cindi Alvitre
- Gabrielino/Tongva San Gabriel Band of Mission Indians; Attn.: Anthony Morales, Chairperson
- Gabrielino/Tongva Council/Gabrielino Tongva Nation; Attn.: Sam Dunlap, Tribal Secretary
- Pechanga Band of Mission Indians; Attn.: Mark Macarro, Chairperson
- Soboba Band of Luiseno Indians; Attn.: Erica Helms, Cultural Resource Manager
- Juaneno Band of Mission Indians; Attn.: Sonia Johnston, Tribal Vice Chairperson

Of those contacted, Anthony Morales, Chairperson of the Gabrielino/Tongva San Gabriel Band of Mission Indians, responded to the letter stating concerns regarding the sensitive nature of the Interchange Proposal and recommending an archaeological and Native American monitor be present during ground-disturbing activities. No other response was received from the remaining seven Native American individuals and organizations. The letter consultations were followed up by telephone inquiries in August 2008. Of those contacted, the Cahuilla Band of Indians requested a copy of the cultural resources inventory report and requested that a Native American Monitor be present during construction of the

Interchange Proposal. Ana Hoover, Cultural Resources Analyst for the Pechanga Band of Mission Indians, recommended that a Native American Monitor be present during the cultural resources survey of the APE and during government-to-government consultation. Joe Ontiveros, Cultural Resources Manager for the Soboba Band of Mission Indians, also recommended that a Native American Monitor be present during the cultural resources survey.

Summary of Findings

As described above, no prehistoric or historical-period archaeological resources were encountered in the APE during the pedestrian and reconnaissance surveys. The late 1990s spillway is the only component of the Prado Dam site (CA-RIV-4730H) located within the APE and within the Federal lands being analyzed. This spillway is not a contributing feature to the Prado Dam site because it was constructed well after the original dam was originally constructed. In addition, the spillway has not yet achieved 50 years of age. Based on this information, the late 1990s spillway is considered exempt.

CA-RIV-5522H was recorded in 1995 and is the former location of a historical-period railroad grade. During the pedestrian survey of the APE, no evidence of this site was noted. The site is considered to be no longer extant.

CA-RIV-6532H, the remains of the historical-period town of Alta Vista/Green River Camp, was recorded and subjected to subsurface testing in 2000. During the pedestrian survey of the APE, no evidence of the site was noted. The site is considered to be no longer extant within the paved segment of SR-91 that would be used for the Interchange Proposal.

Based on the records search and field surveys described above, there are no previously recorded NRHP/CRHR eligible historic properties/historic resources located within the APE.

3.5.2 Potential Cultural Resource Impacts

3.5.2.1 Onsite Alternative

Based on the records search and field surveys, there are no previously recorded NRHP/CRHR eligible historic properties/historic resources located within the APE. The Section 106 finding for the overall SR-91/SR-71 Interchange Improvement Project is No Historic Properties Affected, which includes areas within the Federal lands.

The Prado Dam spillway is the only feature of the historic Prado Dam site located within the APE. The spillway is not considered a character-defining feature of the site nor a historic resource. Because it is the only element of the Prado Dam historic site that would be affected by the Onsite Alternative, the Onsite Alternative would avoid affecting any character-defining feature of the Prado Dam historic site.

Because the record searches and field surveys indicated that there are no cultural resources within Federal lands, no direct or indirect impacts on cultural resources are expected due to construction of the Onsite Alternative.

Therefore, with implementation of the minimization measures identified in Appendix B (CR-1 and CR-2), effects on cultural resources are not anticipated to be significant within the Proposal area.

3.5.2.2 No Action Alternative

Under the No Action Alternative, there would be no new ground disturbance or construction within the Proposal area on Federal lands. As noted above, there are no NHRP-eligible or listed architectural/ historical resources within the APE; therefore, there would be no direct or indirect effects to architectural/historical resources. Furthermore, because there would be no improvements or construction within the Proposal area on Federal lands, there would be no potential in uncovering archaeological

resources; therefore, the No Action Alternative would have no effects on cultural resources because improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands.

3.5.3 Avoidance/Minimization Measures

3.5.3.1 Onsite Alternative

Although the record search and archaeological survey did not identify the presence of known archaeological cultural resources, if unanticipated cultural resources are encountered during ground-disturbing activities, all such activities near the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find.

Furthermore, if human remains are discovered, further disturbances and activities shall cease in any area suspected to overlie remains, and the County Corner shall be contacted pursuant to State Health and Safety Code Section 7050.5. In accordance with Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, notification protocols established in measure CR-2 would be followed.

Minimization measures would be implemented to avoid any potential effects to cultural resources, as described in Appendix B.

3.5.3.2 No Action Alternative

The No Action Alternative would have no effects on cultural resources. Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands; therefore, the No Action Alternative would not require implementation of avoidance, minimization, or mitigation measures.

3.6 Aesthetics

3.6.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment to aesthetics were derived from the reports and resources listed in Section 8.0, References. These reports analyzed aesthetics within the general location of the Onsite Alternative, including potential impacts to resources within Federal lands. The analysis described in this section utilizes data from the overall SR-91/SR-71 Interchange Improvement Project environmental document and these related studies to determine the potential effects of the Onsite Alternative to aesthetic resources, specifically within the Proposal area.

The prominent topographic features within the Proposal area are characterized by two defining landforms: the Chino Hills to the northwest of the Proposal area and the Prado Basin along the Santa Ana River to the northeast. To the south are the foothills of the Santa Ana Mountains, although these are not as prominent as the Chino Hills are within the Proposal area. In general, the Proposal area sits within the basin formed by the Santa Ana River. Existing views of the site consist primarily of low-lying vegetation and trees dispersed throughout Federal lands. The Proposal area currently does not receive any artificial light at night beyond that from the lighting on SR-91 and SR-71.

A Visual Impact Assessment (VIA) (Parsons 2010) was prepared to assess the potential adverse visual effects of the Interchange Proposal and to identify measures to avoid, minimize, and mitigate those adverse effects. The VIA studied impacts for the overall Interchange Proposal by dividing the local area into six view units. These units are defined as portions of the regional landscape that contain a distinct, but not necessarily homogeneous, visual character. Because it is not possible to analyze every view within the Proposal area, it is necessary to select key viewpoints that typify the visual effects of the Interchange Proposal. The key viewpoints that are used to typify the visual effects of the Onsite Alternative are identified in Figure 3-10 and simulated in Figures 3-11 and 3-12. The findings of the VIA for this view units are summarized below.

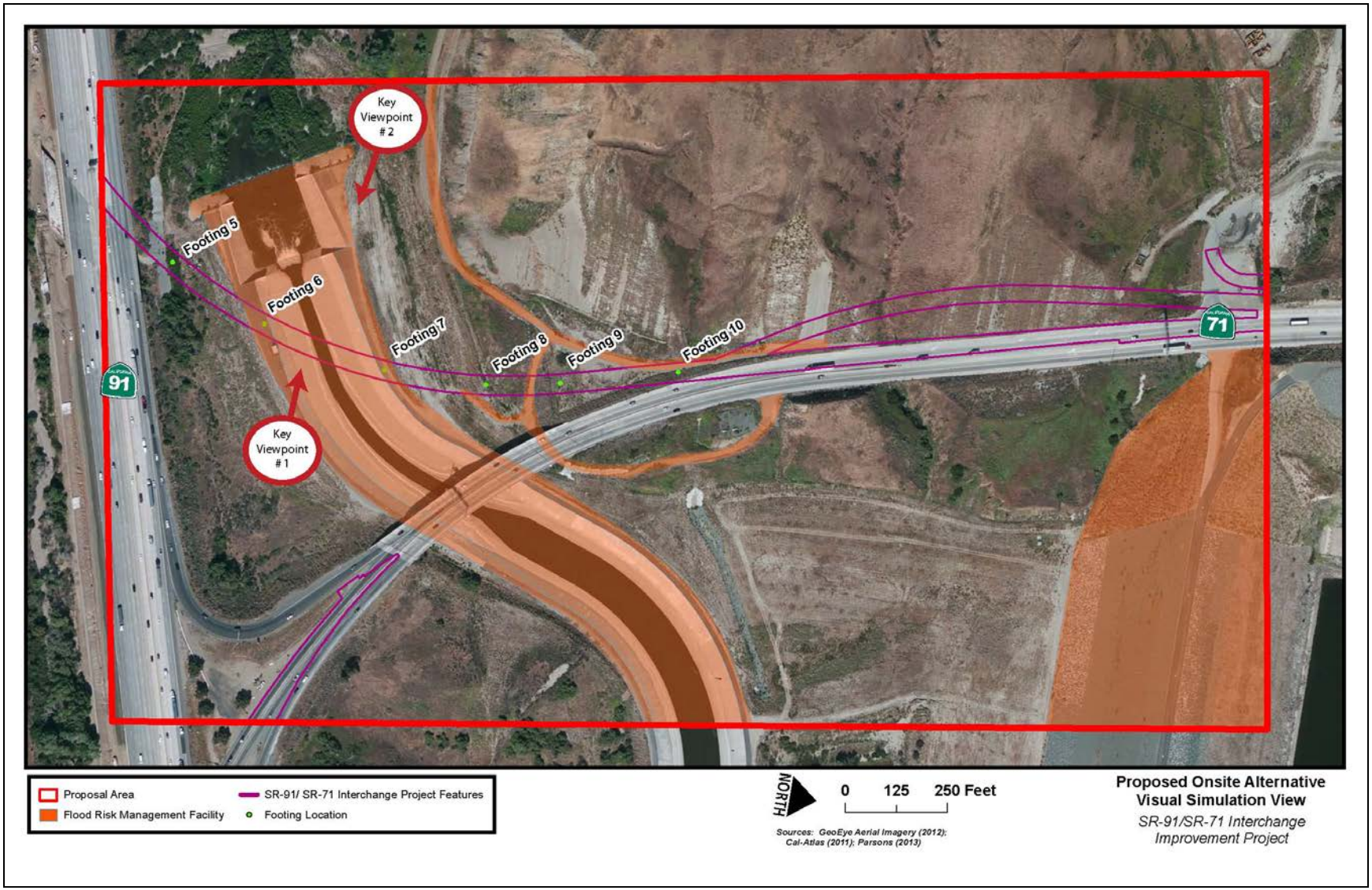

Figure 3-10: Landscape Unit within Potentially Affected Area

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Figure 3-11:
Key Viewpoint #1 of Proposed Bridge Footings within Federal Lands
(Northeast of SR-91/SR-71 interchange looking southwest on the Santa Ana River Channel)

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Figure 3-12:
Key Viewpoint #2 within Federal Lands
(Northwest of SR-91/SR-71 interchange looking southeast)

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Key Viewpoint #1 within Federal Flood Risk Management Facility:

Orientation: The photo for this simulation (Figure 3-11) was taken from the existing flood risk management facility, on top of the southern levee of the flood risk management facility looking westward toward the interchange.

Existing Visual Character/Quality: The landscape from this viewpoint is disturbed with concrete and impervious surface in the mid-ground. The ground plane has no vegetation because the surface has been paved over for construction of the Santa Ana River Spillway flood risk management facility. The overall visual quality of the view is moderately low, with moderately low vividness, low intactness, and moderately low unity.

Features: The new flyover structure would be the most visually prominent feature; this bridge would be approximately 23 feet above the existing Santa Ana River Bridge.

Changes to Visual Character: The addition of the second bridge raises the visual profile of the freeway, but it would not be higher than the hills in the background of the photo. Given the current disturbed nature of the foreground area, it is unlikely that any vegetation would grow due to the existing paved condition of the flood risk management facility.

Anticipated Viewer Response: Because there are very few viewers from this location and the area is so disturbed, it is anticipated that viewer sensitivity would be moderately low.

Resulting Visual Impact: From this viewpoint, the new flyover structure would be a noticeable addition in the landscape, but effects to the visual quality of the view are not anticipated to be significant. It is anticipated that the overall visual quality would remain approximately the same, with low vividness and intactness, and moderately low unity.

Key Viewpoint #2 within Federal Lands

Orientation: The photo for this simulation (Figure 3-12) was taken from the existing dirt road along the base of Chino Hills looking eastward toward the interchange.

Existing Visual Character/Quality: The landscape from this viewpoint is disturbed, with a dirt road and piles of dirt in the mid-ground. The ground plane has sparse vegetation, mostly grasses and weedy species. The overall visual quality of the view is moderately low, with moderately low vividness, low intactness, and moderately low unity.

Features: The new flyover structure would be the most visually prominent feature; this bridge would be approximately 23 feet above the existing Santa Ana River Bridge.

Changes to Visual Character: The addition of the second bridge raises the visual profile of the freeway, but not higher than the hills in the background to the right of the photo. Given the current disturbed nature of the foreground area, it is unlikely that screening vegetation would grow large enough to provide any screening in this view in the near term.

Anticipated Viewer Response: Because there are very few viewers from this location and the area is so disturbed, it is anticipated that viewer sensitivity would be moderately low.

Resulting Visual Impact: From this viewpoint, the new flyover structure would be a noticeable addition in the landscape, but effects to the visual quality of the view are not anticipated to be significant. It is anticipated that the overall visual quality would remain approximately the same, with low vividness and intactness, and moderately low unity.

3.6.2 Potential Aesthetic Impacts

3.6.2.1 Onsite Alternative

The construction phase of the Onsite Alternative would result in temporary visual impacts. The presence of construction vehicles and equipment would temporarily degrade the visual quality of the Proposal area during construction of the Onsite Alternative. Additionally, changes to the visual quality of the slope areas along SB SR-71 would be considered temporary because the post-construction result of this activity would result in a revegetated hillside slope. These impacts are temporary and would cease once construction is complete, and resulting effects are not anticipated to be significant.

It is anticipated that the Onsite Alternative would cause a permanent minor decrease in the overall visual quality of the area, with the impacts being greater in some of the landscape units on Federal lands than in others. Mitigation measures detailed in Appendix B are recommended to avoid and minimize these effects to the greatest extent practicable. With their implementation, visual impacts would be reduced and effects to the overall visual quality of the Proposal area are not anticipated to be significant.

Specific changes to the visual environment for the key viewpoint described above on Federal lands are discussed below:

Key Viewpoint #1 within Federal Flood Risk Management Facility

Changes associated with Key Viewpoint #1 are associated with the new flyover structure and the bridge columns. These changes would be noticeable to viewers. The landscape from this viewpoint is disturbed with concrete and impervious surface in the mid-ground. The ground plane has no vegetation because the surface has been paved over for construction of the Santa Ana River Spillway flood risk management facility. The overall visual quality of the view is moderately low, with moderately low vividness, low intactness, and moderately low unity.

Access to this key viewpoint is limited to individuals with access to the flood risk management facility. Current viewers within the unit are primarily workers associated with USACE. These workers are considered to have a relatively low sensitivity to changes in the visual environment. While the flyover would be prominent in the mid- to foreground views, it is unlikely to have a substantial visual effect due to the small number of potential viewers within the unit. In addition, a substantial number of man-made structures already in the western hillside landscape (e.g., residential homes and commercial buildings), the addition of the new flyover is unlikely to diverge significantly from the current visual quality.

Key Viewpoint #2 within Federal Lands

Within this key viewpoint, the changes associated with the new flyover structure would be noticeable. Areas within the eastern section have very little vegetation to screen even the existing bridge. Much of this is due to past construction disturbances. Therefore, construction of the new flyover would be prominent in the mid- to foreground within this area of Federal lands.

Few people are located within the key viewpoint; however, a proposed trail along the Santa Ana River that would ultimately traverse this area may increase potential viewers. There appear to be no trails associated with CHSP that would have views from this unit. Current viewers within the unit are primarily workers associated with dam and spillway operations. These workers are considered to have a relatively low sensitivity to changes in the visual environment. While the flyover would be prominent in the mid- to foreground views, it is unlikely to have a substantial visual effect due to the small number of potential viewers within the unit. In addition, because there are a substantial number of man-made structures already in the eastern landscape, the addition of the new flyover is unlikely to diverge significantly from the current visual quality.

Construction of the Onsite Alternative may produce minor temporary effects on aesthetics and visual quality due to the presence of construction equipment and new structures being erected. Construction of the Onsite Alternative includes constructing the proposed direct flyover bridge connector structure from EB SR-91 to NB SR-71, temporary falsework, two proposed bridge footings within the flood risk management facility, and four proposed bridge footings within Federal lands. Construction activities associated with the Onsite Alternative would be temporary and are anticipated to last the duration of construction, which is anticipated to be 24 months. Minor effects on aesthetics and visual quality would be temporary.

As such, effects on visual quality resulting from the proposed direct flyover bridge connector structure from EB SR-91 to NB SR-71, two proposed bridge footings within the flood risk management facility, and four proposed bridge footings within Federal lands are not anticipated to be significant. Additionally, effects on visual quality due to grading of the hillside slopes along SR-71 are not anticipated to be significant due to the revegetation and hydroseeding activities to be implemented after construction of the Onsite Alternative.

3.6.2.2 No Action Alternative

Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands, and the baseline aesthetic conditions would remain. There would be no temporary visual impacts because there would be no falsework, construction equipment/vehicles or hillside grading at or around the Proposal area. Moreover, there would also be no permanent minor decrease in the overall visual quality of the area. The existing views within the Proposal area would remain unaffected without the proposed structures. As a result, the No Action Alternative would have no effects on aesthetics.

3.6.3 Avoidance/Minimization Measures

3.6.3.1 Onsite Alternative

Minimization measures would be implemented to avoid significant effects to aesthetics, as described in Appendix B.

3.6.3.2 No Action Alternative

The No Action Alternative would have no effects on aesthetics. Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands; therefore, the No Action Alternative would not require implementation of avoidance, minimization, or mitigation measures.

3.7 Noise

3.7.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment for noise were derived from the reports listed in Section 8.0, References. These reports analyzed potential noise impacts within the general location of the Onsite Alternative; however, the reports prepared for the overall SR-91/SR-71 Interchange Improvement Project do not specifically analyze the potential noise impacts related to the Onsite Alternative. Information and data from these reports were utilized to independently analyze and determine the potential effects of the Onsite Alternative. It should be noted that traffic noise related to the bridge spanning over the Santa Ana River Channel has been included in the greater SR-91/SR-71 Interchange Improvement Project environmental document. The noise analysis described below focuses on the potential noise effects of the proposed six bridge columns within Federal lands.

According to the Noise Study Report (Parsons, 2010) prepared in support of the environmental document for the SR-91/SR-71 Interchange Improvement Project, existing ambient noise levels within the Proposal area range from 61 to 73 dBA. Sources of ambient noise within the Proposal area are primarily from traffic noise generated by SR-91 to the south and SR-71 to the west and east of the Onsite Alternative.

Noise Standards

Noise is defined as unwanted or objectionable sound. The unit of measurement used to describe a noise level is the decibel (dB). The human ear is not equally sensitive to all frequencies within the sound spectrum; therefore, the A-weighted noise scale, which weights the frequencies to which humans are sensitive, is utilized for measurements. Noise levels using A-weighted measurements are written dBA. Decibels are measured on a logarithmic scale, which quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source would increase the noise level by 3 dBA; conversely a decrease of half of the energy would result in a 3-dBA decrease. Figure 3-13 shows typical A-weighted noise levels:

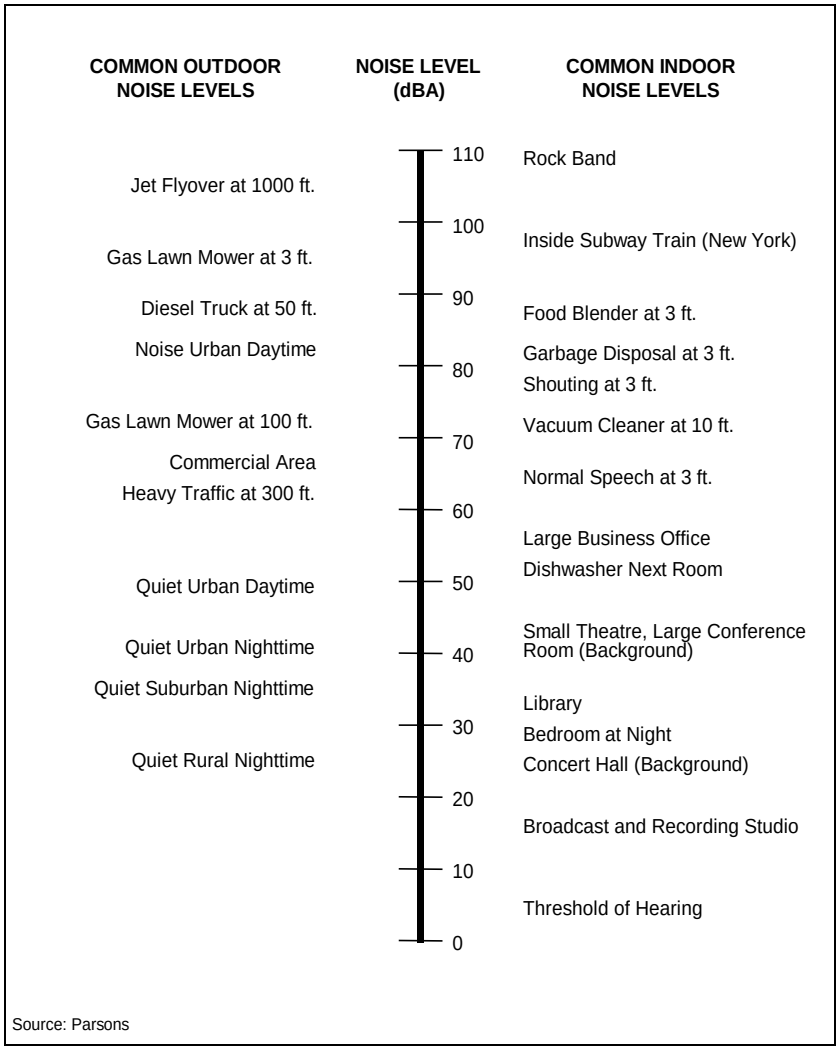

Figure 3-13: Sound Levels of Typical Noise Sources and Noise Environments

The Interchange Proposal is considered to produce a significant noise effect if it would substantially increase ambient noise levels for adjacent sensitive receptors. Long-term noise effects would not occur from the operational characteristics of the six proposed bridge columns; however, it is anticipated that potential short-term noise effects could occur as a result of construction activities associated with construction of the proposed six bridge columns and the bridge structure spanning over the Santa Ana River Channel. For the purposes of this analysis, the Onsite Alternative would be considered to produce adverse noise effects if it would:

- Exceed the 55-dBA Stationary Noise Source Standard established for residences and other sensitive land uses in the City of Corona General Plan Noise Element and Noise Ordinance;
- Conduct construction outside of the allowable hours per the City of Corona Municipal Code;
- Exceed the 55-dBA Sound Level Standard established for residential land uses per the Riverside County Code; or,
- Conduct construction outside of allowable hours per the Riverside County Code.

The County of Riverside and City of Corona noise limits and construction noise standards are summarized in Table 3-14.

Table 3-14: Noise Limits and Construction Noise Standards

	External Sound Level Standards for Residential Uses and Other Sensitive Land Uses (dBA)	Construction Noise Work Hour Standards
City of Corona	55	7:00 AM – 8:00 PM
County of Riverside	55	6:00 AM – 6:00 PM (June – September) 7:00 AM – 6:00 PM (October – May)

Source: City of Corona Municipal Code (2013), Riverside County Code (2013).

Based on 23 CFR 772, noise level criteria have been adopted to determine traffic noise impact to a specific activity category for each property. The characteristics of the Proposal area suggest Activity Category G best describes the activities within the area. Table 3-15 summarizes the activity categories related to 23 CFR 772.

Table 3-15: Noise Abatement Criteria

Activity Category	Criteria L_{eq} per hourly A-Weighted Sound Level Decibels	Description of Activities
A	60 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	70 Exterior	Residential
C	70 Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	55 Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	75 Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted

Source: 23 CFR Part 772, 2013.

3.7.2 Potential Noise Impacts

3.7.2.1 Onsite Alternative

Temporary Impacts – Construction Equipment Noise

During the construction phases of the Interchange Proposal, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction; therefore, a detailed construction noise-level calculation is often conducted during the design phase. Construction noise generated by the Onsite Alternative would conform to Caltrans' Standard Specifications Section 14-8.02, "Noise Control," and also by Standard Special Provision S5-310; these measures are anticipated to minimize construction related noise. These requirements state that noise levels generated during construction shall comply with applicable local, State, and Federal regulations and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications. In addition, Standard Special Provision would be edited specifically during the plans, specifications, and estimate (PS&E) phase.

Table 3-16 summarizes noise levels produced by construction equipment commonly used on roadway construction projects. As indicated, equipment involved in construction is expected to generate noise levels ranging from 80 to 89 dBA at a distance of 50 feet. Noise produced by construction equipment would be reduced over distance at a rate of approximately 6 dB per doubling of distance. As such, construction noise effects are not anticipated to be significant because construction would be conducted in accordance with Caltrans' Standard Specifications, which are provided in Appendix B as construction noise mitigation measures (Measure N-1). In addition, construction noise would be short term, intermittent, and not discernible because the Proposal area is dominated by local traffic noise. Hence, temporary effects related to construction noise on Federal lands are not anticipated to be significant, and measures are proposed to minimize construction noise, as presented in Appendix B.

Table 3-16: Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

Source: Federal Transit Administration, 2006.

Potential temporary noise effects may occur during construction of the Onsite Alternative. The degree of noise effects would vary throughout the construction phase; however, potential noise effects resulting from construction activities are not anticipated to be significant. Most importantly, there are no sensitive land uses that include sensitive receivers (e.g., residences, schools, churches) within Federal lands that would be subject to temporary noise effects within a distance of 50 feet, the distance within which construction noise levels would be at their greatest. As noted above, beyond 50 feet, noise levels generated from construction equipment and activities would attenuate (or drop off) by 6 dB per doubling of distance, per the sound propagation property of geometric spreading. The nearest sensitive receivers to the location of the Onsite Alternative are residences located in the surrounding hills, well beyond the Proposal area. These receivers are at a far enough distance from the Onsite Alternative that noise emanating from construction activities would not produce temporary noise effects that are anticipated to be significant. As such, permanent or temporary noise effects are not anticipated to be significant because noise effects would result mainly from temporary construction activities that would not be discernible by sensitive receivers near the Proposal area. With implementation of avoidance and minimization measures

(as described in Appendix B), and in accordance with Caltrans' Standard Specification for noise control, temporary noise effects would be minimized to the greatest extent practicable.

Permanent Impacts

Permanent noise effects are not anticipated as a result of the Onsite Alternative because there are no sensitive receptors within the Proposal area; hence, the realignment of SR-71 would not produce permanent effects. Any noise effects arising from the six proposed bridge footings would be temporary and would last the duration of construction, which is approximately 24 months. As such, bridge footings would not produce permanent noise impacts.

With the implementation of minimization measures (as presented in Appendix B), and in accordance with applicable Caltrans' Standard Specifications, temporary noise effects due to construction of the Onsite Alternative are not anticipated to be significant. Although construction of the six proposed bridge footings may produce temporary noise effects, these effects are not anticipated to be significant. Given the distance of sensitive receivers from the Proposal area, decreases in construction equipment noise over distance, properties of sound propagation, and construction of bridge footings within Federal lands would not produce noise effects that are anticipated to be significant.

With regard to permanent noise impacts on Federal lands, residential land uses, in addition to other land uses sensitive to noise impacts, do not exist in the Proposal area or on Federal lands at Prado Basin. The area mainly consists of open space, a federal flood risk management facility, and government property. With the absence of residential uses and other sensitive receptors on Federal lands, permanent noise effects resulting from the Onsite Alternative are not anticipated to be significant. In terms of noise impacts on parks and recreational facilities associated with this area (i.e., CHSP), the Onsite Alternative would not produce effects that are anticipated to be significant, because sound levels emanating from construction equipment would attenuate over distance to less than significant.

3.7.2.2 No Action Alternative

Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be constructed on Federal lands. As a result, noise effects would not occur within the Proposal area because construction activities would not be conducted on Federal lands; hence, any potential temporary construction-related noise effects would not occur under the No Action Alternative.

In addition, the No Action Alternative would not produce permanent noise-related effects on Federal lands because there are no sensitive receptors within the Proposal area. Potential noise effects resulting from temporary construction activities or permanent operations of the interchange facility would not occur, and the baseline conditions for noise would remain unaffected within the Proposal area. The O&M of the SARP would continue with the purpose of providing flood risk management for Orange and Riverside counties. As such, there would be no additional noise impacts to the SARP flood risk management facility and/or future USACE flood risk management activities/projects.

3.7.3 Avoidance/Minimization Measures

3.7.3.1 Onsite Alternative

Construction would be conducted in accordance with Caltrans' Standard Specifications. Minimization measures N-1 through N-7 should be implemented to avoid noise effects, as described in Appendix B.

3.7.3.2 No Action Alternative

The No Action Alternative would not produce noise-related effects. Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands. Potential effects associated with these activities would not occur; therefore, avoidance/minimization measures would not be required.

3.8 Recreation Resources

3.8.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment for recreational resources were derived from the report listed in Section 8.0, References. The information and data from these reports were utilized to independently analyze potential effects to recreational resources within the Proposal area.

Chino Hills State Park

Research was conducted to determine whether publicly owned parks, recreation areas, wildlife or waterfowl refuge, or land from a historic sites were within 0.5-mile of the Interchange Proposal. One publicly owned park Chino Hills State Park (CHSP) is generally located west of the SR-71 and north of the SR-91. CHSP is a natural open-space area in the hills of Santa Ana Canyon near Riverside, which serves as a critical link in the Puente-Chino Hills biological corridor. CHSP is vitally important as a refuge to many types of plants and as a link between natural areas essential to the survival of many animals. Its nearly 14,100 acres encompass stands of oaks, sycamores, and rolling, grassy hills that stretch nearly 31 miles from the Santa Ana Mountains to the Whittier Hills. The existing amenities at CHSP include onsite parking, picnic areas, an equestrian staging area, pipe corrals, a historic barn, water spigots, campsites, restrooms, and more than 60 miles of hiking, biking, and equestrian trails.

Santa Ana River Trail and Parkway

The Santa Ana River Trail and Parkway (SART) is a trail and bikeway corridor that passes through urban parkland and forests. In 2006, the Counties of San Bernardino, Orange, and Riverside, as well as SAWPA and the Wildlands Conservancy, entered into a Memorandum of Understanding to assist in completing this regional recreational resource. If approved, completion of the 110-mile-long SART will connect Big Bear Lake in the San Bernardino Mountains to the mouth of the Santa Ana River at the Pacific Ocean. The trail is divided into three components: the Lower Trail (within Orange County at the westernmost limits), the Middle Trail (within portions of Orange, Riverside, and San Bernardino counties), and the Upper Trail (within the mountainous areas maintained and operated by the U.S. Forest Service as part of the San Bernardino National Forest). The SART does not currently extend through the Proposal area; however, if the SART connectivity project within the Middle Trail segment is approved, the trail will traverse through the Proposal area near the Onsite Alternative. Construction of the trail within Orange County would be completed by 2020 and the Riverside County portion by 2035.

Prado Dam

The Prado Dam is not considered a recreational facility; however, the Prado Basin Park located approximately 4 miles northeast of the Proposal area on River Road in the eastern portion of the Prado Basin is considered a recreational facility. Prado Basin Park is outside the Proposal area.

Section 4(f)

The Department of Transportation Act of 1966 included a special provision – Section 4(f), which stipulated that FHWA and other Department of Transportation (DOT) agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless the following conditions apply:

- There is no feasible and prudent alternative to the use of land.
- The action includes all possible planning to minimize harm to the property resulting from use.

In August 2005, Section 6009(a) of SAFETEA-LU made the first substantive revision to Section 4(f) since the 1966 U.S. Department of Transportation Act. Section 6009, which amended existing Section

4(f) legislation at both Title 49 U.S.C. Section 303 and Title 23 U.S.C. Section 138, simplified the process and approval of projects that have only *de minimis* impacts on lands impacted by Section 4(f). Under the new provisions, once the U.S. DOT determines that a transportation use of Section 4(f) property results in a *de minimis* impact, analysis of avoidance alternatives are not required, and the Section 4(f) evaluation process is complete. Section 6009 also required the U.S. DOT to issue regulations that clarify the factors to be considered and the standards to be applied when determining if an alternative for avoiding the use of a Section 4(f) property is feasible and prudent. On March 12, 2008, FHWA issued a Final Rule on Section 4(f), which clarifies the 4(f) approval process and simplifies its regulatory requirements. In addition, the Final Rule moves the Section 4(f) regulation to 23 CFR 774, which outlines the implementation of 23 U.S.C. § 138 and 49 U.S.C. § 303. Furthermore, FHWA's final rule on Section 4(f) *de minimis* findings is codified at 23 CFR 774.3 (for approvals) and 23 CFR 774.17 (for definition of terms). Sections 4.19 and 4.20 provide further discussion on Section 4(f).

Section 6(f)

Section 6(f) applies to public recreation or park lands acquired or developed with Land and Water Conservation Fund (LWCF) Act funds pursuant to the LWCF Act of 1965, codified at 16 U.S.C 4601 *et seq*. Property acquired or developed with LWCF assistance shall be retained and used for public outdoor recreation. Any property so acquired and/or developed shall not be wholly or partly converted to other than public outdoor recreation uses without the approval of the National Park Service (NPS) pursuant to Section 6(f)(3) of the LWCF Act and these regulations. The conversion provisions of Section 6(f)(3), 36 CFR Part 59, and these guidelines apply to each area or facility for which LWCF assistance is obtained, regardless of the extent of participation of the program in the assisted area or facility and consistent with the contractual agreement between NPS and the State. Responsibility for compliance and enforcement of these provisions rests with the State for both State and locally sponsored projects. According to the LWCF, CHSP has received the following LWCF funding to date:

- A $75,600 LWCF Act grant in fiscal years (FYs) 1982 and 1983 (Project #06-00969 for the purchase of land, APN not available) for the park.
- A $1,488,120 LWCF Act acquisition grant in FYs 1984 and 1985 (Project #06-01144 for the purchase of land at APN 1003-141-3-4 [partial]) for CHSP.
- A grant (Project #06-01571) for development within the park.

Based on the LWCF funding received by CHSP in the past, CHSP is subject to protection under Section 6(f). Temporary nonconforming uses within Section 6(f) property require coordination with State Parks and NPS.

3.8.2 Potential Recreation Resource Impacts

3.8.2.1 Onsite Alternative

The SART alignment within the Proposal area is currently in development. The Proponents are coordinating with the SART partners to ensure that the Onsite Alternative is compatible with future plans of the trail. Based on the alignment map provided by the SART partners, the Onsite Alternative layout provided in this EA is compatible with the preliminary alignment of the SART within the Proposal area; hence, there are no potential impacts to this future recreational facility. Because CHSP is the only existing recreational facility within the general area, the analysis conducted for recreational resources is focused on potential effects of the Onsite Alternative to this park. CHSP is identified as a Section 4(f) and 6(f) resource, per 23 CFR 774 and CFR Title 36, Chapter 1, Part 59, respectively.

Potential Impacts to Chino Hills State Park

CHSP is located west of the Proposal area, adjacent to Federal land parcels, and would not be permanently affected by construction of the Onsite Alternative. Although some minor permanent and

temporary construction easements would be required immediately adjacent to CHSP, these acquisitions would not affect the recreational use of CHSP. Construction impacts at CHSP are expected to temporarily disturb 3.84 acres and would be short term as hillside slopes for the Proposed Action are graded to accommodate the SR-91/71 flyover structure. After construction, the area within CHSP would maintain its current function as a slope easement. This area of the park is preserved as open space conservation and is not used for recreational activities.

Federal policies preserving public parks and recreational areas are found under 23 U.S.C. § 138 and 49 U.S.C. § 303. These policies assert that special efforts should be made in preserving public parks and recreational sites. Under these federal policies, *de minimis* impact is defined for publicly owned parks, recreational areas, and wildlife and waterfowl refuges as a transportation program or project that will not adversely affect the activities, features, and attributes of the Section 4(f) resource. The Proponents sent a letter to the California State Parks Superintendent outlining the overall Interchange Proposal's Section 4(f) *de minimis* impact on CHSP. On May 3, 2010, CHSP issued a written concurrence of the Project's Section 4(f) *de minimis* impact finding.

Section 6(f) applies to public recreation or park lands acquired or developed with LWCF Act funds pursuant to the LWCF Act of 1965. All requests for temporary uses within a Section 6(f) property for purposes that do not conform to the public outdoor recreation requirement must submit an *LWCF Project Description and Environmental Screening Form* (LWCF PD/ESF). Section 6(f) of the LWCF Act is codified at CFR Title 36, Chapter 1, Part 59.

A formal request by State Parks was submitted to NPS describing the temporary nonconforming use. In April 2011, the LWCF PD/ESF for the Interchange Proposal was completed and submitted to State Parks. The completed LWCF PD/ESF application states that the Interchange Proposal intends temporary nonconforming uses within CHSP and requires a permanent slope easement north of SR-91 and west of SR-71 within CHSP. The total easement area is approximately 3.84 acres of the easternmost section of CHSP, which would also accommodate the future SR-71 Widening Project. Currently, this area of the CHSP functions as a slope easement. The proposed property to be temporarily used is not part of a trail system and does not provide significant recreational value for visitors. Furthermore, this area does not affect any park facilities or decrease recreational opportunities. Construction of the permanent slope easement within CHSP is anticipated to occur for less than 6 months and would not affect outdoor recreational activity during construction and after completion of the permanent slope easement.

In May 2011, the Proponents received a concurrence letter from State Parks agreeing that the assessment provided in the LWCF PD/ESF completed for the Interchange Proposal is a temporary nonconforming use as described in Section 6(f) of the LWCF. The Proponents would continue coordination with State Parks through project completion to ensure that the SR-91/SR-71 Interchange Improvement Project complies with the regulations and provisions stated in Section 6(f)(3) of the LWCF Act.

With the implementation of minimization measures, potential effects to recreational resources within CHSP are not anticipated to be significant. Construction activities would avoid parks and recreational areas to the greatest extent feasible and would not affect access to and from CHSP. Construction activities associated with CHSP consist of hillside grading and would not affect any recreational uses of the park. Potential direct and indirect effects on recreational facilities are not anticipated.

3.8.2.2 No Action Alternative

Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands. The No Action Alternative would have no temporary effects on recreational resources, including CHSP and/or Section 4(f)/6(f) properties because construction activities would not take place in the Proposal area. Recreational resources near the Proposal area would remain unaffected, and there would be no change in the existing conditions of these resources. Furthermore, access to public recreation lands surrounding the Proposal area would not be affected by the No Action Alternative.

3.8.3 Avoidance/Minimization Measures

3.8.3.1 Onsite Alternative

Construction activities and permanent features of the direct flyover bridge connector structure and bridge footing columns completely avoid recreational uses of CHSP as discussed above. Measures to minimize potential impacts from construction are described in Appendix B.

3.8.3.2 No Action Alternative

The No Action Alternative would have no effects on recreational resources. Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands; therefore, the No Action Alternative would not require implementation of avoidance, minimization, or mitigation measures.

3.9 Health and Safety

3.9.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment to health and safety were derived from the reports listed in Section 8.0, References. These reports analyzed potential health and safety effects within the general location of the Onsite Alternative; however, the reports prepared for the overall SR-91/SR-71 Interchange Improvement Project do not specifically analyze the potential effects on health and safety resources related to the Onsite Alternative. Information and data from these reports were utilized to independently analyze and determine the potential effects of the Onsite Alternative.

Emergency Services

Emergency services, such as police and fire departments near the Proposal area, are listed in Table 3-17. These services are from the county jurisdictions of Riverside, San Bernardino, and Orange County and the city jurisdictions of Corona, Anaheim, and Brea.

Table 3-17: Local Fire and Police Stations

Public Service Department	Service Area	Station and Address
Anaheim Police Department	Anaheim	East District 8201 E. Santa Ana Canyon Road Anaheim, CA 92808
Anaheim Fire Department	Anaheim	East District Weir Canyon Station 10 8270 E. Monte Vista, Anaheim, CA 92808
Brea Police Department	Yorba Linda	1 Civic Center Circle, Brea, CA 92821
Orange County Fire Authority	Yorba Linda	Station 53 25415 La Palma Avenue, Yorba Linda, CA 92887
Corona Police Department	Corona	849 W. Sixth Street, Corona, CA 92882
Corona Fire Department	Corona	Station 5 1200 Canyon Crest, Corona, CA 92882
Riverside County Sheriff	Riverside County	Norco Sheriff Department 2870 Clark Avenue, Norco, CA 92860
Riverside County Fire Department	Riverside County	Northwest Division Station 14 3770 Blair Street, Corona, CA 92879
San Bernardino County Fire Department	San Bernardino County	2413 North Euclid Avenue, Upland, CA 91783
San Bernardino County Sheriff	San Bernardino County	13843 Peyton Drive, Chino Hills, CA 91709

Source: Parsons, 2009.

Hazardous Waste and Materials

Recognized Environmental Conditions

The SR-91/SR-71 Interchange Improvement Project Initial Site Assessment (ISA) was completed in November 2008. The ISA was conducted to identify Recognized Environmental Conditions (RECs) at the Project area. RECs include any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. Site reconnaissance was done to determine if any RECs were in the Proposal area. Based on the site reconnaissance, five types of RECs were identified as follows.

First, miscellaneous hazardous materials were spilled near the Proposal area in the past. Although all hazardous materials have been cleaned up, it is still considered an REC for the Interchange Proposal. Second, polychlorinated biphenyl (PCB)-containing liquids in pole-top transformers may be present along the Proposal area. In addition, asbestos-containing materials (ACMs) are present in grey rectangular shims located beneath guard rail posts. Lead-based paint (LBP) may also be present in the paint used for lane striping. Finally, aerially deposited lead (ADL) may be present along the shoulders of SR-91 and SR-71 in the soil. Should any of these be encountered or disturbed, they should be managed and/or disposed of properly.

Known or Suspected Hazardous Material Contamination:

Three sites from the Resource Conservation and Recovery Act (RCRA) Information System Sites/Quantity Generators (RCRA GEN) database are within the 0.5-mile distance from the Proposal area, including Federal lands. The names and locations of the sites are Royal Cleaners located at 4300 Green River Drive, Chevron Station No. 90236 located at 4710 Green River Road, and Shell Service Station 135196 located at 4721 West Green River/91 Freeway. All three are small-quantity generators of hazardous waste, but none constitute an REC for the Interchange Proposal. None are located on Federal lands.

Two sites from the Emergency Response Notification System (ERNS) database are within the 0.5-mile search distance from the Proposal area. In 1991, 130 gallons of an oxidizing acid were dumped along the roadside on SR-71 approximately 0.5-mile north of SR-91. Only land was affected, and cleanup was supervised by Caltrans. In 1995, abandoned chemicals, butyl nitrite, and organic powder were found at 4718 Green River Road. The site was cleaned by the County health department. Both sites constitute RECs for the Interchange Proposal; however, neither is on Federal lands.

Two State/Tribal Leaking Underground Storage Tank (LUST) sites were identified within the 0.5-mile search distance from the Proposal area. The first site is Chevron Station No. 90236 located at 4710 Green River Road. Gasoline was discharged, but it only impacted soil. The site is not within the Proposal area or Federal lands, and there were no migrating hazardous substances moving toward the Proposal area. The case was closed in 2000. The second site is Shell Green River located at 4721 Green River Road. In 1998, groundwater was contaminated from gasoline discharge. According to a 2007 site assessment report, the groundwater contamination is migrating in a northwesterly direction away from the Proposal area and Federal lands. Neither site constitutes an REC for the Interchange Proposal.

3.9.2 Potential Health and Safety Impacts

3.9.2.1 Onsite Alternative

Emergency Services

In the short-term, construction of the Onsite Alternative may result in temporary outages of certain utilities. These outages would result in minor inconveniences to the surrounding communities. The Onsite Alternative may also result in some disruption to emergency services serving and traveling through Federal lands due to detours and closures from the construction of the Onsite Alternative.

Emergency service providers in Anaheim and Yorba Linda access areas to the north and south of SR-91 via local arterial and secondary roads. In addition, emergency service providers in these two cities can cross the Onsite Alternative segment of SR-91 at Gypsum Canyon Road if emergency services personnel and/or equipment are needed on the other side of the freeway from the stations at which those services are based. Emergency service providers in Orange County can, if requested under mutual aid agreements, travel on SR-91 to reach locations in San Bernardino and Riverside counties.

Emergency service providers in San Bernardino County (north of SR-91) would respond from stations located in San Bernardino and would not necessarily need to use SR-91 to access emergency locations; however, those emergency service providers could use SR-91 and SR-71 if personnel/equipment are arriving from more distant stations or are responding to requests for service in Orange County under mutual aid agreements.

Emergency service providers in Riverside County (north and south of SR-91) would respond from stations located in the cities of Corona and Norco, as shown above in Table 3-15. Those responders would not necessarily need to use SR-91 to access emergency locations; however, those emergency services providers could use SR-91 from more eastern locations in Corona and Riverside County if personnel/ equipment are coming from more distant stations or are responding to requests for service in Orange County under mutual aid agreements.

Hazardous Waste and Materials

The ISA identified five RECs. These RECs are past miscellaneous hazardous materials spilled in the Proposal area, PCBs in pole-top transformers, ACMs in gray rectangular shims beneath guard rail posts, LBP in paint used for lane striping, and ADL in soils. Based on the findings of the ISA, potential impacts of the Onsite Alternative are as follows:

Miscellaneous hazardous materials: Hazardous materials were historically spilled and found on and near the Proposal area; however, these hazardous materials have been cleaned up with no further remediation activities required. Although these hazardous materials are RECs, it is not likely that the Onsite Alternative would create conditions or disturb these materials to expose people or the environment to a significant hazard.

PCBs: Pole-top transformers with PCB-containing liquids may be present along the Proposal area. As a result, the pole-top transformers would be properly managed if they are to be removed or relocated during construction activities.

ACM: ACM is currently present in gray rectangular shims located beneath guard rail posts at three sites within the SR-91/SR-71 Interchange Proposal area. Based on the previous data, current Onsite Alternative scope, and other ongoing projects in the area, it is not likely that construction of the proposed interchange would encounter any ACM; however, if ACM materials are disturbed during construction activities, the materials would be managed in accordance with California Division of Occupational Safety and Health (Cal/OSHA) regulations (Title 8, *California Code of Regulations* [CCR], Section 1529).

LBP: Paint used in the lane striping, which might be removed as part of the Interchange Proposal, may contain LBP. As a result, paint would be sampled for LBP to determine proper handling and disposal requirements.

ADL: ADL may be present along the shoulders of SR-91 and SR-71. Previous ADL sampling has been conducted in both directions of SR-91. Those results indicated ADL was present in the soils along the shoulders of SR-91. To comply with appropriate hazardous waste regulations, soils contaminated with lead would be managed properly by including the Caltrans Standard Specification SSP S5-740 ADL or equivalent specification in the Onsite Alternative plans.

If avoidance and minimization measures are implemented as described in Appendix B, health and safety effects (permanent and temporary) are not anticipated to be significant. With the implementation of minimization measures, effects on health and safety are not anticipated to result from construction of the Onsite Alternative.

3.9.2.2 No Action Alternative

Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands. There would be no disruption to emergency services. Moreover, with the No Action Alternative, no potentially hazardous waste or materials would be disturbed or exposed. Potential effects associated with these activities would not occur; therefore, they would not affect the health and safety of humans within the Proposal area. The No Action Alternative would have no impacts on human health and safety.

3.9.3 Avoidance/Minimization Measures

3.9.3.1 Onsite Alternative

Emergency Services

Although major disruption to emergency services during construction of the Onsite Alternative is not anticipated, measures would be taken in the Transportation Management Plan (TMP) to avoid and minimize disruption. Measures to minimize potential impacts from Onsite Alternative construction are described in Appendix B.

Hazardous Waste and Materials

Spill and hazardous waste prevention during construction activities would utilize Caltrans Spill Prevention BMP WM-4. Construction activities on Federal lands would not utilize chemicals or other potentially hazardous materials. Potential spills during construction activities would most likely come from engines and biodegradable drilling mud. If motor oil or other motor fluid leaks are observed from the motors of the vehicles or excavation equipment onsite, field or construction personnel would place a plastic tarp beneath the leak so that fluids do not make contact with the exposed ground surface. Maintenance of vehicles and excavation equipment would not be conducted onsite. Information on spill prevention BMPs is provided in Appendix E.

Although effects related to hazardous waste and materials are not expected, many measures would be implemented during construction to avoid and minimize the chance of exposure to hazardous waste and materials. These measures are described in Appendix B.

3.9.3.2 No Action Alternative

The No Action Alternative would have no effects on health and safety. Under the No Action Alternative, improvements to the SR-91/SR-71 Interchange would not be implemented on Federal lands; therefore, the No Action Alternative would not require implementation of avoidance, minimization, or mitigation measures.

3.10 Flood Risk Management

3.10.1 Description of Resource and Baseline Conditions

The Proposal area is located within a flood risk management facility under the jurisdiction of USACE. Prado Dam and its associated features provide flood risk management with the purpose of reducing the risk of damage from floods for the surrounding area and the communities of Orange, Riverside, and San Bernardino counties. Construction of the Prado Dam in May 1941 consisted of an earthen embankment, outlet works, and concrete spillway. Due to rapid growth and development in southern California, the effectiveness of the original flood control system has decreased; areas that would absorb rainfall runoff have been reduced, as well as the water holding capacities of the reservoirs. As a result of the inadequacy of the original flood risk management facility, the SARP was designed to provide flood protection for all three counties.

The SARP is located along a 75-mile reach of the Santa Ana River in Orange, Riverside, and San Bernardino counties and is anticipated to be completed by 2020. The plan for flood risk management improvements includes three principal features:

- Lower river channel modification for flood risk management along the 30.5 miles of the Santa Ana River from Prado Dam to the Pacific Ocean.
- Construction of Seven Oaks Dam (approximately 38 miles upstream of the existing Prado Dam)
- Enlargement of Prado Dam to increase reservoir storage capacity from 217,000 acre-feet to 362,000 acre-feet.

Within the parameters of the Proposal area, flood risk management features of the SARP within the Prado Basin include Prado Dam, the Santa Ana River Outlet Channel, the spillway channel, the wastewater treatment dike, and the Temescal Creek dike; however, it is anticipated that the spillway channel and the surrounding adjacent area would be affected with construction of the Onsite Alternative.

Flood Zones

Within the Proposal area, the Federal Emergency Management Agency (FEMA) has identified two flood zones on the Flood Insurance Rate Map (FIRM) for this area (Maps 06065C0669G and 06065C0668G).

The two flood zones within the area are defined as:

- Zone A – Areas with a 1 percent chance annual and a 26 percent chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown within these zones.
- Zone X – Areas outside the 1 percent annual chance floodplain, areas of 1 percent annual chance sheet flow flooding where average depths are less than 1-foot, areas of 1 percent annual chance stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 1 percent annual chance flood by levees. No base flood elevations or depths are shown within this zone. Insurance purchase is not required in these zones.

The Onsite Alternative is located within the Wardlow/Fresno Canyon Wash area, which is identified as a Zone A floodplain according to FEMA FIRM Map No. 06065C0668G. This area would be within the floodplain during a 100-year flood event and is known as a Special Flood Hazard Area subject to inundation by the 100-year flood; however, the entire Proposal area is not within a regulatory floodway.

3.10.2 Potential Flood Risk Management Impacts

3.10.2.1 Onsite Alternative

The Proponents have been coordinating with USACE regarding the design of the Onsite Alternative and construction methods to avoid or minimize any potential effects to flood risk management facilities under the jurisdiction of USACE. Through these meetings, the Proponents were instructed by USACE that the Onsite Alternative must not impair USACE's operation of the Santa Ana River Channel.

Permanent Effects

The Onsite Alternative consists of the construction of six bridge columns supporting the proposed flyover structure over the Santa Ana River Channel. Of these six bridge columns, four would be constructed within the Federal land, resulting in permanent minor modifications to Federal lands by increasing the amount of impervious surface area. The four proposed bridge footings would result in a 0.01-acre increase of impervious surface area within Federal land. This increase is relatively minor and does not have the potential to result in permanent effects to surface hydrology that are anticipated to be significant.

The two proposed bridge columns within the Federal flood risk management facility would not be constructed in the Santa Ana River Channel but would be constructed on top of the channel levees. These two columns are not anticipated to increase the total impervious surface area because the top of the existing levees is currently constructed with concrete; therefore, no permanent effects to flood risk management are anticipated from constructing these two columns from a surface hydrology standpoint because there would be no net increase in impervious surface.

From a structural standpoint, the two columns on top of the Santa Ana River Channel levee are designed to withstand seismic events. The top of shaft for the two bents on either side of the channel were lowered to match the bottom of the channel elevation to prevent damage to the channel lining during seismic event. A 12-foot-diameter CIDH pile would be constructed and may include a temporary steel casing during construction. A permanent steel isolation casing through the levee is also proposed to isolate the levee from potential column movement during a seismic event. The top of the pile foundation is proposed at the elevation of the bottom of channel to eliminate the chance of column movement damaging the channel during a seismic event. A figure of the columns on the Santa Ana River Channel levee was previously shown in Figure 2-3.

Because the proposed modifications to the flood risk management facility would not result in realignment, changes to structural geometry or affect the hydraulic capacity of the Santa Ana River Channel, the Section 408 Outgrant for the Onsite Alternative would qualify for a Minor Section 408 determination. USACE has reviewed initial plans and construction methods submitted by the Proponents to construct within the Santa Ana River Channel Levee. On April 10, 2013, USACE provided an initial Section 408 Action Classification that the activities associated with the Onsite Alternative would be a "Minor 408 Action" and does not anticipate these "these columns will alter the Santa Ana River Levee." The Section 408 Memorandum is provided in Appendix H.

Temporary Effects

Temporary Falsework Construction

To construct the portion of the flyover bridge over the Santa Ana River, temporary falsework would be required to be constructed within the Santa Ana River Channel to support the structure above the Santa Ana River. Heavy-duty machinery (e.g., cranes) would be prohibited to enter and operate within the channel lining and channel bottom; operation of heavy machinery would occur outside these areas and/or on top of the channel levee (along the maintenance road). The maintenance road along the top of the levee would also be utilized by construction personnel to access the construction area. Within the general area of the falsework, construction personnel and light-duty construction equipment would operate within the channel bottom. To ensure that construction of the falsework does not interfere with the operations of Prado Dam and its associated features, the Proponents and/or the construction contractor would coordinate with USACE prior to work within the Santa Ana River Channel.

Once the falsework has been constructed within the Santa Ana River Channel, it would remain at this location until the portion of the flyover structure spanning over the Santa Ana River has been constructed or at the end of the dry season. Traditional falsework construction has been discussed with USACE, and it has been determined that the portion of the bridge spanning the channel could be constructed within the 6-month-long dry season from March to October. If construction of this flyover segment has not been completed during the first dry season, the falsework would be removed from the channel and reconstructed at the beginning of the next dry season to recommence construction of the flyover bridge. With the installation of temporary falsework within the Santa Ana River Channel, there is a risk that temporary construction activities associated with the installation could be exposed to unforeseen flood events (e.g., a 100-year flood event) and/or unplanned controlled releases. If such an event were to occur during construction of temporary falsework, construction equipment could potentially be washed out onto the Santa Ana River and/or floodplain; however, because the portion of the bridge spanning the channel would be constructed within the 6-month-long dry season (March to October), floods or maximum releases are not anticipated because these events are less likely to occur during this time of year. To further minimize potential impacts to the operations of the flood risk management facility, falsework would be removed from within the channel at the end of the dry season, eliminating the risk of potential wash out when the rainy season begins. In addition, construction equipment would not be stored and/or remain within the Santa Ana River Channel after the conclusion of each work day throughout the duration of construction of the Onsite Alternative. Storage of construction equipment would be located at designated staging areas as approved by USACE.

In addition to working outside the rainy season, the falsework is designed to withstand the maximum dam release. USACE requested a hydraulics analysis to be conducted that considers the full loading conditions to determine the effects of the temporary modification of the Santa Ana River Channel spillway on the flood risk management system performance and to ensure that the design of the falsework in the channel could withstand the maximum controlled dam release parameter of 30,000 cfs (provided in Appendix F). The hydraulics analysis indicates that the falsework is anticipated to withstand the maximum flow of 30,000 cfs. The results of the analysis were previously discussed in Section 3.2 and summarized in Table 3-2. Once construction of the flyover bridge structure is completed, the falsework would be removed, and the area would be restored to Pre-Onsite Alternative conditions.

Column Construction

To minimize potential impacts to the levee during construction of the columns supporting the flyover bridge structure, the Proponent has designed large-diameter single-shaft CIDH piles to optimize foundations and eliminate the need for large pile caps. During construction, a temporarily oscillated steel casing would be used to ensure the quality of the CIDH-constructed piles. The temporarily cased oscillated method would provide the safest construction method for CIDH piles while eliminating the

risks associated with groundwater, caving due to loose material, and vibrations caused by driven piles. Furthermore, a permanent steel isolation casing through the levee is also proposed and would be constructed to isolate the levee from potential column movement during a seismic event.

Permanent or temporary effects to flood risk management facilities due to the Onsite Alternative are not anticipated to be significant. Permanent effects to flood risk management facilities include the construction of two bridge columns on top of either side of the Santa Ana River Channel levee, which would not affect the operations or the system performance of the flood risk management facility. Modifications are relatively minor and potential effects resulting from these modifications are not anticipated to be significant for the operations and structural integrity of the facility. Temporary effects from construction are anticipated to be minor and would cease after the construction of the columns is complete. Permanent and/or temporary effects on flood risk management due to construction of temporary falsework are not anticipated to be significant, thereby eliminating the potential alterations or modifications to flood risk management system performance. Avoidance and minimization measures would be implemented to ensure that the construction and permanent features of the Onsite Alternative would not result in effects that are anticipated to be significant for flood risk management.

3.10.2.2 No Action Alternative

Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands and flood risk management facility; therefore, construction of temporary falsework within the Santa Ana River Channel and construction of permanent bridge footings within the Proposal area and on top of the channel levees would not occur. Construction equipment and/or vehicles would not be present on or around the flood risk management facility. As such, there would be no risk of construction equipment or temporary falsework washing out onto the Santa Ana River Channel spillway floodplain should a substantial flood event or unplanned maximum flow controlled release occur. The No Action Alternative would not result in any changes to the baseline conditions of flood risk management facilities within the Proposal area. The SARP would continue with the purpose of providing Federal flood risk management for Orange, Riverside and San Bernardino counties. USACE would continue to implement future phases of the SARP and other flood risk management projects associated with the Santa Ana River Watershed, including areas upstream and downstream of the Prado Dam and Basin. The No Action Alternative would not result in temporary or permanent effects on flood risk management facilities.

3.10.3 Avoidance/Minimization Measures

3.10.3.1 Onsite Alternative

As described in Appendix B, avoidance and minimization measures would be implemented to avoid and/or minimize potential effects to flood risk management facilities and flood risk management. In addition to avoidance and minimization measures, any conditions issued by USACE would be implemented and followed by the Proponents and its construction contractor.

3.10.3.2 No Action Alternative

The No Action Alternative would have no effects on flood risk management. Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands; therefore, the No Action Alternative would not require implementation of avoidance, minimization, or mitigation measures.

3.11 Socioeconomics and Environmental Justice

3.11.1 Description of Resource and Baseline Conditions

The Federal lands and Proposal area on which the Onsite Alternative would be constructed consist of open space, a federal flood risk management facility, and government property. The Proposal area does not support a population, provide housing or a means to add to the population in the area, or consist of industrial or commercial land uses that are sources of employment. There are no known future plans within Federal lands to develop to other land uses that could affect socioeconomics and environmental justice within the area.

3.11.2 Potential Socioeconomic Impacts

3.11.2.1 Onsite Alternative

Construction locations and permanent improvements on Federal lands are not within residential, industrial, and/or commercial uses and do not support a population. Land uses within the Proposal area consist of open space and a flood risk management facility. Because of the absence of a population within Federal lands, there would be no effects to socioeconomic and environmental justice populations. Furthermore, no minority or low-income populations would be affected by the Interchange Proposal. As such, socioeconomic effects are not anticipated to be significant.

Under the Onsite Alternative, construction activities would not affect any established communities. SR-91 forms an existing north/south border separating residential neighborhoods within the northwestern portion of Corona from those to the south and southeast. No residential neighborhoods are located along the SR-71 segment of the Proposal area or on Federal lands.

Construction activities associated with the Onsite Alternative would not conflict with applicable land use plans, policies, or regulations of local or regional agencies. These activities would be temporary in nature and would not introduce land uses that are incompatible with existing uses, require changes to existing land use designations, or change local or regional planning document goals or policies. In addition, they would not include activities that would be unacceptable or intrusive on adjacent land uses such that current land uses could not remain. Moreover, BMPs for construction traffic management, noise abatement, and control of air quality and water quality impacts would be implemented during construction and would address construction-related impacts to area land uses.

Under the Onsite Alternative, construction of the proposed interchange would not affect an established community. SR-91 forms an existing north/south border separating residential neighborhoods within the northwestern portion of Corona from those to the south and southeast. No residential neighborhoods are located along the SR-71 segment of the Proposal area. As noted previously, construction activities would occur almost entirely within the existing SR-91 and SR-71 ROW. Although some minor permanent and temporary construction easements would be required immediately adjacent to these freeways, these acquisitions would not result in the physical division of an established community

The Project is intended to manage and improve traffic conditions on SR-71 and SR-91. It is expected to have a beneficial effect on all surrounding communities and their respective General Plans as it improves mobility and reduces congestion.

The proposed Onsite Alternative is anticipated to have no effect on socioeconomic or environmental justice resources within Federal lands.

3.11.2.2 No Action Alternative

Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands. As such, there would be no effect on local populations, existing communities, local land use plans, or immediately adjacent neighborhoods beyond current baseline conditions. Because of the absence of improvements under the No Action Alternative and the absence of a population within the Proposal area, there would be no effects to local socioeconomics and/or environmental justice populations.

3.11.3 Avoidance/Minimization Measures

3.11.3.1 Onsite Alternative

No avoidance, minimization, and mitigation measures are proposed because the Interchange Proposal is consistent with existing and proposed land uses, and it would have no effects on socioeconomic or environmental justice resources. As such, socioeconomic effects are not anticipated to be significant.

3.11.3.2 No Action Alternative

The No Action Alternative would have no effects on local socioeconomic or environmental justice resources. Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands; therefore, the No Action Alternative would not require implementation of avoidance, minimization, or mitigation measures.

3.12 Traffic and Transportation

3.12.1 Description of Resource and Baseline Conditions

The Proposal area consists of open space and a federal flood risk management facility operated by USACE. Adjacent roadways to the Proposal area include the SR-71 and SR-91 roadway facilities under the jurisdiction of Caltrans; however, these roadways are outside the limits of the Proposal area and are not part of the traffic analysis provided in this section. Roadways within the Proposal area are not public roadway facilities that are part of the local or regional traffic circulation network and function as USACE access to various locations throughout the general area of the Prado Dam. The locations of these access points were previously illustrated in Figure 2-4. The Proposal area includes four access points located along SR-71 and north of SR-91 (three located east of SR-71 and one access point located to the west of SR-71). Current function of these access roads provides USACE staff and authorized personnel access to SR-71, but it does not exhibit heavy ingress/egress traffic volumes throughout the day because the primary function of these access points is to provide USACE personnel access for maintenance and emergency purposes.

Access Modification/Improvements

Four existing access driveways along SR-71 are located within the jurisdiction of USACE and provide access to areas within the Prado Dam, Santa Ana River, and the surrounding area. Proposed modifications to these existing access points are discussed below.

Access Point #1 is located approximately 0.28-mile north of SR-91 and provides access east of SR-71 to the general area of the Santa Ana River Channel and the Prado Dam. This access point would be maintained in its current location as part of the Onsite Alternative.

Access Point #2 is located approximately 0.33-mile north of SR-91 and provides access to areas west of SR-71, the Santa Ana River, and channel spillway. The Onsite Alternative would require vacating this access to accommodate the proposed roadway geometrics and structural features of the flyover structure.

Access Point #3 is located approximately 0.5-mile north of SR-91 and provides access to the west and east of SR-71. The existing western access provides access to the Sukut property, which is a rock crushing and mining company. The existing eastern access provides access directly to the Prado Dam. Access to the Prado Dam at this access point would be maintained as part of the Onsite Alternative; however, direct access to the Sukut property at this existing location would be modified through relocating the entrance to the driveway 0.25-mile to the north to accommodate the flyover structure and proposed roadway geometrics.

Access Point #4 is located approximately 0.75-mile north of SR-91 and provides access to the east of SR-71 to the Prado Flood Control Basin and the Prado Dam. The Onsite Alternative would maintain access to Federal lands to the east and proposes to provide access to the Sukut property by constructing an access point to the west of SR-71. The Proponents would construct a driveway parallel to southbound SR-71 from Access Point #4 to the existing Sukut property entrance (located 0.25-mile south of the proposed modified Access Point #4). It is anticipated that construction of the new Sukut property access driveway would require an additional 1.23 acres to construct.

The Onsite Alternative is also proposing to improve Access Point #4 by providing the modified USACE driveway an exclusive right-turn lane into and an acceleration lane out of the driveway. These improvements would enhance safety along the NB SR-71 mainline by providing vehicles and large trucks transitional lanes for ingress and egress movements at the proposed modified USACE driveway. Preliminary plans indicate that approximately 0.36-acre within Federal lands would be required to construct the modified driveway.

3.12.2 Potential Traffic Impacts

3.12.2.1 Onsite Alternative

The Onsite Alternative consists of the construction of bridge columns, the flyover structure, and other features within the Proposal area. These features would not alter the existing land use (open space) to a traffic-generating development that would result in additional vehicular traffic within the Proposal area. The Proposal area does not include public roadway facilities that are part of the local or regional traffic circulation network; however, access roads that provide access to Federal lands from SR-71 are located within the Proposal area. Because there are no public roadways within the Proposal area, the traffic analysis focuses on the effects of the Onsite Alternative on USACE access points located along SR-71.

Four access points, which functions as maintenance and emergency access to Federal lands, are currently operating along SR-71. It is anticipated that Access Point #2 would be vacated due to construction of the flyover structure touching down at the general location of this access. The design of the proposed roadway and flyover structure would prohibit ingress/egress movements at this location. The three other existing access points would remain in operation. Traffic volumes at all three access points are considerably low because public access to these areas is prohibited. Although one of these access points would be vacated (Access Point #2) after completion of the Onsite Alternative, access to and from the Prado Dam would not be affected because areas of the vacated access point could be reached by Access Point #1 located east of SR-71.

To offset the elimination of Access Point #2, the northernmost access (Access Point #4) would be improved as part of the Onsite Alternative. Improvements at this access point include an exclusive right-turn lane and an acceleration lane from Access Point #4 to SR-71. Ingress and egress movements would be significantly improved and would accommodate large trucks entering and exiting the Prado Dam facility. NB vehicles and trucks on SR-71 would be provided an exclusive right-turn lane, which would provide vehicles turning into USACE a deceleration lane prior to turning into the driveway. This additional right-turn lane allows vehicles to move away from the faster-moving traffic in the general purpose lanes to slow down to turn into the driveway. Vehicles turning out of the driveway would be

provided a NB acceleration lane that would ease transition onto the SR-71 general purpose lanes. These features are anticipated to enhance safety and access of vehicles entering and existing Federal lands.

During construction of the Onsite Alternative, the Proponents and/or the construction contractor would maintain and provide access to Prado Dam from SR-71. In addition to providing access to minimize potential effects to operations of Prado Dam, staging and equipment storage areas would be located outside access points and routes within the Proposal area. Mobilization of equipment within the Proposal area would utilize existing routes, previously disturbed areas, and/or routes designated by USACE to the greatest extent feasible.

Furthermore, new pedestrian, transit, or other types of multi-modal facilities are not allowed within the Proposal area; therefore, the Americans with Disabilities Act (ADA) Standards for Accessible Design (28 CFR Part 36) do not apply.

Significance of Potential Effects

The Onsite Alternative would not generate additional traffic to the existing circulation pattern, nor would it affect access to the Proposal area. Although Access Point #2 would be vacated, the limited ingress and egress movements at this access would be accommodated by Access Point #1 and would provide vehicle access to the general area west of SR-71 where the vacated access is proposed; therefore, traffic effects impacting O&M and emergency personnel access are not anticipated to be significant. Improvements to the northernmost access point are anticipated to enhance USACE vehicle safety and access. Effects to O&M caused by accessing the flood risk management facility are not anticipated to be significant.

Furthermore, the Onsite Alternative would have a positive effect on traffic by directly addressing existing and projected operational deficiencies at the SR-91/SR-71 junction. These operational deficiencies include an interchange ramp that is currently designed as a nonstandard tight-loop ramp with a posted speed limit of 20 mph, which restricts the speed of vehicles and traffic flow. During periods of high transportation demand, this constraint regularly causes a traffic backup to the EB SR-91 mainline. A new direct connector linking EB SR-91 and NB SR-71 would accommodate existing and future increases in traffic volumes and would eliminate the existing nonstandard tight-loop ramp configuration. These improvements would result in a safer, more effective freeway interchange facility. As regional growth continues throughout the Inland Empire region, it is anticipated that the proposed interchange facility would enhance traffic conditions between San Bernardino, Riverside, and Orange counties.

Lastly, USACE access from SR-71 onto Federal lands would be maintained during construction. As mentioned previously, construction equipment would not be stored directly on access points/routes that are utilized by USACE for accessing the flood risk management facility, nor would access to Federal lands be obstructed by construction activities; therefore, during construction of the Interchange Proposal, access to and from the flood risk management facility would be maintained, and the O&M of the facility by USACE staff would not be significantly affected.

3.12.2.2 No Action Alternative

Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands. There are no roadway facilities within the Proposal area that are part of the local or regional traffic circulation network. As a result, the No Action Alternative would have no effects on traffic and circulation beyond existing baseline conditions. The O&M of the flood risk management facility would continue with the purpose of providing flood risk management for Orange and Riverside counties. Additionally, all four of the existing USACE access roads from SR-71 would continue to provide maintenance and emergency access to Federal lands and the flood risk management facility from SR-71.

However, under the No Action Alternative, it is anticipated that traffic congestion would continue to increase in the absence of improvements to the existing interchange facility. Traffic impacts associated with the proposed interchange facility were analyzed in the overall SR-91/SR-71 Interchange Improvement Project. According to the traffic study, without construction of the proposed freeway-to-freeway interchange, traffic conditions would continue to deteriorate under the No Action Alternative.

3.12.3 Avoidance/Minimization Measures

3.12.3.1 Onsite Alternative

Avoidance or minimization measures are required to ensure access to and from Federal lands are maintained during construction of the Onsite Alternative. These avoidance and minimization measures include prohibiting construction equipment storage on access points/routes and obstructing USACE routes/paths within the Proposal area. During construction of the Onsite Alternative, the Proponents would provide at least one access point from SR-71 to Federal lands. Implementation of these measures would maintain USACE access to Federal lands and the flood risk management facility. As a result, the O&M of the facility (by USACE staff) would not be affected by construction activities associated with the Onsite Alternative.

3.12.3.2 No Action Alternative

The No Action Alternative would have no effects on traffic and circulation. Under the No Action Alternative, improvements to the SR-91/SR-71 interchange would not be implemented on Federal lands; therefore, the No Action Alternative would not require implementation of avoidance, minimization, or mitigation measures.

3.13 Cumulative Impacts

A cumulative impact is an "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions" (40 CFR 1508.7). Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time (40 CFR 1508.7).

Cumulative impacts to resources in the Proposal area may result from residential, commercial, industrial, and highway development. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the Proposal area, such as changes in community character, traffic patterns, housing availability, and employment. Land use within the Proposal area is designated primarily as Open Space by the County of Riverside; therefore, development associated with residential, commercial, industrial, and/or agricultural land uses would not be anticipated within the Proposal area.

3.13.1 Affected Environment

The Proposal area is in the northwestern portion of Riverside County within the city of Corona. This area is characterized by large open space areas to the north and southwest, including CHSP, Prado Flood Control Basin, and Cleveland National Forest. These areas are known to contain sensitive plant and animal species and function as regional wildlife corridors. Areas to the south, northwest, and east are largely urban and include residential, commercial, and light industrial land uses. Development opportunities are limited and almost exclusively focused along SR-91 within the City of Corona. Remaining areas are either in permanent conservation or are part of the Prado Flood Control Basin. Some oil and mining activities are currently being undertaken along the west of the SR-71.

The City of Corona has indicated that little to no development is currently planned along SR-91. Only one commercial development is proposed, but no activity related to this development has occurred since 2004. Similarly, the County of Riverside has indicated that development is limited to small surface mining and petroleum extraction activities, which already exist along the west side of SR-71. Given that the Interchange Proposal and other related roadway projects are located within or immediately adjacent to SR-91 and SR-71, the cumulative study area has been limited to these areas and is shown in Figure 3-14.

The reasonably foreseeable actions used in this cumulative impact analysis were obtained through research and based on information provided by the following agencies: Caltrans, USACE, Orange County Water District (OCWD), City of Corona, County of Riverside, and County of Orange, which identified approved and pending development and infrastructure projects proposed in proximity to the Proposal area.

Table 3-18 summarizes the related past, present, and reasonably foreseeable projects that have or could impact the environmental resources within the Proposal area. It should be noted that related past projects have been accounted for in the baseline conditions for each environmental resource as these projects have been implemented at the time that the analysis for the Onsite Alternative has been conducted. For example, the noise analysis included the additional noise levels generated by past projects because when the noise measurements for the Onsite Alternative were conducted, operational noise from past development was subsequently measured and utilized as the baseline conditions; in this regard, the past project's effects have been considered in the analysis because the Onsite Alternative's impacts are analyzed *in addition to* the baseline conditions. Similar assumptions were also made for each environmental resource discussed in this section. Hence, the cumulative projects identified in Table 3-18 reflect projects that were not included in the initial baseline conditions analysis and measurements.

Table 3-18: Related Projects

Name	Jurisdiction	Proposed Activity	Status
SR-91 Corridor Improvement Project	Caltrans	Conversion of an existing high-occupancy vehicle (HOV) lane to a high-occupancy toll (HOT) lane; Conversion of an existing general purpose (GP) lane to an HOT lane; Addition of a GP lane between SR-241 and SR-71; Improvements to the SR-91 westbound (WB) off-ramp to SR-71 NB; and Improvements to the SR-71 SB ramp to SR-91 EB. Construct a second left-turn lane on the SR-91 WB exit ramp to Green River Road; construct a third right-turn lane on the SR-91 EB exit ramp to Green River Road; and construct a third SB through lane along Green River Road south of the SR-91 EB exit ramp.	Construction is anticipated between 2015 and 2035. Construction of the Initial Phase anticipated between 2015 and 2017. Construction of the Ultimate Project would be completed by 2035.
SR-71 Corridor Improvement Project	Caltrans	Addition of one GP lane along the NB and SB sides of SR-71 for approximately 3 miles from the San Bernardino County line and SR-91.	Construction is anticipated between 2020 and 2035.
Orange County Flood Control District (OCFCD) Santa Ana River Interceptor (SARI) Line Realignment	USACE	Replacement of nearly 4 miles of an existing wastewater pipeline from the Orange/San Bernardino county line to Weir Canyon along the southern banks of the Santa Ana River.	In construction. Construction to be completed by January 2014.

Table 3-18: Related Projects

Name	Jurisdiction	Proposed Activity	Status
USACE Santa Ana River Mainstem Project Reach 9 Phases IIA and IIB	USACE	Provide improvements to the USACE flood risk management system by realigning the Santa Ana River and constructing river bank protection.	Phase IIA: In construction. Construction to be completed by July 2013. Phase IIB: Construction completed in October 2012.
USACE Santa Ana River Flood Control Project Auxiliary Dike, Floodwall, and Embankment	USACE	Construction of an auxiliary dike and floodwall from the spillway to just past Auto Center Drive provide additional flood protection for the Santa Ana River mainstem project and protect the SR-91 freeway corridor from flooding.	Construction completed in 2012.
Santa Ana River Trail and Parkway	Santa Ana Watershed Project Authority (SAWPA) and USACE	Construction of a continuous Class I Bikeway along the entire Santa Ana River through San Bernardino, Riverside, and Orange counties. An additional soft-top trail for pedestrian and equestrian users would also be provided in some high-traffic areas.	Riverside County Construction anticipated to be completed by 2035. Orange County Construction anticipated to be completed by 2020.
OCWD Sediment Management Demonstration Project	OCWD and USACE	This project would remove sediment from within Prado Basin and reintroduce it into the river below Prado Dam to manage and restore sediment transport in the Santa Ana River Watershed.	Construction and operation of the proposed project are scheduled between 2014 and 2016.
OCWD Sediment Management Project	OCWD and USACE	This full-scale sediment management project would apply the findings of the demonstration project (above) to long-term removal of sediment from within the Prado Basin and deposit of sediment in and around the main channel of the Santa Ana River directly below the Prado Dam outlet.	Construction is anticipated between 2016 and 2035.
Prado Ecosystem Restoration and Water Conservation	USACE	This project is meant to investigate alternatives available to restore environmental resources and conserve water within Prado Basin and downstream of Prado Dam, within the Santa Ana River. This effort would focus on restoring aquatic, wetland, and riparian habitats for endangered and other significant species, and conserving water. Alternatives would include elements that achieve ecosystem restoration and water conservation.	Draft EIR/EIS scheduled for circulation in 2015. Construction of selected alternative(s) is anticipated between 2015 and 2035.

Methodology

The cumulative impacts analysis for the Interchange Proposal was developed by following the eight-step process identified below:

1. Identify resources to be analyzed.
2. Define the study area for each resource.
3. Describe the current health and historical context for each resource.
4. Identify direct and indirect impacts.

5. Identify other reasonably foreseeable actions that affect each resource.
6. Assess potential cumulative impacts.
7. Report results.
8. Assess the need for mitigation.

The cumulative analysis is limited to only those resources that require avoidance, minimization, and mitigation measures. Each of those resources is analyzed to determine whether the impact contribution of the Onsite Alternative to those resources, when considered with other projects, could be cumulatively considerable. In addition, the analysis considers cumulative projects that are within and/or adjacent to the Proposal area. The resources study area is limited to those within the Proposal area.

According to the Council on Environmental Quality (CEQ), NEPA documents "should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant" (CEQ 1997). The EA references the ongoing uses in the Prado Basin while also specifying the narrow range of future activities in the Proposal Area, which mainly involve flood risk management and other compatible low impact uses. As such, the following section focuses on what cumulative and incremental effects the Onsite Alternative would have on the environment by evaluating related proposals based on the following criteria:

- Past – what impacts have past projects had on the surrounding resources?
- Present – what impact would the proposed action have on existing resources?
- Future – will the proposed action contribute to the degradation of the environment?

The analysis for each environmental resource in this EA is based on existing data which includes other projects' environmental impacts that have occurred in the past. For example, vegetation impacts of other projects that occurred in the past have been captured in the vegetation survey conducted for the Interchange Proposal. There were no other projects being constructed within the Proposal area at the time of the preparation of the studies that could potentially affect the cumulative impact analysis; hence, cumulative impact analyses provided in subsequent sections discusses projects that are not included in the baseline conditions and/or planned to be constructed in the future.

Past

The cumulative impact analysis conducted in this EA includes impacts to environmental resources that have occurred in the past. The analysis conducted in the EA makes the assumption that the existing baseline data used already includes past projects' impacts on the environment. Hence, the baseline data that was evaluated for the Interchange Proposal is inclusive of impacts associated with past projects that have occurred within or immediately adjacent to the Proposal Area. Past projects that have occurred in the vicinity of the Proposal area include the OCTA SR-91 Eastbound Lane Addition and the SR-71 Widening in San Bernardino County. Past projects within the Proposal area include modifications to Prado Dam in response to increased population and resulting infrastructure needs related to water conservation activities in the area, including construction of the State Route 71 Dike extension to the main embankment in January 2001, raising the embankment and constructing new outlet works in October 2008, and constructing the Corona National Housing Tract Dike and the Corona Sewer Treatment Plant Dike in November 2008. Other developments outside the Proposal Area include various residential developments within the jurisdiction of the Cities of Corona and Chino Impacts of these aforementioned projects have been accounted for in the empirical data/ information gathered to assess baseline conditions for the Interchange Proposal.

Present

At the time of preparation of the environmental studies, other Proposals within the vicinity of the Onsite Alternative were under construction. These include the USACE's Santa Ana River Mainstem Project Reach 9, Phases IIA and IIB. The features of the SARP that occur within the Proposal Area are associated with improvements to Federal flood risk management operations at the Prado Basin. This activity is not considered to impact flood risk management, but rather enhance the flood fighting capability within the Prado Basin. In addition, the Interchange Proposal has conducted additional studies *after t*he completion of the SARP Phases IIA and IIB to document additional impacts; hence, the baseline data provided in this EA includes the potential impact of SARP Phases IIA and IIB. Because the SARP has been included in the baseline conditions analysis, this EA has covered the effects of SARP Phases IIA and IIB within the Proposal area. Such project-related effects include temporary construction effects which were accompanied by approved restoration activities in and around the Corps' construction areas.

Future

Cumulative impacts to environmental resources discussed in the EA analyzes whether the Onsite Alternative would contribute to the degradation of the environment in addition to other known planned development within the Proposal Area. Although future additional development will continue to be seen incrementally in the western areas of Riverside and San Bernardino counties which will be served by the proposed 91/71 Interchange, development within the Prado Basin is constrained because the Prado Dam and the surrounding basin is reserved for flood risk management activities and protected under the Western Riverside County (WRC) MSHCP. Because of these factors, it is unlikely that high-impact development would occur in the future without approvals from USACE and other resource agencies. Proposals within this area are limited to Federal flood risk management activities related to SARP and other compatible low impact Proposals. Nearby roadway improvements may be developed by Caltrans adjacent to the Proposal area in the future. These include the SR-91 Corridor Improvement Project (CIP) and SR-71 CIP. However, the Interchange Proposal is not likely to add significant cumulative effects because of the Proposal's mitigation measures as proposed and due to the relatively low number of future proposals, which would likely implement avoidance, minimization, and/or mitigation measures to address potentially adverse effects. Areas where these proposals would be constructed are covered under the WRC MSHCP, whose intent is to promote biological habitat conservation adjacent to Prado Basin. USACE will continue to examine resource needs and conflicts to help guide future Proposals within the Prado Basin.

The discussion provided in the subsequent sections discusses potential environmental impacts for each specific resource as a result of the Onsite Alternative and other planned development in the future.

3.13.2 Environmental Resources for Which No Cumulative Impacts Would Result

The following environmental resources would not result in cumulative impacts within the Proposal area:

Geology and Soil Quality, Stability, and Moisture – As discussed in Section 3.1, there are no known geologic issues in the Proposal area, including no known fragile, compactable, or unstable geologic features, fault zones, or other geologically unstable areas. No direct or indirect effects are anticipated for geology and soil quality, including those caused by faults, seismicity, liquefaction, seiches, tsunamis, mudflows, and slope stability. A review of impacts for the SR-91 Corridor Improvement Project indicates that, with mitigation, the project is not expected to result in temporary, permanent, or cumulative impacts. Similarly, the SR-71 Corridor Improvement Project and other projects in the area are expected to be designed in accordance with applicable building and seismic codes so that the facilities would be able to accommodate seismic events that could potentially occur near the Proposal area. As such, neither the Onsite Alternative nor other related projects would result in either direct or indirect cumulative impacts to geology, including soil quality, stability, and moisture.

Water Resources – When considering cumulative impacts with regard to water quality, the amount of additional impervious surface that is proposed is a primary concern. The proposed Onsite Alternative is anticipated to result in a total 4.2-acre increase of impervious surface on Federal lands. Relative to the 32,112 acres of total area within the Lower Santa Ana River Watershed, this increase is not considered significant. This is expected to translate into minor localized increases in runoff of insignificant volume within the Proposal area. With the implementation of various design pollution prevention BMPs in conjunction with treatment BMPs, the existing drainage pattern of the area would not be altered in a manner that would result in substantial erosion, sedimentation, or flooding within or downstream of the Proposal area . Furthermore, these BMPs would capture runoff generated by the Onsite Alternative as to not affect water quality or beneficial uses of the Santa Ana River.

The SR-91 Corridor Improvement Project and SR-71 Corridor Improvement Project are also expected to increase impervious coverage near the Proposal area, which could increase sediment, trash, and debris pollutants and runoff volume flowing to the Santa Ana River. The Santa Ana River Trail and Parkway Project would also involve the construction of additional impervious surfaces near and through the Proposal area; however, the trail segment adjacent to the Proposal area would mostly consist of enhancement of dirt trails. Based on these increases in impervious surface coverage in the vicinity, these projects could lead to increased transport of pollutants to receiving waters, in addition to downstream erosion; however, as part of these projects, BMPs would be implemented to treat drainage created by these projects by incorporating biofiltration swales, infiltration basins, detention basins, and/or media filters. All of the runoff from new impervious surface areas created by these projects would be treated by the project's BMPs, as presented in Appendix B.

Other related projects, including the OCFCD SARI Line Realignment and USACE Santa Ana River Flood Control Project, are expected to have temporary impacts on water resources; however, they are not expected to significantly contribute to increased impervious surface in the vicinity of the Proposal area. The OCWD Sediment Management Demonstration Project is expected to positively affect regional water resources by increasing percolation rates within Prado Basin. Finally, USACE's Prado Ecosystem Restoration and Water Conservation project is meant to investigate efficient ways of conserving water and restoring critical habitat. As such, neither the Onsite Alternative nor other related projects would result in either direct or indirect cumulative impacts to water resources.

Air Quality – The features of the Onsite Alternative are not anticipated to violate any ambient air quality standards, contribute substantially to an existing air quality violation, or expose sensitive receptors to substantial pollutant concentrations. Considering other transportation projects within the Proposal area, such as the SR-91 Corridor Improvement Project and the SR-71 Corridor Improvement Project, these projects are anticipated to reduce operational emissions and are expected to improve regional air quality by enhancing traffic conditions through the reduction in traffic congestion and vehicle idling. Other projects within the Proposal area, such as the SARI Line Realignment, SARP, SART, OCWD Sediment Projects, and Prado Ecosystem Restoration, are not anticipated to generate operational criteria pollutants compared to transportation projects; hence, cumulative projects are not anticipated to result in cumulative impacts.

Construction activities associated with the Onsite Alternative would produce criteria pollutants, odor, and GHG emissions; however, these effects would be temporary and are not anticipated to be significant.

Cultural Resources – Based on the findings of the Historic Property Survey Report (HPSR) and Archaeological Survey Report (ASR) completed for the Project, there are no cultural, historic resources/historic properties within the Proposal area. The Section 106 finding for the overall Interchange Proposal is No Historic Properties Affected, which includes areas within Federal lands. The SR-91 Corridor Improvement Project within the Proposal area received a determination of No Adverse Effect. Additionally, no historical resources were determined to be present near the Interchange Proposal. The

SR-71 Corridor Improvement Project has not conducted a project-specific cultural resource study; however, the cultural research conducted by the Interchange Proposal also includes the general area of the SR-71 Corridor Improvement Project within the Proposal area. Based on this information, neither the Onsite Alternative nor other related projects collectively would result in direct or indirect cumulative impacts to cultural resources.

Noise – During construction of the Onsite Alternative, construction activities may intermittently dominate the noise environment in the Proposal area. Noise effects from construction are not anticipated to be significant because construction would be conducted in accordance with Caltrans' Standard Specifications for noise control. Furthermore, construction-related noises would be short term, intermittent, and largely indiscernible because the Proposal area is already dominated by local traffic noise. The timing of the construction of the Onsite Alternative would not coincide with construction of other transportation projects. The SR-91 Corridor Improvement Project would be implemented prior to construction of the Onsite Alternative, and the SR-71 Corridor Improvement Project is anticipated to be constructed after construction of SR-71. Construction-related noise of other projects identified in Table 3-18 would either be implemented before the Onsite Alternative or thereafter; hence, construction-related cumulative noise impacts are not anticipated.

Permanent noise effects are not anticipated because there are no sensitive receptors within the Proposal area, and bridge footings proposed within Federal lands would not produce noise. The area mainly consists of open space, a federal flood risk management facility, and government property; therefore, construction of the Onsite Alternative would not produce permanent effects. Any noise effects would be temporary and would only occur during construction, which is scheduled to occur over a period of approximately 24 months.

A review of related projects found that potential long-term noise impacts associated with these projects would result solely from traffic noise. The SR-91 Corridor Improvement Project environmental document states that, with mitigation, the project would not result in temporary, permanent, or cumulative impacts. The SR-71 Corridor Improvement Project is also expected to have similar or fewer effects based on current information of the project's scale, features, and location. The SR-71 Corridor Improvement Project area within the limits of the Proposal area currently does not include sensitive receptors or areas of frequent human use that could be impacted by noise. Land uses within the Proposal area prohibit residential development, which would not result in the creation of areas that could be potentially impacted by noise. Cumulative noise effects in the future are also not anticipated. Other projects, such as the SARI Line Realignment, SARP, SART, OCWD Sediment Projects, and Prado Ecosystem Restoration, do not generate operational noise; hence, neither the Onsite Alternative nor other related projects would collectively result in direct or indirect noise impacts.

Health and Safety – In the short term, the Onsite Alternative may result in some disruption to emergency services serving and traveling through Federal lands due to detours and closures related to the construction of the Onsite Alternative. As detailed in Section 3.9, major disruptions to emergency services during construction of the Onsite Alternative are not anticipated; however, a Transportation Management Plan (TMP) would be developed to avoid and minimize any disruption to the greatest extent practicable. In conjunction with other transportation projects within the Proposal area, a cumulative impact to emergency services is not anticipated because of the timing of the construction of the Onsite Alternative would not coincide with the SR-91 Corridor Improvement Project and SR-71 Corridor Improvement Project. Other projects within the area, such as such as the SARI Line Realignment, SARP, SART, OCWD Sediment Projects, and Prado Ecosystem Restoration, are not anticipated to require road closures and would not affect emergency services. Cumulative impacts to emergency services are not anticipated.

The ISA and related record searches prepared for the Onsite Alternative identified five RECs, including miscellaneous hazardous materials, PCBs, ACM, LBP, and ADL; however, these RECs are not located within the Proposal area and are mostly located along SR-91 and SR-71. Other cumulative projects in the area, such as the SARI Line Realignment, SARP, SART, OCWD Sediment Projects, and Prado Ecosystem Restoration, are not anticipated to encounter hazardous waste materials because these are most likely located on or immediately adjacent to roadways. As such, neither the Onsite Alternative nor other related projects collectively would result in direct or indirect cumulative impacts to factors affecting health and safety near the Proposal area. Nevertheless, the Proponents would implement minimization measures as detailed in Section 3.9 (and provided in Appendix B) to ensure effects on health and safety are not anticipated to result from construction of the Onsite Alternative.

Socioeconomic and Environmental Justice – Construction locations and permanent improvements on Federal lands are not within residential, industrial, and/or commercial uses and do not support a population. Land uses within the Proposal area consist of open space and a flood risk management facility. Because of the absence of a population within Federal lands, there would be no effects to socioeconomic and environmental justice populations. Furthermore, no minority or low-income populations would be affected by the Interchange Proposal. As such, socioeconomic effects are not anticipated to be significant.

A review of the SR-91 Corridor Improvement Project indicates that the project would have no effect on socioeconomic or environmental justice issues on Federal lands or near the Proposal area. The SR-71 Corridor Improvement Project is also not expected to result in disturbances to existing communities because it would be constructed within existing State ROW and is not expected to displace existing residents. Other related projects, such as the SARI Line Realignment, SARP, SART, OCWD Sediment Projects, and Prado Ecosystem Restoration, are not anticipated to have an effect on socioeconomics or environmental justice issues because they are located entirely within the general area of the Santa Ana River and would not result in displacement of residents or businesses. As such, neither the Onsite Alternative nor other related projects collectively would result in direct or indirect cumulative impacts to socioeconomic or environmental justice issues in the Proposal area.

Traffic and Transportation – Because the Onsite Alternative activities would be conducted outside existing roadways, it is not anticipated to alter existing traffic circulation or worsen traffic conditions. Mobilization of equipment would occur within Federal lands, which do not contain any public roadways. The Onsite Alternative would not generate additional traffic to the existing circulation pattern, nor would it modify existing traffic because construction activities would be temporary; permanent impacts would not occur because the Proposal area does not contain public roadways. The Onsite Alternative would be conducted in open space, away from local and regional roadways; therefore, no effects to traffic and circulation are anticipated. The SR-91 Corridor Improvement Project and SR-71 Corridor Improvement Project are anticipated to construct within Federal lands; however, measures for each project would be implemented similar to the Onsite Alternative to ensure that USACE access and existing routes are not obstructed during construction. It should be noted that the Proponents for all three cumulative roadway projects (Onsite Alternative, SR-91 Corridor Improvement Project, and SR-71 Corridor Improvement Project) would not construct these three projects concurrently. It is anticipated that the SR-91 Corridor Improvement Project would be constructed first, followed by the Onsite Alternative and the SR-71 Corridor Improvement Project. Other related projects are located almost exclusively within the general area of the Santa Ana River; therefore, they are not expected to temporarily or permanently affect traffic and transportation near the Proposal area. Because the Proposal area does not contain any public roadways and minimization measures would be implemented, the Onsite Alternative and other related projects would not collectively result in direct or indirect cumulative impacts to traffic and transportation. It should be noted that the Onsite Alternative does not generate traffic such as residential and commercial development; rather, the purpose of the project is to alleviate past, present and future traffic congestion generated in part by other local and regional developments outside the Proposal area.

3.13.3 Environmental Resources having Potential Cumulative Impacts but could be Minimized

Water Resources – Potential impacts to jurisdictional drainages identified in Section 3.2 reflect impacts by recently constructed and current projects under construction, such as the SR-91 Eastbound Lane Addition, SR-91 Corridor Improvement Project, and the SARP Reach 9 Phase IIA. The impacted area for non-wetland waters and wetlands identified in Section 3.2 accounts for recently completed projects such as the SARP Reach 9 Phase IIA Project, as well as future projects that would be in place prior to the Onsite Alternative, such as the SR-91 Corridor Improvement Project. A review of impacts to waters of the U.S. indicates that the SR-91 Corridor Improvement Project shows that the project would likely result in a total of 0.42-acre of permanent impacts to wetlands and non-wetland waters due to road widening and new structures. The Onsite Alternative is anticipated to permanently impact 0.02-acre of wetland and 0.008-acre of non-wetland waters. Roadway impacts by the Onsite Alternative and the SR-91 Corridor Improvement Project to jurisdictional resources will be mitigated through USACE's Section 404 Nationwide Permit process. Both roadway projects will offset impacts to waters of the U.S. through the purchase of mitigation credits at a USACE-approved mitigation bank.

The SR-71 Corridor Improvement Project is in the preliminary planning stages, and an alignment has not been identified. If impacts to water resources are identified, the applicant is anticipated to mitigate impacts through the Section 404 permitting process by either mitigating impacts through site restoration or the purchase of mitigation credits at a USACE-approved mitigation bank. It should be noted that all cumulative roadway projects planned within the Proposal area are being implemented by the same Proponent as the Onsite Alternative and will mitigate impacts to waters of the U.S. The Proponents would also implement the appropriate avoidance and minimization measures during construction activities. Through these permitting requirements, minimization and restoration measures for each project, no net loss of wetlands or other jurisdictional waters would result from the Onsite Alternative, and effects to wetlands and other waters are not anticipated to be significant.

The SART is not anticipated to produce any effects to water resources because the proposed trail improvements are not anticipated to impact jurisdictional resources. Other related projects, including the OCWD Sediment Management Demonstration, USACE's Prado Ecosystem Restoration and Water Conservation, OCFCD SARI Line Realignment, and SARP, aim to improve the function of the Santa Ana River within the Proposal area and have also incorporated avoidance, minimization, and compensatory mitigation into their plans so that no net loss of waters or wetlands are anticipated; therefore, effects to waters of the U.S. due to the aforementioned projects are not anticipated to be significant.

Biological Resources – Urbanization has significantly affected biological resources within the Proposal area. Historically, the Proposal area was comprised of coastal sage scrub, chaparral, and riparian plant communities. These habitats have been reduced and largely limited to areas designated as open space, such as the CHSP, Cleveland National Forest, and Prado Dam area. Similarly, most animal species, especially those that are currently designated by Federal and State agencies as sensitive, have experienced considerable decline. Wildlife movement between Cleveland National Park and CHSP is constrained due to SR-91, and wildlife crossings within this area are limited to a few locations. Implementation of State and Federal long-term planning and conservation programs, such as the Natural Communities Conservation Plan (NCCP) and MSHCP, have assisted in reducing impacts on native species through conservation of habitat and enhancement of wildlife corridors.

The analysis for the Onsite Alternative determined that temporary and permanent effects on biological resources (i.e., wildlife, vegetation, and sensitive species) are not anticipated to be significant – with the implementation of minimization and mitigation measures as discussed in Section 3.4. In conjunction with other planned roadway projects within the Proposal area, the SR-91 Corridor Improvement Project and the SR-71 Corridor Improvement Project are anticipated to be constructed at different time periods.

Within the Proposal area, construction timing for these three projects would not coincide with each other. According to the environmental document prepared for the SR-91 Corridor Improvement Project, the findings of the biological studies indicate that effects are not anticipated to be significant with the implementation of mitigation measures. These measures will be required to be implemented prior to the commencement of the SR-91/SR-71 Interchange Proposal. The SR-71 Corridor Improvement Project is in the preliminary stages of project development, and it is anticipated that this project would also require measures to offset any potential impacts to biological resources. All three transportation projects would implement measures to minimize impacts to biological resources and are covered activities under the MSHCP. All three roadway projects would follow provisions under this conservation plan.

To protect the Santa Ana River and its critical habitats, comprehensive monitoring and protection plans, which have helped to avoid, minimize, and mitigate for potential impacts to biological resources near the Proposal area, have been incorporated into the projects currently under construction. These are other non-roadway cumulative projects within the Proposal area, such as the SARI Line Realignment, SARP, SART, OCWD Sediment Projects, and Prado Ecosystem Restoration. These projects are designed to result in positive effects for species that live on or near the Proposal area.

Cumulative projects would incorporate measures to minimize impacts to biological resources. These include, but are not limited to, restoration of vegetation to Pre-Onsite Alternative conditions, conducting preconstruction surveys for sensitive plants and wildlife to avoid impacts to these species, and offsite habitat restoration. Most of the permanent and temporary impacts to vegetation, invasive and exotic plant species, would affect portions of Federal lands already disturbed by previous construction. Given the temporary nature of construction activities and lack of substantial permanent loss of vegetation by all three roadway projects, cumulative effects on biological resources within Federal lands are not anticipated to be significant.

Aesthetics – Views and aesthetics near the Proposal area include urban development and expansive views of open space areas located within the CHSP, Cleveland National Forest, and Prado Dam area. Existing views are limited and punctuated by urban development, especially within the eastern and western portions of the Proposal area. These areas were previously characterized as rural and contained expansive views of the adjacent mountains and Chino Basin. Over the years, urban development has considerably altered the historic views and aesthetic environment along the Proposal area.

Because the remaining open space areas are currently in long-term conservation, it is anticipated that views and aesthetics will largely remain the same in the future. These land use restrictions are anticipated to limit the location and intensity of development within the remaining hillside areas. In addition, views along SR-91 and SR-71 would be anticipated to be similar to existing conditions with the exception of the bridge structure. The Onsite Alternative consists of construction of a bridge structure that would be a prominent addition to the landscape. As discussed in Section 3.6, visual effects due to the bridge structure are not anticipated to be significant because the visual quality of the area is low and a substantial number of man-made structures are already in the landscape; the addition of the bridge structure is unlikely to diverge significantly from the current visual quality.

A review of potential aesthetic impacts for other related projects near the Proposal area indicates that most of these projects would likely result in temporary visual effects that are not anticipated to be cumulatively significant. There are no prominent structures that would be constructed by the SARI Line Realignment, SARP, SART, OCWD Sediment Projects, and Prado Ecosystem Restoration. The SR-91 Corridor Improvement Project environmental document indicates that permanent structures associated with that project could result in low to moderate visual impacts to some viewers; however, avoidance, minimization, and mitigation measures have been incorporated into the SR-91 Corridor Improvement Project to substantially reduce the short- and long-term visual impacts to less than significant – by providing structural elements, highway plantings, and glare and graffiti reduction measures (refer to

Appendix B). As such, the visual effects associated with the Onsite Alternative and related projects are not anticipated to be cumulatively significant and are not anticipated to collectively result in direct or indirect cumulative impacts to aesthetics.

Recreation Resources – With the exception of the Santa Ana River Trail and Parkway, recreational opportunities within the study area are stable and in long-term, permanent preservation. These static recreational resources include the CHSP, Cleveland National Forest, and Prado Dam area. The Onsite Alternative would temporarily affect approximately 4 acres of CHSP for slope easements while the slopes are constructed; however, this land is currently used as open space and has no recreational function, as described in Section 3.9. Furthermore, construction activities would avoid CHSP to the greatest extent feasible and would not affect access to and from CHSP or other recreational resources in the Proposal area. No direct or indirect impacts to existing recreational uses at Cleveland National Forest or Prado Dam are anticipated.

A review of impacts for the SR-91 Corridor Improvement Project shows that the project would likely result in the permanent use of 0.48-acre of CHSP land and an aerial easement for that structure. These improvements would be placed to avoid effects to the park maintenance road and would not affect CHSP trailheads in the Proposal area. The SR-91 Corridor Improvement Project would also require six temporary construction easements (TCE); however, no permanent features would be constructed in CHSP within the boundaries of the TCEs. These affected areas would be revegetated at the completion of construction in consultation with State Parks to return the property to its original property owners with similar functions and values as the land had prior to its use as a TCE. Because this project would result in *de minimis* impacts to Section 4(f) properties, the potential for the SR-91 Corridor Improvement Project to contribute to cumulative impacts is considered minimal.

The existing County of Riverside, County of Orange, and City of Corona plans for the Santa Ana River Trail and Parkway near the SR-91/SR-71 interchange call for a Class I Bikeway along the north side of the Santa Ana River. An additional soft-top trail for pedestrian and equestrian users may also be provided in some areas, including along the northern edge of the Santa Ana River near the SR-91/SR-71 interchange on Federal lands. As such, these Santa Ana River Trail and Parkway Projects would result in increased recreational opportunities near the Proposal area.

A review of impacts associated with the SR-91 Corridor Improvement Project shows that it may result in temporary detours and permanent relocation of a segment of this trail. In addition, construction of the Onsite Alternative may also result in temporary impacts to the future trail facility depending on the timing and location of construction activities and how they relate to the recreational facilities in place at the time. Coordination among the responsible parties would be maintained to reduce the likelihood of significant delays and cumulative impacts to recreational trail users as much as possible. As such, neither the Onsite Alternative nor other related projects collectively would result in direct or indirect cumulative impacts to parks or recreation resources.

Flood Risk Management – The analysis for the Onsite Alternative in Section 3.10 determined that temporary impacts on hydrology and floodplains associated with construction activities could occur; however, effects are not anticipated to be significant as it relates to hydrology and floodplains. A review of impacts for the SR-91 Corridor Improvement Project indicates that the project would result in temporary, but mitigable, impacts; however, no permanent or cumulative impacts would result. As such, neither the Onsite Alternative nor other related projects collectively would result in direct or indirect cumulative impacts to growth; therefore, this issue is not proposed for further analysis and consideration.

A review of the SR-91 Corridor Improvement Project indicates that the project would result in temporary but mitigable impacts; however, no permanent or cumulative impacts would result. Similar effects are anticipated from the proposed SR-71 Corridor Improvement Project. The USACE SARP and Flood

Control Project would help to provide additional flood protection. Furthermore, the OCWD Sediment Management Demonstration Project and Prado Ecosystem Restoration and Water Conservation projects would result in increased percolation of stormwater, providing additional capacity to handle stormwater during storm events. As such, neither the Onsite Alternative nor other related projects collectively would result in direct or indirect cumulative impacts to flood risk management facilities and their functions.

Cumulative Impact Determination

Considering all past, present and future projects within and outside of the Proposal Area, no significant adverse cumulative effects to the environment are foreseen as a result of implementing the Interchange Proposal. Past projects that have occurred within the Proposal Area generally consist of flood risk management projects and roadway projects. The purpose of these past projects improves the function and operations of these facilities, which is evident with the land uses within the area maintaining their current designations for the last 20 years. Present projects also consist of flood risk management and roadway projects, which do not significantly convert existing land uses to high impact development or other uses. Because the Proposal Area is regulated by USACE and adjacent outside areas fall under the protection of the WRC MSHCP, development is highly constrained and would not likely contribute to cumulative effects in the future.

3.13.4 Avoidance/Minimization Measures

No additional avoidance and/or minimization measures beyond those identified in Appendix B for each of the resources analyzed are required to address the Onsite Alternative's contribution to cumulative impacts. Mitigation measures identified will address temporary and permanent impacts.

4.0 APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

This Draft EA fulfills the requirements of NEPA and other pertinent laws and regulations discussed below.

4.1 National Environmental Policy Act Compliance

NEPA is the nation's primary charter for protection of the environment. It establishes the national environmental policy that provides a framework for Federal agencies to minimize environmental damage and requires Federal agencies to evaluate the potential environmental impacts of their proposed actions. Under NEPA, a Federal agency must prepare an EA describing the environmental effects of any proposed action having a significant impact on the environment. The EA must identify measures necessary to avoid or minimize impacts resulting from the proposed action or determine if further analysis is required and prepare an EIS. USACE would be preparing an EIS if applicable. This EA has been prepared to comply with the Act.

4.2 U.S. Fish and Wildlife Coordination Act (16 U.S.C. 661)

This Act requires federal agencies to coordinate with USFWS and local and State agencies when any stream or body of water is proposed to be modified. The intent is to give fish and wildlife conservation equal consideration with other purposes of water resources development projects. The Onsite Alternative would not involve modification of a body of water; therefore, formal coordination and preparation of a Coordination Act Report is not required.

4.3 Endangered Species Act of 1973 (Public Law 93-205, as amended)

The Endangered Species Act (ESA) protects threatened and endangered species, as listed by USFWS, from unauthorized take, and directs Federal agencies to ensure that their actions do not jeopardize the continued existence of such species. ESA Section 7 defines Federal agency responsibilities for consultation with USFWS. The Act requires preparation of a biological assessment to address the effects on listed and proposed species of a project. A biological assessment was prepared for the overall Interchange Proposal, and subsequent biological investigations were conducted during the first half of 2013 to update existing endangered species within the Proposal area. Through the formal Section 7 consultation process, USFWS issued a BO in June 2011 for the greater SR-91/SR-71 Interchange Improvement Project. Approval of the Onsite Alternative would comply with the requirements of the ESA.

4.4 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the taking or harming of any migratory bird, its eggs, nests, or young without an appropriate Federal permit. Almost all native birds are covered by this Act, as well as any bird listed in wildlife treaties between the United States and several countries, including Great Britain, Mexican States, Japan, and countries once part of the former Soviet Socialist Republics. A "migratory bird" includes the living bird, any parts of the bird, its nests, or its eggs. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requiring harvest to be limited to levels that prevent over-utilization. Section 704 of the MBTA states that the Secretary of the Interior is authorized and directed to determine if, and by what means, the take of migratory birds should be allowed and to adopt suitable regulations permitting and governing take. Disturbance of the nest of a migratory bird requires a permit issued by USFWS pursuant to 50 CFR. To avoid impacts to other migratory birds consistent with MSHCP 10(a)(1)(B) Permit Condition 5, vegetation removal would be performed outside of the March 1 to September 15 bird breeding season. If construction activities are scheduled to occur within an area that

supports an active nest site or within an established no-disturbance buffer, construction will be delayed until after the breeding season or until the young have fledged (as determined by an ornithologist). As such, the Interchange Proposal would be in compliance with the MBTA, as well as approval of the Onsite Alternative.

4.5 Clean Water Act

The CWA Section 404 (b) prohibits the discharge of dredged or fill materials into waters of the United States, including wetlands, except as permitted under separate regulations by USACE and EPA.

Under CWA Section 404, USACE regulates discharges of dredged or fill material into waters of the United States, including wetlands. "Waters of the United States" is defined in 33 CFR 328.3 as follows:

- All waters that are currently used, or were used in the past or may be susceptible to use in interstate or foreign commerce;
- All interstate waters including interstate wetlands;
- All other waters, such as intrastate lakes, rivers, streams (including intermittent streams), the use, degradation, or destruction of which could affect interstate or foreign commerce;
- All impoundment of waters otherwise defined as waters of the United States under the definition; and
- Tributaries of waters, defined above.

USACE does not require or issue itself permits, although NWPs may be applied to USACE projects and are thus considered when addressing compliance under Section 404(b)(1). Pursuant to 40 CFR 230.10, for all waters of the U.S., only the least environmentally damaging practicable alternative (LEDPA) can be permitted on projects with impacts exceeding 0.5-acre. As discussed in Section 3.2, Water Resources, the Interchange Proposal is anticipated to produce minor discharge of fill materials into waters of the U.S., which requires an NWP prior to construction of the Interchange Proposal. RCTC would request verification under NWP 14 (Linear Transportation Projects) and would require additional certification as it would authorize activities within a state that has a Federally approved coastal zone management program (i.e., California); the NWP would require to be certified to be consistent with the State's program and in accordance with 33 CFR 330.4(d).

Furthermore, because coverage under NWP 14 would authorize activities that would result in permanent impacts to waters of the U.S., a CWA Section 401 Water Quality Certification will also be required. Therefore, in accordance with the CWA, the Proponents will apply for a Section 404 Permit and a Section 401 Water Quality Certification; in addition to requesting verification under NWP 14. Through obtaining these permits and implementing their conditions, the Onsite Alternative would be in compliance with the CWA.

4.6 Clean Air Act of 1970 (42 U.S.C. 7401 *et seq.*)

1977 Amendments to the CAA enacted legislation to control seven toxic air pollutants. EPA adopted National Emission Standards for Hazardous Air Pollutants (NESHAP), which has been designed to control HAP emissions to prevent health effects in humans.

1990 Amendments to the CAA determine the attainment and maintenance of NAAQS (Title I), motor vehicles and reformulation (Title II), HAP (Title III), acid deposition (Title IV), operating permits (Titles V), stratospheric O_3 protection (Title VI), and enforcement (Title VII).

General Conformity

Under Section 176(c) of the Clean Air Act Amendments (CAAA) of 1990, the lead agency is required to make a determination of whether the proposed action "conforms" to the SIP. Conformity is defined in CAAA Section 176(c) as compliance with the SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards; however, if the total direct and indirect emissions from the Onsite Alternative are below the General Conformity Rule *de minimis* emission thresholds, the Onsite Alternative would be exempt from performing a comprehensive air quality conformity analysis and would be considered in conformance with the SIP. The greater SR-91/71 Interchange Improvement Project is in conformance with the SIP as indicated in SCAG's latest FTIP.

The Onsite Alternative would also not have a significant impact on air quality as analyzed in this EA. The total emissions of each criteria pollutant either meets or is below *de minimis* levels as prescribed in 40 CFR 93.153(b). The action is not considered to be regionally significant. Emissions are expected to be minimal and below the *de minimis* thresholds; thus, they would not violate national or State standards. As a result, approval of the Onsite Alternative would have no long-term impacts on local or regional air quality. In addition, construction of the Onsite Alternative would occur intermittently for the next 2 years, and construction criteria pollutants have been quantified in this EA that did not meet significance thresholds. Therefore, approval of the Onsite Alternative would be in compliance with the Federal CAA as amended in 1990 and as required.

4.7 Noise Control Act of 1972, as amended (42 U.S.C. 4901 *et seq.*)

Noise generated by any activity that may affect human health or welfare on Federal, State, County, local, or private lands must comply with noise limits specified in the Noise Control Act. USACE has determined that, by complying with its own Special Events Policy to minimize impacts during construction of the Onsite Alternative, approval of the Onsite Alternative would be in compliance with the Noise Control Act.

4.8 National Historic Preservation Act (Public Law 89-665; 16 U.S.C. 470–470m, as amended, 16 U.S.C. 460b, 470l–470n)

The NHPA provides for an expanded NRHP, including district, sites, buildings, structures, and objects significant in American history, architecture, archaeology, and culture. Section 106 of the Act requires Federal agencies to identify and protect significant properties that are located on Federal lands and/or that would be affected by Federal actions. In accordance with Section 106 of the NHPA, following consultation with local government entities; Native American Tribes, Groups, and Individuals; the NAHC; local historical societies and historic preservation groups; and records searches via several site record information centers, it was determined that no properties requiring evaluation are present within the APE and that a finding of No Historic Properties Affected is appropriate for this undertaking. As such, approval of the Onsite Alternative would be in compliance with NHPA Section 106, as implemented by 36 CFR 800. The Cultural Report and Native American consultation are provided in Appendix K.

4.9 Archaeological Resources Protection Act, as amended

The Archaeological Resources Protection Act (ARPA) requires oversight when cultural resources may be impacted when working on Federal lands or in case of other work-related Federal connections. ARPA allows for the preservation of historical and archaeological data, including relics and specimens that might otherwise be irreparably lost or destroyed. Though the record search and archaeological survey failed to indicate the presence of known archaeological cultural resources, construction monitoring and mitigation measures CR-1 and CR-2 would minimize potential effects to buried cultural resources in the

unlikely event cultural resources are encountered during construction activities. As such, approval of the Onsite Alternative would be in compliance with ARPA.

4.10 Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provides EPA with the authority to identify and clean up contaminated hazardous waste sites. Individual states may implement hazardous waste programs under RCRA with EPA approval. California has not yet received this EPA approval; instead, the California Hazardous Waste Control Law (HWCL) is administered by the California Environmental Protection Agency (Cal-EPA) to regulate hazardous wastes. Although the HWCL is generally more stringent than RCRA, until EPA approves the California program, both State and Federal laws apply in California. CERCLA also contains enforcement provisions for the identification of liable parties. It details the legal claims that arise under the statute and provides guidance on settlements with EPA. Section 120 of this Act addresses hazardous waste cleanups at Federal facilities and requires the creation of a Federal Agency Hazardous Waste Compliance Docket, which lists facilities that have the potential for hazardous waste problems. In addition, a Hazardous Substance Superfund was established to pay not only the EPA cleanup and enforcement costs and certain natural resource damages, but also to pay for certain claims of private parties. Conformance with this law would only be engaged if unforeseen waste was found or was abandoned onsite. As such, approval of the Onsite Alternative would be in compliance with this Act because no such CERCLA substances are involved with or would be locally stored for construction activities associated with the Onsite Alternative.

4.11 National Flood Insurance Program

The National Flood Insurance Program (NFIP) is administered by FEMA's Flood Insurance Administration. The flood risk management capacity of the Basin would not be impacted by the Onsite Alternative; therefore, NFIP users would not be affected.

4.12 Federal Water Project Recreation Act of 1965, as amended

The Federal Water Project Recreation Act requires that any Federal water project must give full consideration to opportunities afforded by the project for outdoor recreation and fish and wildlife enhancement. There are no outdoor recreation and fish and wildlife opportunities within the Proposal area. Construction activities associated with the Onsite Alternative would be temporary in nature, and these activities would not affect normal outdoor water recreation use within Federal lands; hence, the Onsite Alternative would be in compliance with the Federal Water Project Restoration Act of 1965, as amended.

4.13 Federal Land Policy and Land Management Act of 1976

The Federal Land Policy and Land Management Act regulates management of the public lands and their various resource values so that resources are used in a combination that would best meet the present and future needs of the American people. The Onsite Alternative addresses a current and future need of transportation improvements to the public; hence, the use of resources within Federal land would be in compliance with the Act.

4.14 Executive Order 11988: Floodplain Management

EO 11988 was signed by President Jimmy Carter on May 24, 1977, and was published in 42 *Federal Register* (FR) 26351. Its purpose is to "…avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect

support of floodplain development wherever there is a practicable alternative." Each agency would provide leadership, take action to reduce the risk of flood loss, and minimize the impact of floods on human safety, health, and welfare. Agencies would restore and preserve natural and beneficial values served by the floodplains. Each agency also has the responsibility to evaluate potential effects of federal action that may be taken within floodplains. Each agency would ensure that planning and budget requests reflect consideration of flood hazards and floodplain management.

As discussed in Section 3.10, the installation of temporary falsework within the channel would temporarily affect the facility due to temporary occupancy within the channel; however, the falsework would remain within the channel temporarily, and it has been designed so that it would not interfere with the channel's maximum release parameters of 30,000 cfs. Furthermore, the portion of the bridge structure spanning the Santa Ana River channel would be constructed within the 6-month-long dry season (March 10 to October 1), during which significant floods or maximum flow controlled releases are highly unlikely. Following construction of this section, temporary falsework would be removed from the channel prior to the end of the dry season.

Falsework occupancy within the channel would not modify floodplains or support excessive floodplain development because its purpose would be to facilitate construction of the bridge section spanning the Santa Ana River channel. Additionally, construction equipment would not be stored within the spillway or directly within the spillway floodplain, thereby eliminating the risk of construction equipment being accidentally washed out onto the floodplain (should an unforeseen event occur [such as a 100-year flood event or unplanned controlled release]). Thus, approval of the Onsite Alternative would not adversely impact floodplain management or add to excessive floodplain development on Federal lands. The Onsite Alternative would be in compliance with EO 11988.

4.15 Executive Order 12088: Federal Compliance with Pollution Control Standards

The head of each executive agency is responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal facilities and activities under control of the agency. Enactment of environmental commitments (as presented in Table 2 of the Caltrans/FHWA-approved CE [June 2011]) to minimize pollution impacts during construction of the Onsite Alternative would meet the standards of EO 12088. The Onsite Alternative would be in compliance with EO 12088.

4.16 Executive Order 12898: Environmental Justice Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

EO 12898 was signed on February 11, 1994. This order was intended to direct Federal agencies "To make achieving environmental justice part of its mission by identifying and addressing... disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the [U.S.]...." No minority or low-income communities would be disproportionately affected by approval of the Onsite Alternative. As such, approval of the Onsite Alternative would be in compliance with EO 12898.

4.17 Land and Water Conservation Fund Act of 1965

The LWCF Act is codified at Title 16 U.S.C. 4601 *et seq.* The purpose of the LWCF Act is to assist in preserving, developing, and assuring accessibility to all citizens of the United States of present and future generations and visitors who are lawfully present within the boundaries of the United States such quality

and quantity of outdoor recreation resources as may be available and are necessary and desirable for individual active participation in such recreation and to strengthen the health and vitality of the citizens of the United States by (1) providing funds for and authorizing Federal assistance to the states in planning, acquisition, and development of needed land water areas and facilities, and (2) providing funds for the Federal acquisition and development of certain lands and other areas.

Specifically, Section 6(f) of the LWCF Act applies to public recreation or park lands acquired or developed with LWCF Act funds pursuant to the LWCF Act. All requests for temporary uses within a Section 6(f) property for purposes that do not conform to the public outdoor recreation requirement must submit an LWCF Project Description and Environmental Screening Form (LWCF PD/ESF). A formal request by State Parks was submitted to NPS describing the temporary nonconforming use. In April 2011, the LWCF PD/ESF for the Interchange Proposal was completed and submitted to State Parks. The completed LWCF PD/ESF application states that the Interchange Proposal intends temporary nonconforming uses within CHSP and requires a permanent slope easement north of SR-91 and west of SR-71 within CHSP. The total easement area is approximately 3.84 acres of the easternmost section of CHSP, which would also accommodate the future SR-71 Widening Project. Currently, this area of the CHSP functions as a slope easement. The proposed property to be temporarily used is not part of a trail system and does not provide significant recreational value for visitors. Furthermore, this area does not affect any park facilities or decrease recreational opportunities. Construction of the permanent slope easement within CHSP is anticipated to occur for less than 6 months and would not affect outdoor recreational activity during construction and after completion of the permanent slope easement.

In May 2011, the Proponents received a concurrence letter from State Parks agreeing that the assessment provided in the LWCF PD/ESF completed for the Interchange Proposal is a temporary nonconforming use as described in Section 6(f) of the LWCF. The Proponents would continue coordination with State Parks to ensure that the Interchange Proposal complies with the regulations and provisions stated in Section 6(f)(3) of the LWCF Act. Given that the previously approved environmental document is inclusive of the Proposal analyzed in this EA, and that the Interchange Proposal has undergone the Section 6(f) review and evaluation process, approval of the Onsite Alternative would thus be in compliance with the Section 6(f) requirements of the LWCF Act, as codified in Title 16 U.S.C. 4601 *et seq.* (LWCF Act) and CFR Title 36, Chapter 1, Part 59 (Section 6(f) of LWCF Act).

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6.0 AGENCY COORDINATION AND PUBLIC OUTREACH

6.1 INTRODUCTION

USACE has coordinated with RCTC extensively regarding the scope and schedule of the Onsite Alternative. To ensure compliance with Federal and State environmental regulations, RCTC, along with Caltrans District 8, coordinated with USFWS, SHPO, USACE, and State regulatory agencies during the Project approval phase of the overall SR-91/SR-71 Interchange Improvement Project. As a result of this coordination, minimization and compensatory measures have been incorporated into the Project and can be applied to the Onsite Alternative. Additional coordination with the regulatory agencies may be necessary to verify effects during the implementation of the Onsite Alternative.

Early and ongoing coordination with the general public and responsible agencies is an essential part of the environmental review process. It is vital in determining the scope of environmental documentation, the level of analysis, potential impacts, mitigation measures, and related environmental requirements. Agency coordination and public participation can be accomplished through a variety of formal and informal methods, including PDT meetings, value analysis (VA) studies, interagency coordination meetings, site reviews, and open house public meetings.

The scoping process for this Interchange Proposal was implemented throughout the various stages of Project development, starting with distribution of the Notice of Initiation of Studies (NOIS) and up through circulation of the joint IS/MND/CE document. The joint IS/MND/CE document was previously prepared and approved by Caltrans and FHWA in June 2011. Scoping and coordination occurred for the joint document only, however, and was not separately conducted for this EA. This Draft EA will be made available through the USACE SPL Web site and other electronic communications to interested parties.

6.2 SUMMARY OF THE SCOPING PROCESS

Prior to the drafting of this EA, RCTC conducted many scoping efforts, including public outreach meetings, to solicit comments on the Onsite Alternative and ensure coordination among all stakeholders. The general objectives of this scoping process include identifying concerns of the general public, identifying critical constraints, developing and screening alternatives, and ensuring that the environmental document focuses on relevant issues. The following groups were considered stakeholders for the Interchange Proposal:

- The agencies represented by the PDT, including Caltrans, FHWA, RCTC, Riverside County, and the City of Corona.
- The general public, which includes local residents, business owners, and other groups or individuals who have a stake in the effects of the Proposal.
- Agencies that are either public or private organizations, bureaus, or companies that have a fiduciary stake in the effects of the Interchange Proposal on a particular resource. Resources that are managed by these agencies include wildlife, resource conservation areas, and utilities.

6.2.1 Notice of Initiation of Studies

On August 19, 2008, a public notice in the form of an NOIS was distributed through the U.S. Mail to more than 2,094 residents, elected officials, governmental agency officials, commuters, media, property owners, business owners, and other stakeholders. This notice was made available on the RCTC and Caltrans District 8 Web site and was posted on public notice boards. A newspaper advertisement in the *Press-Enterprise* and *La Prensa* was also purchased to announce the public meeting. The NOIS described the Interchange Proposal, informed the recipient of upcoming environmental studies, and solicited input on the Interchange Proposal.

6.2.2 Public Open House Meetings

On August 26, 2008, a public open house meeting was held from 5:00 to 8:00 p.m. at the Corona City Hall. Several informative posters regarding the Interchange Proposal were displayed, along with a looping PowerPoint presentation that described the features, purpose and need, benefits of the Interchange Proposal, funding sources, and tentative schedule. The PowerPoint presentation also provided a brief summary of the environmental process. Members from the PDT represented by Caltrans, RCTC, County of Riverside, and City of Corona, whose technical disciplines included ROW, design, and environmental planning, were present to answer questions. Comment cards were distributed to the meeting attendees, and input was solicited on the Interchange Proposal.

Approximately 35 visitors attended and 23 guests signed in at the registration desk. During the public meeting, visitors completed and returned 7 comment cards. The comments focused on questions about the following issues:

- Questions about design of the new EB ramp from SR-91 to SR-71
- Volume of noise that may be generated from the widening
- Impacts to the SR-241 toll road
- Need to widen SR-71
- Potential use of reclaimed water for landscaping and the runoff of this water into the local groundwater
- Two requests to be added to the Project database

In addition to the seven comment cards received during the public meeting, three letters were received from the following agencies: SAWPA, SCAQMD, and the City of Corona. These letters addressed preliminary engineering and environmental document issues specific to the agencies' needs.

Three e-mail inquiries were received from the general public. These e-mails addressed the following:

- That the SR-91/SR-71 interchange improvements would only provide a "temporary fix" and a better solution would be to link the SR-241 toll road with SR-83 in Upland.
- That the SR-91/I-15 interchange should be a higher priority transportation project than the SR-91/SR-71 interchange.
- The length of time needed to prepare projects for construction; that the SR-91/SR-71 interchange improvements are long overdue; and whether there are plans to connect SR-241 to SR-71.

Responses were prepared for all of the comments listed above and sent via mail or e-mail by Caltrans Environmental Services Division.

A second public open house meeting was held to discuss the findings of the draft environmental document and solicit comments from the public. The meeting was held at the Corona City Hall on December 9, 2010, from 5:00 to 8:00 p.m. The public meeting was staffed by Interchange Proposal personnel from Caltrans, RCTC, and consultants. To inform the public of the purpose and need of the Interchange Proposal and findings of the environmental document for the overall SR-91/SR-71 Interchange Improvement Project, a looping PowerPoint presentation was also displayed during the meeting. Display boards were once again used to present the results of the environmental studies and were displayed throughout the meeting room.

Public comments were solicited during the public open house meeting, as well as the following comment collection methods:

- Via postal mail to Aaron Burton, Environmental Branch Chief, Environmental Studies "B", California Department of Transportation, 464 West 4th Street, 6th Floor, MS 1163, San Bernardino, CA 92401-1400
- Via e-mail to the lead agency main contact
- Via Project Web site at http://www.sr91-sr71project.info/comments.asp
- During public meeting at Corona City Hall on December 9, 2010, from 5:00 to 8:00 p.m.

A total of 13 comments were received from the public and resource agencies. Comments received regarding the draft environmental document generally inquired about mitigation measures for biological resources, accessibility of large trucks along SR-91, inclusion in the notification list, emergency services, traffic circulation, coordination with other transportation projects within the area, hazardous waste procedures, and construction within State Parks ROW.

6.2.3 Native American Coordination

Eight Native American Tribes were contacted based on recommendations from the NAHC. Letters describing the Interchange Proposal and soliciting input were sent to the following tribes:

- Cahuilla Band of Indians; Attn.: Anthony Madrigal, Jr., Chairperson
- Pechanga Band of Mission Indians; Attn.: Paul Macarro, Cultural Resource Center
- Ti' At Society; Attn.: Cindi Alvitre
- Gabrielino/Tongva San Gabriel Band of Mission Indians; Attn.: Anthony Morales, Chairperson
- Gabrielino/Tongva Council/Gabrielino Tongva Nation; Attn.: Sam Dunlap, Tribal Secretary
- Pechanga Band of Mission Indians; Attn.: Mark Macarro, Chairperson
- Soboba Band of Luiseno Indians; Attn.: Erica Helms, Cultural Resource Manager
- Juaneño Band of Mission Indians; Attn.: Sonia Johnston, Tribal Vice Chairperson

Of those contacted, Mr. Anthony Morales, Chairperson of the Gabrielino/Tongva San Gabriel Band of Mission Indians, called on July 30, 2008, and stated that he had concerns regarding the sensitive nature of the Interchange Proposal and recommended that an archaeological and Native American monitor be present during ground-disturbing activities. Pursuant to a request by Caltrans District 8 Native American coordinator (DNAC), Gwyn Alcock, regarding a request for Native American monitoring during construction, Æ provided a revised draft ASR to Mr. Morales on May 18, 2009. On May 19, 2009, Mr. Morales called Æ and was concerned that Caltrans did not agree to his request for Native American monitoring during construction; however, after explaining why the APE had little to no potential for containing intact buried Native American cultural deposits due to its geomorphic setting and documented prehistoric settlement patterns in the overall Prado Basin, Mr. Morales agreed with Æ and Caltrans' findings and recommendations for no Native American monitoring during construction.

On August 1, 2008, Æ received an e-mail from Ms. Anna Hoover, Cultural Resources Analyst for the Pechanga Band of Mission Indians, requesting that a Pechanga monitor be present during the cultural resources survey of the APE. Æ invited the tribe to participate in the August 5, 2008, cultural resources survey; however, no tribal representative showed up for the survey. In a letter dated September 22, 2008, the Pechanga Band of Mission Indians requested to be notified if cultural resources are identified during construction and to be consulted regarding the treatment and disposition of all artifacts discovered during construction. In addition, the Pechanga Band of Mission Indians requested to be notified by the lead agency once the entitlement and/or CEQA/NEPA process commences for the Interchange Proposal to enable the tribe the opportunity to participate in the environmental review process. The tribe also requested copies of all archaeological reports, site records, and environmental documents once they are

completed. Lastly, the Pechanga Band of Mission Indians requested formal government-to-government consultation with the lead agency. Caltrans initiated government-to-government consultation after receipt of this letter. Pursuant to a request by Caltrans DNAC, Gwyn Alcock, regarding a request for Native American monitoring during construction, Æ provided a revised draft ASR to Ms. Hoover on May 18, 2009. On March 4, 2010, Ms. Alcock received a call from Ms. Hoover to discuss the Interchange Proposal. Ms. Hoover stated that, after reviewing the Interchange Proposal, they had no further comments or concerns at the time; however, if the sensitivity appears to rise above the level of low concern for prehistoric resources, they wanted to be contacted. Therefore, under the auspices of the Federal guidelines for Section 106, Native American government-to-government consultation has been completed between the DNAC, Gwyn Alcock, and the Pechanga Band of Mission Indians.

Mr. Joe Ontiveros, Cultural Resources Manager for the Soboba Band of Mission Indians, in a telephone call on August 4, 2008, recommended that a Native American monitor be present during the cultural resources survey of the APE. Æ invited the tribe to participate in the cultural review survey of the APE. On August 5, 2008, Soboba assisted with the archaeological survey of the APE. Pursuant to a request by Caltrans DNAC, Gwyn Alcock, regarding a request for Native American monitoring during construction, Æ provided a revised draft ASR to the tribe on May 18, 2009. On June 18, 2009, Mr. Ontiveros contacted Ms. Alcock to discuss the Interchange Proposal and results of the cultural resources identification efforts. While Mr. Ontiveros understands Caltrans' monitoring policy, he had concerns that Native American artifacts may have washed into the APE during one or more flooding episodes; it does not matter if they are out of context – they are still considered "sacred to a point." Mr. Ontiveros stated, however, that Caltrans may move forward on the Interchange Proposal.

The Cahuilla Band of Missions Indians, in a telephone call on September 11, 2008, requested a copy of the cultural resources inventory report and that a Native American monitor be present during construction. Pursuant to a request by Caltrans DNAC, Gwyn Alcock, regarding a request for Native American monitoring during construction, Æ provided a revised draft ASR to the tribe on May 18, 2009. On July 10, 2009, Æ received an e-mail from Ms. Yvonne Markle, Assistant Director of Environmental Department for the Cahuilla Band of Mission Indians, stating that currently the Cahuilla Band of Mission Indians has no concerns regarding this Interchange Proposal; however, they requested to be updated on any findings in the APE that pertain to any discoveries of Native American artifacts.

Æ contacted Cindi Alvitre of the Ti' At Society by telephone on August 4, 2008, and September 17, 2008. Detailed messages regarding the Interchange Proposal were left during both attempts to contact Ms. Alvitre. No response was received.

Æ contacted Mr. Sam Dunlap, Tribal Secretary for the Gabrielino/Tongva Council/Gabrielino Tongva Nation, by telephone on August 4, 2008. Mr. Dunlap stated that he had not had the chance to read the letter yet and would get back to them when he had read it. On September 17, 2008, Æ left a detailed message regarding the Interchange Proposal for Mr. Dunlap. No response was received.

Æ left a detailed message regarding the Interchange Proposal for Ms. Sonia Johnston of the Juaneño Band of Mission Indians on August 4, 2008. On September 17, 2008, Æ called Ms. Johnston, who stated that the tribe had no concerns regarding the Interchange Proposal.

6.2.4 Agency Coordination

Coordination was conducted with the four agencies that have authority over resources in the APE. A natural resource meeting took place on September 25, 2008, to discuss the Interchange Proposal's potential impacts to environmental resources. The agencies that follow were contacted regarding the Interchange Proposal.

6.2.4.1 San Bernardino County Museum

The San Bernardino County Museum (SBCM) was consulted on whether the Interchange Proposal could affect paleontological resources. SCBM is responsible for, and maintains records of, paleontological findings within San Bernardino County. A request for a paleontological literature search was submitted to SBCM to conduct a records search within the APE.

In January 2009, a Paleontological Identification Report/Paleontological Evaluation Report (PIR/PER) was issued by SBCM, stating that the Proposal area "demonstrates that numerous exposures of potentially fossil-bearing sediments are present and may be impacted by development. These lithologic units have high potential to contain significant nonrenewable paleontologic resources throughout their extent and are therefore assigned high paleontologic sensitivity." The report further states that a Paleontological Mitigation Plan (PMP) to mitigate impacts to nonrenewable paleontologic resources should be prepared by a qualified vertebrate paleontologist.

6.2.4.2 Southern California Association of Governments Transportation Conformity Working Group

On March 24, 2009, the Interchange Proposal's air quality staff consulted with the SCAG Transportation Conformity Working Group (TCWG) according to the guidance provided in the *Transformation Conformity Guidance for Qualitative Hot-Spot Analysis in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas.* A SCAG "PM Hot Spot Interagency Review Form" was prepared and submitted to the TCWG for consideration at its April 28, 2009, meeting.

The TCWG concurred with the analysis and determined that the Interchange Proposal is "Not a Project of Air Quality Concern (POAQC) – Hot Spot Analysis not required," and no further analysis was required. This consultation was conducted as part of the requirements to prepare and complete an Air Quality Conformity Analysis Report that would be prepared and submitted to FHWA for concurrence pursuant to SAFETEA-LU Section 6005 for a project air quality conformity determination subsequent to public review of this document. After a 30-day public review, an Air Quality Conformity Analysis was prepared for the Interchange Proposal. On May 10, 2011, FHWA issued a Project-Level Conformity Determination for the overall SR-91/SR-71 Interchange Improvement Project.

6.2.4.3 United States Army Corps of Engineers

In January 2008, representatives from USACE were invited to the Proposal area to discuss the Interchange Proposal and to discuss whether any resources would be jurisdictional under USACE. USACE declined a field meeting at the time and requested further information about the Interchange Proposal instead.

1. On January 28, 2008, a copy of the Jurisdictional Assessment was sent to USACE; subsequent to receipt of the Jurisdictional Assessment, USACE assigned a pending NWP number to the Interchange Proposal (SPL-2008-00293-SJH-7-Mar-08).
2. On June 6, 2008, a completed "approved JD form" was sent to USACE.
3. On May 26, 2009, a field review with USACE staff was conducted at the Proposal area.

The Proponents have also coordinated with USACE to ensure that the Interchange Proposal does not conflict with the Santa Ana River Reach 9 Phase 2A Project. SR-91/SR-71 Interchange Proposal representatives attended coordination meetings in July 2008 and March 2011.

Additional meetings between the Proponents and USACE have also occurred in December 2012 and April 2013 to discuss the Onsite Alternative features and its potential impacts to the flood risk management facility and on Federal lands.

6.2.4.4 Orange County Flood Control District

A copy of the draft *SR-91/71 Improvement Project Initial Study/Proposed Mitigated Negative Declaration* was provided to OCFCD. OCFCD provided comments related to the Santa Ana River Project within the jurisdiction and responsibility of OCFCD.

6.2.5 Permits and Approvals Needed

Specific regulatory requirements have been identified through a review of environmental laws and regulations, existing guidelines, and correspondence with responsible agencies. Table 6-1 summarizes the permits and approvals that are necessary for the Interchange Proposal to satisfy regulatory requirements.

Table 6-1: Required Permits

Agency	Permit
Federal	
USACE	CWA, Section 404 Discharge of Dredged or Fill Materials Permit
USACE	Section 408 Permit
State of California	
RWQCB	CWA, Section 401 Water Quality Certification
CDFW	California Fish and Game Code, Section 1602 Lake or Streambed Alteration Permit

7.0 PUBLIC CIRCULATION/RESPONSE TO COMMENTS

A notice was issued to the public to announce the availability of the Draft EA for public review and comment. The Draft EA was circulated for public review and comment for a 30-day period from (Dates TBD). Following the public review and comment period, (TBD) comments were received from members of the public, public agencies, or other interested parties. As a result, ___ responses to comments were made in regard to the Draft EA and are addressed in the Final EA.

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8.0 REFERENCES

Caltrans. June 2011. *SR-91 and SR-71 Interchange Improvement Project Initial Study and Mitigated Negative Declaration,* City of Corona, Riverside County, California.

Geology and Soil Quality, Stability, and Moisture

California Geological Survey, January 1, 1980. State of California Earthquake Fault Zones Map, Prado Dam Quadrangle, California.

Caltrans. August 13, 1993. As-Built Plans, West Prado Overhead (Widen), Bridge No. 56-634R/L, Bridge Department, Engineering Geology Section.

Caltrans. December 30, 1970. As-Built Plans, West Prado Overhead, Bridge No. 56-634R/L, Bridge Department, Engineering Geology Section.

Converse Consultants. October 2008. *Preliminary Foundation Report State Route 91/71 Interchange Improvement Project*, City of Corona, Riverside County, California.

County of Riverside Transportation Land Management Agency. 2008. *Riverside County Environmental Hazards Map*.

Digital Geologic Map of the Santa Ana 30'X60' Quadrangle, Southern California, Version 1.0.

Earth Mechanics, Inc. August 2012. *Technical Memorandum Preliminary Foundation Report, E91/N71 Connector,* Riverside County, California.

Seismic Hazard Zone Report 045 for the Prado Dam 7.5-Minute Quadrangle, Orange County, California, 2000.

Water Resources

Caltrans. 2008. Flood Plain Hydraulic Study.

Caltrans. June 2010. Jurisdictional Delineation of Waters and Wetlands, SR-91 and SR-71 Interchange Improvement Project, Riverside County, California.

Caltrans. June 2010. Determination of Biological Equivalent or Superior Preservation (DBESP) Analysis, SR-91 and SR-71 Interchange Improvement Project, City of Corona, Riverside County, California.

Parsons. 2012. *Section 408 Outgrant Justification, State Route 91/71 Interchange Improvement Project.* November.

RWQCB. 2008. Basin Plan. February.

Air Quality

Caltrans. August 2010. SR-91 and SR-71 Interchange Improvement Project Air Quality Technical Study.

Caltrans. April 2011. *SR-91 and SR-71 Interchange Improvement Project Air Quality Conformity Analysis.*

CARB, 2008.

CEC. 2006.

U.S. Environmental Protection Agency. February 2011. *Technology Transfer Network Air Toxics, 2005 National-Scale Air Toxics Assessment, Glossary of Key Terms.* Accessed May 14, 2013. http://www.epa.gov/ttn/atw/nata2005/gloss1.html

U.S. Environmental Protection Agency. 2013.

Biological Resources

Caltrans. May 2010. SR-91 Corridor Improvement Project Comprehensive Wildlife Corridor Analysis.

Caltrans. June 2010. Habitat Assessment and MSHCP Consistency Analysis for the SR-91 and SR-71 Interchange Improvement Project, City of Corona, Riverside County, California.

Caltrans. June 2010. Determination of Biological Equivalent or Superior Preservation (DBESP) Analysis, SR-91 and SR-71 Interchange Improvement Project, City of Corona, Riverside County, California.

Caltrans. June 2010. SR-91/ SR-71 Interchange Improvement Project Natural Environmental Study.

Caltrans. March 2011. SR-91 and SR-71 Interchange Improvement Project Habitat Assessment.

LSA. *Natural Environment Study*. 2010.

United States Fish and Wildlife Service (USFWS). June 22, 2011. Biological Opinion for the SR-91 and SR-71 Interchange Improvement Project.

Cultural Resources

Caltrans. October 2010. SR-91 and SR-71 Interchange Improvement Project Archaeological Survey Report.

Caltrans. October 2010. SR-91 and SR-71 Interchange Improvement Project Historic Property Survey Report.

Aesthetics

Caltrans. June 2011. SR-91 and SR-71 Interchange Improvement Project Visual Impact Assessment, City of Corona, Riverside County, California.

Noise

Caltrans. October 2010. *SR-91 and SR-71 Interchange Improvement Project Noise Study Report*, City of Corona, Riverside County, California.

Health and Safety

Caltrans. August 2010. SR-91 and SR-71 Interchange Improvement Project Initial Site Assessment Phase 1, City of Corona, Riverside County, California.

Traffic and Transportation

Caltrans. TASAS April 2005 – March 2008.

Parsons. 2010. SR-91/SR-71 Interchange Improvement Project Traffic Study. March.

9.0 RECOMMENDATION

The Asset Management Division recommends that no significant impacts have been identified with respect to the Onsite Alternative.

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APPENDIX A ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION ALIGNMENT MAPS

APPENDIX B MINIMIZATION AND MITIGATION MEASURES

The minimization measures indicated in this table were derived from the overall SR-91/SR-71 Interchange Improvement Project Environmental Document. Other minimization measures have also been added beyond those identified the SR-91/SR-71 Interchange Improvement Project Environmental Document. Construction activities would adhere and/or implement the measures outlined in this table to minimize potential effects to environmental resources.

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
GEOLOGY AND SOIL QUALITY, STABILITY, AND MOISTURE						
GEO-1	A site-specific geotechnical investigation will be completed to ensure that piles, retaining walls, and other structures will not impact geology and topography in the area. The final design will address any geotechnical hazards that are identified in the investigation.	Caltrans (during final design)	Site-specific geotechnical investigation should be conducted during final design.		IS/MND	
GEO-2	An erosion control plan will be prepared prior to construction of the project. The erosion control plan must specify measures such as soil stabilization. As described in the Caltrans Plans Preparation Manual: "The locations and details of the erosion control materials shall be shown on the erosion control plans. Erosion control materials may include, but are not limited to, compost, straw, fiber, stabilizing emulsion, and erosion control blankets/mats."	Caltrans (during final design)	An erosion control plan shall be prepared during final design.		IS/MND; CWA 402	
GEO-3	If slopes are going to be constructed steeper than 2:1 (H:V), then stability analyses shall be performed during the final design phase.	Caltrans (during final design)	Stability analysis should be conducted during final design		IS/MND	
GEO-4	During final design, the most suitable pile type shall be used based on the geotechnical data, site-specific investigation, cost considerations, and the latest Caltrans requirements by using Working Stress Design or Load and Resistance Factor Design methods for abutment and bent.	Caltrans (during final design)	Determine the most suitable pile type during final design.		IS/MND	
GEO-5	Earthwork shall conform to requirements of the Caltrans Standard Specifications, Section 19. Soil compaction shall be accomplished in accordance with Section 19-5 of the Standard Specifications. The subgrade shall be compacted to at least 95 percent of the laboratory maximum dry density. Fill placed during widening of the embankments shall be benched into the existing slopes as described in Section 19-6.1 of the	Caltrans (during final design)	Conformance with Caltrans Standard Specifications Section 19 is required during final design.		IS/MND	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
	Standard Specifications. Actual depths and extend of toe-of-fill keyways will be determined during site-specific investigations.					
GEO-6	Import soils shall have the minimum characteristics: • Non-reactive to Portland cement concrete, or cement type shall reflect corrosivity test results. • Have shear values of a minimum cohesion equal to 100 pounds per square inch and friction angle of 30 degrees or a combination of strength parameters that will provide a safety factor of at least 1.5 static and 1.1 pseudostatic stability analysis results. • Expansion index shall be equal to or less than 20.	Caltrans (during final design) Resident Engineer/ Contractor (during construction)	Type of import soils should be determined during final design.		IS/MND	
GEO-7	A minimum over-excavation shall be performed within all areas to receive compacted fill. The over-excavation should extend horizontally a minimum distance equal to the depth of excavation from the edges of new fill.	Caltrans (during final design) Resident Engineer/ Contractor (during construction)	Over-excavation should be performed during construction.		IS/MND	
GEO-8	If soundwalls are determined feasible and reasonable on the hillside homes south of SR-91, then a geotechnical engineer will review the plans to ensure the stability of these soundwalls.	Caltrans (during final design) Resident Engineer/ Contractor (during construction)	Recommendations for appropriate foundation support measures will be incorporated during the final design. Dewatering permit must be obtained prior to construction (if required).		IS/MND	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
GEO-9	To address seismic concerns associated with placement of bridge columns on top of the Santa River Channel levees, a permanent steel isolation casing through the levee will be incorporated into the column design. A permanent steel isolation casing will isolate the levee from potential column movement during a seismic event.	Caltrans (during final design) Resident Engineer/ Contractor (during construction)	Temporary steel isolation casing will be incorporated into bridge column design during final design and implemented during construction.		EA	
WATER RESOURCES						
WATER QUALITY AND STORMWATER RUNOFF						
WQ-1	Conform to the requirements of the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) Storm Water Permit, Order No. 99-06- DWQ, NPDES No. CAS000003, adopted by the State Water Resources Control Board (SWRCB) on July 15, 1999, in addition to the Best Management Practices (BMPs) specified in the Caltrans Storm Water Management Plan (SWMP) (Caltrans 2007b). When applicable, the Contractor shall also conform to the requirements of the General NPDES Permit for Construction Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002 and any subsequent General Permit in effect at the time of project construction.	Caltrans (during final design)/ Contractor (prior to and during construction)/ Resident Engineer	The Contractor will conform to the requirements of the Caltrans Statewide NPDES Storm Water Permit and implement BMPs prior to and during construction activities.		IS/MND; CWA 402	
WQ-2	Prepare and implement the Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall address all State and Federal water control requirements and regulations. The SWPPP shall address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP shall include BMPs to control pollutants, sediment from erosion, stormwater runoff, and other construction-related impacts. In addition, the SWPPP shall include the provisions of SWRCB Resolution No. 2001-046, which requires implementation of specific Sampling Analysis Procedures to ensure that the implemented BMPs are effective in preventing the exceedance of any	Contractor (during construction)/ Resident Engineer	The Contractor shall conform and implement site BMPs prior to and during construction activities.		IS/MND; CWA 402	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
	water quality standards. The results of the risk-level determination indicate that the project has a Risk Level of 1, which directs the project to implement the following Risk Level 1 requirements: – Effluent Standards – Good Site Management "Housekeeping" – Non-Stormwater Management – Sediment Controls – Run-on and Runoff Controls – Inspection, Maintenance, and Repair Risk Level 1 Monitoring and Reporting Requirements specific implementation details regarding these requirements are found in Attachment C of the *NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009-DWQ* (September 2009).					
WQ-3	File a Notice of Intent (NOI) with the SWRCB at least 30 days prior to any soil-disturbing activities.	RCTC (prior to construction)/ Caltrans	File NOI to SWRCB at least 30 days prior to construction.		IS/MND; CWA 402	
WQ-4	Conform all work to the Construction Site BMP (Category II) requirements specified in the latest edition of the Caltrans SWMP to control and minimize the impacts of construction and construction related activities, materials, and pollutants on the watershed. These include, but are not limited to, temporary sediment control, temporary soil stabilization, scheduling, waste management, materials handling, and other non-stormwater BMPs. For a complete list, refer to Section 4.5 of the Caltrans SWMP (2003).	RCTC (during final design)/ Contractor (during construction)/ Resident Engineer	Caltrans SWMP should be followed during the design phase of the project. BMPs should be implemented during construction.		IS/MND; CWA 402	
WQ-5	Give special attention to stormwater pollution control during the rainy season, which is defined by the SWRCB as year round. Appropriate soil stabilization and sediment controls will be implemented when rain is predicted. Water Pollution Control BMPs will be used to minimize impacts to receiving waters. Measures will be incorporated to contain all vehicle loads and avoid	Contractor (during construction) Resident Engineer	Implement Recommendations during construction.		IS/MND	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
	any tracking of materials that may fall or blow onto Caltrans right-of way (ROW).					
WQ-6	If dewatering is necessary, then this project will fully conform to Order No. R8-2009-0003 (NPDES No. CAG998001), General Waste Discharge Requirements for Discharges to Surface Water which Pose an Insignificant *(De Minimis)* Threat to Water Quality, from the Santa Ana RWQCB. Dewatering BMPs will be used to control sediments and pollutants. A United States Environmental Protection Agency (EPA)-certified laboratory will test and monitor the discharge for compliance with the requirements of the RWQCB.	Contractor (during construction)/ Resident Engineer	Dewatering BMPs should be implemented during construction activities.		IS/MND; CWA 402	
WQ-7	The Caltrans SWMP describes BMPs and practices to reduce the discharge of pollutants associated with the stormwater drainage systems of State highways, facilities, and activities. The completed project plans will incorporate all necessary Maintenance BMPs (Category IA), Design Pollution BMPs (Category IB), and Treatment BMPs (Category III) to meet the Maximum Extent Practicable (MEP) requirements. A combination of BMPs from the following categories will be implemented as part of the project: • Maintenance BMPs – This category includes routine maintenance work, such as litter pickup, toxics control, street sweeping, drainage, and channel cleaning. • Design Pollution Prevention BMPs – Permanent soil stabilization systems will be incorporated into project design, such as preservation of existing vegetation, concentrated flow conveyance systems (e.g., drainage ditches, dikes, berms, swales), and slope/surface protection systems that utilize either vegetated or hard surfaces. Determination of Design Pollution Prevention BMPs will occur during final design. • Treatment BMPs – The applicability of all nine Caltrans-approved Treatment BMPs were analyzed as part of this project. This category of BMPs includes	RCTC/ Caltrans (Oversight) (during final design). Contractor/ Resident Engineer (during construction)	Implement BMPs during construction.		IS/MND; Caltrans SWMP; CWA 402	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
	traction sand traps, infiltration devices, detention devices, biofiltration strips/ swales, dry weather flow diversion, media filters, multi-chamber treatment trains, wet basins, and gross solids removal devices (GSRDs).					
WQ-8	Prior to the disturbance of all jurisdictional drainages, the following are required: • Obtain and conform to Clean Water Act (CWA) Section 404 permit issued by USACE prior to disturbance of all jurisdictional drainages. • Obtain and conform to CWA Section 401 Water Quality Certificate issued by Santa Ana RWQCB prior to disturbance of all jurisdictional drainages. • Obtain and conform to Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW) prior to disturbance of all jurisdictional drainages. • Compensatory mitigation measures for impacts to jurisdictional drainages shall adhere to requirements contained within Section 2.3 of this IS.	RCTC/ Caltrans (during final design/prior to construction)/ Contractor during construction	Obtain permits prior to construction. Conform to requirements during construction.		CWA 404; CWA 401; CDFW 1600	
AIR QUALITY						
AQ-1	In addition to the South Coast Air Quality Management District (SCAQMD) rules, the following mitigation measures set forth a program of air pollution control strategies that will ensure that construction emissions will not exceed any applicable standard. Measures 1 and 2 include fugitive dust reduction strategies, in addition to Rule 403 requirements. Measures 3 through 5 provide reduction for other contaminants, including nitrogen oxide (NO_X) emissions. 1. In addition to SCAQMD Rule 403 requirements, apply water to all excavation/grading activity areas as necessary to remain visibly moist during active operations. 2. Apply nontoxic soil stabilizers, as needed, to reduce offsite transport of fugitive dust from unpaved staging areas and unpaved road surfaces. 3. Properly tune and maintain construction equipment	Caltrans (during final design) Resident Engineer/ Contractor (during construction)	Minimization measures will be conducted during construction.		SCAQMD Rule 403	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
	and vehicles in accordance with manufacturer's specifications. Low-sulfur fuel shall be used in construction equipment per California Code of Regulations (CCR) Title 17, Section 93114. 4. During construction, keep trucks and vehicles in loading/ unloading queues with their engines off when not in use to reduce vehicle emissions. Phase construction activities to avoid emissions peaks, where feasible, and discontinue during second-stage smog alerts. 5. To the extent feasible, use construction equipment that is either equipped with diesel oxidation catalyst or is powered by alternative fuel sources (e.g., methanol, natural gas). 6. Active construction areas shall be watered regularly to control dust and minimize impacts to adjacent vegetation. All measures provided above and included in SCAQMD Rules 403 and 1403 that are applicable to the project construction activities shall be implemented to the extent feasible to avoid adverse short-term air quality impacts.					
AQ-2	Active construction areas shall be watered regularly to control dust and minimize impacts to control dust and minimize impacts to adjacent vegetation.	Resident Engineer/ Contractor (during construction)	Implement recommendation during construction.		IS/MND	
BIOLOGICAL RESOURCES						
NATURAL COMMUNITIES						
BIO-1	The limits of grading required for all aspects of the interchange and construction staging areas will be clearly marked, and all construction areas, including staging of construction equipment, will be surveyed.	Caltrans (prior to construction)/ Resident Engineer (during construction)	The limits of grading of the project and staging areas will be delineated prior to construction.		IS/MND	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
BIO-2	Planned roads will be located in the least environmentally sensitive location feasible, including disturbed and developed areas or areas that have been previously altered.	Caltrans (PS&E)	Implement recommendation during PS&E.		Western Riverside County MSHCP; IS/MND	
BIO-3	Alignments will follow existing roads, easements, ROWs, and disturbed areas, as appropriate, to minimize habitat fragmentation. Implementation of BMPs, as discussed in Section 5.2.5 of the SR-91 and SR-71 Interchange Improvement Project Habitat Assessment and Multiple Species Habitat Conservation Plan (MSHCP) Consistency Analysis Report (Parsons/MBA 2010), preconstruction surveys, construction monitoring, and prescribed mitigation for impacts to riparian/riverine areas, will reduce all potential impacts to sensitive species not considered adequately conserved under the MSHCP to less than substantial.	Caltrans (PS&E)/ Resident Engineer (prior to and during construction)	Minimizing habitat fragmentation by implementing alignments to follow disturbed areas should be completed during PS&E. Preconstruction surveys and construction monitoring should be implemented during construction.		IS/MND	
BIO-4	Incorporate measures to control the quantity and quality of runoff from the site entering the MSHCP Conservation Area. In particular, measures shall be put in place to avoid discharge of untreated surface runoff from developed and paved areas into MSHCP Conservation Areas. According to the *Water Resources and Water Quality Technical Report* (Parsons 2010), the construction of a new flyover connector will not generate any changes in existing runoff in the area, and an SWPPP will be prepared for construction of the site.	Caltrans (during final design)/ Contractor (during construction	Incorporate measures prior to construction.		Western Riverside County MSHCP; IS/MND	
BIO-5	The use of chemicals or generation of bioproducts (i.e., manure) that are potentially toxic or may adversely affect wildlife species, habitat, or water quality shall not result in discharge to the MSHCP Conservation Area. The greatest risk is from landscaping fertilization overspray and runoff. Contractor shall avoid the discharge of chemicals, generation of bio products and over spraying of landscaping fertilizer within the MSHCP Conservation Area.	Caltrans/ Contractor	Avoid discharge of chemicals within MSHCP during construction.		Western Riverside County MSHCP; IS/MND	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
BIO-6	Night lighting shall be directed away from the MSHCP Conservation Area to protect species within the MSHCP Conservation Area from direct night lighting. Shielding shall be incorporated in project designs to ensure that ambient lighting in the MSHCP Conservation Area is not increased.	Caltrans/ Contractor	Implement measure during construction.		Western Riverside County MSHCP; IS/MND	
BIO-7	Noise-generating land uses affecting the MSHCP Conservation Area shall incorporate setbacks, berms, or walls to minimize the effects of noise on MSHCP Conservation Area resources pursuant to applicable rules, regulations, and guidelines related to land use noise standards.	Caltrans (during final design)	Implement measure during final design.		Western Riverside County MSHCP; IS/MND	
BIO-8	Land uses adjacent to the MSHCP Conservation Area shall incorporate barriers, where appropriate, in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass, or dumping into the MSHCP Conservation Areas. Such barriers may include native landscaping, rocks/boulders, fencing, walls, signage, and/or appropriate mechanisms. Manufactured slopes associated with the site development shall not extend into the MSHCP Conservation Area.	Caltrans/ Contractor	Incorporate barriers during construction.		Western Riverside County MSHCP; IS/MND	
BIO-9	To maintain the integrity of the wildlife corridor, the design plans of culvert improvements in the Fresno Canyon area will be submitted to the wildlife agencies for review and approval.	Caltrans (during final design)	Submit design plans during final design.		Western Riverside County MSHCP; IS/MND	
WETLANDS AND OTHER WATERS						
BIO-10	If jurisdiction is confirmed by USACE, RWQCB, and CDFW, then the following permits will be acquired: a Section 404 permit from USACE pursuant to Section 404 of the CWA; a Section 401 Water Quality Certification from the RWQCB; and a Section 1600 Streambed Alteration Agreement from CDFW pursuant to Section 1600 of the California Fish and Game Code. RCTC will implement and/or abide by the permit conditions for all resource agencies.	Caltrans/ RCTC (during final design)	Obtain Section 404 permit, Section 401 certification, and Section 1600 agreement during final design.		CWA 404; CWA 401; CDFW 1600	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
BIO-11	To offset impacts to jurisdictional resources, RCTC will obtain mitigation credits at a minimum ratio of 2:1. Currently, there are three potential mitigation areas under consideration by RCTC for riparian/riverine and jurisdiction resources mitigation: (1) habitat restoration of lands within Chino Hills State Park (CHSP); (2) habitat restoration of lands within the Green River Golf Course; and (3) habitat restoration or creation of lands owned by the Regional Conservation Authority (RCA).	RCTC (during final design)	Obtain mitigation credit during final design.		IS/MND; DBESP	
BIO-12	Planned roads will avoid, to the greatest extent feasible, impacts to wetlands. If wetlands avoidance is not possible, then any impacts to wetlands will require issuance of and mitigation in accordance with a Federal Section 404 and/or State Section 1600 permit.	Caltrans (during final design)	Avoidance of impacts to wetlands shall be implemented during final design.		Western Riverside County MSHCP; IS/MND	
			PLANTS			
BIO-13	To minimize direct impacts to special status plant species, the limits of grading required for all aspects of the interchange and construction staging areas will occur entirely within Department ROW or temporary construction easements and will be clearly marked.	Caltrans (during final design) Resident Engineer/ Contractor (during construction)	Construction staging areas will be delineated prior to construction. Construction activities should only occur within these limits.		IS/MND	
BIO-14	Preconstruction surveys will be conducted for sensitive plants after the final construction ROW has been established. All appropriate plants will be tagged and moved to appropriate offsite locations prior to the start of grading. It may be possible that plants will be salvaged, stored, and replanted within disturbed areas subsequent to construction.	Caltrans (during final design)/ Resident Engineer/ Contractor (during construction)	Preconstruction surveys, tagging, and moving of plants will be conducted prior to construction.		IS/MND	

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BIO-15	The appropriate biological surveys will be based on field conditions and recommendations of the project manager in consultation with a qualified biologist. The results of the biological resources investigations will be mapped and documented. The documentation will include preliminary conclusions and recommendations regarding potential effects of facility construction on MSHCP Conservation Area resources and methods to avoid and minimize impacts to these resources in conjunction with project siting, design, construction, and operation. The project biologist will work with facility designers during the design and construction phase to ensure implementation of feasible recommendations.	Caltrans/ Biologist (during final design) Resident Engineer/ Biologist (during construction)	Biological Surveys will be conducted prior to construction. Project biologist will work with facility designers during the design and construction phase to implement recommendations.		IS/MND	
BIO-16	During the Design Phase, a habitat assessment and, as required, focused surveys for the Brand's phacelia (blooming period: March to June), San Diego ambrosia (blooming period: April to October), and San Miguel savory (blooming period: March to May) will be conducted during the appropriate blooming season. Subsequent to surveys, RCTC will update the information in the Joint Project Review (JPR) and DBESP to address the additional surveys and, as necessary, presence of and impacts to these species. If the federally endangered San Diego ambrosia is identified onsite during the surveys, Caltrans will reinitiate Section 7 consultation with USFWS to amend the Biological Opinion (BO). Applicable mitigation will be determined through coordination with the resource agencies based on the survey results and project impacts. Potential mitigation measures listed below, or a combination of the two measures, could be implemented. • Onsite conservation of existing Brand's phacelia, San Diego ambrosia, and San Miguel savory though avoidance and designation of environmentally sensitive areas. • Translocation of Brand's phacelia, San Diego	RCTC to conduct habitat assessment/ focused surveys, and update JPR and DBESP (if necessary); Caltrans to reinitiate Section 7 consultation (if required)	Conduct habitat assessment during final design phase. Habitat assessment must be conducted during the blooming season for each plant species.		IS/MND; RCA JPR	

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	ambrosia, and San Miguel savory individuals outside of the project ROW to areas of suitable habitat, as identified by a contractor-supplied plant biologist with knowledge of and experience with translocation of local flora species of the region.					
	ANIMAL SPECIES					
BIO-17	Design of planned roads will consider wildlife movement requirements, as further outlined in Section 7.5.2, Guidelines for Construction of Wildlife Corridors, and any construction, maintenance, and operation activities that involve clearing of natural vegetation will be conducted outside the active breeding season (February 15 through August 31).	Caltrans (during final design) Resident Engineer/ Contractor (during construction)	Clearing of vegetation shall occur outside the breeding season during construction.		Western Riverside County MSHCP; IS/MND	
BIO-18	For the wildlife fencing on SR-91 and SR-71, consideration will be given during design to avoid disturbance of the fencing or movement of wildlife. If the project requires removal of the fencing, then biological monitoring will be required and replacement of any disturbed fencing will occur after construction. For Proposed Constrained Linkage (PCL) 1 and PCL 2, the following measures shall be implemented to improve wildlife connectivity: • For PCL 1, the project will improve wildlife connectivity by utilizing an open channel instead of a traditional pipe extension, installing wildlife fencing to funnel into the crossing, and planting of native vegetation. • For PCL 2, the project will improve the function of the undercrossing bridge by removing most of the existing concrete revetment and regrading the slopes of the crossing openings to a 4:1 slope. In addition, wildlife fencing will be installed to funnel the wildlife into the crossings, and native vegetation will be planted to provide habitat continuity. Caltrans and RCTC will continue its commitment to work with the RCA and	Caltrans (during final design); Resident Engineer (during construction)	Wildlife fencing should be implemented during construction; if fencing is removed, a biological monitor is required during construction.		IS/MND; RCA JPR; USFWS Biological Opinion	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
	Wildlife Agencies on implementing a replacement linkage for PCL 1, as well as incorporating measures to improve PCL 2 after the completion of cumulative projects in the area (SR-91 Corridor Improvement Project [CIP]). These measures to improve PCL 1 and PCL 2 will be incorporated before the completion of the SR- 91 CIP Initial Project, which is anticipated to be completed in 2015.					
BIO-19	An appropriate openness ratio of at least 0.6 (calculated in meters as [opening width X height/length of crossing]) and height for crossings intended for use by medium- and large-sized wildlife will be maintained. The openness ratio, which is a function of a structure's length [(height x width)/length], is important for larger animals when using culverts and highway undercrossings. To maintain the integrity of the wildlife corridor, the design plans of culvert improvements in the Fresno Canyon area will be submitted to the wildlife agencies for review and approval.	Caltrans (final design) Resident Engineer/ Contractor (during construction)	Dimensions of wildlife crossing should be implemented during final design. Resident Engineer/Contractor will maintain crossing during construction activities.		IS/MND	
BIO-20	Crossing facilities will be vegetated as naturally as possible to mimic the surrounding natural crossing area. In some instances, vegetation may need to be tailored to match the needs of the focused species. Natural objects, such as stumps, rocks, and other natural debris, will be used within the crossing facility to create cover for wildlife and to encourage the use of crossings. The landscaping plans near the wildlife corridor areas will be submitted to the wildlife agencies for review and approval.	Caltrans (final design)	Artificial lighting will be implemented during final design.		IS/MND	
BIO-21	Sediment and erosion-control measures will be implemented until such time soils are determined to be successfully stabilized. In addition, the following measures will be implemented to areas within the MSHCP Conservation Areas: • Incorporate measures to control the quantity and quality of runoff from the site entering the MSHCP Conservation Area. In particular, measures shall be put	Resident Engineer/ Contractor (during construction)	Sediment and erosion control measures will be implemented during construction.		IS/MND	

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	in place to avoid discharge of untreated surface runoff from developed and paved areas into MSHCP Conservation Areas. According to the report, the construction of a new flyover connector will not generate any changes in existing runoff in the area and an SWPPP will be prepared for construction of the site. • The use of chemicals or generation of bioproducts (i.e., manure) that are potentially toxic or may adversely affect wildlife species, habitat, or water quality shall not result in discharge to the MSHCP Conservation Area. The greatest risk is from landscaping fertilization overspray and runoff.					
BIO-22	Equipment storage, fueling, and staging areas will be sited on non-sensitive upland habitat types with minimal risk of direct discharge into riparian areas or other sensitive habitat types.	Resident Engineer/ Contractor (during construction)	Equipment storage, fueling, and staging areas will be sited on non-sensitive upland habitat during construction.		IS/MND	
BIO-23	During construction, the placement of equipment within the stream or on adjacent banks or adjacent upland habitats occupied by Covered Species that are outside of the project footprint will be avoided.	Resident Engineer/ Contractor (during construction)	Avoidance of placing equipment within the stream or adjacent banks will be followed during construction.		IS/MND	
BIO-24	When work is conducted during the fire season, as identified by the Riverside County Fire Department, adjacent to coastal sage scrub or chaparral vegetation, appropriate fire-fighting equipment (e.g., extinguishers, shovels, water tankers) shall be available onsite during all phases of project construction to help minimize the chance of human-caused wildfires. Shields, protective mats, and/or other fire preventive methods shall be used during grinding, welding, and other spark-inducing activities. Personnel trained in fire hazards, preventive actions, and responses to fires shall advise contractors regarding fire risk from all construction related activities.	Resident Engineer/ Contractor (during construction)	Fire-fighting equipment will be present during construction.		IS/MND	

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BIO-25	Active construction areas shall be watered regularly to control dust and minimize impacts to adjacent vegetation.	Resident Engineer/ Contractor (during construction)	Implement recommendation during construction.		IS/MND	
BIO-26	All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other toxic substances shall occur only in designated areas within the grading limits of the Proposal area. These designated areas shall be clearly marked and located in such a manner as to contain runoff.	Resident Engineer/ Contractor (during construction)	All toxic substances shall occur only in designated areas during construction.		IS/MND	
BIO-27	Waste, dirt, rubble, or trash shall not be deposited in the Conservation Area or on native habitat. No erodible materials will be deposited into water courses. Brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks. Silt fencing or other sediment trapping materials will be installed at the downstream end of construction activities to minimize the transport of sediments offsite.	Resident Engineer/ Contractor (during construction)	Implement recommendation during construction.		IS/MND	
BIO-28	Impacts to Species of Special Concern, such as the coast horned lizard, although adverse, are not considered substantial; however, to avoid any impacts to the coast horned lizard, a qualified biological monitor will be onsite during the construction phase of the project to ensure that direct take of this species does not occur.	Resident Engineer/ Contractor (during construction)	Recommendation should be followed during construction.		IS/MND	
BIO-29	To avoid impacts to bats and potentially suitable habitat for day, night, and maternity roosting, construction activities should avoid the maternity season (March through August). In addition, a qualified biologist will conduct a preconstruction survey to determine if the construction area contains roosting or maternity colonies. If work must be conducted during the maternity period and roost locations are not occupied, exclusion devices will be installed in all potential roosting locations before March and maintained throughout construction. If work must be conducted during the maternity period and roost locations are	Resident Engineer/ Contractor (during construction)	A biological monitor should be present at the construction site during construction.		IS/MND	

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	found to be occupied, then a sufficient buffer, in consultation with CDFW, will be maintained around any bat roosting or maternity colony. In addition, a qualified biological monitor will be onsite during the construction phase of the project to ensure that no direct take occurs and there is no nest abandonment due to excessive disturbance. Any active nurseries found onsite and mitigation to offset impacts to bat species will be coordinated with CDFW.					
BIO-30	During the Design Phase of the project, a habitat assessment will be completed in accordance with the Burrowing Owl Survey instructions for the Western Riverside MSHCP Survey Area. If suitable habitat is identified during the survey, additional focused surveys may be completed as applicable. To ensure that any burrowing owl that may occupy the project area in the future are not affected by construction activities, preconstruction surveys will be completed 30 days prior to construction, and a report will be prepared and submitted in accordance with the requirements of the MSHCP 30-day Pre-Construction Burrowing Owl Survey Report Format identified. If preconstruction surveys determine that burrowing owl are present, one or more of the following mitigation measures may be required: (1) avoidance of active nests and surrounding buffer area during construction activities; (2) passive relocation of individual owls; (3) active relocation of individual owls; and (4) preservation of onsite habitat with long-term conservation value for the owl. The specifics of the required measures will be coordinated between the Caltrans District Biologist, RCTC, and the resource agencies.	Caltrans/ RCTC to conduct habitat assessment and preconstruction surveys. Resident Engineer/ Contractor (during construction)	Habitat Assessment should be conducted during the design phase. Preconstruction surveys to be conducted 30 days prior to construction. Implement mitigation measures during construction.		IS/MND; Western Riverside County MSHCP	
BIO-31	In accordance with the Migratory Bird Treaty Act, to avoid effects to nesting birds, any native or exotic vegetation removal or tree-trimming activities will occur outside of the nesting bird season (i.e., March 1 through June 30 within Riverside County). If vegetation clearing is necessary during the nesting season, a qualified biologist	Caltrans/ Resident Engineer	Implement measure during design phase.		IS/MND; MBTA	

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	will conduct a preconstruction survey to identify the locations of nests. Should nesting birds be found, an exclusionary buffer will be established by the biologist. This buffer will be clearly marked in the field by construction personnel under guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active.					
THREATENED AND ENDANGERED SPECIES						
BIO-32	Timing of construction activities will consider seasonal requirements for breeding birds and migratory nonresident species. Habitat clearing will be avoided during species' active breeding season, which is generally defined as February to August.	Caltrans/ RCTC (during final design); Resident Engineer/ Contractor (during construction)	Construction activities will adhere to seasonal requirements and will occur outside the breeding season of February to August.		IS/MND	
BIO-33	To offset the permanent loss of 1.0-acre of the MSHCP public, quasi-public (PQP) lands, RCTC will commit to purchase 1.0-acre of land and relinquish it to the RCA for long-term conservation, consistent with the requirements of the MSHCP.	RCTC	Purchase replacement land during final design.		IS/MND; RCA JPR	
BIO-34	To offset permanent impacts to riverine and riparian areas, the project will perform offsite enhancement at a 3:1 ratio through one of three options: (1) purchasing credits in the Santa Ana Watershed for arundo (*Arundo donax*) or salt cedar (*Tamarix* spp.) removal; (2) restoration within CHSP; or (3) restoration on the Green River Golf Course.	RCTC (during final design)	Obtain mitigation credit during final design.		IS; DBESP	

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			INVASIVE SPECIES			
BIO-35	The invasive, non-native plant species listed in the MSHCP will be considered in approving landscape plans to avoid the use of invasive species for portions of the project that are adjacent to the MSHCP Conservation Area. Considerations in reviewing the applicability of this list shall include proximity of planting areas to the MSHCP Conservation Areas, species considered in the planting plans, resources being protected within the MSHCP Conservation Area and their relative sensitivity to invasion, and barriers to plant and seed dispersal, such as walls, topography, and other features.	Caltrans (during final design)	Implement measure during final design.		Western Riverside County MSHCP; IS/MND	
BIO-36	In compliance with the Executive Order on Invasive Species, EO 13112, and subsequent guidance from the Federal Highway Administration (FHWA), the landscaping and erosion control included in the project will not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.	Caltrans/ RCTC (prior to construction); Resident Engineer/ Contractor (during construction)	Landscaping and erosion control measures shall be decided prior to construction. Inspection and cleaning of equipment shall occur during construction.		IS/MND	
BIO-37	Implementation of the BMPs discussed in Section 5.2.5 of the *SR-91 and SR-71 Interchange Improvement Project Habitat Assessment and MSHCP Consistency Analysis Report* (Parsons/MBA 2010) will limit the introduction of invasive species into the Conservation Area and will reduce any potential impacts to adjacent sensitive communities to less than substantial.	Caltrans/ RCTC (prior to construction); Resident Engineer/ Contractor (during construction)	Implement recommendations during construction.		MSHCP Consistency Analysis Report (2010)	

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CULTURAL RESOURCES						
CR-1	Though no archaeological resources are anticipated to be encountered during construction, it is Caltrans' policy if cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.	Caltrans/ Contractor (during construction)	Implement recommendation during construction		IS/MND	
CR-2	If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Gary Jones, District Cultural Resources Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.	Caltrans/ Contractor (during construction)	Implement recommendation during construction		IS/MND	
PALEONTOLOGY						
P-1	A Paleontological Mitigation Plan (PMP) will be prepared by a qualified paleontologist in accordance with Caltrans' Standard Environmental Reference (SER) requirements.	Caltrans (during design)	The PMP will be prepared during design.		IS/MND	
P-2	A qualified principal paleontologist (M.S. or Ph.D. in paleontology or geology familiar with paleontological procedures and techniques) will be retained to be present to consult with grading and excavation contractors at pre-grading meetings.	Caltrans (during final design)/ Paleontologist (during construction)	Contractors will consult with the paleontologist at pre-grading meetings.		IS/MND	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
P-3	A paleontological monitor, under the direction of the qualified principal paleontologist, will be onsite to inspect cuts for fossils at all times during original grading involving sensitive geologic formations.	Caltrans (during construction)/ Paleontologist (during construction)	A paleontological monitor should be present during construction.		IS/MND	
P-4	When fossils are discovered, the paleontologist (or paleontological monitor) will recover them. Construction work in these areas will be halted or diverted to allow recovery of fossil remains in a timely manner.	Paleontologist (during construction)/ Resident Engineer (during construction)	Paleontological monitor will recover fossils during construction.		IS/MND	
P-5	Fossil remains collected during the monitoring and salvage portion of the mitigation program will be cleaned, repaired, sorted, and cataloged.	Paleontologist (during construction)	Fossil remains collected will be cleaned, repaired, sorted, and catalogued during the monitoring and salvage portion of the mitigation program.		IS/MND	
P-6	Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will then be deposited in a scientific institution with paleontological collections.	Paleontologist (during construction)	Prepared fossils with all information will be deposited in a scientific institution during/after construction.		IS/MND	
P-7	A Paleontological Mitigation Report (PMR) will be completed that outlines the results of the mitigation program.	Paleontologist (during construction)	Final report will be completed after construction.		IS/MND	

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P-8	Where feasible, selected road cuts or large finished slopes in areas of critically interesting geology may be left exposed as important educational and scientific features. This may be possible if no substantial adverse visual impact results.	Paleontologist (during construction)/ Resident Engineer (during construction)	If feasible, exposure of interesting geology may be left exposed during construction.		IS/MND	
AESTHETICS						
AES-1	Work with the community during preliminary design to implement the Aesthetics and Landscape Master Plan for the project improvements through a formalized structure that allows for community input.	Caltrans (during final design)/ Landscape Architect (during final design)	Solicit comments from the community regarding the Aesthetics and Landscape Master Plan during preliminary design.		IS/MND	
AES-2	Develop Context-Sensitive Solutions for the aesthetic and landscape treatments of the project elements based on the Caltrans Aesthetics and Landscape Master Plan.	Caltrans (during final design)/ Landscape Architect (during final design)	Develop Context-Sensitive Solutions during final design.		IS/MND	
AES-3	Apply architectural detailing to the bridges in the corridor, including textures, colors, and patterns. Potential bridge elements that might receive aesthetics treatments include columns, pier caps, parapets, fencing, abutment, and wing walls.	Caltrans (during final design)/ Landscape Architect (during final design)	Caltrans (during final design)/ Landscape Architect (during final design).		IS/MND	
AES-4	Apply architectural detailing to the retaining walls, including textures, colors, and patterns. Include caps that will provide shadow lines, as shown in the Caltrans Aesthetics and Landscape Master Plan.	Caltrans (during final design)/ Landscape Architect (during final design)	Caltrans (during final design)/ Landscape Architect (during final design).		IS/MND	

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AES-5	Save and protect as much existing vegetation as feasible, especially trees.	Caltrans/ RCTC (during final design) Resident Engineer (during construction)	Saving and protecting existing vegetation shall be implemented during construction.		IS/MND	
AES-6	Include skyline trees in the new plantings to help break up views to the new flyover.	Caltrans (during final design)/ Landscape Architect (during final design)	Include skyline trees during final design.		IS/MND	
AES-7	Utilize drainage and water quality elements, where required, that maximize the allowable landscape. Place any water quality or detention ponds out of clear view of the interchange or from the highway. If this is not possible, integrate these features into the landscape design.	Caltrans (during final design)/ Landscape Architect (during final design)	Implement drainage and water quality elements during final design.		IS/MND	
AES-8	The Project Engineer will ensure that replacement planting to mitigate the loss of existing landscaping is included in the final design. All planting must be reviewed and approved by the District Landscape Architect. Replacement planting will be funded with project's construction and will include no less than 3 years of plant establishment. The Project Engineer will ensure that the replacement is under construction within 2 years of acceptance of the highway contract that damaged or removed the existing planting.	RCTC/ Project Engineer (during final design)/ Landscape Architect (during final design)	Revegetation of disturbed areas will occur after construction. Landscaping design of disturbed areas will be completed during project design.		IS/MND	
AES-9	To address potential impacts associated with views of construction access and staging areas, the Resident Engineer will be required to construct the project in accordance with Caltrans Standard Construction Specifications, including appropriate measures to address visual impacts during construction.	Caltrans/ Resident Engineer	Implement measures during construction.		IS/MND	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
AES-10	To reduce glare, RCTC's Project Engineer will ensure that the project plans specify lighting fixtures with non glare hoods and that lighting plans require the review and approval of the Department and applicable city and county before construction to assure compliance with their applicable policies regarding public street lighting.	RCTC/ Project Engineer	Implement measure prior to and during construction.		IS/MND	
	NOISE					
N-1	To minimize construction-generated noise, Standard Specification Section 14-8.02 "Noise Control" and Standard Special Provision S5-310 need to be followed. This Standard Special Provision will be edited specifically for the project during the plans, specifications, and estimate (PS&E) phase. Construction noise control and noise monitoring must comply with Caltrans General "5-1 Noise Control" standard special provisions. This section applies to equipment on the project or associated with the project, including trucks, transit mixers, stationary equipment, and transient equipment. Do not exceed 86 A-weighted decibels (dBA) at 50 feet from the project limits from 7:00 p.m. to 7:00 a.m. Do not operate construction equipment or run equipment engines from 7:00 p.m. to 7:00 a.m. or on Sundays, except you may operate within the project limits during these hours to: • Service traffic control facilities • Service construction equipment *Noise Monitoring* Provide one Type 1 sound-level meter and one acoustic calibrator to be used by the Department until contract acceptance. Provide training by a person trained in noise monitoring to one Department employee designated by the Engineer. The sound-level meter must be calibrated and certified by the manufacturer or other independent acoustical laboratory before delivery to the Department. Provide annual recalibration by the manufacturer or other independent acoustical laboratory. The sound-level meter must be capable of	Resident Engineer/ Contractor (during construction)	Noise control provisions will be implemented during construction.		IS/MND; Caltrans SSPs	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
	taking measurements using the A-weighting network and the slow response settings. The measurement microphone must be fitted with a windscreen. The Department returns the equipment to you at contract acceptance. The contract lump sum price paid for noise monitoring includes full compensation for furnishing all labor, material, tools, equipment, and incidentals and for doing all work involved in noise monitoring. **Section 14-8.02, Noise Control,** of Caltrans standard Specifications states: • Do not Exceed 86 dBA at 50 feet from the jobsite activities from 9:00 p.m. to 6:00 a.m. • Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the jobsite without the appropriate muffler. • If adverse construction noise impacts are anticipated, project plans and specifications must identify abatement measures that will minimize or eliminate adverse construction noise impacts on the community. When construction noise abatement is identified, Caltrans will consider the benefits achieved and the overall adverse social, economic, and environmental effects and costs of the construction noise abatement measures. • If noise barriers are planned as part of the project, Caltrans will consider constructing the barriers before beginning project construction so that the barriers can reduce construction noise transmission to adjacent land uses. Barriers can be constructed before project construction through a separate contract or as a first phase of work under the project construction contract.					
N-2	If possible, avoid using impact pile driving for bridge demolition/reconstruction. Utilize less noise-intrusive piling techniques using vibratory pile driving or cast-in-drilled-hole (CIDH) piling.	Resident Engineer/ Contractor (during construction)	Avoidance of the usage of impact pile driving will be implemented during construction.		IS/MND; Caltrans SSPs	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
N-3	In case of construction noise complaints by the public, the construction manager will be notified and noise monitoring will be conducted if necessary.	Resident Engineer/ Contractor (during construction)	Noise monitoring will be implemented during construction (if applicable).		IS/MND; Caltrans SSPs	
N-4	All equipment will have sound-control devices no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.	Resident Engineer/ Contractor (during construction)	Sound control devices will be implemented during construction.		IS/MND; Caltrans SSPs	
N-5	Truck loading, unloading, and hauling operations will be conducted so that associated noise impacts are kept to a minimum by carefully selecting routes to avoid going through residential neighborhoods to the greatest possible extent.	Resident Engineer/ Contractor (during construction)	Truck activities will be monitored during construction.		IS/MND; Caltrans SSPs	
N-6	Use and relocate temporary barriers, if warranted and practicable, to protect sensitive receptors from excessive construction noise. Such temporary noise barriers can be made of heavy plywood or moveable insulated sound blankets. They will be free of visible internal gaps, and the material will provide a transmission loss of at minimum 15 dBA (preferably at least 20 dBA) relative to the noise source requiring abatement so that it can provide a useful level of insertion loss when used as a barrier.	Resident Engineer/ Contractor (during construction)	Use and relocate temporary barriers, if warranted and practicable, to protect sensitive receptors from excessive construction noise during construction.		IS/MND; Caltrans SSPs	
N-7	As directed by the Department's resident engineer, the contractor will implement appropriate additional noise abatement measures including, but not limited to, changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, or installing acoustic barriers around stationary construction noise sources.	Contractor (during construction)	Implement noise abatement measures during construction.		IS/MND; Caltrans SSPs	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
RECREATION RESOURCES						
PR-1	The project will clearly delineate the construction area with environmentally sensitive fencing. All construction activities, including staging and storage, will stay within the designated construction limits.	Caltrans/ Contractor	The delineation of the construction area should be implemented before construction activities. All construction personnel should stay within the designated construction limits at all times.		IS/MND	
PR-2	After construction, the project will re-seed the slope with native vegetation, including coastal sage scrub or other native species that is characteristic of the Chino Hills State Park flora. The project sponsor will confer with State Parks on the native seed mix prior to implementation of the project.	Caltrans/ Contractor	Re-seeding of the slope shall be implemented after construction.		IS/MND	
HEALTH AND SAFETY						
HAZARDOUS WASTE AND MATERIALS						
HW-1	There is a possibility of encountering polychlorinated biphenyl (PCB)-containing liquids, asbestos-containing materials (ACMs), lead-based paint (LBP), and aerially deposited lead (ADL) during construction. Any hazardous materials encountered shall be managed accordingly.	Resident Engineer/ Contractor (during construction)	Proper handling and managing of hazardous materials should be carried out during construction.		IS/MND	
HW-2	Pole-top transformers with PCB containing liquids shall be properly managed if they are to be removed or relocated.	Resident Engineer/ Contractor (during construction)	Removal and relocation of PCB containing transformers should be properly managed during construction.		IS/MND	
HW-3	Prior to the final environmental document, presumed ACM materials, including rails, bearing pads, support piers, expansion joint material of bridges, asphalt, and concrete, will be surveyed and assessed in compliance	Caltrans (during PA/ED) Resident Engineer/	Survey and assessment of ACM materials will be conducted during		IS/MND	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
	with 40 CFR *(Code of Federal Regulations)* 763. During construction, if bridge structures not previously tested for asbestos are anticipated to be disturbed or if suspect ACMs are discovered, the contractor shall stop work and these materials will be surveyed and assessed for asbestos prior to disturbance.	Contractor (during construction)	the PA/ED phase of the project. Structures that are anticipated to be disturbed and have not been tested for asbestos or ACMs must stop work during construction.			
HW-4	Paint used for lane striping shall be tested for LBP prior to demolition/removal to determine proper handling and disposal requirements.	Caltrans (prior to construction) Resident Engineer/ Contractor (during construction)	Testing of paint for LBP should be conducted prior to demolition/ removal.		IS/MND	
HW-5	Any soils with ADL contamination shall be managed properly and disposed. During project construction, soil in the project limits may be reused within Department ROW, provided it is placed a minimum of 5 feet above the maximum water table and is covered by pavement. Soil export will be minimized, and excess soil generated during project construction, if any, will be disposed of at a non-Resource Conservation and Recovery Act (RCRA) California Class I hazardous waste disposal facility.	Caltrans Hazardous Waste Coordinator (prior to construction) Resident Engineer/ Contractor (during construction)	Caltrans will review the Lead Compliance Plan (prior to Construction) Soil handling instructions should be implemented during construction.		IS/MND	
HW-6	LBP, ACM, and ADL surveys shall be conducted if data has not already been collected in this area by previous projects. LBP, ACM, ADL, and herbicide/ pesticide surveys should take approximately 4 to 6 weeks (for sampling and report generation). Further needed investigations will be postponed until final design is complete.	Caltrans (prior to construction) Resident Engineer/ Contractor (prior to construction)	LBP, ACM, ADL, and herbicide/ pesticide surveys will be conducted prior to construction.		IS/MND	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
UTILITIES AND EMERGENCY SERVICES						
U/ES-1	To ensure that emergency response times are not disrupted, all affected public and private emergency responders will be informed of the project construction schedule, lane closures (if any), and detour plans (if any) well in advance of any detour plan or lane closure being implemented throughout the construction period.	Caltrans (final design)/ Resident Engineer (prior to and during construction)	Notification of Utilities and Emergency Services will occur prior to commencement of construction. Resident Engineer will establish open lines of communication during the duration of construction.		IS/MND	
U/ES-2	Area residents will be regularly informed of the project development and construction plans prior to and during the construction period so that they are aware of the construction timing, traffic detour plans, lane/road closures, and transit detour plans.	Caltrans (final design)/ Resident Engineer (prior to and during construction)	A TMP will be prepared during PS&E. The TMP will be implemented during construction.		IS/MND	
U/ES-3	All public utility lines, pipes, and cables that are disturbed or removed to accommodate the project will be replaced or relocated to continue to meet the needs of surrounding residents and businesses. During construction, arrangements will be made to avoid disruption in utility services. If interruption in service is unavoidable, notice will be given and proper arrangements will be made with residents and businesses to minimize inconveniences.	Caltrans (during final design)/ Resident Engineer (during construction)	Public utility lines, pipes, and cables that will be replaced or relocated should be incorporated during final design. During construction, arrangements must be made to avoid disruption in utility services.		IS/MND	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
U/ES-4	To avoid conflicts during construction, emergency and other essential service providers, as well as other public services will be notified prior to construction. The project Resident Engineer will also establish a communication plan with each public service provider. Public service providers to be contacted include all of the following agencies: -Anaheim Police Department -Anaheim Fire Department -Brea Police Department -California Department of Forestry and Protection -Orange County Fire Authority -Corona Police Department -Riverside County Sheriff -Riverside County Fire Department -San Bernardino County Fire Department -San Bernardino County Sheriff	Caltrans/ Resident Engineer (during construction)	Implement recommendation during construction.		IS/MND	
U/ES-5	A TMP will be prepared for the project prior to construction. The TMP will include plans and requirements for the project area that must be implemented during project construction to ensure traffic safety and maintain access for emergency access vehicles at all times.	Caltrans/ RCTC (prior to construction)	Implement recommendation prior to construction.		IS/MND	
U/ES-6	A TMP will be provided to California Department of Forestry and Fire Protection, Riverside County Fire Department and other public service providers at least 6 months prior to construction of the project.	Caltrans/ RCTC	Provide TMP prior to construction activities.		IS/MND	
U/ES-7	To minimize the risk of wildfire during construction, the construction contractor shall ensure that all construction vehicles are equipped with fire extinguishers and shovels, as well as provide other firefighting equipment at the construction site. Inspection of all construction equipment is required to ensure compliance with minimum safety standards. Access to all fire hydrants, if any, and fire department vehicle access along the Proposal area and Santa Ana River watershed area will be provided.	Caltrans/ RCTC/ Contractor	Implement during construction.		IS/MND	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
U/ES-8	The Mitigation Monitoring Plan for the project will be provided to the California Department of Forestry and Fire Protection, Riverside County Fire Department and other public service providers at least 6 months prior to commencement of construction activities.	Caltrans/ RCTC	Prior to construction		IS/MND	
FLOOD RISK MANAGEMENT						
FP-1	To minimize impacts to the floodplain during construction, the project will implement temporary construction measures as indicated under Section 2.2.2, Water Quality and Stormwater Runoff.	Resident Engineer/ Contractor (during construction)	Implement recommendation during construction.		IS/MND	
FP-2	If construction is occurring within the Zone A floodplain, then the contractor will ensure that the area will be returned to its original state after construction is completed to maintain the integrity of the floodplain.	Resident Engineer/ Contractor (during construction)	Implement recommendation after construction.		IS/MND	
FP-3	Construct the portion of the bridge spanning the channel within the 6-month-long dry season (March 10 to October 1) to minimize potential effects on the operations of flood risk management facility. During the construction of the falsework, heavy duty vehicles (such as 250-ton crane) are prohibited from entering/traversing on the bottom of the Santa Ana River channel and its lining. Construction equipment would not be stored or remain in the channel at the end of each workday for the duration of project construction. Construction equipment storage would be located at an USACE-approved location. Additionally, the Proponents would implement and follow conditions issued by USACE during construction.	Resident Engineer/ Contractor (during construction)	Implement recommendation during construction.		EA	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE						
COM-1	Per the TMP, public outreach will be conducted with affected area residents and businesses regarding construction schedules and potential temporary inconveniences during project construction.	City/ Caltrans/ RCTC	Public outreach to inform area residents and businesses regarding construction schedules shall be conducted prior to construction.		IS/MND	
COM-2	The project will be constructed in several stages to minimize impacts to the communities by avoiding concurrent ramp closures and traffic congestion during construction.	Caltrans	Construction staging should be planned prior to construction (during PS&E phase).		IS/MND	
COM-3	The effects of temporary construction-related disruptions to the local communities will be addressed through implementation of a Transportation Management Plan (TMP) and a Ramp Closure Study for all ramps closed longer than 10 consecutive days.	Caltrans	The TMP plan should be completed during the PS&E phase of the project.		IS/MND	
COM-4	Where appropriate and feasible, construction staging areas will be located inconspicuously to minimize adverse visual effects upon residential and recreational areas.	Caltrans	Construction staging areas should be determined during PS&E phase of the project.		IS/MND	
COM-5	Prior to beginning construction, the project proponent, with concurrence of the Department, will submit a copy of the proposed construction schedule and detour information to all potentially affected emergency service providers, school districts, and municipal transportation departments so that school bus routes and emergency vehicle routes can be revised.	Caltrans/ RCTC	Construction schedule and detour information should be provided prior to construction.		IS/MND	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source [1]	Comments
TRAFFIC AND TRANSPORTATION						
TC-1	Prior to project construction, a Transportation Management Plan (TMP) will be prepared to address the detours and traffic issues that may occur to the traveling public as a result of construction activities. The TMP will address elements such as signage, traffic controls, Construction Zone Enhanced Enforcement Program (COZEEP), and public awareness campaign.	Caltrans (during final design)/ Resident Engineer (prior to construction)	The TMP will be developed during PS&E.		IS/MND	
TC-2	During the design phase, RCTC will coordinate with the City of Corona, USACE, and other affected parties to ensure that access to their jurisdictions or properties will be maintained during construction. At least one access point will be provided for affected parties.	Caltrans (during final design) Resident Engineer/ Contractor (prior to and during construction)	Coordination with City and USACE will be conducted during PS&E. The construction management plan shall be followed during construction.		IS/MND	

[1] Commitments were obtained from the following sources:

Caltrans SSPs = California Department of Transportation Standard Special Provisions
CDFW 1600 = California Department of Fish and Wildlife Service Section 1600: Lake and Stream Alteration Program
CWA 402 = Clean Water Act, Section 402: National Pollutant Discharge Elimination System.
CWA 401 = Clean Water Act, Section 401: Water Quality Certification
CWA 404 = Clean Water Act Section 404: Permits to Discharge Dredged or Fill Material
DBESP = Determination of Biological Equivalent or Superior Preservation (June 2010)
EA = *SR-91/ SR-71 Interchange Improvement Project Environmental Assessment* (September 2013). United States Army Corps of Engineers.
IS/MND = *SR-91/ SR-71 Interchange Improvement Project Initial Study and Mitigated Negative Declaration* (June 2011). California Department of Transportation
MBTA = Migratory Bird Treaty Act
RCA JPR = Regional Conservation Authority Joint Public Review (June 2011)
USFWS Biological Opinion = United States Fish and Wildlife Service Biological Opinion (June 2011)
Western Riverside County MSHCP = Western Riverside County Multiple Species Habitat Conservation Plan (adopted June 2003)

APPENDIX C USFWS-ISSUED BIOLOGICAL OPINION FOR SR-71/SR-91 INTERCHANGE PROPOSAL

APPENDIX D WILDLIFE SPECIES COMPENDIA

APPENDIX E CALTRANS SPILL PREVENTION BMP WM-04

APPENDIX F PRELIMINARY FOUNDATION REPORT E91/N71 CONNECTOR

APPENDIX G REPRESENTATIVE PHOTOS OF CONSTRUCTION EQUIPMENT

Representative Photograph of Hydraulic Drill Rig

Representative Photo of 250 ton Crawler Crane

Representative Photo of Crawler Crane

Representative Photo of Rubber Tired Loader

Representative Photo of All-Terrain Fork Lift

Representative Concrete Boom Pump

Representative Photo of Baker Tank

Representative Photo of Service Truck (Ford 550 Heavy Duty or Similar)

APPENDIX H SECTION 408 ACTION CLASSIFICATION DETERMINATION

APPENDIX I PROPOSED RELINQUISHMENTS AND ADDITIONAL EASEMENTS

APPENDIX J REGIONAL CONSERVATION AUTHORITY JOINT PROJECT REVIEW

Regional Conservation Authority
Western Riverside County

RCA Joint Project Review (JPR)
PUBLIC PROJECT

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Revised Date: 6-8-11~~9-14-10~~

Project Information

Permittee: **Riverside County Transportation Commission**
Project: **SR91/71 Interchange Improvement Project**

Requirements Related to Planned Facilities

Consistency Conclusion: The proposed project demonstrates consistency with the requirements for covered road projects and with other requirements of the MSHCP.

This JPR Analysis is being updated to address new information provided by the Permittee in response to USFWS comments on the JPR. The new information is presented in a Habitat Assessment dated March 2011.

Applicable Core/Linkage: Proposed Constrained Linkage 1, Proposed Constrained Linkage 2, Existing Core A
Area Plan: Temescal Canyon

APN	Sub-Unit	Cell Group	Cell
Various	SU 1 – Santa Ana River/Santa Ana Mountains SU 2 – Prado Basin	B	1520 1612 1616 1702 1704 1706

Project Characteristics

a. The proposed project is the construction of a new flyover connector from the eastbound State Route 91 (SR 91) to northbound State Route 71 (SR 71) located in Riverside County in the City of Corona. The project includes the flyover connector from southbound SR 71 to eastbound SR 91; westbound SR 91 to northbound SR 71 connector; reconstruction of Green River Road On-Ramp to eastbound SR 91; SR 91 restriping; realignment of SR 71; drainage improvements; retaining walls; local access along SR 71 relocation; signage/ramp metering; and right-of-way acquisition (see Pages 8 and 9 of Habitat Assessment).

Relation to Reserve Assembly and Covered Activity Status

b. The SR91/71 interchange is depicted on Figure 7-1 of the MSHCP, which depicts the roadways that were contemplated in the MSHCP as going through the Criteria Area per Section 7.3.5 of the MSHCP. The project is considered a Covered Activity since it is depicted on Figure 7-1 of the MSHCP. Since the project is a covered activity, it is not subject to the Criteria.

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a. The Reserve Features associated with the project impact area are Proposed Constrained Linkage 1, Proposed Constrained Linkage 2 and Existing Core A. Proposed Constrained Linkage 1 is located in the northwest portion of the Plan Area. The Linkage connects Existing Core A (Prado Basin and the Santa Ana River) with Existing Core B (Cleveland National Forest) to the south. Existing urban Development constrains the Linkage at its northern terminus; the Linkage is unconstrained in the south. In addition, SR 91 intersects this Linkage at its northern border. Despite this, Proposed Constrained Linkage 1 likely provides for movement of mountain lion and bobcat from the Santa Ana Mountains to the Chino Hills area beyond the Plan Area. Maintenance of contiguous habitat blocks with appropriate refugia for resting, such as rockpiles, brushpiles, windfalls, hollow snags, and hollow trees, is important for dispersal of juveniles in this proposed Linkage.

b. Proposed Constrained Linkage 2 consists of Fresno Canyon. Like Proposed Constrained Linkage 1, this Linkage connects Existing Core A (Prado Basin and the Santa Ana River) with Existing Core B (Cleveland National Forest) to the south. Unlike Constrained Linkage 1, however, the Fresno Canyon Constrained Linkage provides a riparian connection from the Prado Basin and Santa Ana River to the Cleveland National Forest, thus allowing for movement of species such as coast range newt and western pond turtle. This Linkage is also likely to be important for mountain lion movement from the Santa Ana Mountains to the Chino Hills beyond the Plan Area. Maintenance of contiguous habitat blocks with appropriate refugia for resting, such as rockpiles, brushpiles, windfalls, hollow snags, and hollow trees, is important for dispersal of juveniles in this proposed Linkage.

c. Existing Core A consists of Prado Basin and the Santa Ana River, located in the northwest region of the Plan Area. This southwest-to-northeast trending swath of land is composed largely of Public/Quasi-Public Lands owned by a variety of entities, but it also contains a small number of privately owned lands. The Core also functions as a Linkage, connecting Orange County to the west with San Bernardino County to the north. Existing Core A is connected to Existing Core B (Cleveland National Forest) via both an upland and a riparian connection (Proposed Constrained Linkage 1 and Proposed Constrained Linkage 2, respectively). This Core is constrained on all sides by existing urban development and agricultural use, and planned land uses surrounding the Core consist largely of high-impact land uses such as city and community Development. Therefore, high-quality riparian Habitat within the Core and along the edges must be maintained for species such as southwestern willow flycatcher, yellow warbler, yellow-breasted chat, western yellow-billed cuckoo, and others.

d. The Planning Species for Proposed Constrained Linkage 1 (PCL 1) are Cooper's hawk, coastal California gnatcatcher, bobcat, and mountain lion. The Planning Species for Proposed Constrained Linkage 2 (PCL 2) are coast range newt, western pond turtle, bobcat, and mountain lion. The proposed alignment and improvements are not expected to directly affect these planning species nor will it impact the function of ecotones as there are no significant ecotonal areas within the project footprint. The majority of the habitats surrounding the alignment are upland and riparian habitats with a mix of native and non-native habitats. The drainages in the project area may serve as linkages for the terrestrial planning species.

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e. The Planning Species for Existing Core A are Santa Ana sucker, arroyo chub, western pond turtle, Cooper's hawk, tricolored blackbird, burrowing owl, American bittern, cactus wren, northern harrier, western yellow-billed cuckoo, yellow warbler, white-tailed kite, southwestern willow flycatcher, California horned lark, peregrine falcon, yellow-breasted chat, loggerhead shrike, black-crowned night heron, osprey, double-crested cormorant, downy woodpecker, white-faced ibis, tree swallow, least Bell's vireo, bobcat, mountain lion, and Santa Ana River woollystar. The project impacts would not directly affect the habitats associated with the Prado Basin, which is the focus of Existing Core A.

f. The project alignment does cross areas that are contemplated for MSHCP Conservation associated with PCL 1 and PCL 2. The project is a Covered Road and will maintain culverts and connections under the roadway, thereby continuing the ability of some wildlife to move through the project area. The Permittee, in discussions with the RCA and Wildlife Agencies, has acknowledged that there is a need to address connectivity issues with PCL 1 in an alternate location. The Permittee has also acknowledged that it will commit to enhancing PCL 2 as a viable wildlife corridor. As such, the project would not adversely affect the ability of the MSHCP Conservation Area to be assembled or managed in accordance with the MSHCP.

g. Section 7.5 of the MSHCP addresses the Guidelines for Facilities within the Criteria Area and Public/Quasi Public (PQP) Lands. Based on the revised analysis prepared by RCTC dated May 25, 2011, ~~T~~the proposed project would result in 1.03 acres of permanent impacts and 10.60 acres of temporary impacts of PQP lands. The supplemental report stated that with the exception of the Prado Dam access road, all temporary impacts to PQP lands will be revegetated with native vegetation. In addition, RCTC will purchase 1.0 acre of suitable PQP replacement land to mitigate for the project's permanent impacts and relinquish to the RCA for long-term conservation. The proposed project has or will implement the conditions set forth in Section 7.5.1 through the design process, or will through the implementation process. Section 7.5.2 of the MSHCP addresses the guidelines for constructing wildlife crossings. The proposed project was analyzed in a Wildlife Corridor Analysis Report prepared by Parsons Transportation Group (Parsons) dated August 2010. According to the Parsons report, the project area contains several areas that promote the movement of wildlife from the Prado Basin and the Santa Ana River (Existing Core A) in the north to the Cleveland National Forest (Existing Core B) in the south. The wildlife crossings are primarily located along SR 91 from the Green River Road on-ramp to the interchange from southbound SR 71 to eastbound SR 91. Within the project area are seven drainages or underpasses that potentially allow wildlife movement from the north to the south of SR 91. See the Parsons Report for more details on these seven crossings. Two of the seven underpasses are major crossings for PCL 1 and PCL 2, which serve as a wildlife linkage between Core A and Core B as shown in Figure 3 of the Wildlife Corridor Analysis Report. The seven wildlife crossings range in size from small concrete-lined culverts to an undercrossing located near the mouth of the Santa Ana River spillway. These corridors allow the exchange of wildlife to cross three imposing barriers – SR 91, railroad tracks, and the Santa Ana River. Coyote and mountain lion have been identified by wildlife studies conducted by LSA to utilize these corridors across SR 91. Parsons notes that for PCL 1, the project will improve wildlife connectivity by utilizing an open channel instead of a traditional pipe extension, constructing wildlife fencing to funnel into the crossing, and planting of native vegetation; for PCL 2, the

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project will improve the function of the undercrossing bridge by removing the obstruction of the concrete revetment and re-grading the slopes of the crossing openings. In addition, wildlife fencing will be installed to funnel the wildlife into the crossings in the area and native vegetation will be planted to provide habitat continuity (see page 11 -12 of the Wildlife Corridor Analysis Report). Since the project design did consider the impacts to the MSHCP Criteria Area by proposing to improve the existing undercrossing to facilitate better wildlife movement from Existing Core A (Prado Basin and the Santa Ana River) to Existing Core B (Cleveland National Forest), the project would not conflict with the provisions set forth in Section 7.5.1 and 7.5.2 of the MSHCP. The project will also be designed to be consistent and compliant with Section 7.5.3 of the MSHCP, which addresses the Best Management Practices (BMPs) that will be used to minimize impacts to habitats and species.

h. Since the project interchange is depicted on Figure 7-1 of the MSHCP, the project is considered a Covered Activity. Additionally, since the project has considered its impacts on wildlife movement, planning species, ecotones, and habitats, it will not adversely affect Reserve Assembly.

Other Plan Requirements

Data:

Section 6.1.2 – Riparian/Riverine/Vernal Pool Mapping:

Yes. The project application materials include discussion of riparian/riverine areas. Vernal pool and fairy shrimp habitat were not identified within project footprint.

Section 6.1.3 – Narrow Endemic Plant Species Surveys:

Yes. A portion of the eastern project alignment is located in a Narrow Endemic Plant Species Survey Area (NEPSSA) for San Diego ambrosia, Brand's phacelia, and San Miguel savory.

Section 6.3.2 – Additional Species Surveys:

Yes. The project alignment is located within an Additional Species Survey area for burrowing owl.

Section 6.1.4 –Urban/Wildland Interface Guidelines:

Yes. The project is located within proposed MSHCP Conservation Areas and is subject to Urban/Wildland Interface requirements.

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Comments:

a. Section 6.1.2: Updated information related to riverine and riparian resources was provided by the Permittee in their supplemental material dated May 25, 2011 followed by a clarification email dated June 2, 2011. Information from the ~~Based on the~~ Habitat Assessment prepared by Michael Brandman Associates (MBA) dated June 2010 and the DBESP dated June 2010, is also still utilized, where applicable. A Habitat Assessment dated March 2011 was also provided in the revised materials submitted to the RCA on May 25, 2011. Based on the information provided originally, the project area supports 32.71 acres of riverine/riparian habitat in thirteen distinct areas which generally occur in the southern portions of the project area adjacent to the Santa Ana River and associated tributaries – Fresno Canyon Wash and Wardlow Wash – and within the northern extent of the project site adjacent to SR 71. Of the approximately 32 acres of riparian/riverine resources, the project construction and operation will permanently impact 0.28 ~~0.44~~ acres of riverine and riparian areas and temporarily impact 3.25 ~~1.67~~ acres (see Table 4 from the June 2, 2011 email from Caltrans)~~email from Permittee dated August 31, 2010~~). According to the supplemental report, permanent impacts to MSHCP designated riparian/riverine areas have been reduced primarily due to reconsideration of slope impacts within the project area (see Attachment 4 of supplemental report). The report state that project impacts outside of the toe of slope for the roadway adjacent to SR 71 are now considered temporary impacts. All temporary impacts will be revegetated subsequent to construction. Based on the information provided by MBA, the project site does not support vernal pools or fairy shrimp habitat. Field surveys were conducted by ~~Gonzales Environmental Consulting on April 25, May 1, 7, 15, 22, 29, June 5, 12, 19, 26, July 3, and 10, 2007~~ ECORP Consulting, Inc. (ECORP) on January 4, and 5, 2011 for riparian birds Least Bell's vireo~~,~~ and Southwestern Willow Flycatcher (SWF)~~,~~ ~~and~~ The previous survey work conducted by Gonzales Environmental Consulting addressed Western Yellow Cuckoo. No western yellow-billed cuckoo were observed or heard during the surveys in 2007. ~~Four pairs of Least Bell's vireo and one pair and one migratory SWF were observed in the project area during the Gonzales survey efforts. Gonzales Environmental Consulting concluded that the proposed action may adversely affect least Bell's vireo, southwestern willow flycatcher, and their habitat. Additionally, surveys conducted for other area projects by LSA conducted from April 15 through July 15, 2008 found suitable LBV habitat in the proposed project impact area (see Figure 2 Sheet 3 of 3 in LSA November 7, 2008 Report).~~ ECORP documented 78.3 acres of suitable habitat for LBV ~~-~~within the study area. Of the 78.3 acres of suitable habitat for LBV, the project would permanently impact 0.2 acres and temporarily impact 2.0 acres. The acres of impacts related to LBV are included in the above acres of impacts to riparian/riverine resources. ECORP noted that at least one vireo territory would be affected as a result of these impacts. The project proposes to mitigate all temporary impacts by in kind revegetation (native plants). Additionally, RCTC will mitigate permanent LBV impacts at a 2:1 ratio (0.4 acres). The project proposes to mitigate its permanent impacts to riparian/riverine resources (0.0.28~~44~~ acres) by performing off site enhancement through one of three options: ~~purchasing credits in the Santa Ana Watershed for arundo or salt cedar removal~~restoration or creation of lands ~~woend~~owned by the RCA; restoration within Chino Hills State

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Park within Riverside County; and/or restoration on Green River Golf Course. To mitigate for the temporary impacts to riparian and riverine resources, the Permittee will restore the impacted area (3.25 acres) to pre-project conditions. Additionally, since the riparian areas in the project area are known to support occupied LBV and SWF habitat, the Permittee will avoid the nesting season (March 1 to June 30) with all construction activities. This will ensure that no LBV or SWF are directly or indirectly impacted by the project. Should construction need to happen within the nesting season, then the Permittee shall notify the RCA and Wildlife Agencies. Since the project proposes to restore its temporary impacts on site, avoid the nesting season, and mitigate off site for its permanent impacts, the project demonstrates compliance with the requirements of Section 6.1.2.

b. Section 6.1.3. A portion of the eastern project alignment is located in a NEPSSA for San Diego ambrosia, Brand's phacelia, and San Miguel savory. The project area was surveyed as part of larger project surveys for other projects in the area. Per pages 31 and 32 of the MBA Habitat Assessment, none of the past focused surveys found these three NEPSSA plants in the project area. Specifically, MBA states that there is no suitable soils or habitat present for these plants within the project impact area. No project-specific focused surveys were warranted based on MBA's determination of no suitable habitat. Additionally, based on the supplemental information provided in the June 2, 2011 email from Caltrans, there is no suitable habitat for the NEPSSA species, nor was there any of these NEPSSA species identified during the June 2, 2011 site visit conducted by Caltrans within the project footprint. Based on the results of the focused survey efforts, the project demonstrates consistency with Section 6.1.3 of the MSHCP.

c. Section 6.3.2: The project alignment is located within an Additional Species Survey area for burrowing owl. MBA concluded there was suitable habitat in the project area for burrowing owl. Habitat Assessments and focused surveys for burrowing owl were conducted by LSA in 2009 for another project (SR 91 CIP project) which covered the area to be impacted by the project. The LSA Burrowing Owl Survey Report dated December 2009 addresses within it the area to be impacted by the SR 71/SR91 interchange project which is the focus of this JPR. Page 14 of the December 2009 Burrowing Owl Survey Report describes "Survey Area 5 (SA5) as representing the proposed project. Within SA5, LSA determined there was suitable habitat for burrowing owl, and therefore conducted focused surveys on March 19, 20, April 22, 23 and May 8, 2009. No owl signs were found, and no owls were observed within the areas surveyed during t~~h~~ese focused surveys. Additionally, based on the June 2, 2011 supplemental information, the area of the project along SR71 does not support suitable burrowing owl habitat. Since burrowing owls are mobile species and have the potential to subsequently occupy any suitable burrows on site, preconstruction surveys will be required in areas with suitable habitat no more than 30 days prior to the start of construction activities. Based on the information provided by LSA, the project demonstrates compliance with the requirements of Section 6.3.2 of the MSHCP.

d. Section 6.1.4: To preserve the integrity of areas adjacent to the project alignment which are proposed Conservation Areas, the guidelines contained in Section 6.1.4 related to controlling adverse effects for development adjacent to the MSHCP Conservation Area should be considered by the Permittee in their

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actions relative to the project. Specifically, the Permittee should include as project conditions of approval the following measures:

i. Incorporate measures to control the quantity and quality of runoff from the site entering the MSHCP Conservation Area. In particular, measures shall be put in place to avoid discharge of untreated surface runoff from developed and paved areas into MSHCP Conservation Areas. According to the report, the proposed construction of a new flyover connector will not generate any changes in existing runoff into the area and a stormwater pollution prevention plan will be prepared for construction of the site.

ii. The use chemicals or generation of bioproducts (i.e.) manure, which are potentially toxic or may adversely affect wildlife species, habitat or water quality shall not result in discharge to the MSHCP Conservation Area. The greatest risk is from landscaping fertilization overspray and run-off.

iii. Night lighting shall be directed away from the MSHCP Conservation Area to protect species within the MSHCP Conservation Area from direct night lighting. Shielding shall be incorporated in project designs to ensure ambient lighting in the MSHCP Conservation Area is not increased.

iv. Proposed noise generating land uses affecting the MSHCP Conservation Area shall incorporate setbacks, berms or walls to minimize the effects of noise on MSHCP Conservation Area resources pursuant to applicable rules, regulations and guidelines related to land use noise standards.

v. Consider the invasive, non-native plant species listed in *Table 6-2* of the MSHCP in approving landscape plans to avoid the use of invasive species for the portions of the project that are adjacent to the MSHCP Conservation Area. Considerations in reviewing the applicability of this list shall include proximity of planting areas to the MSHCP Conservation Areas, species considered in the planting plans, resources being protected within the MSHCP Conservation Area and their relative sensitivity to invasion, and barriers to plant and seed dispersal, such as walls, topography and other features.

vi. Proposed land uses adjacent to the MSHCP Conservation Area shall incorporate barriers, where appropriate in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass, or dumping into the MSHCP Conservation Areas. Such barriers may include native landscaping, rocks/boulders, fencing, walls, signage, and/or appropriate mechanisms. Manufactured slopes associated with the proposed site development shall not extend into the MSHCP Conservation Area.

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APPENDIX K CULTURAL RESOURCE TECHNICAL STUDY