

**State Route 91/State Route 71 Interchange
Improvement Project
Riverside County, California**

**Draft
Environmental Assessment**

Prepared for
**United States Army Corps of Engineers
Los Angeles District
and
Riverside County Transportation Commission**

Prepared by
PARSONS
**3200 E. Guasti Road, Suite 200
Ontario, CA 91761**

January 2013

CONTENTS

1.0	INTRODUCTION	1-1
1.1	Project Authority.....	1-1
1.2	Background.....	1-1
1.3	Purpose and Need	1-2
1.4	Scope of Analysis	1-3
1.5	Location	1-3
2.0	ALTERNATIVES.....	2-1
2.1	No Action Alternative.....	2-1
2.2	Onsite Alternative	2-1
2.2.1	Description.....	2-1
2.2.2	Onsite Alternative Work Plan.....	2-2
2.2.3	Spill/Hazardous Waste Prevention	2-2
2.2.4	Duration of Construction Activities.....	2-2
2.3	Alternatives Eliminated from Further Consideration.....	2-2
3.0	PROPOSED ACTION.....	3-1
4.0	ENVIRONMENTAL IMPACTS AND ANALYSIS.....	4-1
4.1	Background.....	4-1
4.2	Geology and Soil Quality, Stability, and Moisture.....	4-1
4.2.1	Description of Resource and Baseline Conditions.....	4-1
4.2.2	Potential Geological Impacts	4-3
4.2.3	Avoidance/Minimization Measures	4-4
4.2.4	Significance of Impacts	4-5
4.3	Water Resources	4-5
4.3.1	Description of Resource and Baseline Conditions.....	4-5
4.3.2	Onsite Alternative	4-13
4.3.3	No Action Alternative.....	4-13
4.3.4	Potential Environmental Impacts.....	4-13
4.3.5	Avoidance/Minimization Measures	4-19
4.3.6	Significance of Impacts	4-20
4.4	Air Quality	4-20
4.4.1	Description of Resource and Baseline Conditions.....	4-20
4.4.2	Onsite Alternative	4-25
4.4.3	No Action Alternative.....	4-25
4.4.4	Potential Air Quality Impacts	4-25
4.4.5	Avoidance/Minimization Measures	4-39
4.4.6	Significance of Impacts	4-39
4.5	Biological Resources	4-39
4.5.1	Description of Resource and Baseline Conditions.....	4-39
4.5.2	Onsite Alternative	4-46
4.5.3	No Action Alternative.....	4-46
4.5.4	Potential Environmental Impacts.....	4-46
4.5.5	Avoidance/Minimization Measures	4-51
4.5.6	Significance of Impacts	4-51
4.6	Cultural Resources	4-52
4.7	Aesthetics.....	4-58
4.8	Noise	4-69

4.8.1	Description of Resource and Baseline Conditions.....	4-69
4.8.2	Onsite Alternative	4-70
4.8.3	No Action Alternative.....	4-70
4.8.4	Potential Noise Impacts	4-71
4.8.5	Avoidance/Minimization Measures	4-87
4.8.6	Significance of Impacts	4-87
4.9	Recreation Resources.....	4-88
4.10	Health and Safety	4-90
4.11	Flood Risk Management	4-94
4.12	Socioeconomics and Environmental Justice	4-96
4.13	Traffic and Transportation	4-98
4.13.1	Description of Resource and Baseline Conditions.....	4-98
4.13.2	Onsite Alternative	4-98
4.13.3	No Action Alternative.....	4-98
4.13.4	Potential Traffic Impacts	4-98
4.13.5	Avoidance/Minimization Measures	4-99
4.13.6	Significance of Impacts	4-99
4.14	Cumulative Impacts	4-100
4.14.1	Past.....	4-100
4.14.2	Present.....	4-102
4.14.3	Future	4-102
5.0	APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS.....	5-1
5.1	National Environmental Policy Act Compliance.....	5-1
5.2	U.S. Fish and Wildlife Coordination Act (16 U.S.C. 661)	5-1
5.3	Endangered Species Act of 1973 (Public Law 93-205, as amended)	5-1
5.4	Migratory Bird Treaty Act.....	5-1
5.5	Clean Water Act.....	5-1
5.6	Clean Air Act of 1970 (42 U.S.C. 7401 <i>et seq.</i>)	5-2
5.7	Noise Control Act of 1972, as amended (42 U.S.C. 4901 <i>et seq.</i>).....	5-3
5.8	National Historic Preservation Act (Public Law 89-665; 16 U.S.C. 470–470m, as amended, 16 U.S.C. 460b, 470l–470n).....	5-3
5.9	Archaeological Resources Protection Act, as amended	5-3
5.10	Uniform Fire Code	5-3
5.11	Comprehensive Environmental Response, Compensation, and Liability Act	5-3
5.12	National Flood Insurance Program	5-4
5.13	Federal Water Project Recreation Act of 1965, as amended	5-4
5.14	Federal Land Policy and Land Management Act of 1976	5-4
5.15	Americans with Disabilities Act of 1990, as amended (42 USC 126, <i>et seq.</i>).....	5-4
5.16	Executive Order 11988: Floodplain Management	5-4
5.17	Executive Order 12088: Federal Compliance with Pollution Control Standards	5-5
5.18	Executive Order 12898: Environmental Justice Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.....	5-5
6.0	PREPARERS	6-1
7.0	SUMMARY OF MITIGATION MEASURES OF THE PROPOSED ACTION AND OF ALTERNATIVES	7-1
8.0	AGENCY COORDINATION.....	8-1
9.0	PUBLIC CIRCULATION/RESPONSE TO COMMENTS.....	9-1
10.0	REFERENCES.....	10-1
11.0	RECOMMENDATION.....	11-1

APPENDICES

- Appendix A Alternative Eliminated From Further Consideration Alignment Maps
- Appendix B Minimization and Mitigation Measures
- Appendix C USFWS-Issued Biological Opinion For SR-71/SR-91 Interchange Project
- Appendix D Wildlife Species Compendia
- Appendix E Caltrans Spill Prevention BMP WM-04

FIGURES

Figure 1-1:	Project Location Map.....	1-5
Figure 2-1:	Overview Alignment Map of Proposed Onsite Alternative	2-9
Figure 4-1:	Waters of the United States.....	4-9
Figure 4-2:	California Department of Fish and Game Jurisdictional Streambed.....	4-11
Figure 4-3:	Potential Temporary and Permanent Impacts to Waters of the United States	4-15
Figure 4-4:	Potential Temporary and Permanent Impacts to CDFG Jurisdictional Streambed	4-17
Figure 4-5:	National MSAT Emissions Trend, 1999 – 2050 for Vehicles Operating on Roadways..	4-31
Figure 4-6:	Vegetation Communities on USACE Parcels	4-41
Figure 4-7:	Restoration Activities on USACE Parcels	4-43
Figure 4-8:	Temporary and Permanent Impacts to Vegetation on USACE Parcels	4-49
Figure 4-9:	Critical Habitat and Recent Occurrences of Threatened and Endangered Species near USACE Parcels	4-53
Figure 4-10:	Landscape Units within Potentially Affected Area.....	4-59
Figure 4-11:	Open Space Landscape Unit with Mitigation at 5 Years Post-Completion (northwest of SR 91/71 interchange looking south).....	4-61
Figure 4-12:	SR-71 Landscape Unit with Mitigation at 5 Years Post-Completion (North of project traveling southbound on SR-71)	4-63
Figure 4-13:	SR-91 Landscape Unit with mitigation at 5 years post-completion (East of project traveling westbound on SR-91)	4-65
Figure 4-14:	Noise Receptor and Barrier Locations	4-73
Figure 4-15:	Noise Receptor and Barrier Locations	4-75
Figure 4-16:	Noise Receptor and Barrier Locations	4-77
Figure 4-17:	Noise Receptor and Barrier Locations	4-79
Figure 4-18:	Noise Receptor and Barrier Locations	4-81

TABLES

Table 2-1:	Proposed Onsite Alternative Bridge Footing Specifications.....	2-2
Table 2-2:	Comparison of Alternatives and Constraints	2-3
Table 4-1	Waters of the United States within USACE Property (APNs 101-140-006 and 101-040-064).....	4-7
Table 4-2:	CDFG Jurisdictional Streambed within USACE Property (APNs 101-140-006 and 101-040-064).....	4-7
Table 4-3:	Impacts to Jurisdictional Waters within USACE Property (APNs 101-140-006 and 101-040-064).....	4-14
Table 4-4:	Ambient Air Quality Standards.....	4-22
Table 4-5:	Health Effects Summary for Air Pollutants	4-23
Table 4-6:	South Coast Air Basin Attainment Status	4-23
Table 4-7:	Local Monitoring Stations Data Summary.....	4-24
Table 4-8:	Summary of Operational Emissions.....	4-28
Table 4-9:	Estimate of Project-Level DPM and MSAT Emissions along Project Segments and Corridor (grams/day) ^a	4-34
Table 4-10:	Annual Operational GHG Emissions Associated with Project	4-37
Table 4-11:	Wildlife Corridor Upland Seed Mix Species	4-40
Table 4-12:	Temporary Impacts to Vegetation within USACE Parcels	4-47
Table 4-13:	Permanent Impacts to Vegetation within USACE Parcels.....	4-47
Table 4-14:	Noise Abatement Criteria.....	4-70
Table 4-15:	Construction Equipment Noise	4-71
Table 4-16:	Roadway Traffic and Train Noise Levels	4-83
Table 4-17:	Summary of Abatement Key Information.....	4-86
Table 4-18:	Local Fire and Police Stations.....	4-91
Table 4-19:	Related Projects.....	4-101

Abbreviations and Acronyms

°F	degrees Fahrenheit
AAM	annual arithmetic mean
AB	Assembly Bill
ADA	Americans with Disabilities Act
AEP	Association of Environmental Professionals
AMSL	above mean sea level
APE	area of potential effects
APN	Assessor's Parcel Number
ARPA	Archaeological Resources Protection Act
ASR	Archaeological Survey Report
ASTM	American Society for Testing and Materials
BMP	Best Management Practice
BO	Biological Opinion
BSDS	bridge site data submittal
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standards
Cal-EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH ₄	Methane
CHSP	Chino Hills State Park
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CPT	cone penetration test
CWA	Clean Water Act
dBA	A-weighted decibel
DBESP	Determination of Biological Equivalent or Superior Preservation
EA	Environmental Assessment
EB	eastbound
EIS	Environmental Impact Statement
EMI	Earth Mechanics, Inc.
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FONSI	finding of no significant impact
FR	Federal Register
GHG	greenhouse gas
GP	general purpose

GWP	global warming potential
HAP	hazardous air pollutant
HOT	high-occupancy toll
HOV	high-occupancy vehicle
HPSR	Historic Property Survey Report
HSA	hollow-stem auger
HWCL	Hazardous Waste Control Law
I-15	Interstate 15
IPCC	Intergovernmental Panel on Climate Change
LEDPA	least environmentally damaging practicable alternative
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MCD	modified California drive
mg/m ³	milligrams per cubic meter
µg/m ³	micrograms per cubic meter
MSHCP	Multiple Species Habitat Conservation Plan
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NB	northbound
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	non-point source
O ₃	ozone
Pb	lead
PCL 2	Proposed Constrained Linkage 2
PM	particulate matter
PM ₁₀	particulate matter with a diameter of less than 10 microns
PM _{2.5}	particulate matter with a diameter of less than 2.5 microns
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RCTC	Riverside County Transportation Commission
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SAWA	Santa Ana Watershed Association
SB	southbound
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SF ₆	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SO ₂	sulfur dioxide
SPT	standard penetration test
SR	State Route
SRA	
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants

TMDLs	total maximum daily loads
U.S.C.	United States Code
UA	universal access
UFC	Uniform Fire Code
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound
WB	westbound

This page intentionally left blank.

1.0 INTRODUCTION

1.1 Project Authority

The United States Army Corps of Engineers (USACE), pursuant to 10 United States Code (U.S.C.) 2667, is authorized to permit nonfederal entities the right to use federal lands if the proposed use is determined to be compatible with the federal project, laws, and regulations, and serves the interests of the public and/or the federal government.

USACE controls Federal lands downstream of the Prado Basin, Riverside County, California (project), on behalf of the United States for the primary purpose of flood risk management. To the extent that requests are submitted to enter onto lands controlled by USACE, USACE, in its discretion, may issue revocable licenses pursuant to the Secretary of the Army's general administrative authorities and also pursuant to 10 United States Code 2667. License requests are subject to a determination of whether a request is compatible with the federal project and applicable laws, regulations, and/or policies.

1.2 Background

The Riverside County Transportation Commission (RCTC) and the California Department of Transportation (Caltrans) (hereinafter “the Proponents”) are submitting a request to USACE to access Federal land Assessor’s Parcel Number (APN) 101-140-006 for an authorized Federal project located in Riverside County, California. The Proponents propose to improve the State Route (SR)-91/SR-71 interchange (Interchange Project) by constructing a new direct flyover connector from eastbound (EB) SR-91 to northbound (NB) SR-71. The project includes the following project components: flyover connector ramp, bridge widening, restriping of SR-91 EB lanes, modification or construction of new drainage facilities, retaining walls, and relocation of access roads. The project 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 of the project and the portion of the project that would be constructed on USACE-managed property are provided in Figure 1-1 below in this chapter.

On June 30, 2011, Caltrans, with RCTC, completed the environmental documentation requirements of the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), as delegated by the Federal Highway Administration (FHWA), for the Interchange Project. Caltrans is the lead agency for CEQA/NEPA, and RCTC is a responsible agency under CEQA. A CEQA draft Initial Study was completed and circulated for public review, culminating in approval of the Mitigated Negative Declaration. Subsequent to that action, Caltrans, as delegated by FHWA, prepared a Categorical Exclusion for the proposed Interchange Project; however, USACE will prepare a separate NEPA document for the portion of the project that would be constructed on USACE-managed property.

Throughout the CEQA/NEPA process, Caltrans and RCTC held several coordination meetings on the Interchange Project with USACE regarding the Section 408, Outgrant, and Section 404 permitting; however, USACE did not comment on the CEQA Initial Study during the public review.

Currently, the Interchange Project is in the design phase, which requires surveys, subsurface utility pothole, geotechnical field investigations, and biological surveys to finalize the design plans and obtain permits for the project. These field investigations were scheduled to occur from late 2012 to mid 2013. A separate NEPA Environmental Assessment was prepared in September 2012, leading to a Finding of No Significant Impact for the field investigation activities.

The present document references a right-of-entry request for USACE to allow the construction of the Project portion that is proposed to be constructed on USACE-managed land, as part of the proposed future SR-91/SR-71 Interchange Improvement Project. The present NEPA document was prepared to satisfy USACE NEPA requirements for proposed work on USACE-managed land.

1.3 Purpose and Need

USACE's purpose for the Proposed Action is to provide RCTC and their consultants with legal access on lands owned by USACE. The need for this action is for USACE to respond to a right-of-entry license for access to USACE-managed property to complete construction of the Interchange Project. USACE would decide whether to grant the right-of-entry license and, if so, would provide the terms and conditions for conducting the proposed action.

RCTC's purpose for the Proposed Action is to move forward with the planning, design, and permitting of the proposed Interchange Project, by constructing the proposed Interchange Project, including the portion of the Project that is proposed to be constructed on USACE-managed land (Proposed Action). Additionally, the purpose of the Proposed Action supports the purpose of the overall proposed Interchange Project, which is to: improve the operational efficiency of the EB SR-91 to NB SR-71 connector; minimize future congestion and delay in the EB direction of SR-91 between Green River Road and the SR-91/71 interchange; improve accessibility to SR-71 from eastbound SR-91 at Green River Road; and, improve access and reduce congestion associated with weaving from Green River Road to EB SR-91.

RCTC's need for the Proposed Action is to advance with the planning, design, and permitting of the proposed Interchange Project, including the portion that is proposed to be constructed on USACE-managed land (Proposed Action); thereby facilitating the proposed Interchange Project. In support of the overall Interchange Project, the Proposed Action is consistent with the need for the Interchange Project, which is to address current and projected future traffic operational deficiencies.

Without the Proposed Action, the planning, design, and permitting of the overall Interchange Project would not be able to advance, as the Proposed Action is part of the proposed alternative discussed in the approved Initial Study/Mitigated Negative Declaration/Categorical Exclusion (IS/MND/CE) (June 2011) that was prepared for the proposed Interchange Project. A number of feasible alternatives were discussed in the June 2011 IS/MND/CE, while other alternatives were eliminated from further consideration. In selecting a preferred alternative, the following criteria were used to evaluate each alternative and determine its practicability: environmental impacts, right-of-way acquisition, traffic operations and driver expectations, safety, project cost, and compatibility with future projects. Following analysis of all of the benefits and impacts of all of the feasible alternatives, including the aforementioned criteria, a preferred alternative was selected as the Build Alternative for the proposed Interchange Project.

As discussed in the June 2011 IS/MND/CE, it was determined that the No Build Alternative for the proposed Interchange Project would not meet the purpose and need for the Project in terms of improving the operational efficiency of the SR-91/71 interchange. While consideration was given to the No Build Alternative, if no modification to the existing SR-91/71 interchange occurs, the purpose and need of the Interchange Project to increase capacity and improve operational characteristics of the SR-91/71 interchange will not be met. Although the No Build Alternative avoids the costs and impacts associated with the Build Alternative, it does not address the purpose and need of the Project. With or without the proposed Interchange Project, traffic volumes are expected to continue increasing. The existing SR-91/71 interchange does not have adequate capacity to accommodate forecasted traffic volumes for year 2015 through 2035, and it is expected to operate at an unacceptable Level of Service (LOS) F in the future as the capacity is increased. It is also anticipated that the mainline operation will be negatively impacted if the interchange improvements are not implemented; queues may form as a result of inadequate capacity, which may spill back on the SR-91 EB mainlines. It is anticipated that construction of the SR-91/71 flyover interchange will increase capacity and alleviate congestion at the interchange.

Permission to enter USACE-managed land to conduct the Proposed Action would facilitate implementation of the proposed Interchange Project, as well as the completion of final design plans, cost estimates, and construction specifications.

1.4 Scope of Analysis

This Environmental Assessment (EA) analyzes the likely effects of the Proposed Action by comparing a No Action Alternative with the Proposed Action, which would allow access on USACE-managed properties to construct the proposed Interchange Project; including the portion that is proposed to be constructed on USACE-managed land. This analysis is offered to the interested public to solicit input on the project 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 study 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 Interstate 15 (I-15) in unincorporated Riverside County, California. More specifically, the study area is located north of SR-91 within the general area of the existing SR-91 and SR-71 interchange. A project location map is provided in Figure 1-1. The study 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.

This page intentionally left blank.

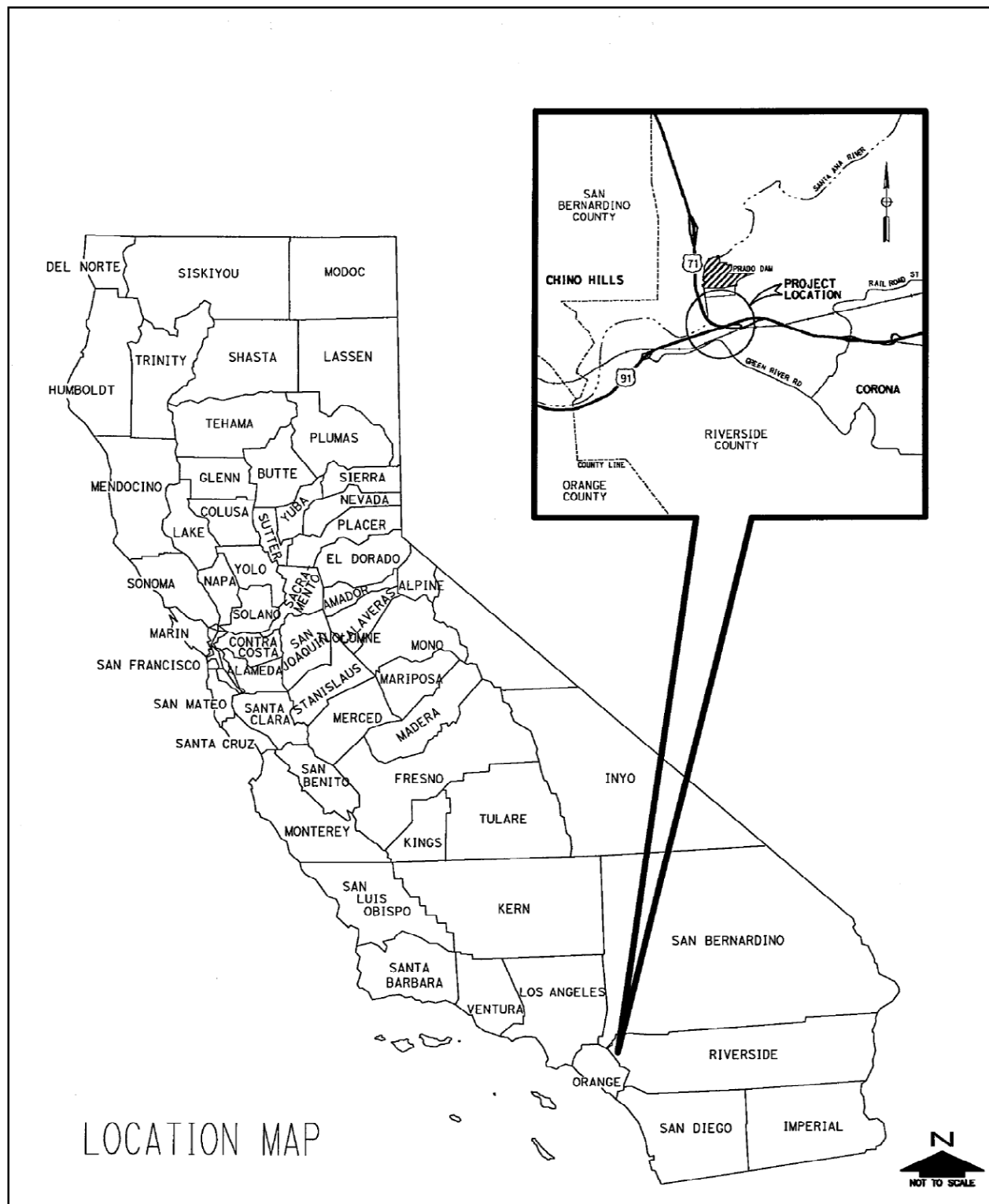


Figure 1-1: Project Location Map

This page intentionally left blank.

2.0 ALTERNATIVES

2.1 No Action Alternative

Under the No Action Alternative, representatives of the Proponents would not have access to USACE-managed property. As a result, representatives of the Proponents would not be able to complete the construction of the proposed SR-91/SR-71 Interchange Improvement Project, including the segment that is proposed to be constructed on USACE land. Furthermore, the final design of the SR-91/SR-71 Interchange Improvement Project would not be able to proceed.

2.2 Onsite Alternative

The proposed Onsite Alternative is presented below as the Proposed Action. The alternative focuses on USACE areas within the Prado Dam facilities and property adjacent to SR-71 and SR-91. The Onsite Alternative grants representatives of the proponents to conduct the construction of the proposed Interchange Project. The following subsections provide a detailed narrative of the Proposed Action.

2.2.1 Description

The Onsite Alternative will utilize a portion of USACE-managed land for completing the construction of the proposed future Interchange Improvement Project. As part of the Onsite Alternative, a flyover bridge connector structure is proposed to be constructed over USACE-managed land, affecting APN# 101-140-006. This parcel on USACE-managed land would be affected by structural improvements associated with the construction of the proposed flyover structure for the SR-91/SR-71 Interchange Improvement Project. However, only 6 of the proposed 13 bridge columns/footings would affect USACE-managed land, as the rest are proposed outside of Corps-managed land. Figure 2-1 illustrates the proposed column locations for the proposed alignment of the EB SR-91 to NB SR-71 Connector Bridge. As shown on Figure 2-1, 6 of the proposed 13 bridge footings would be constructed on USACE-managed land, within the aforementioned parcel and Caltrans right-of-way at SR-71.

Land surveys, geotechnical field investigations, utility field investigations, and biological surveys are scheduled to take place within the area of the Proposed Action between late 2012 and mid 2013. These field investigation activities, for which a separate NEPA Environmental Assessment was prepared (September 2012), are being conducted in preparation for the planning, final design, permitting, and construction of the proposed Interchange Project; including the Proposed Action, which proposes the construction of 6 associated bridge columns/footings at 6 locations within USACE-managed land.

Specifications for the proposed bridge footings include area, perimeter, and latitude/longitude; provided below in Table 2-1. As discussed above, under the Onsite Alternative, only 6 bridge footings would affect USACE-managed land and Caltrans right-of-way. The 6 proposed bridge footings are identified as Footings #8 through #13 in Table 2-1. Footings #1 through #7 would be constructed outside of USACE-managed land.

Table 2-1: Proposed Onsite Alternative Bridge Footing Specifications

Footing #	Area (Sq. Ft.)	Perimeter (Ft.)	Latitude (DMS)	Longitude (DMS)
1	62.90	28.15	33° 52' 45.332" N	117° 39' 18.384" W
2	63.13	28.20	33° 52' 46.006" N	117° 39' 16.165" W
3	63.00	28.17	33° 52' 46.790" N	117° 39' 13.478" W
4	63.08	28.19	33° 52' 47.574" N	117° 39' 10.791" W
5	112.26	37.60	33° 52' 52.857" N	117° 38' 50.897" W
6	112.41	37.63	33° 52' 54.015" N	117° 38' 48.387" W
7	112.24	37.60	33° 52' 55.886" N	117° 38' 45.759" W
8	112.53	38.36	33° 52' 58.169" N	117° 38' 43.726" W
9	112.47	37.64	33° 53' 0.613" N	117° 38' 42.412" W
10	112.55	37.65	33° 53' 3.661" N	117° 38' 41.697" W
11	112.56	37.65	33° 53' 6.140" N	117° 38' 41.775" W
12	112.39	37.63	33° 53' 7.901" N	117° 38' 42.191" W
13	112.28	37.61	33° 53' 10.668" N	117° 38' 43.102" W

2.2.2 Onsite Alternative Work Plan

The contractor conducting the Proposed Action would oversee multiple crews (concurrently) during construction activities.

2.2.3 Spill/Hazardous Waste Prevention

Spill and hazardous waste prevention during construction activities would utilize Caltrans Spill Prevention Best Management Practice (BMP) WM-4. Construction activities on USACE property 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, plastic tarp will be placed beneath the leak so that fluids do not make contact with the exposed ground surface. Maintenance of vehicles and excavation equipment will not be conducted onsite. Information on spill prevention BMPs is provided in Appendix E.

2.2.4 Duration of Construction Activities

Permission to conduct the Proposed Action is necessary to determine the final design of the SR-91/SR-71 interchange structure. Construction activities associated with the proposed Onsite Alternative will be temporary and will last the duration of project construction, which is anticipated to be 24 months. No significant, permanent environmental impacts are anticipated beyond impacts resulting from disturbed resources at bridge footing locations (such as vegetation), which are anticipated to be insignificant. In addition, 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 through the Proposed Action will be restored to pre-project conditions.

2.3 Alternatives Eliminated from Further Consideration

The following alternatives were evaluated and eliminated from further consideration in this EA. Table 2-2 presents a qualitative comparison of alternatives and constraints.

Table 2-2: Comparison of Alternatives and Constraints

	Proposed Action	Alternative with S-Curve Interchange	Alternative with Interchange Loop	Alternative with Widening existing Horseshoe Interchange
Potential Significant Environmental Impacts				
Geology and Soil Quality, Stability, and Moisture	No	No	No	No
Water Resources	No	Yes	Yes	Yes
Air Quality	No	No	No	No
Biological Resources	No	Yes	Yes	Yes
Cultural Resources	No	No	No	No
Aesthetics	No	No	No	No
Noise	No	No	No	No
Recreation Resources	No	No	No	No
Health and Safety	No	No	No	No
Flood Risk Management	No	Yes	Yes	Yes
Socioeconomics and Environmental Justice	No	No	No	No
Traffic and Transportation	No	No	No	No
Cumulative Impacts	No	No	No	No
Engineering/Design Constraints				
Design	No	Yes	Yes	Yes
Sight/Stop Distances	No	Yes	Yes	Yes
Facility Travel Design Speed	No	Yes	Yes	Yes
Major Improvement to Existing SR-71 Bridge Required	No	Yes	Yes	Yes
New Structure Over Santa Ana River	Yes	No	No	No
Meets Caltrans Design Standards	Yes	No	No	No
Encroachment into USACE Overflow Area for Floodway	Yes, but minor	Yes	Yes, but minor	Yes
Encroachment into USACE Mitigation/Restoration Area	Yes, but minor	Yes	Yes, but minor	No
Right-of-Way (ROW) Acquisition	No	No	Yes	Yes
Meets Purpose and Need of Interchange Project	Yes	No	No	No

This page intentionally left blank.

Alternative with S-Curve Interchange Using Existing Santa Ana River Crossing

This alternative would affect the same parcel on USACE-managed land as the Onsite Alternative. Under this alternative, the same number of bridge footings (6) is proposed to be constructed on USACE-managed land, as compared to the Onsite Alternative. To avoid construction of a new flyover structure crossing the Santa Ana River, which is a significant environmental resource, the alignment follows an S-curve concept which would tie into existing facilities to cross the Santa Ana River. However, to tie into the existing facilities to cross the Santa Ana River, the existing SR-71 bridge structure would require major structural improvements to allow for the increase in vehicle capacity. Structural improvements would include retrofitting and widening of the existing SR-71 bridge structure to accommodate a two-lane interchange from EB SR-91 to NB SR-71. As a result, improvements over the Santa Ana River would still be required, as the existing bridge would need to be widened to accommodate roadway improvements.

Construction of this alternative is anticipated to create permanent impacts on drainage and water resources located immediately south of SR-91, such as Wardlow Wash/Fresno Canyon. Affected water resources include wetland and non-wetland jurisdictional waters south of SR-91. Additionally, structural improvements to the SR-71 bridge are anticipated to result in major encroachment onto USACE mitigation/restoration areas, as well as the overflow area at Prado Dam. Impacts to water resources under this alternative would be avoided by the proposed Onsite Alternative, as it is based on a different interchange design concept.

Furthermore, the design of this project alternative would not allow for optimal horizontal sight distances and stop distances for vehicles using the interchange, due to the sharp curvilinear design of the interchange. The curvilinear design would also inhibit optimal speeds for vehicles using the interchange, resulting in a lower design speed relative to the proposed Onsite Alternative. Therefore, the sharp curvilinear design of the interchange would have negative effects on the flow of vehicle traffic on the interchange by inhibiting sight and stop distances and travel speeds. Consequently, the alignment would likely not be approvable by Caltrans, due to design flaws and failure to meet or come close to Caltrans design standards. As a result, this alternative would be operationally less efficient than the proposed Onsite Alternative, and does not meet the purpose and need of the overall Interchange Improvement Project. Therefore, this alternative has been eliminated from further consideration.

Alternative with Interchange Loop Using Existing Santa Ana River Crossing

This alternative would require less bridge footings (5) to be constructed on USACE-managed land, and would affect the same parcel as the proposed Onsite Alternative. To avoid construction of a new flyover structure crossing the Santa Ana River, which is a significant environmental resource, the alternative alignment follows a loop interchange concept which would tie into existing facilities to cross the Santa Ana River. However, to tie into existing facilities to cross the Santa Ana River, the existing SR-71 bridge structure would require major structural improvements to allow for the increase in vehicle capacity. Structural improvements would include retrofitting and widening of the existing SR-71 bridge structure to accommodate a two-lane interchange from EB SR-91 to NB SR-71. As a result, improvements over the Santa Ana River would still be required, as the existing bridge would need to be widened to accommodate roadway improvements.

Construction of a loop interchange from EB SR-91 to NB SR-71 would result in major right-of-way (R/W) impacts, requiring the acquisition of additional right-of-way south of SR-91. Construction of this alternative would affect adjacent right-of-way, including commercial property, public right-of-way (Palisades Drive and Green River Road), and Burlington Northern Santa Fe Railroad (BNSF). The area south of SR-91 is developed, and construction of a loop interchange would require relocation of the adjacent BNSF railroad. Also, a loop interchange at this location would affect adjacent roads, including Palisades Drive and Green River Road, which would need to be realigned as part of this Project Alternative.

With regard to water resources and drainages, construction of this alternative would permanently impact nearby drainages and water resources found directly south of SR-91, such as Wardlow Wash; although this impact would occur outside of USACE-managed land. Water resources include wetland and non-wetland jurisdictional waters, and impacts to water resources under this alternative would be avoided by the proposed Onsite Alternative, due to its flyover interchange design concept. Also, permanent impacts to endangered species habitat within USACE-managed land are anticipated to be affected by construction of a loop interchange; which are associated with Least Bells Vireo (LBV). Furthermore, construction of this alternative would impact wildlife corridors adjacent to SR-91, which are vital for wildlife access between areas south of SR-91 and north of SR-91.

The design of this project alternative would also inhibit optimal speeds for vehicles using the interchange, resulting in a lower design speed relative to the proposed Onsite Alternative. Therefore, the design of the interchange would have negative effects on the flow of vehicle traffic by inhibiting travel speeds. Moreover, the alternative would likely not be approvable by Caltrans, due to design constraints that cannot feasibly meet or come close to Caltrans design standards. As a result, this alternative would be operationally less efficient than the proposed Onsite Alternative, and it does not meet the purpose and need of the overall Interchange Improvement Project.

Relative to the proposed onsite alternative, this alternative would be much more impactful. Due to design constraints and anticipated impacts regarding right-of-way acquisition, improvements to the existing SR-71 bridge structure, drainages and water resources, endangered species habitat, and wildlife corridors, this alternative has been eliminated from further consideration.

Alternative with Widening Existing Horseshoe Interchange Using Existing Santa Ana River Crossing

This alternative would require fewer bridge footings (3) to be constructed on USACE-managed land, and would affect one parcel on USACE-managed land (APN #101-140-006). To avoid construction of a new flyover structure crossing the Santa Ana River, which is a significant environmental resource, the alternative alignment follows a horseshoe interchange concept which would tie into existing facilities to merge onto SR-71 and to cross the Santa Ana River. However, to tie into existing facilities to cross the Santa Ana River, the existing bridge structure at SR-71 would require major structural improvements, to allow for the increase in vehicle capacity. Structural improvements would include retrofitting and widening of the existing SR-71 bridge connector to accommodate a two-lane interchange from EB SR-91 to NB SR-71. Bridge improvements under this alternative are anticipated to result in additional encroachment of the SR-71 onto the Prado Dam Spillway; due to widening of the roadway. As a result, improvements over the Santa Ana River would still be required, as the existing bridge would need to be widened to accommodate roadway improvements.

Additionally, widening the existing SR-91/SR-71 interchange would permanently impact adjacent BNSF Railroad right-of-way, and would require relocation of the existing railroad. With limited additional right-of-way available, it would not be feasible to reconfigure the BNSF Railroad at this location.

Furthermore, construction of the interchange under this alternative is anticipated to create permanent impacts to drainages and water resources located immediately south of SR-91, such as Wardlow Wash/Fresno Canyon; although this impact would occur outside of USACE-managed land. Affected water resources include wetland and non-wetland jurisdictional waters, and impacts to water resources under this alternative would be avoided by the proposed Onsite Alternative, due to the flyover interchange design concept. Additionally, permanent impacts to endangered species habitat within USACE-managed land are anticipated to be affected by the widening of existing interchange facilities, which are associated with Least Bells Vireo (LBV). Furthermore, construction of this alternative would impact wildlife corridors adjacent to SR-91, which are vital for wildlife access between areas south of SR-91 and north of SR-91.

The interchange design would also inhibit travel speeds due to the curvilinear design; requiring design speeds to be lower relative to the proposed Onsite Alternative. Therefore, the curvilinear design of the interchange would have negative effects on the flow of vehicle traffic by inhibiting travel speeds. Consequently, the alignment would likely not be approvable by Caltrans, due to design flaws and failure to meet or come close to Caltrans design standards. As a result, this alternative would be operationally less efficient than the proposed Onsite Alternative, and does not meet the purpose and need of the overall Interchange Improvement Project. In consideration of anticipated impacts and design constraints, this alternative has been eliminated from further consideration.

Alternative not Utilizing USACE-Managed Land

Considering the existing location of the SR-91/SR-71 Interchange and footprint of the proposed Interchange Project, it is not feasible to complete the proposed future SR-91/SR-71 Interchange Improvement Project without utilizing USACE-managed land. To feasibly complete the construction of an interchange structure from EB SR-91 to NB SR-71, the proponents of the Project would need access to USACE-managed land. Construction of the proposed interchange structure requires bridge columns on USACE-managed land. Decreasing the number of bridge columns or altering the interchange design to avoid USACE-managed land would negatively affect the design of the Interchange Project; and would produce permanent impacts to environmental resources and right-of-way. As a result, of the alternatives considered, the proposed Onsite Alternative would be the most feasible and least environmentally damaging design alternative, considering the anticipated impacts and design constraints associated with the alternatives eliminated from further consideration.

Alternative Using Less of the USACE-Managed Site

With the current location of the SR-91/SR-71 Interchange and footprint of the proposed Interchange Project, it is not feasible to complete the construction of an interchange structure on a smaller area of the USACE-managed site. Several design alternatives were evaluated and considered, which included fewer bridge footings and design concept variations, thereby affecting less USACE-managed land. Although these alternatives may require fewer bridge footings, the reduction of affected area would not be substantial. As a result, these alternatives have been eliminated from further consideration because they are anticipated to result in adverse effects regarding water resources, r/w acquisition, railroad and public r/w relocation, encroachment onto the Prado Dam spillway, and design constraints. Therefore, it is not feasible to complete the proposed future SR-91/SR-71 Interchange Improvement Project by using less USACE-managed land while substantially minimizing or avoiding the aforementioned impacts.

This page intentionally left blank.

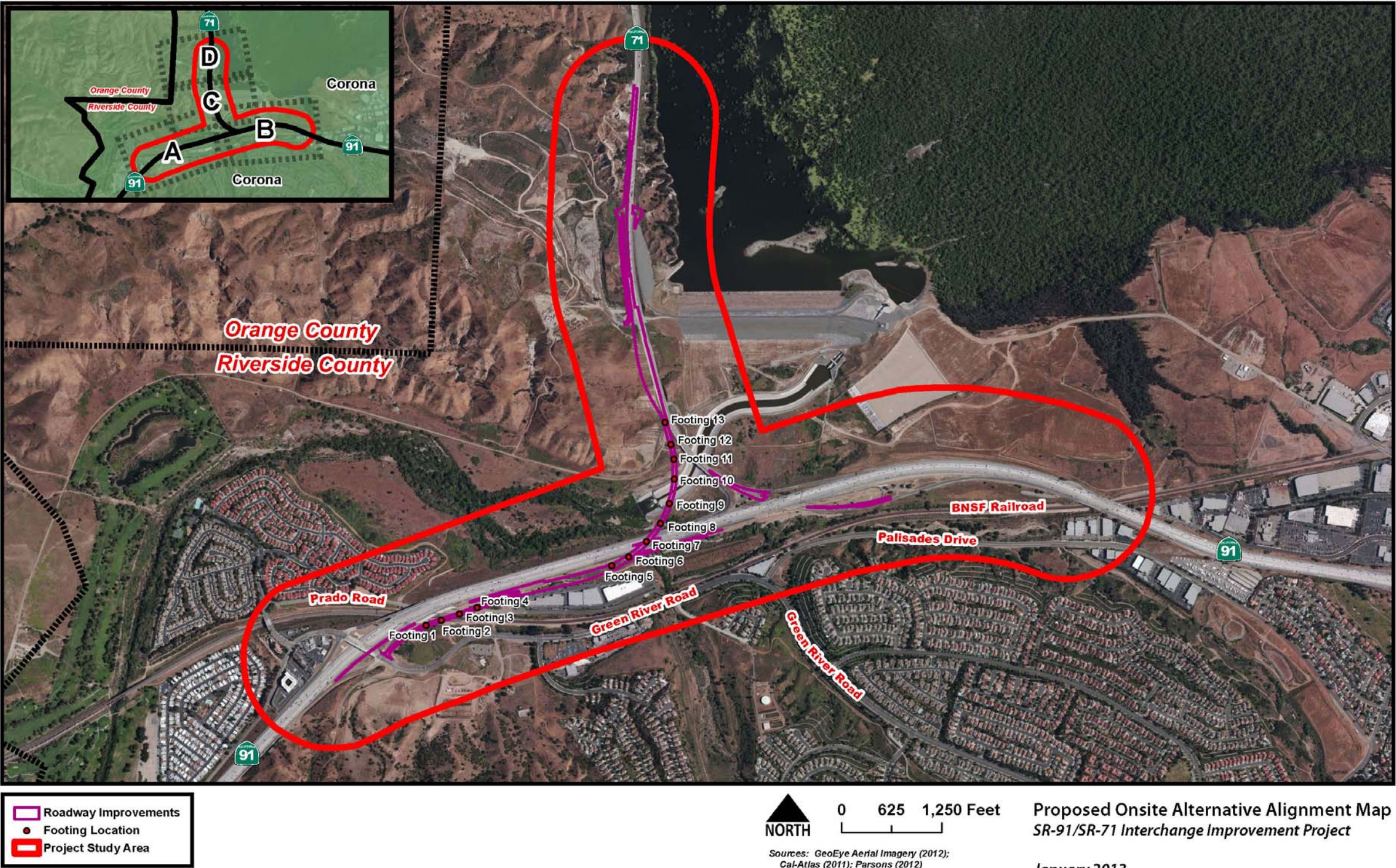


Figure 2-1: Overview Alignment Map of Proposed Onsite Alternative

This page intentionally left blank.

3.0 PROPOSED ACTION

Through a land use application, RCTC has requested that USACE allow RCTC to conduct the construction of a proposed bridge connector flyover structure as part of the SR-91/SR-71 Interchange Improvement Project, which includes the installation of six proposed bridge columns on USACE-managed lands at APN 101-140-006 and Caltrans right-of-way at SR-71. USACE has reviewed RCTC's application and has noted that these activities may have an effect on the environment, which may require a NEPA EA. After completion of the EA, USACE will make a decision to issue a right-of-way (ROW) license to RCTC to enter USACE property and conduct the construction of the proposed future Interchange Improvement Project.

This page intentionally left blank.

4.0 ENVIRONMENTAL IMPACTS AND ANALYSIS

4.1 Background

The Proposed Action consists of conducting the construction of a proposed bridge connector flyover structure as part of the future proposed SR-91/SR-71 Interchange Improvement Project on USACE-managed lands, as described below:

Construction of a Bridge Connector Flyover Structure from EB SR-91 to NB SR-71

Construction of a bridge connector flyover structure from EB SR-91 to NB SR-71 consists of entering USACE property at predetermined USACE-approved locations with the necessary equipment to conduct the construction. Heavy machinery and equipment would be mobilized from the designated staging areas to construction sites. Within USACE property, anywhere from three to five bridge footings are proposed to be constructed; construction would include vegetation removal and soil excavation activities. Construction and associated bridge footing locations are illustrated in Figure 2-1.

4.2 Geology and Soil Quality, Stability, and Moisture

4.2.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment to geological resources were derived from the reports listed below:

- Caltrans. June 2011. *SR 91 and SR 71 Interchange Improvement Project Initial Study and Mitigated Negative Declaration*, City of Corona, Riverside County, California.
- Converse Consultants. October 2008. *Preliminary Foundation Report State Route 91/71 Interchange Improvement Project*, City of Corona, Riverside County, California.

The above-mentioned reports analyzed geological resources within the general location of the proposed Onsite Build Alternative site; however, the reports prepared for the SR-91/SR-71 Interchange Improvement Project do not specifically analyze the potential impacts related to the Onsite Build Alternative. The analysis described in this section utilizes information from the SR-91/SR-71 Interchange Improvement Project (above-referenced documents) and the following resources below to independently analyze and determine the impacts for the proposed Onsite Build Alternatives:

- 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.
- 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.
- *As-Built Plans, West Prado Overhead, Bridge No. 56-634R/L*, Bridge Department, Engineering Geology Section, State of California, Department of Transportation, dated December 30, 1970.
- Seismic Hazard Zone Report 045 for the Prado Dam 7.5-Minute Quadrangle, Orange County, California, 2000.

Site Geology

The project site location 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, which 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 project site area geology is characterized by reddish-brown alluvial fan deposits. No unusual geologic features are present within the area.

Geologic units within USACE property 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 project site is located in a seismically active region. Many nearby active faults that may potentially produce significant ground shaking during a major earthquake are in the project area. These faults are 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 Proposed Action is not located in a currently designated State of California Fault Rupture Hazard Zone.

Seismicity

Damage may occur in USACE property, which is within a zone of major historic earthquakes and recent 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 rating of I (weakest) to a rating of XII (catastrophic). The intensity rating of VIII represents a range of damage from a large amount of damage for poorly built structures to only slight damage for specially designed structures. The Elsinore-Whittier Fault, which is identified as the controlling fault in the area, is capable of generating peak bedrock acceleration of 0.6g and an Mw (moment magnitude) of 7.5 at the project site.

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. The project has a low potential of liquefaction expected onsite due to dense to very dense underlying soils and the absence of groundwater.

Seiches, Tsunamis, and Mudflows

The project site 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 project site 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 the City of Corona due to several upstream flood control projects, including the Seven Oaks Dam; therefore, the project 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) state a seismic coefficient $K_h = 1/3 \times \text{Horizontal PGA}$ 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 to be stable for embankment slope construction. Existing slopes within the project fit the criteria for a gradient of 2:1 or flatter or are reinforced with engineered walls.

4.2.1.1 Onsite Alternative

The proposed Onsite Alternative consists of conducting the construction of a proposed direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71, with six proposed bridge footings constructed on USACE-managed lands.

4.2.1.2 No Action Alternative

Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands.

4.2.2 Potential Geological Impacts

4.2.2.1 Onsite Alternative

No known fragile, compactable, or unstable soils, or unusual geologic features are present within the location of the proposed Onsite Alternative, nor are special reclamation considerations required. Furthermore, the location of the Onsite Alternative is not on or adjacent to a fault zone. No direct or indirect impacts 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.

The Onsite Alternative would result in the construction of a flyover bridge connector structure. Excavated areas within USACE property affected by the proposed bridge columns are relatively minor and consist of six proposed bridge footing columns at various locations, shown in Figure 2-1 (Footings 8 through 13). These excavated areas are not anticipated to produce effects to the following geological-related conditions:

Faults

The Onsite Alternative would result in the construction of a flyover bridge connector structure, with six proposed bridge footing columns within USACE property. Although many active faults that may potentially produce significant ground shaking during a major earthquake are in the project area, the project site is not located in a currently designated State of California Fault Rupture Hazard Zone. The current project footprint is not located on or adjacent to an active fault; however, project structures will be designed in compliance with current Seismic Design Parameters. Therefore, permanent or temporary effects associated with faults are not anticipated.

Seismicity

The Onsite Alternative would result in the construction of a flyover bridge connector structure, with six proposed bridge footing columns within USACE property. Damage could potentially occur in the project area, as 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 proposed Onsite Alternative would be subject to seismicity, the project will

address any seismic activity effects of the Onsite Alternative through compliance with Seismic Design Parameters.

Liquefaction

The Onsite Alternative would result in the construction of a flyover bridge connector structure, with six proposed bridge footing columns within USACE property. 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. However, the proposed Onsite Alternative has a low potential of liquefaction expected due to dense to very dense underlying soils and the absence of groundwater. Therefore, impacts associated with liquefaction are not anticipated as a result of the Onsite Alternative.

Seiches, Tsunamis, and Mudflows

USACE property is located approximately 25 miles inland from the Pacific Ocean and lies at approximately 400 feet above mean sea level (AMSL). The potential for inundation due to a tsunami to affect the proposed project site is negligible. Therefore, impacts associated with the potential for tsunamis are considered negligible.

Due to the steep topography adjacent to USACE property 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 GSRDs, will be implemented where appropriate to ensure that the potential for mudflows will 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 the City of Corona due to several upstream flood control projects, including the Seven Oaks Dam; therefore, the project site has a low potential for a seiche occurrence.

Slope Instability

Slope instability is defined by the potential adverse impacts from seismic shaking. Caltrans Guidelines for Structure Foundation Reports (March 2006) state a gradient of 2:1 (horizontal to vertical) or flatter is considered to be stable for embankment slope construction. Existing slopes within the proposed project fit the criteria for a gradient of 2:1 or flatter or are reinforced with engineered walls. As a result, the Onsite Alternative is not anticipated to produce significant effects to slope instability.

4.2.2.2 No Action Alternative

The No Action Alternative will have no impacts on geological resources. Under the No Action Alternative, the construction of a flyover bridge connector structure with six proposed bridge footing columns within USACE property would not be conducted. Potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the Proposed Action.

4.2.3 Avoidance/Minimization Measures

4.2.3.1 Onsite Alternative

No minimization measures are required.

4.2.3.2 No Action Alternative

The No Action Alternative will have no impacts on geological resources. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge columns within USACE property, would not be constructed. As a result, potential impacts associated with these activities would not occur on USACE-managed lands. Therefore, avoidance and minimization measures would be required.

4.2.4 Significance of Impacts

4.2.4.1 Onsite Alternative

The Proposed Action activities are not anticipated to produce significant effects, permanent or temporary, to geology and soil quality, stability, or moisture within the project area.

4.2.4.2 No Action Alternative

The No Action Alternative will have no impacts on geological resources. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge columns within USACE property, would not be constructed. Therefore, potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the proposed project.

4.3 Water Resources

4.3.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment for water resources were derived from the reports listed below:

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

The reports mentioned above analyzed water resources within the general location of the Proposed Action, including the potential impacts to water resources within USACE-managed properties. Information and data from these reports were utilized to independently analyze and determine the impacts for the Proposed Action as it pertains specifically to USACE-managed land.

Hydrology and Floodplain

Hydrology

The project 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 project 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 0.18-mile to the northeast side of the project limits 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 Santa Ana River Project, Prado Dam the existing dam embankment was raised 28.4 feet to an elevation of 594.4 feet. Also, new outlet works have been constructed, which increases the maximum discharge capacity from 9,000 cubic feet per second (cfs) to 30,000 cfs. Once completed, Prado Dam improvements will 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 Proposed Action 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 cubic feet per second (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 project 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 Clean Water Act (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 U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. 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 general location of the Proposed Action on USACE-managed parcels, approximately seven features are potentially jurisdictional non-wetland or wetland waters. These seven features total 5.12 acres of non-wetland waters, and 14.02 acres of wetland waters within USACE property. Non-wetland and wetland features are illustrated in Figure 4-1. Table 4-1 summarizes the acreages of potential non-wetland and wetland waters of the US within USACE-managed affected by the Proposed Action.

**Table 4-1: Waters of the United States within USACE Property
(APNs 101-140-006 and 101-040-064)**

Jurisdictional Feature Identification	Non-Wetland Waters (Acres)	Wetland Waters (Acres)
H	0	0.91
I (Santa Ana River)	5.05	0
J	0.02	0
K	0.03	0
L	0.02	0
M	0	13.11
TOTAL	5.12	14.02

Source: Parsons. 2012.

The wetland reports completed for this project also confirmed the presence of streambeds within USACE parcels that may be considered jurisdictional by California Department of Fish and Game (CDFG). Potential CDFG jurisdiction (riparian/riverine habitat) on the site of the Proposed Action totals 0.99 acres of unvegetated streambed and 1.49 acres of vegetated riparian habitat. Table 4-2 and Figure 4-2 summarize these potential CDFG jurisdictional waters within USACE parcels.

**Table 4-2: CDFG Jurisdictional Streambed within USACE Property
(APNs 101-140-006 and 101-040-064)**

Jurisdictional Feature Identification	Unvegetated Streambed (Acres)	Vegetated Streambed (Acres)
H	0.07	1.49
I (Santa Ana River)	0.92	0
L	0	0.001
TOTAL	0.99	1.49

Source: Parsons. 2012.

Water Quality and Stormwater Runoff

The Santa Ana 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 Proposed Action, there are no water bodies designated as being impaired under Section 303(d) of the CWA by the State Water Resources Control Board (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 in close proximity to the Proposed Action.

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:

- 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 project site 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 U.S. 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. .

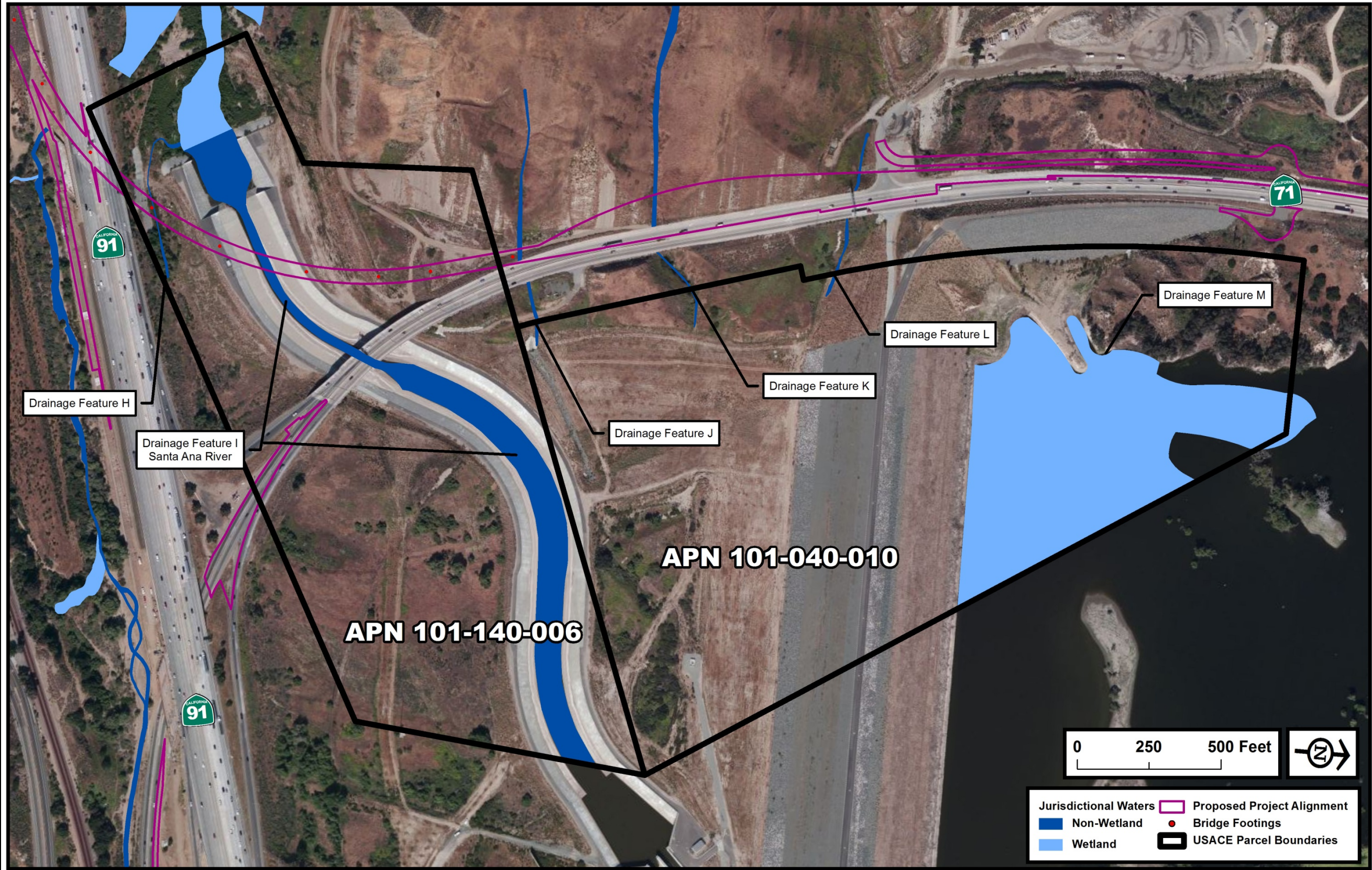


Figure 4-1: Waters of the United States

This page intentionally left blank.

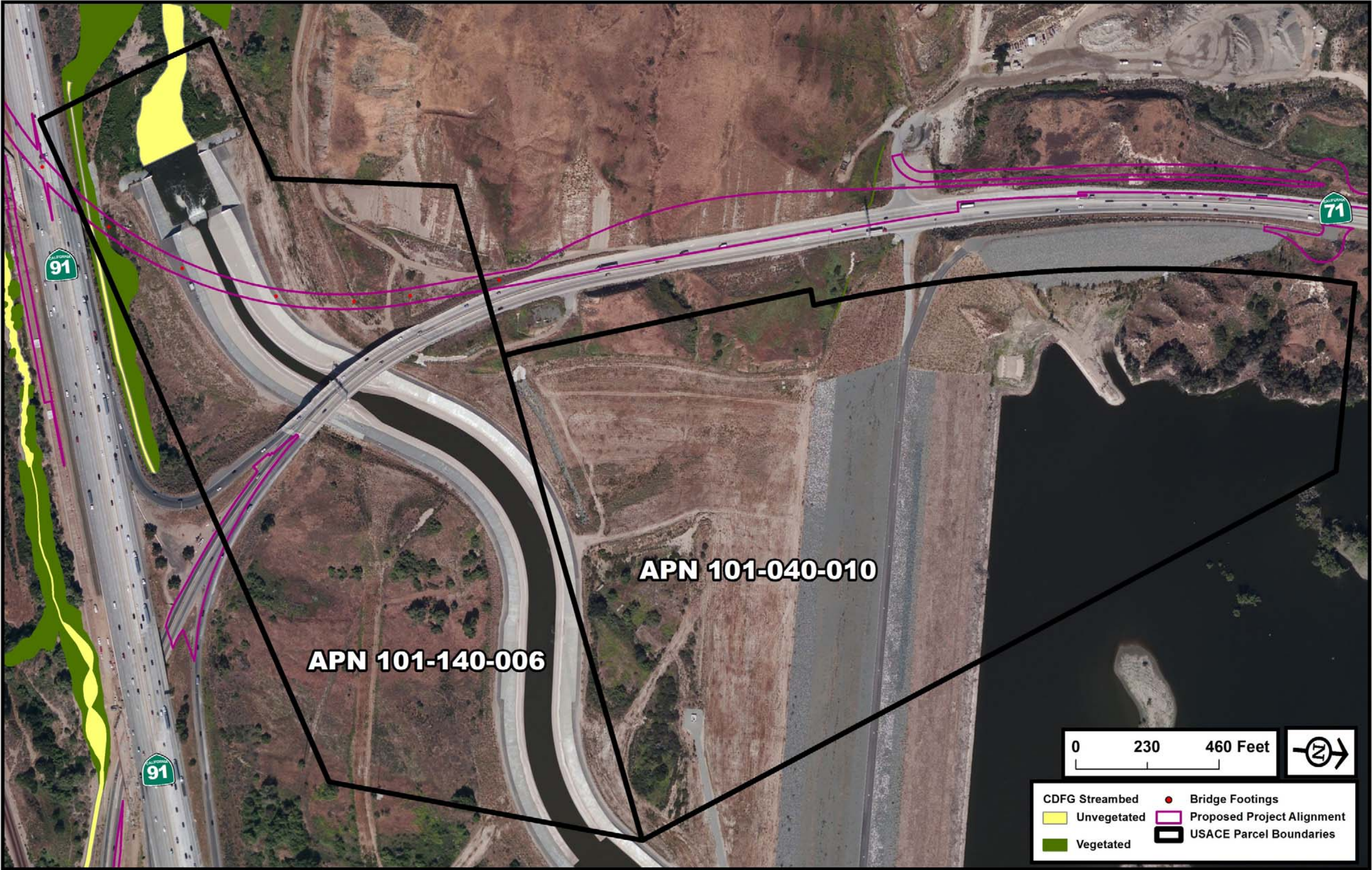


Figure 4-2:
California Department of Fish and Game Jurisdictional Streambed

This page intentionally left blank.

The primary source of groundwater in the project vicinity 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 project 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.

4.3.2 Onsite Alternative

The proposed Onsite Alternative consists of conducting the construction of a proposed direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71, with six proposed bridge footings constructed on USACE-managed lands.

4.3.3 No Action Alternative

Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands.

4.3.4 Potential Environmental Impacts

4.3.4.1 Onsite Alternative

Hydrology

The project will result in minor permanent modifications to onsite hydrology and surface flows, and will increase the amount of impervious surface area within USACE parcels. The Onsite Alternative is anticipated to result in a 1.46 acre increase of impervious area on USACE parcels. Note that the total area of the Lower Santa Ana River Watershed is 32,112 acres. An increase of 1.46 acre is not considered significant relative to the large size of the watershed. Furthermore, with implementation of treatment BMPs, storage capacity of runoff from impervious surfaces will be provided, and the change in flow velocity in pre- and post-project conditions will be minimal. There will be no exceedance of the capacity of the existing or planned stormwater drainage systems, and effects to the stormwater drainage system will be less than significant. Additionally, with the implementation of various design pollution prevention BMPs in conjunction with treatment BMPs, the existing drainage pattern of the area will not be altered in a manner that will result in substantial erosion, sedimentation, or flooding within or downstream of the project area; therefore, impacts associated with surface hydrology related to capacity exceedance related to existing or planned storm drains or provide a substantial additional source of polluted runoff will be less than significant.

Wetlands and Other Waters

During construction of the Onsite Alternative, support structures, footings, slope protection, and realignment of SR 91 and SR 71 roads and connectors, USACE and RWQCB jurisdictional waters and wetlands, and CDFG jurisdictional vegetated and unvegetated streambeds will be temporarily impacted within USACE-managed parcels. As indicated in Figure 4-3, construction of the project will result in temporary impacts to 0.43-acre of USACE and RWQCB non-wetland waters. One of the footing structures would result in 0.01-acre of permanent impact to non-wetland jurisdictional waters within USACE-managed parcels.

Also, the project will result in temporary impacts to 0.03-acre of CDFG unvegetated streambed and 0.46-acre of vegetated streambed within USACE-managed parcels.

**Table 4-3: Impacts to Jurisdictional Waters within USACE Property
(APNs 101-140-006 and 101-040-064)**

	Temporary Impacts (Acres)	Permanent Impacts (Acres)
USACE/RWQCB – Wetland	0	0
USACE/RWQCB – Non-Wetland	0.43	0.01
CDFG – Vegetated	0.46	0
CDFG – Unvegetated	0.03	0

Source: Parsons. 2012.

Based on these findings, the project will require a Section 404 permit from USACE pursuant to Section 404 of the Clean Water Act (CWA), Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), and a Section 1600 Streambed Alteration Agreement from California Department of Fish and Game (CDFG) pursuant to Section 1600 of the California Fish and Game Code.

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; (2) habitat restoration of lands within the Green River Golf Course; and (3) habitat restoration or creation of lands owned by the Riverside Conservation Authority.

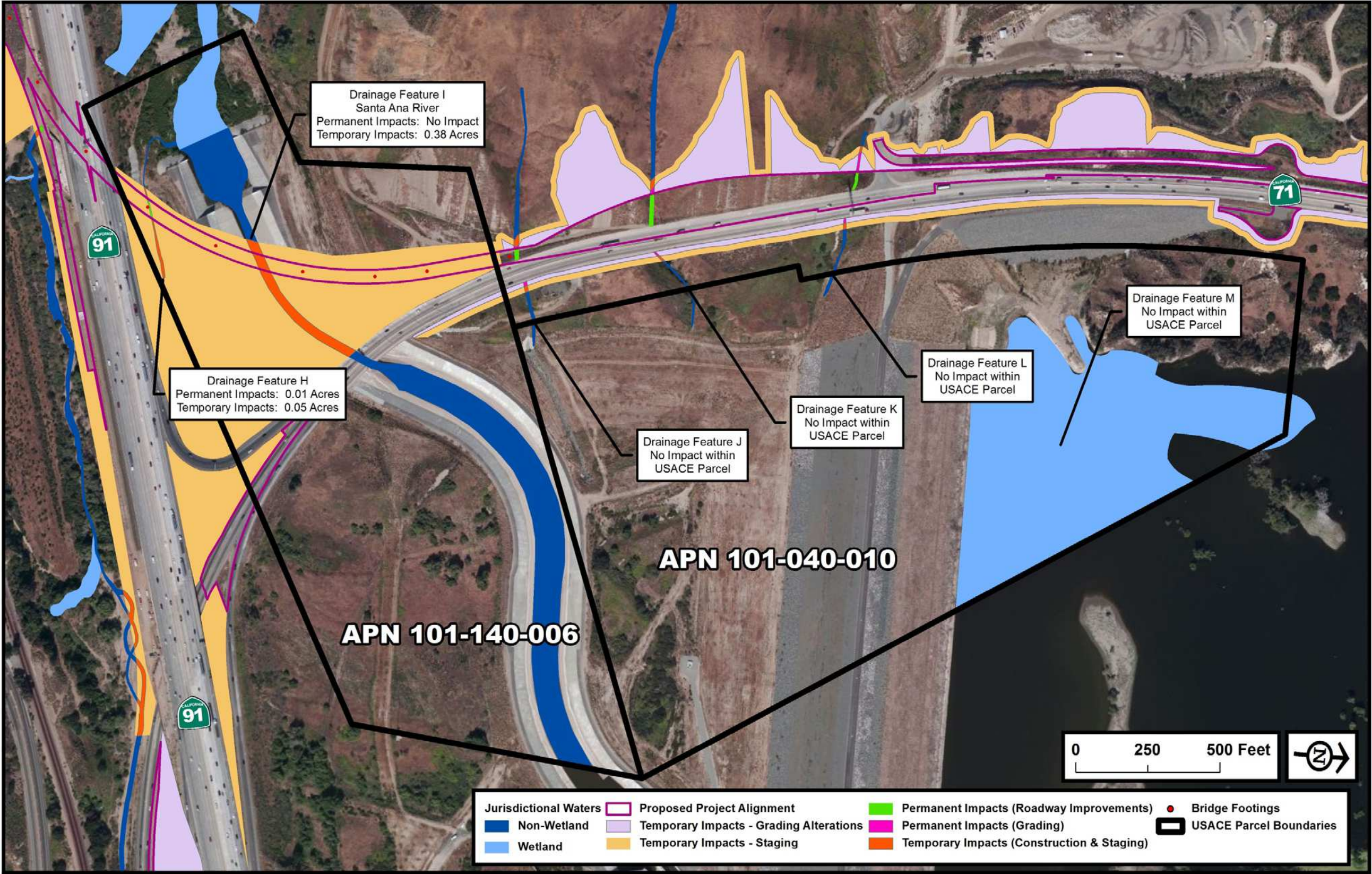


Figure 4-3:
Potential Temporary and Permanent Impacts to Waters of the United States

This page intentionally left blank.

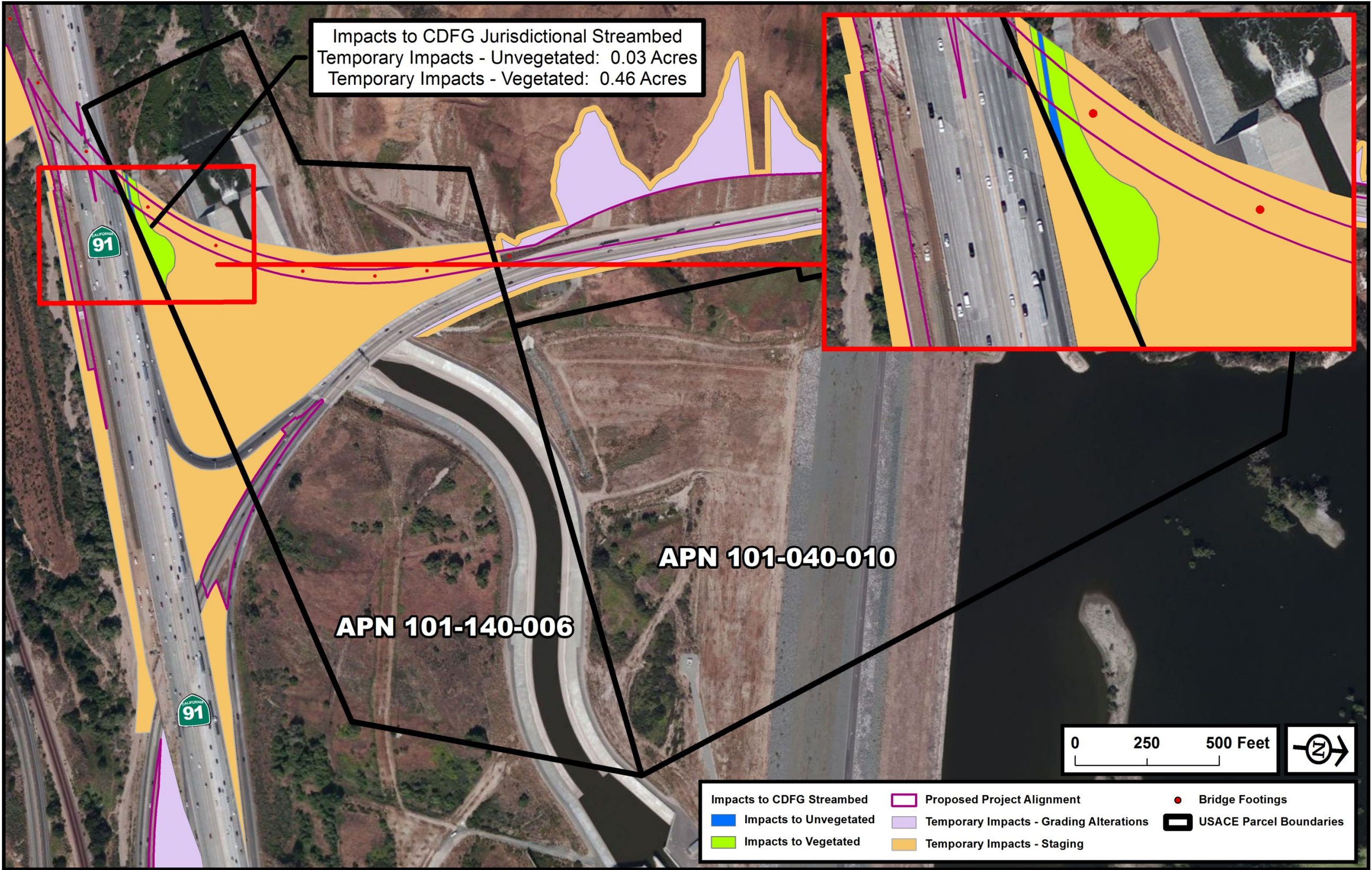


Figure 4-4:
Potential Temporary and Permanent Impacts to CDFG Jurisdictional Streambed

This page intentionally left blank.

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 project design to minimize impacts to water quality from post-project conditions. Treatment devices will be sized to capture runoff generated by the total impervious surface area within the project limits. All nine of the Caltrans-approved treatments BMPs have been considered for this project. These include biofiltration strips/swales, infiltration devices, media filters, detention devices, traction sand traps, dry weather flow diversion, gross solids removal devices (GSRDs), wet basins, and multi-chambered treatment trains. These treatment BMPs will be incorporated into the project design, as appropriate to the maximum extent practicable (MEP). With the implementation of treatment BMPs, the project is not expected to have a significant impact on the water quality of the receiving waters, and it will not affect beneficial uses of downstream receiving water bodies.

In the short term, excavation, grading, paving, and other construction activities will 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 project 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 project 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 project may involve dewatering activities during excavation of the ramps or where new footings would be required, 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.

4.3.4.2 No Action Alternative

The No Action Alternative will have no impacts on water resources. Under the No Action Alternative, the construction of a flyover bridge connector structure with six proposed bridge footing columns within USACE property would not be conducted. Potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the Proposed Action.

4.3.5 Avoidance/Minimization Measures

4.3.5.1 Onsite Alternative

The 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 will be minimized through construction of Maintenance BMPs, Pollution BMPs, and Treatment BMPs to meet MEP requirements and as detailed in Appendix B.

4.3.5.2 No Action Alternative

Under the No Action Alternative, construction of the proposed Interchange Project would not be conducted on USACE-managed lands. No minimization measures would be required.

4.3.6 Significance of Impacts

4.3.6.1 Onsite Alternative

With implementation of minimization measures as discussed in Appendix B, the Proposed Action is not anticipated to produce significant effects, permanent or temporary, to hydrology, floodplain, jurisdictional waters, water quality, or stormwater runoff within the project area.

4.3.6.2 No Action Alternative

The No Action Alternative will have no impacts on water resources. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge columns within USACE property, would not be constructed. Therefore, potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the proposed project.

4.4 Air Quality

4.4.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment to air quality were derived from the reports listed below:

- Caltrans. June 2011. *SR 91 and SR 71 Interchange Improvement Project Initial Study and Mitigated Negative Declaration*, City of Corona, Riverside County, California.
- Caltrans. August 2010. *SR 91 and SR 71 Interchange Improvement Project Air Quality Technical Study*.

The above-mentioned reports analyzed air quality resources within the general location of the proposed Onsite Alternative site; however, the reports prepared for the SR-91/SR-71 Interchange Improvement Project do not specifically analyze the potential impacts related to the Onsite Alternative. Information and data from these reports were utilized to independently analyze and determine the impacts for the proposed Onsite Alternative.

Climactic Conditions

The project site is located in the northwestern portion of Riverside County within the South Coast Air Basin (SCAB), which includes all of Orange County and the nondesert 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.

The southern California region 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 project 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. The mean annual precipitation in the Riverside Fire Station 3 area over a 104-year period (1893-2007) was 10.3 inches. In nearly all months of the year, evaporation exceeds precipitation.

Topography is a major factor influencing wind direction over the project area. The predominant wind direction in the project 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 project area ranges between 4 and 6 miles per hour (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.

Air Quality Standards

The Federal Clean Air Act (CAA) was passed in 1970 and last amended in 1990. It 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 ozone (O₃) 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). Air quality standards that are currently in effect for criteria pollutants are illustrated in Table 4-4. Table 4-5 summarizes potential health effects resulting from exposure to these pollutants.

Standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO₂), O₃, particulate matter (PM), lead (Pb), and sulfur dioxide (SO₂). The State of California also has its own ambient air quality standards, the California Ambient Air Quality Standards (CAAQS). The CAAQS standards are more stringent than the NAAQS for most criteria pollutants. In general, the California state standards are more health protective than the corresponding NAAQS.

Monitored Air Quality

Based on the CAAQS, the SCAB complies with the State standards for sulfates, hydrogen sulfide, and vinyl chloride, but it is unclassified for the California standard for visibility-reducing particles. Table 4-6 shows the federal and state attainment status for the SCAB.

The nearest air monitoring station to the project site is the Norco monitoring station, which is located approximately 5 miles northeast of the project site. Only PM₁₀ is monitored at this station. The other representative monitoring stations for the project area are the Riverside-Magnolia Monitoring Station, which is located approximately 14 miles from the project site, and the Riverside-Rubidoux Station, which is located 15 miles northeast of the project site. The Magnolia station monitors CO and PM_{2.5}, while all criteria pollutants are monitored at the Rubidoux station.

Table 4-7 presents the local ambient air quality data recorded at these stations for the past 4 years. As shown in Table 4-7, exceedance of the California standards was recorded for O₃ (8-hour and 1-hour [California standard]), PM₁₀ (24-hour and annual), and PM_{2.5} (24-hour and annual) on one or more occasions from 2005 through 2008. No exceedance of either the State or national standards was recorded for SO₂, NO₂, or CO.

Table 4-4: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ^{a,c}	Federal Standards ^{b,c}	
			Primary	Secondary
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	—	—
	8 Hour	0.07 ppm (137 µg/m ³)	0.075 ppm (147 µg/m ³) ^d	—
Respirable Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ³	150 µg/m ³	Same as Primary
	Annual (AAM)	20 µg/m ³	— ^e	
Fine Particulate Matter (PM _{2.5})	24 Hour	No Separate State Standard	35 µg/m ³ ^f	Same as Primary
	Annual (AAM)	12 µg/m ³	15 µg/m ³	
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	—
	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	
Nitrogen Dioxide (NO ₂)	Annual (AAM)	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as Primary
	1 Hour	0.18 ppm (339 µg/m ³)	—	
Sulfur Dioxide (SO ₂)	Annual (AAM)	—	0.030 ppm (80 µg/m ³)	—
	24 Hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)	—
	3 Hour	—	—	0.5 ppm (1,300 µg/m ³)
	1 Hour	0.25 ppm (655 µg/m ³)	—	—
Lead (Pb) ^g	30-Day Average	1.5 µg/m ³	—	—
	Calendar Quarter	—	1.5 µg/m ³	Same as Primary
	Rolling 3-Month ^h	—	0.15 µg/m ³	Same as Primary
Visibility- Reducing Particles	8 Hour	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%	No Federal Standards	
Sulfates	24 Hour	25 µg/m ³		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)		
Vinyl Chloride ^g	24 Hour	0.01 ppm (26 µg/m ³)		

^a California standards for O₃, CO (except Lake Tahoe), SO₂ (1 and 24 hour), NO₂, suspended particulate matter (PM₁₀, PM_{2.5}), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

^b National standards (other than O₃, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O₃ 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 PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For 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.

^c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon 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.

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

^e The annual standard of 50 µg/m³ was revoked by EPA in December 2006 due to lack of evidence linking health problems to long-term exposure to coarse particulate pollution.

^f 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.

^g The California Air Resources Board (CARB) has identified Pb and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for implementation of control measures at levels below the ambient concentrations specified for these pollutants.

^h 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 4-5: Health Effects Summary for Air Pollutants

Pollutant	Sources	Primary Effects
Ozone (O ₃)	Atmospheric reaction of organic gases with nitrogen oxides in the presence of sunlight.	Aggravation of respiratory diseases; irritation of eyes; impairment of pulmonary function; plant leaf injury.
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).
Lead (Pb)	Contaminated soil.	Impairment of blood function and nerve construction; behavioral and hearing problems in children.

Source: EPA 2006.

Table 4-6: South Coast Air Basin Attainment Status

Pollutant	Attainment Status Basis	
	National Standard	California Standard
Ozone (O ₃), 1-hour average	N/A ^a	Extreme
Ozone (O ₃), 8-hour average	Severe-17 ^b	Nonattainment
Carbon monoxide (CO)	Attainment/Maintenance c	Attainment ^c
Nitrogen dioxide (NO ₂)	Attainment/Maintenance	Nonattainment ^d
Sulfur dioxide (SO ₂)	Attainment	Attainment
PM ₁₀	Serious	Nonattainment
PM _{2.5}	Nonattainment	Nonattainment
Lead (Pb)	Attainment	Attainment
Sulfates (SO ₄ ²⁻)	N/A	Attainment

N/A = not applicable; PM₁₀ = particulate matter with a diameter of less than 10 microns; PM_{2.5} = particulate matter with a diameter of less than 2.5 microns.^a The National 1-hour O₃ standard was revoked on June 15, 2005.^b A request for reclassification status to "extreme" nonattainment was submitted to the Environmental Protection Agency (EPA) in September 2007.^c The SCAB was redesignated by the EPA as attainment for CO, effective June 11, 2007.^d The State NO₂ standard was amended in February 2007, to lower the 1-hour standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. The Office of Administrative Law approved the proposed amendments and the new standards became effective on March 20, 2008.

Source: EPA 2007; CARB 2010; and SCAQMD 2007.

Table 4-7: Local Monitoring Stations Data Summary

Pollutant	Monitoring Station	Averaging Time	Standard	2005	2006	2007	2008
Ozone (O ₃)	Rubidoux	1-Hour	Maximum Concentration (ppm)	0.144	0.151	0.131	0.146
			Days > CAAQS (0.09 ppm)	46	45	31	52
		8-Hour	Maximum Concentration (ppm)	0.129	0.117	0.111	0.116
			Days > NAAQS (0.08 ppm)	56	57	46	57
			Days > CAAQS (0.07 ppm) ^a	83	75	69	86
Particulate Matter (PM ₁₀)	Norco	24-Hour	Maximum Concentration (µg/m ³)	79	74	93 ^c	76
			Days > NAAQS (150 µg/m ³)	0	0	6	0
			Days > CAAQS (50 µg/m ³)	5	10	10	1
		Annual	National (50 µg/m ³) ^a	32	36	44	32
			State (20 µg/m ³)	31	n/a	43	n/a
	Rubidoux	24-Hour	Maximum Concentration (µg/m ³)	123	109	118 ^b	100
			Days > NAAQS (150 µg/m ³)	0	0	3	0
			Days > CAAQS (50 µg/m ³)	67	69	65	7
		Annual	National (50 µg/m ³) ^a	52	56	59	45
			State (20 µg/m ³)	50	53	57	n/a
Particulate Matter (PM _{2.5})	Magnolia	24-Hour	Maximum Concentration (µg/m ³)	95	55	69	43
			Days > NAAQS (35 µg/m ³) ^c	27	31	30	12
			3-year Avg 98 th Percentile (µg/m ³) ^d	50	47	49	48
		Annual	Arithmetic Mean (15.0 µg/m ³)	17.9	16.9	18.3	13.2
	Rubidoux	24-Hour	Maximum Concentration (µg/m ³)	99	68	76	48
			Days > NAAQS (35 µg/m ³) ^c	2	1	30	15
			3-year Avg 98 th Percentile (µg/m ³) ^d	65	57	56	51
		Annual	Arithmetic Mean (15.0 µg/m ³)	20.9	19.0	18.9	16.3
Carbon Monoxide (CO)	Rubidoux	1-Hour	Maximum Concentration (ppm)	3.4	2.7	3.8	2.7
			Days > CAAQS (20 ppm)	0	0	0	0
		8-Hour	Maximum Concentration (ppm)	2.5	2.3	2.9	1.9
			Days > NAAQS/CAAQS (9.0 ppm)	0	0	0	0
Nitrogen Dioxide (NO ₂)	Rubidoux	1-Hour	Maximum Concentration (ppm)	0.077	0.076	0.072	0.072
			Days > CAAQS (0.25 ppm) ^f	0	0	0	0
		Annual	Arithmetic Average (0.053 ppm)	0.022	0.020	0.020	0.018
Sulfur Dioxide (SO ₂)	Rubidoux	1-Hour	Maximum Concentration (ppm)	0.024	0.012	0.016	0.011
			Days > NAAQS (0.14 ppm)	0	0	0	0
			Days > CAAQS (0.04 ppm)	0	0	0	0
		Annual	Arithmetic Mean (0.030 ppm)	0.004	0.001	0.002	0.001

Exceedances shown in **bold**; ppm – parts per million; µg/m³ – micrograms per cubic meter

- ^a State statistics are based on California-approved samplers, whereas national statistics are based on samplers using Federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
- ^b The data reported for 2007 represents the second high value. The first high values measured at the station occurred on October 21, 2007, which coincides with three wildfires that occurred in Riverside County in October 2007.
- ^c 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 became effective in October 2009.
- ^d Attainment condition for PM_{2.5} is that the 3-year average of the 98th percentile of 24-hour concentrations at each monitor within an area must not exceed the standard (35 µg/m³).
- ^f NO₂ standard was amended in February 2007 to lower the 1-hour standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. These changes become effective after regulatory changes are approved by the Office of Administrative Law

Source: CARB 2009 - <http://www.arb.ca.gov/adam/>; and EPA 2009 - <http://www.epa.gov/air/data/>.

Sensitive Receptors

Some population groups, such as children, the elderly, and acutely and chronically ill persons, especially those with cardio-respiratory problems, are considered more sensitive to air pollution than others. Sensitive receptor locations, as defined by the 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. Nearest residential land uses adjacent to the field investigation site 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 on the west of SR-71, the land is undeveloped, while east of SR-71, the land consists of the Prado Dam flood control area (USACE flood control land).
- South of SR-91: Along the top of the hills, the land use is primarily residential. The closest residences to the project site are located approximately 650 feet south of the EB SR-91 on-ramp from SR-71.

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

4.4.2 Onsite Alternative

The proposed Onsite Alternative consists of conducting the construction of a proposed direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71, with six proposed bridge footings constructed on USACE-managed lands.

4.4.3 No Action Alternative

The No Action Alternative will have no impacts on air resources. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands. Potential impacts associated with these activities would not occur.

4.4.4 Potential Air Quality Impacts

4.4.4.1 Onsite Alternative

Air Quality Analysis

The Onsite Alternative will provide traffic flow improvement and congestion relief through the main components of the project. The project operational air quality analysis was conducted based on the forecast of traffic conditions for project opening year (2015) and horizon year (2035) and comparison of emissions for build and no build scenarios.

Vehicle emissions associated with the propose Onsite Alternative will have both temporary and permanent effects on air quality. A qualitative air quality analysis is provided below to analyze potential effects of the proposed Onsite Alternative. A project will have significant effects on air quality if it will violate any ambient air quality standard, contribute substantially to an existing air quality violation, or expose sensitive receptors to substantial pollutant concentrations.

Temporary Impacts

Construction emissions associated with the Onsite Alternative will be temporary and will last the duration of project construction (approximately 24 months). A quantitative analysis of construction emissions is not required because the construction period is less than 5 years. A qualitative analysis was completed for the project Air Quality Technical Study (Parsons 2010) as described below.

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 project site. In addition, fugitive dust emissions will result from earthwork (e.g., excavation, demolition) and onsite construction activities. Off-road (onsite) mobile source emissions, include CO, nitrogen oxides (NO_x), volatile organic compounds (VOCs), directly-emitted particulate matter (PM₁₀ and PM_{2.5}), and TACs such as diesel exhaust particulate matter. O₃ is a regional pollutant that is derived from NO_x and VOCs in the presence of sunlight and heat, and will 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 will release reactive organic compounds and off-gassing products (e.g., paints, and asphalt). Construction activities associated with the Onsite Alternative will be temporary and will last the duration of project construction (24 months). A qualitative construction emissions analysis has concluded that project construction will not create adverse pollutant emissions. Short-term impacts to air quality will occur during grading/site preparation, new flyover construction, realignment, paving, and restriping phase.

Odors

During project construction, objectionable odors will be mainly related to the operation of diesel-powered equipment and to off-gas emissions during road-building activities, such as paving and asphaltting. While construction equipment onsite will generate some objectionable odors primarily arising from diesel exhaust, these emissions will generally be limited to the project site and will be temporary in nature. Most of the potential sensitive receptors are located at a sufficient distance from the project site such that impacts will not be experienced. As such, odors will not affect a substantial number of people. A less than significant impact is expected.

Toxic Air Contaminants

The potential for TAC emissions during construction of the Onsite Alternative will 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. Given the construction schedule of 2 years, the project will 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.

Mechanized equipment will be used to conduct the 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 project construction will 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.

Asbestos

Although asbestos were identified at three bridge locations in the project area, these materials are not expected to be disturbed during construction activities. It is unlikely that other construction activities will result in the release of naturally occurring asbestos (NOA). The impact is judged to be less than

significant. Asbestos sheet packing materials are not expected to be disturbed during construction activities.

Permanent Impacts

Regional Conformity

The project (with first revisions) is referenced in the 2008 RTP Amendment #2 and 2008 RTIP Amendment #08-24, page 23. The 2008 RTP was adopted by SCAG on May 8, 2008; FHWA and Federal Transit Administration (FTA) approved the 2008 Plan on June 5, 2008. The 2008 RTIP was federally approved on November 17, 2008. On December 3, 2009, SCAG adopted Amendment #2 to the 2008 RTP and Amendment #08-24 to the Final 2008 RTIP. The Amendments were federally approved on January 22, 2010. The project is also listed in the 2008 RTIP – Amendments 1-32 and 38 in the “Riverside County – State Highway Listing.” On February 2010, a second RTIP amendment for the project was submitted to SCAG, which stipulates the following changes: *Project description and schedule update to reflect the reconstruction of the Green River Rd. EB on-ramp instead of the construction of EB collector distributor system; incorporate the reprogramming of the PA&ED State Cash-RIP funds in the amount of \$2,000,000 to the SR-91 corridor Improvement Project (RIV071250); and decrease the total project cost from \$181,625,000 to \$123,510,000 reflecting the current TPC based on the revised project description.* The following RTIP description was referenced at the time of these revisions:

- ID: RIV070308 – Description: At SR91/71 JCT: Replace EB 91 to NB 71 Connector W/Direct Flyover Connector, and Re-construct the Green River Road EB On-Ramp (EA: 0F541).

The scope of the project changed slightly, and the updated project description has been included in RTIP Amendment #08-41, as described below, and approved by SCAG on April 20, 2010, and by FHWA and FTA on May 3, 2010. The description is consistent with the current project scope, cost, and schedule, as described in the current 2008 RTIP, and meets the CAA requirements and is in conformity with the SIP.

- Route 91 PM: 0.6/2.6;

Description: *At SR91/71 JCT: Replace EB 91 to NB 71 Connector W/Direct Flyover Connector, and Re-Construct the Green River Road EB on-ramp (EA: 0F541).*

At the time of the 30-day public review of the draft environmental document (between November 22, 2010, and December 21, 2010), SCAG received approval from FHWA and FTA for the latest 2011 FTIP on December 14, 2010. The adopted 2011 FTIP project description for the SR 91/71 Interchange Improvement Project is similar to the description provided in the 2008 RTIP Amendment #08-41, with the exception of the funding estimate, which was revised from the previous figure of \$123,510,000 (2008 RTIP) to \$113,058,000 (2011 FTIP). The currently adopted 2011 FTIP supersedes the 2008 RTIP.

Section 93.122(d)(2) of the EPA Transportation Conformity Rule requires that in PM₁₀ and PM_{2.5} nonattainment and maintenance areas (for which the SIPs identify construction-related fugitive dust as a contributor to the area problem), the FTIP should conduct the construction-related fugitive PM emission analysis. The 2003 PM₁₀ and 2007 SIP Air Quality Management Plan (AQMP) emissions budgets for SCAB include the construction and unpaved road emissions. The 2011 FTIP PM₁₀ and PM_{2.5} regional emissions analysis includes the construction and unpaved road emissions for conformity finding.

Regional Emissions Analysis

The primary source of air pollutant emissions generated by the project will be from motor vehicles traveling along the project segments on SR 91, SR 71, and the connector ramps within the project limits. To determine the regional direct operational impact, criteria pollutant emissions from vehicles traveling in the project study area were estimated and compared with the No Build Alternative for opening year 2015 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 project 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 4-8. 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 NO_x daily emissions during opening year 2015. During the horizon year 2035, the net change in daily emissions would be below the SCAQMD thresholds for all criteria pollutants.

Table 4-8: 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 2015	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 2015	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.

Table 4-8 also shows that the project Onsite Alternative emissions compared to the existing condition (i.e., 2007 emissions) decrease for CO, NO_x, and VOC; and slightly increases for SO₂ during the future analyzed years. Because the re-entrained road dust emissions are considered in calculation of directly emitted particulates, emissions of PM₁₀ and PM_{2.5} show a relatively small increase in the future analyzed years (i.e., 2015 and 2035), compared with the 2007 emissions (approximately 18 tons PM₁₀ 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, project operation will not have adverse impacts on 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.

Project Level Conformity

As summarized in Table 4-6, the project area is designated as attainment/maintenance for Federal CO standard, and nonattainment for Federal and State O₃ and particulate matter (PM₁₀ and PM_{2.5}).

Local CO Analysis

As part of the air quality analysis performed for this project, a screening exercise following the CO Hot-Spot Analysis Protocol was performed to determine whether the project requires a qualitative or quantitative analysis, or if none will be necessary. Based on the screening, which is included in the *Air Quality Technical Report*, it is concluded that the project is satisfactory and no further qualitative or quantitative CO analysis will be required.

Particulate Matter (PM₁₀ and PM_{2.5}) Hot-Spot Analysis

Pursuant to Federal Conformity Regulations [specifically, 40 CFR 93.105(c)(1)(i)], an Interagency Review Form was prepared for the project and was submitted to the SCAG Transportation Conformity Working Group (TCWG). The project Review Form was discussed among representatives at a TCWG meeting on April 28, 2009, to determine if the project requires a project-level PM hot-spot analysis. The TCWG determined that the project is not a project of air quality concern (POAQC); therefore, no further PM hot-spot analysis is required for the project.

The project is not considered a POAQC because it does not meet the definition of a POAQC as defined in the EPA Transportation Conformity Guidance:

- The project is not a new or expanded highway project. The new direct flyover from EB SR 91 to NB SR 71 will replace the existing loop on-ramp and, as such, it will not expand the highway, as described in the project description. These components of the project will not substantially increase the traffic of surrounding roadways or highways. This type of project improves roadway operations by reducing traffic congestion and reducing delay time per vehicle. Based on the Traffic Study (Parsons 2008), the project will not increase the traffic volumes along the local roadways. The traffic volume along the connector ramps and SR 71 within the project limits will be well below the 125,000 ADT, and along SR 91, segments (in Build Alternative) will remain below the 125,000 ADT threshold for a POAQC through the RTP horizon year. Similarly, based on the project traffic study, truck volumes within the project corridor are estimated between 2 percent (ramps) and 7 percent to 8 percent (highway segments) of total ADT, and it is presumed that these proportions will not change during the years after completion of construction through the RTP horizon year of 2035.
- The project will not affect congested intersections with a significant number of diesel trucks. The LOS for intersections affected by the project will improve compared to the no-build scenario.
- The project does not include highway facility improvements to connect a highway to a major freight, bus, or intermodal terminal.
- The project will not involve a significant increase in the number of diesel transit buses or diesel trucks.
- The project site is not identified in the SIP as a site of possible violation for PM₁₀ or PM_{2.5}.

Based on the above discussion, it can be concluded that the project meets the CAA requirements and 40 CFR 93.116 without a qualitative hot-spot analysis pursuant to FHWA and EPA *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas*. The project will not create a new, or worsen an existing, PM₁₀ or PM_{2.5} violation and it will comply with any local, State, and Federal rules and regulations developed as a result of implementing control or mitigation measures and/or strategies in the 2003 PM₁₀ SIP and 2007 PM_{2.5} SIP (approved by EPA in May 2008); therefore, PM hot-spot analysis is not required.

Furthermore, construction of project improvements will last 2 years and will comply with SCAQMD Rule 403; therefore, temporary construction emissions are not required to be considered.

Air Quality Conformity

During the 30-day public review period for the Draft IS/MND for the project from November 22, 2010, to December 21, 2010, no comments regarding air quality conformity were received. An Air Quality Conformity Analysis for the project 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 SR 91/71 Interchange Improvement Project pursuant to Section 6005 of SAFETEA-LU. The project area is subject to regional conformity analysis requirements. The results of the analysis indicate that the project has attained project-level conformity for CO. The project 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 91/71 Interchange Improvement Project conforms to the SIP in accordance with 40 CFR Part 93.”

Mobile Source Air Toxics Analysis

FHWA released an interim guidance on February 3, 2006, determining when and how to address mobile source air toxic (MSAT) impacts for transportation projects. The guidance document was updated on September 30, 2009 (FHWA 2009), and was used as the basis for this analysis. FHWA has developed a tiered approach for analyzing MSATs, depending on specific project circumstances. FHWA has identified three levels of analysis:

1. No analysis for exempt projects or projects with no potential for meaningful MSAT effects;
2. Qualitative analysis for projects with low potential MSAT effects; and
3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

For projects warranting MSAT analysis, the seven priority MSATs should be analyzed.

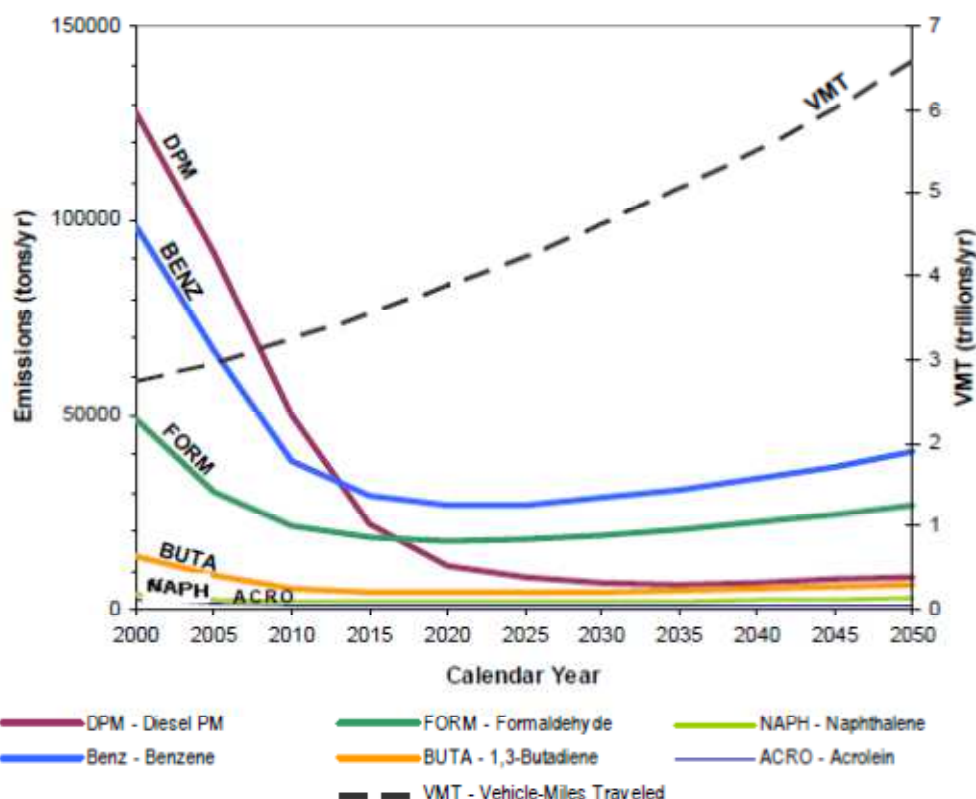
Under Category 1, three types of projects are included: (a) projects qualifying as a categorical exclusion under 23 CFR 771.117(c); (b) projects exempt under the CAA conformity rule under 40 CFR 93.126; and (c) other projects with no meaningful impacts on traffic volumes or vehicle mix.

The types of projects included in Category 2 are those that serve to improve operations of highway, transit, or freight movement without adding substantial new capacity or without creating a facility that is likely to meaningfully increase emissions. This category covers a broad range of projects. Any projects not meeting the threshold criteria for higher potential effects set forth in Category 3 below and not meeting the criteria in Category 1 should be included in this category. Examples of these types of projects are minor widening projects and new interchanges, such as those that replace a signalized intersection on a surface street or where design year traffic is not projected to meet the 140,000 to 150,000 AADT criterion.

Category 3 includes projects that have the potential for meaningful differences among project alternatives. Only a limited number of projects meet this two-pronged test. To fall into this category, projects must:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of DPM in a single location; or
- Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000, or greater, by the design year; and
- Projects proposed to be located in proximity to populated areas or in rural areas, in proximity to concentrations of vulnerable populations (i.e., schools, nursing homes, hospitals).

EPA's 2007 MSAT rule requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE 6.2 model, even if vehicle activity (i.e., VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in Figure 4-5.



Notes:

- (1) The projected data were estimated using EPA's MOBILE 6.2 Model run August 20, 2009.
- (2) Annual emissions of polycyclic organic matter are projected to be 561 tons per year for 1999, decreasing to 373 tons per year for 2050.
- (3) Trends for specific location may be different, depending on locally derived information representing VMT, vehicle speeds, vehicle mix, fuels, emission control programs, methodology, and other factors.

Source: FHWA 2009.

Figure 4-5: National MSAT Emissions Trend, 1999 – 2050 for Vehicles Operating on Roadways

California's vehicle emission control and fuel standards are more stringent than Federal standards and are effective sooner, so the effect of combined State and Federal regulations is expected to result in greater reduction of MSATs in earlier time than the FHWA analysis predicts.

Unavailable Information for Project-Specific Mobile Source Air Toxics Impact Analysis

This EA includes a basic analysis of the likely MSAT emission impacts of this project; however, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in this environmental document. Due to these limitations, the following discussion is included in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information.

Information that is Unavailable or Incomplete

Evaluating the environmental and health impacts from MSATs on a proposed highway project will involve several key elements, including emissions modeling, dispersion modeling to estimate ambient concentrations resulting from the estimated emissions, exposure modeling to estimate human exposure to the estimated concentrations, and final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

Exposure Levels and Health Effects

Even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology, which affects emissions rates, over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs

Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some are either statistically associated with adverse health outcomes through epidemiological studies (i.e., frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of many EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or State level.

EPA is in the process of assessing the risks of various kinds of exposures to MSAT emissions. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at <http://www.epa.gov/iris>. The following toxicity information for priority MSATs was taken from the IRIS database *Weight of Evidence Characterization* summaries. This information is taken verbatim from EPA's IRIS database and represents the Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.

- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure. **Naphthalene**, which is the replacement for Acetaldehyde in the 2009 update memorandum, is also a probable human carcinogen based on observations of respiratory tumors in mice after inhalation and oral exposure. Noncancer effects of concern in humans exposed to naphthalene include hemolytic anemia, cataract, and respiratory toxicity.
- **Diesel exhaust (DE)** is characterized as a likely carcinogen to humans by inhalation from environmental exposures. DE, as reviewed in this document, is the combination of DPM and DE organic gases. DE also represents chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

Other studies have addressed MSAT health impacts on humans in proximity to roadways. The Health Effects Institute, which is a nonprofit organization funded by EPA, FHWA, and the industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Project-Level MSAT Analysis

Based on FHWA's tiered approach in their interim guidance document, the Onsite Alternative will be considered a Category 2 project with minimal potential MSAT effects. The ultimate traffic levels on all segments of the project are predicted to be less than 140,000 AADT. The analysis to assess local MSAT effects was conducted for six priority MSATs using the UC Davis-Caltrans *CT-EMFAC 2.6* (UC-Davis and Caltrans, 2008) to provide a comparison of MSAT emissions for the project corridor with and without the project. Traffic volumes and average speeds during peak and non-peak hours, as well as percent of trucks and VMT were used as input data. The amount of MSAT emissions associated with project operation will be proportional to VMT, assuming that other variables, such as fleet mix, are the same between the Onsite Alternative and No Action Alternative.

Emissions of priority MSATs were estimated along the project corridor for the opening year 2015 and the horizon year 2035, as well as for the base year 2007 (existing conditions). The base year emissions are included to show the effect of control plans on MSAT emissions compared in the future opening and horizon years even with forecasted increased VMT.

Table 4-9 presents the estimated daily emissions for the analyzed roadway segments and the project corridor. As shown, a substantial decrease in MSAT emissions can be expected for the project from the base year through the horizon year even with increasing VMT. This decrease is prevalent for all of the priority MSATs, is consistent with EPA's study, and is due to the improved pollution emission performance of a modernizing fleet of all diesel-fueled vehicles. This trend is anticipated to continue throughout the planning horizon. Comparison of build and no-build emissions shows that the increase of emissions of MSATs would be lower in the horizon year 2035, and along the SR 71 studied segment, the MSATs emissions for the Onsite Alternative are less than the No Action condition. This difference is due to complete implementation of different components of Measure A by the horizon year 2035.

Table 4-9: Estimate of Project-Level DPM and MSAT Emissions along Project Segments and Corridor (grams/day)^a

Roadway Year (Scenario)	Priority MSAT					
	DPM	Benzene	1,3- Butadiene	Acetaldehyde	Acrolein	Formaldehyde
Eastbound SR 91 – between Off-Ramp to Green River Road and On-Ramp from SR 71						
Base Year (Existing)	5,245	1,522	320	899	69	2,253
Opening Year (No-Build)	3,595	855	175	519	38	1,292
Opening Year (Build)	5,009	1,194	245	725	53	1,805
Project Increment - 2015	1,414	338	70	206	15	512
Horizon Year (No-Build)	1,816	473	98	225	22	595
Horizon Year (Build)	2,484	647	134	308	30	814
Project Increment - 2035	667	174	36	83	8	219
SR 71 – North of SR 91						
Base Year (Existing)	1,235	359	75	212	16	530
Opening Year (No-Build)	733	175	36	106	8	264
Opening Year (Build)	871	207	43	126	9	313
Project Increment - 2015	138	33	7	20	1	50
Horizon Year (No-Build)	544	143	30	67	7	179
Horizon Year (Build)	360	95	20	45	4	118
Project Increment - 2035	-184	-48	-10	-23	-2	-60
Ramps						
Base Year (Existing)	458	146	28	76	6	195
Opening Year (No-Build)	489	131	23	88	5	209
Opening Year (Build)	856	223	39	147	8	351
Project Increment - 2015	366	92	17	59	4	142
Horizon Year (No-Build)	207	59	10	48	2	109
Horizon Year (Build)	369	101	17	78	3	180
Project Increment - 2035	162	41	7	30	1	71
Project Studied Corridor						
Base Year (Existing)	6,948	2,026	423	1,187	92	2,978
Opening Year (No-Build)	4,817	1,161	234	713	51	1,765
Opening Year (Build)	6,736	1,624	327	997	71	2,469
Project Increment - 2015	1,919	463	93	285	20	704
Change from 2007	-212	-402	-96	-190	-21	-509
Horizon Year (No-Build)	2,567	676	137	340	30	884
Horizon Year (Build)	3,213	842	170	431	37	1,113
Project Increment - 2035	646	167	33	90	7	229
Change from 2007	-3,735	-1,184	-253	-756	-55	-1,866

DPM – diesel particulate matter; Base year – 2007; Opening year – 2015; Horizon year – 2035

Emission values are rounded; therefore, the calculated numbers may show difference by one unit.

Calculations were conducted using UC Davis/Caltrans CT-EMFAC Model version 2.6.

^a At the time of this report, CT-EMFAC version 2.6 was the latest available model version, which was not yet updated to include the 2009 revised priority MSAT list.

Source: Parsons 2009.

In general, the project is intended to alleviate the existing and future traffic congestions and delays, but not to increase traffic volumes. Nevertheless, the improved efficiency of the roadways could attract rerouted trips, although minimal, from elsewhere in the local transportation network. This increase in VMT will lead to slightly higher MSAT emissions for the Onsite Alternative. In summary, while the project Onsite Alternative will result in a relatively small increase in localized MSAT emissions, the EPA and California vehicle and fuel regulations, coupled with fleet turnover, will result in substantial reductions over time (e.g., see Figure 4-5), which will cause region-wide MSAT levels to decline substantially when compared to the existing levels. Furthermore, there are only a few residences within 500 ft of the project corridor (WB SR 91 at the Green River Road ramps); there are no other sensitive receptors within 600 ft of the project limits.

As discussed above, the study of MSATs, dose-response effects, and modeling tools are currently in a state where accurate information is incomplete or unavailable. The current modeling tools do not provide a reliable method of predicting emissions to a receptor based on location relative to the freeway. At this time, predicting MSAT effects on or at a specific location is speculative, and further analysis of the environmental impacts on the human environment as related to MSAT emissions cannot be performed.

Climate Change/Greenhouse Gas

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels. Climate change is a change in the average weather of the earth that may be measured by changes in wind patterns, storms, precipitation, and temperature. Gases that trap heat in the atmosphere are GHGs, analogous to the way a greenhouse retains heat. The presence of GHGs in the atmosphere affects the earth's temperature. Without the natural heat-trapping effect of GHG, the earth's surface would be approximately 34°C cooler; however, human activities have increased the amount of GHGs in the atmosphere, which disrupts the natural climate change.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including CO₂, methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources, including passenger cars, light-duty trucks, other trucks, buses, and motorcycles, make up the largest source (second to electricity generation) of GHG-emitting sources. The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

Federal

Although climate change and GHG reduction is a concern at the federal level, currently there are no regulations or legislation that have been enacted specifically addressing GHG emissions reductions and climate change at the project level. The United States Environmental Protection Agency (EPA) has not promulgated explicit guidance or methodology to conduct project-level GHG analysis.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and Executive Order (EO) 13514 – Federal Leadership in Environmental, Energy, and Economic Performance.

EO 13514 is focused on reducing GHGs internally in federal agency missions, programs, and operations, but also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the CAA and that EPA has the authority to regulate GHGs. The Court held that the EPA Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

State

With the passage of several pieces of legislation, including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change.

Assembly Bill (AB) 1493, Pavley. Vehicular Emissions: Greenhouse Gases, 2002: requires the California Air Resources Board (CARB) to develop and implement regulations to reduce automobile and light-truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the EPA Administrator granted a CAA waiver of preemption to California. This waiver allowed California to implement its own GHG emission standards for motor vehicles beginning with model year 2009. California agencies will be working with federal agencies to conduct joint rule making to reduce GHG emissions for passenger cars in model years 2017-2025.

Sources of GHG in California

The GHG emissions are mostly related to fossil fuel combustion for energy use. These are driven largely by economic growth and fuel used for power generation, transportation, heating, and cooling. According to the California Energy Commission (CEC) (2006), energy-related CO₂ emissions resulting from fossil fuel combustion represents approximately 81 percent of California's total GHG emissions. Although the emissions of other GHG gases, such as CH₄ and N₂O are small, it should be noted that their global warming potential (GWP) is very high in relation to that of CO₂.

Project Analysis

According to Recommendations by the Association of Environmental Professionals (AEP) on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents (March 5, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The project is located in Riverside County, within the SCAB, which is an approximately 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. The Basin is currently designated as attainment/maintenance for the Federal CO standard, and nonattainment for Federal and State O₃ and particulate matters (PM₁₀ and PM_{2.5}).

The Onsite Alternative will add capacity and improve operating conditions at the SR 91/71 interchange. LOS will improve over the No Action Alternative, thereby reducing vehicle idling time and associated

GHG emissions; however, the project's added capacity and future demand will increase the number of vehicles on the roadway, thereby increasing GHG emissions.

The project is a transportation facility; therefore, the GHG emissions will only include the direct GHG emissions that will be generated by the construction and operational activities of the project. Construction emissions of CO₂ are temporary in nature and generally much smaller than operational emissions; therefore, these emissions were not included for analysis. Operational GHG emissions are associated with vehicle traffic along the freeway segments and ramps within the project corridor.

Project-related GHG emissions (Onsite and No Action Alternatives) were calculated using the emission factors for on-road mobile sources, annual VMT along the project roadways, and guidelines of the California Climate Action Registry Protocol and the Office of Planning and Research's Technical Advisory (OPR 2008).

Table 4-10 summarizes the annual operational GHG emissions associated with vehicle traffic along the project corridor.¹ The GHG emission estimates are provided for the baseline year 2007 (existing conditions), as well as the Onsite and No Action scenarios during the opening year 2015 and horizon year 2035. Sources considered in the emission calculations are the same as those analyzed for criteria pollutants. As shown, CO₂ emissions are the primary GHG of concern because vehicle operation does not result in appreciable amounts of other GHGs.

Table 4-10: Annual Operational GHG Emissions Associated with Project

Project Scenario/Roadway Segments	Emissions (Metric Tons per Year)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Base (Existing) Year 2007	44,027	3.3	2.6	44,916
Year 2015 – No Build Alternative	53,377	2.3	3.2	54,417
Year 2015 – Build Alternative (Opening Year)	74,663	3.2	4.5	76,125
Net Change from 2007 Baseline	30,636	-0.12	1.86	31,209
Net Change from Year 2015 No Build Alternative (Project Increment)	21,286	0.91	1.30	21,708
Horizon Year 2035 – No Build Alternative	61,836	1.2	3.6	62,978
Horizon Year 2035 – Build Alternative	77,933	1.5	4.6	79,390
Net Change from 2007 Baseline	33,906	-1.8	2.0	34,474
Net Change from Year 2035 No Build Alternative (Project Increment)	16,097	0.3	1	16,413

One metric ton equals 2,204.6 lbs

CO₂e = carbon dioxide equivalent of combined emissions of all GHGs. The CO₂-equivalent emission of each GHG is the emission rate multiplied by its corresponding global warming potential (GWP). The GWPs for CH₄ and N₂O are 21 and 310, respectively.

Source: Parsons, May 2009.

The data in Table 4-10 show that in each analyzed future year, annual operational carbon dioxide equivalent (CO₂e) emissions will increase relative to the 2007 baseline, and the Onsite Alternative emissions will increase compared to the No Action scenario; however, at the time of preparation of this report, no significance criterion has been established for transportation projects to evaluate the project GHG emission impact. Table 4-10 shows that in years 2015 and 2035 the Onsite Alternative (Build Alternative) has higher emissions than the No Action Alternative (No-Build Alternative) for those same years. In general, the project is intended to alleviate the existing and future traffic congestions and delays,

¹ The emission factors needed for the analysis were obtained from EMFAC 2007, OFFROAD 2007, and the California Climate Action Registry – General Reporting Protocol (CCAR 2007).

but not to increase traffic volumes. Nevertheless, the improved efficiency of the roadways could attract rerouted trips, although minimal, from elsewhere in the local transportation network. This increase in VMT will lead to higher GHG emissions for the Onsite Alternative.

It should be noted that while the CO₂ emissions factor does assume certain reductions in vehicle emissions due to future vehicle models operating more efficiently, the factor does not take into account additional reductions in vehicle emissions that will take place in response to AB 1493, when mobile source emission reductions are ultimately implemented through legislation.

Construction Emissions

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. 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 will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

As discussed previously, GHG emissions for transportation projects can be divided into those produced during construction and operations. Construction emissions of CO₂ are temporary in nature and generally much smaller than operational emissions; therefore, these emissions were judged sufficiently small in their likely contribution to GHGs and were not included in the analysis. For a complete discussion of emissions during construction, see discussion above on potential air quality impacts associated with the proposed Onsite Alternative.

Conclusion

As discussed above, there may be impacts to climate change associated with the project, 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 project's direct impact and its contribution on the cumulative scale to climate change. However, the Proponents are firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

Ultimately, the Project's Proponents recognize the concern that CO₂ emissions raise for climate change; however, accurate modeling of GHG emissions levels, including CO₂, at the project level is not currently possible. 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 project's contribution to climate change and greenhouse gas emissions is cumulatively considerable.

4.4.4.2 No Action Alternative

The No Action Alternative would not implement the improvements to the SR-91/SR-71 interchange, including the construction of a proposed direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 and six proposed bridge footing columns on USACE-managed land. The No Action Alternative includes improvements reasonably expected to be implemented by other projects in the study area. However, this alternative would not include construction activities on USACE-managed land; therefore, there would be no impacts associated with construction emissions on USACE-managed land. Furthermore, no changes in mobile or stationary source emissions would take place under the No Action Alternative; the roadway capacity for future traffic growth would be inadequate, resulting in slower

traffic, more congestion, and increased idling time. This would cause additional emissions on a per-mile basis.

4.4.5 Avoidance/Minimization Measures

4.4.5.1 Onsite Alternative

Most of the construction impacts to air quality are short term in duration; therefore, they will not result in adverse or long-term conditions. Implementation of the appropriate measures will reduce any air quality impacts resulting from construction activities. Compliance with applicable rules and regulations, as presented in Appendix B, is considered part of the project. In addition to the SCAQMD rules presented in Appendix B, the mitigation measures found also in Appendix B set forth a program of air pollution control strategies that will ensure that construction emissions will not exceed any applicable standard. All measures provided in Appendix B and SCAQMD Rules that are applicable to the project 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.

4.4.5.2 No Action Alternative

The No Action Alternative will have no impacts on air resources. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands. Potential air quality impacts associated with these activities would thus not occur.

4.4.6 Significance of Impacts

4.4.6.1 Onsite Alternative

With the implementation of minimization measures and accordance with applicable SCAQMD Rules, the proposed Onsite Alternative is not anticipated to significantly affect air quality and GHGs, both temporarily and permanently.

4.4.6.2 No Action Alternative

The No Action Alternative will have no impacts on air resources. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands. Potential air quality impacts associated with these activities would thus not occur.

4.5 Biological Resources

4.5.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment to wildlife species were derived from the biological reports listed below:

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

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

The above-mentioned reports analyzed biological resources within the general location of the Proposed Action, including the potential impacts to resources within USACE properties. The analysis described in this section utilizes biological data from the SR-91/SR-71 Interchange Improvement Project and these related studies to determine the potential impacts of the Proposed Action to biological resources specifically within the two USACE-managed parcels in the project vicinity.

Vegetation

Vegetation communities found on USACE-managed land at APN #101-140-006 consists 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 4-6. Vegetation on APN 101-140-006 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 (riparian), and coastal California gnatcatcher (coastal sage scrub). Due to several previous and ongoing disturbances within the project vicinity, 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 project.

USACE currently completed habitat restoration activities within the general area of the Santa Ana River, as indicated in Figure 4-7. The restoration activities were required as a result of vegetation impacts associated with the Santa Ana River Mainstem/Prado Dam Project. Table 4-11 provides a summary of the plant species within the area.

Table 4-11: Wildlife Corridor Upland Seed Mix Species

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

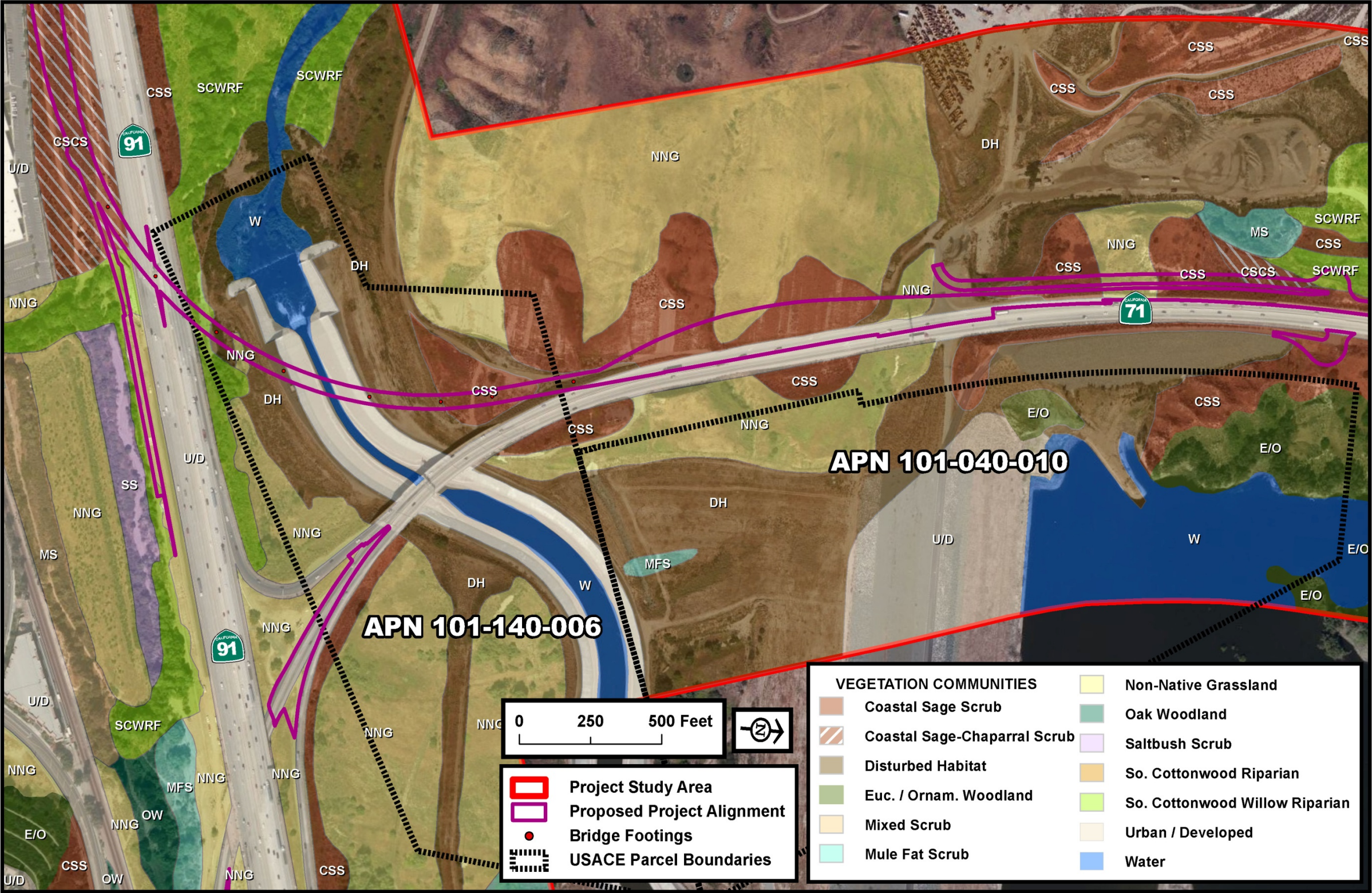


Figure 4-6:
Vegetation Communities on USACE Parcels

This page intentionally left blank.

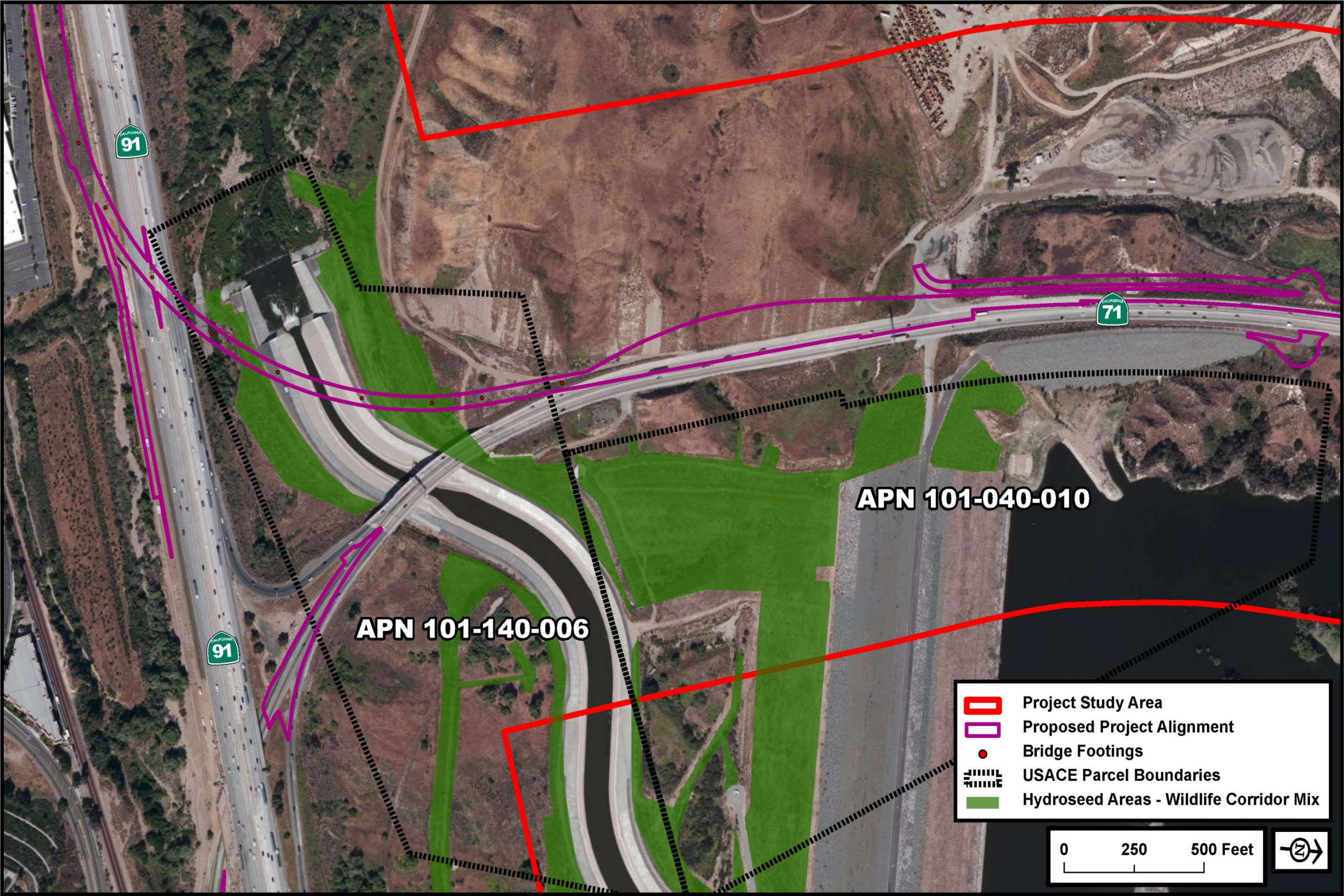


Figure 4-7:
Restoration Activities on USACE Parcels

This page intentionally left blank.

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 SR-91/SR-71 Interchange Improvement Project, the USACE-managed parcels support a resident population of small to large mammal species, including coyote and mountain lion. According to the SR-91/SR-71 Interchange Improvement Project *Natural Environmental Study* (2010), the project study 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 project study 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.

A major wildlife crossing is located directly adjacent to USACE lands at APN 101-140-006. This wildlife crossing is identified as Proposed Constrained Linkage 2 (PCL 2) by the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). PCL 2 crosses SR-91 through a large box culvert and large undercrossing, and it provides a riparian connection from the Prado Basin and Santa Ana River to the Cleveland National Forest, thus allowing movement of species. This linkage is likely to be important for mountain lion and coyote movement from the Santa Ana Mountains to Chino Hills. Because of the proximity of the wildlife crossing to USACE property, it is likely that wildlife cross USACE property.

Threatened and Endangered Species

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

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

Of the 22 sensitive wildlife species identified above, 3 of these, the Santa Ana sucker, least Bell's vireo, and coastal California gnatcatcher are federally listed as threatened/endangered species and are present within the area.

Santa Ana Sucker: The Santa Ana sucker is federally listed as threatened and a CDFG 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 project site at APN 101-140-005. Based on the California Natural Diversity Database (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 project area.

Least Bell's Vireo: The least Bell's vireo is both federally and state listed as an endangered species. Suitable habitat for this species occurs within the riparian woodlands within the project site; however, USFWS-designated critical habitat does not exist within either USACE-managed parcel. Least Bell's vireo 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 coastal California gnatcatcher is federally listed as threatened and a CDFG 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. Coastal California gnatcatcher was previously recorded as occurring within the vicinity of the proposed Interchange Project. Because suitable habitat remains undisturbed, the species has a potential to occur within the project area.

4.5.2 Onsite Alternative

The proposed Onsite Alternative consists of conducting the construction of a proposed direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71, with six proposed bridge footings constructed on USACE-managed lands.

4.5.3 No Action Alternative

Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands.

4.5.4 Potential Environmental Impacts

4.5.4.1 Onsite Alternative

Vegetation

Activities associated with construction of the Build Alternative may produce temporary impacts to vegetation on USACE parcel APN 101-140-006 due to the mobilization of heavy machinery to construct the proposed Interchange Project. 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-project conditions, which may include replanting or hydroseeding with native plant species. Furthermore, preconstruction surveys for sensitive plants will be conducted. All sensitive plants will be tagged and moved to appropriate offsite locations before grading begins. To the extent

feasible, these sensitive plants will 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 4-12 and Figure 4-8.

Table 4-12: Temporary Impacts to Vegetation within USACE Parcels

Vegetation Type	Temporary Impacts (acres)	Temporary Impacts (square feet)
Coastal Sage Scrub	1.08	47,002
Disturbed Habitat	4.59	199,856
Non-Native Grassland	4.37	190,261
Southern Cottonwood Willow Riparian Forest	0.52	22,587
Urban / Developed	2.88	125,204
Water	0.36	15,676
Total Impacts	13.8 acres	600,586 square feet

Permanent features of the Proposed Action include a flyover bridge structure and 6 bridge columns/footings, which would permanently affect vegetation within USACE-managed lands. The flyover structure is not anticipated to result in permanent impacts to vegetation on USACE-managed parcels once constructed. However, permanent impacts to vegetation are anticipated to result from the 6 bridge columns/footings. The expected permanent impacts as a result of these structures are specified in Table 4-13 and Figure 4-8. The majority of these permanent impacts would affect portions of USACE parcels already disturbed by invasive and exotic plant species.

Table 4-13: Permanent Impacts to Vegetation within USACE Parcels

Vegetation Type	Permanent Impacts (acres)	Permanent Impacts (square feet)
Coastal Sage Scrub	0.003	120.44
Disturbed Habitat	0.013	557.04
Total Impacts	0.016 acres	667.48 square feet

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. Newly planted vegetation and hydro-seeded areas within the USACE restoration area could be potentially uprooted and crushed due to construction activities; however, these activities are short term, and implementing minimization measures will ensure that the effects of the proposed Interchange Project on the USACE Restoration Project would not be adverse. 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-project conditions after construction activities have been completed.

Given the temporary nature of construction activities and lack of substantial permanent loss of vegetation, no significant adverse effects are expected to result to vegetation communities on USACE-managed parcels.

Wildlife Species

Mobilization of heavy machinery to construct the proposed interchange on USACE parcels may temporarily impact 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, and noise control measures would be implemented during the operation of heavy machinery or other noise-generating activities. All equipment will have sound-control devices, and no equipment will have an unmuffled exhaust. Heavy machinery operation will be limited to not exceed 86 A-weighted decibels (dBA) at 50 ft from the project limits from 7:00 p.m. to 7:00 a.m. Engines on construction equipment will 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 will 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 will 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 project vicinity, design of the Onsite Alternative will consider the movement requirements of local wildlife species. Proposed Constrained Linkage (PCL) 1 would be improved by utilizing an open channel instead of a traditional pipe extension, and installation of wildlife fencing to funnel into the crossing. PCL 2 would be improved through removal of existing concrete revetment, re-grading of slopes, installation of wildlife fencing, and planting of native vegetation. Also, wildlife fencing on SR 91 and SR 71 would be disturbed as little as possible, and fencing that must be removed would be replaced after construction.

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

Threatened and Endangered Species

A Biological Opinion (BO) was issued by USFWS for least Bell's vireo and coastal California gnatcatcher in June 2011 for the SR-91/SR-71 Interchange Improvement Project (Appendix C). The BO included the area within the proposed construction activities on USACE-managed parcels. According to the BO, USFWS does "not anticipate any adverse effects to vireo or gnatcatcher" as result of the Proposed Action 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 USACE-managed lands. As discussed earlier in this section, vegetation found on USACE parcels consist of riparian and coastal sage scrub, which are potentially suitable habitat for Santa Ana sucker (riparian), least Bell's vireo (riparian), and coastal California gnatcatcher (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. Also, 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.

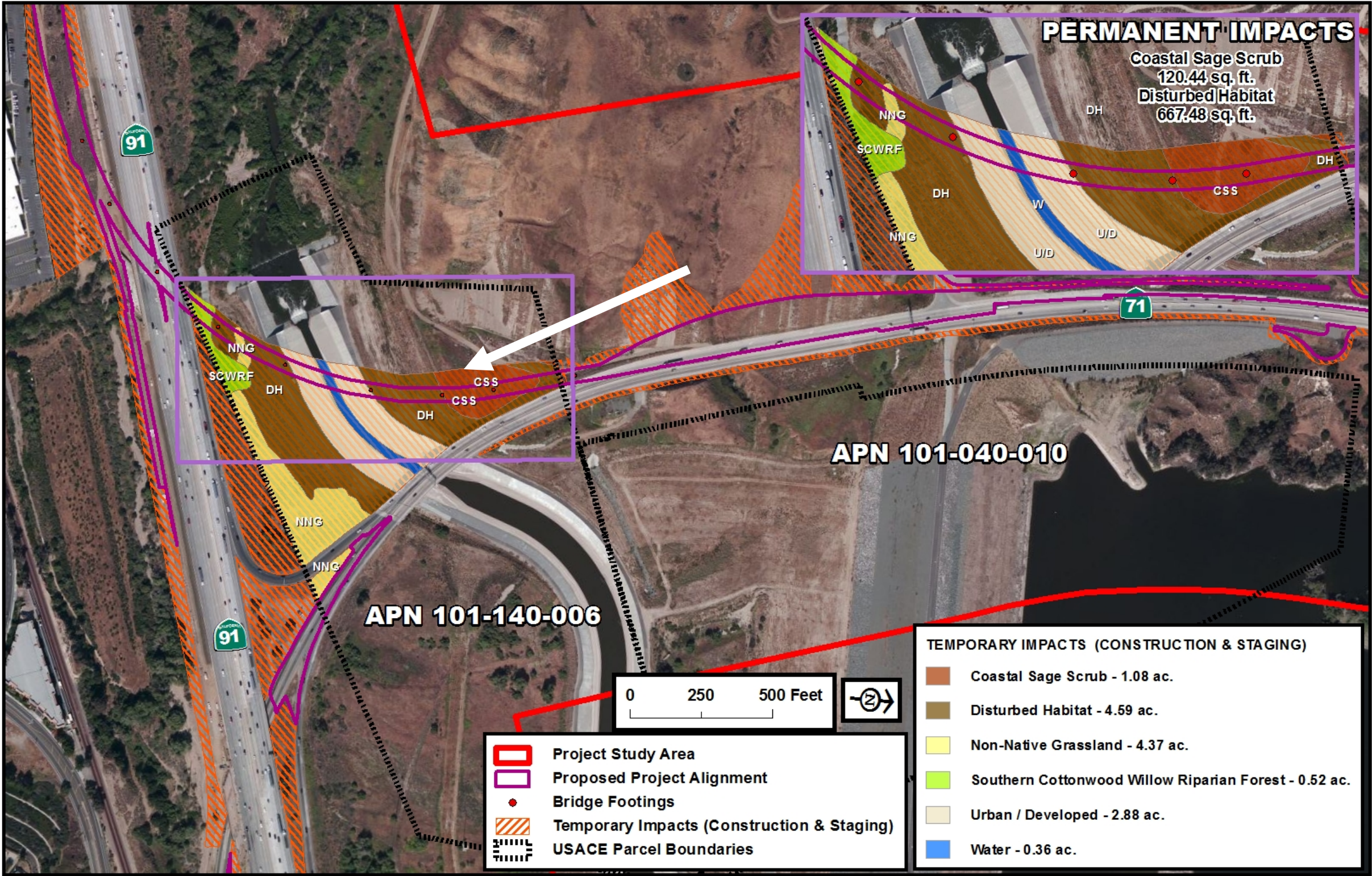


Figure 4-8:
Temporary and Permanent Impacts to Vegetation on USACE Parcels

This page intentionally left blank.

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-project conditions, night lighting re-direction from sensitive areas, and implementing noise control measures.

To further minimize impacts to avian species, the proponent will review the latest annual data from SAWA on least Bell's vireo occurrences to ensure that nesting birds have not recently been recorded within the project area. Figure 4-9 illustrates the latest information available from SAWA and the California Natural Diversity Database (CNDDDB) regarding recorded incidences of least Bell's vireo, coastal California gnatcatcher, and Santa Ana Sucker near the USACE property. SAWA recorded a total of three occurrences of Least Bell's vireo in APN 101-140-006. Additionally, as indicated in the figure, the SAWA and CNDDDB records show occurrences of Least Bell's vireo, coastal California gnatcatcher, and Santa Ana Sucker outside of USACE-managed parcels, but within close proximity of the project. 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.

Because the construction activities are temporary and minimization measures will be implemented, no direct or indirect effects to threatened and endangered species (Santa Ana sucker, least Bell's vireo, or coastal California gnatcatcher) are anticipated as part of the Proposed Action. Potential permanent effects to threatened and endangered species would be minimized through implementation of minimization measures as identified in Appendix B.

4.5.4.2 No Action Alternative

The No Action Alternative will have no impacts on biological resources. Under the No Action Alternative, the construction of a flyover bridge connector structure with six proposed bridge footing columns within USACE property would not be conducted. Potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the Proposed Action.

4.5.5 Avoidance/Minimization Measures

4.5.5.1 Build Alternative

Minimization measures BIO-1 through BIO-36 would be implemented to avoid significant effects to biological resources, as described in Appendix B.

4.5.5.2 No Action Alternative

Under the No Action Alternative, construction of the proposed Interchange Project would not be conducted on USACE-managed lands. No minimization measures would be required.

4.5.6 Significance of Impacts

4.5.6.1 Build Alternative

With the implementation of minimization measures, effects on biological resources are not anticipated to result from construction of the proposed interchange. There would be no significant effects, permanent or temporary, to biological resources if avoidance and minimization measures are implemented, as described in Appendix B.

4.5.6.2 No Action Alternative

The No Action Alternative will have no impacts on biological resources. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six

proposed bridge columns within USACE property, would not be constructed. Therefore, potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the proposed project.

4.6 Cultural Resources

4.6.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment to cultural resources were derived from the reports listed below:

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

A Historic Property Survey Report (HPSR) and an Archaeological Survey Report (ASR) were also prepared to comply with Section 106 requirements for the SR-91/SR-71 Interchange Improvement Project environmental document.

Areas of Potential Effects (APE)

The area of potential affect (APE) includes areas of direct and indirect effects, covering all anticipated project-related activities, including utility relocation, access roads, 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 project.

The APE includes USACE parcels APN 101-140-006 and 101-040-064. These parcels were included in the previously conducted cultural reports and pedestrian archaeological surveys on August 2008.

Record Searches

A cultural resources literature and records search was conducted for a 1-mile radius of the project APE, including USACE parcels. 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 Archeological Information Center (SBAIC), and the South Central Coastal Information Center (SCCIC) were conducted on 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 project study 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 project APE. Prado Dam is located partly within USACE parcel APN 101-040-010, which includes Caltrans right-of-way at SR-71.

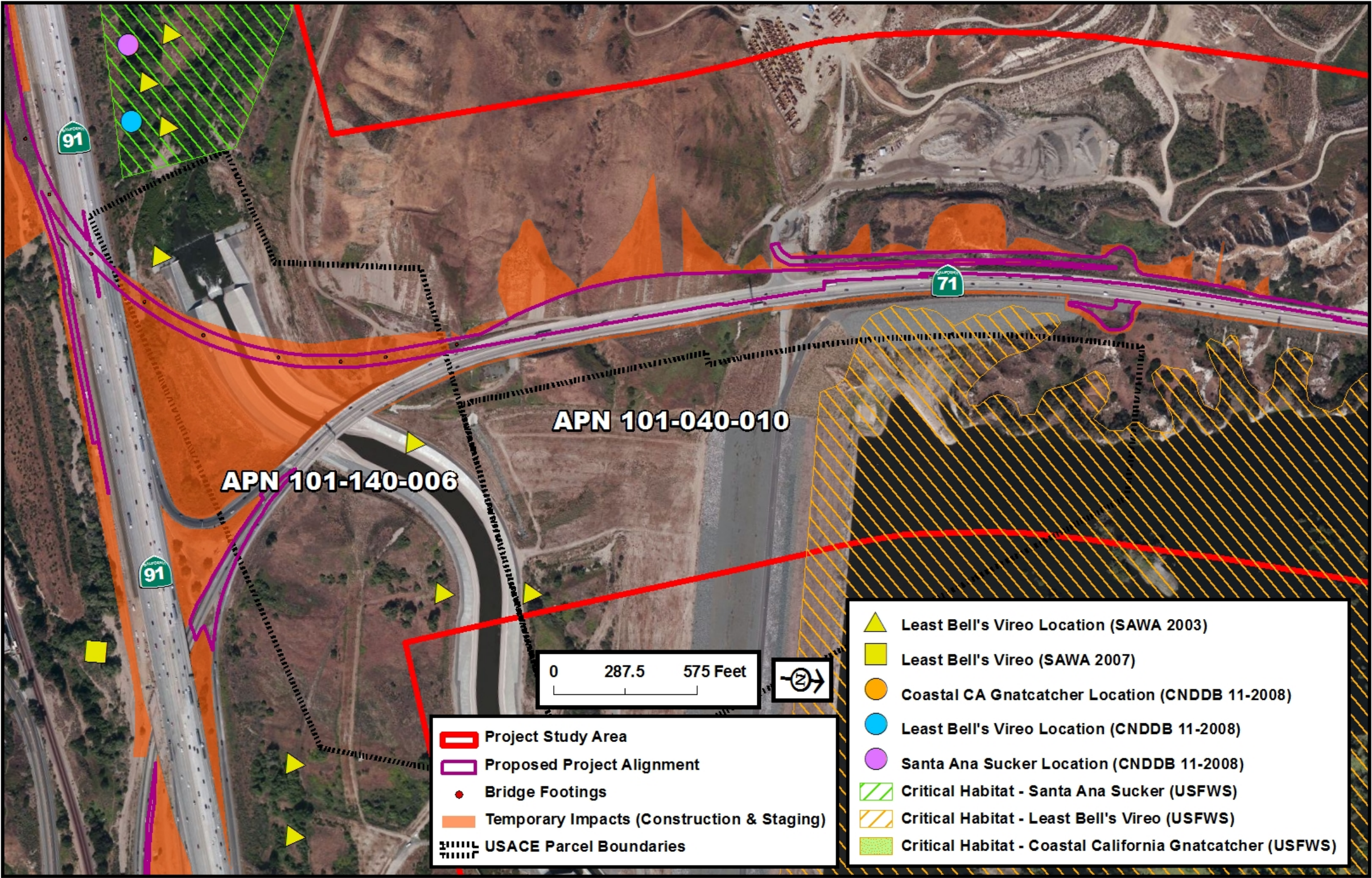


Figure 4-9:
Critical Habitat and Recent Occurrences of Threatened and Endangered Species near USACE Parcels

This page intentionally left blank.

The Prado Dam is a large built-environment property located outside the APE, except for a modern spillway that extends into the APE on APN 101-040-010. The actual NRHP status of the property is unclear, but the dam has been assumed in the past to be a Historic Property under NHPA Section 106; therefore, it is also considered a historical resource under CEQA. Our analysis exempted the spillway in accordance with the FHWA/Caltrans/SHPO/ACHP Section 106 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 project APE or USACE parcels. Established sometime between the periods of 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 will be used for project-related signage during construction. The remaining 16 cultural resources recorded near the project study area are all located north of the project APE and beyond the limits of the USACE-managed parcels being analyzed.

Other sources consulted by the CHRIS Information Centers include NRHP; National Register of Eligible Properties; the California Register of Historic Resources; 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 project 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 ft apart. Only those portions of the project APE that have not been extensively disturbed (e.g., cut embankments) or paved over by the existing SR-91 and SR-71 freeways, as well as by the 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 project APE along SR-91 were inspected either by a pedestrian survey or by car. In addition, the project 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 project APE. The only portion of the Prado Dam located within the project 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 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 project APE. The NAHC responded, stating that Native American cultural resources are

known to exist in the immediate project area. The NAHC also stated that the project 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 project. Therefore, the following individuals and organizations were contacted by letter in July 2008 during preparation of the *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 project and recommending an archaeological and Native American monitor be present during project-related 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 project construction. 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 project 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 project 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 project APE and within the USACE parcels 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 pursuant to the criteria of Attachment 4 of the Section 106 PA.

CA-RIV-5522H was recorded in 1995 and is the former location of a historical-period railroad grade. During the pedestrian survey of the project 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 project 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 will be used for this project.

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.

4.6.1.1 *Onsite Alternative*

The proposed Onsite Alternative consists of conducting the construction of a proposed direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71, with six proposed bridge footings constructed on USACE-managed lands.

4.6.1.2 *No Action Alternative*

Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands.

4.6.2 Potential Cultural Resource Impacts

4.6.2.1 *Onsite Alternative*

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

The Onsite Alternative will construct an additional bridge over the Prado Dam spillway to the west of an existing bridge. The 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. Since it is the only element of the Prado Dam historic site that will be affected by the project, the Onsite Alternative will 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 USACE property, no direct or indirect impacts on cultural resources are expected due to construction of the proposed interchange.

4.6.2.2 *No Action Alternative*

The No Action Alternative will have no impacts on cultural resources. Under the No Action Alternative, the construction of a flyover bridge connector structure with six proposed bridge footing columns within USACE property would not be conducted. Potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the Proposed Action.

4.6.3 Avoidance/Minimization Measures

4.6.3.1 *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 will 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 Coroner shall be contacted pursuant to State Health and Safety Code Section 7050.5. In accordance with PRC Section 5097.98, if the remains are thought to be Native American, notification protocols established in measure CR-2 will be followed.

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

4.6.3.2 *No Action Alternative*

The No Action Alternative will have no impacts on cultural resources. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge

columns within USACE property, would not be constructed. As a result, potential impacts associated with these activities would not occur on USACE-managed lands. Therefore, avoidance and minimization measures would not be required.

4.6.4 Significance of Impacts

4.6.4.1 Onsite Alternative

Activities associated with the Proposed Action are not anticipated to produce significant effects, permanent or temporary, to cultural resources within the project area.

4.6.4.2 No Action Alternative

The No Action Alternative will have no impacts on cultural resources. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge columns within USACE property, would not be constructed. Therefore, potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the proposed project.

4.7 Aesthetics

4.7.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment to aesthetics were derived from the reports listed below:

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

The prominent topographic features within the project area are characterized by two defining landforms: the Chino Hills to the northwest of the project 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 project area. In general, the project 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 USACE property. The project 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 impacts of the project and to identify measures to avoid, minimize, and mitigate those adverse impacts. The VIA follows the guidance contained in FHWA's *Visual Impact Assessment for Highway Projects* (FHWA 1981) for assessing visual impacts of proposed freeway improvements. The VIA studied impacts for the entire project by dividing the local area into six landscape units. Landscape units are defined as portions of the regional landscape that contains a distinct, but not necessarily homogeneous, visual character. The USACE parcels fall within three of the six total landscape units analyzed as part of this VIA. These are identified in Figure 4-10 as Landscape Units 2, 3 and 6. Because it is not possible to analyze every view within the project area, it is necessary to select key viewpoints that typify the visual effects of the project. A key view was used to represent each landscape unit. The findings of the VIA for each of these three landscape units are summarized in below.

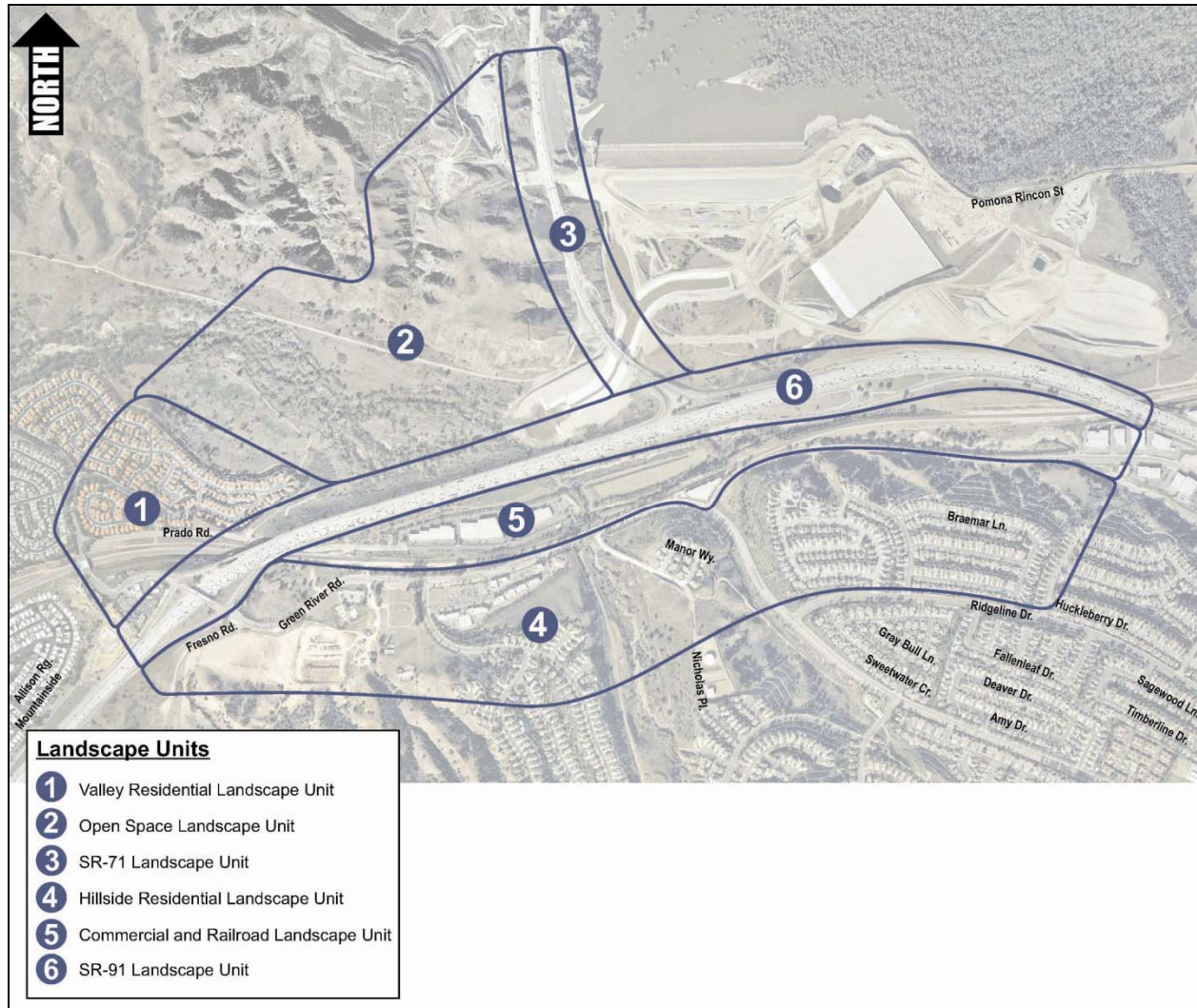


Figure 4-10:
Landscape Units within Potentially Affected Area

Landscape Unit 2 – Open Space Landscape Unit:

Orientation: The photo for this simulation (Figure 4-11) 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.

Project Features: The new flyover structure will be the most visually prominent feature created by the project; this bridge will be approximately 23 ft 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 will 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 will be moderately low.

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

Landscape Unit 3 – SR-71 Landscape Unit:

Orientation: This viewpoint (Figure 4-12) demonstrates the view south along the SB lanes of SR-71 towards the SR 91/71 interchange.

Existing Visual Character/Quality: The existing visual character is typical for a highway view within the corridor. The view includes highway paving and the toe of a large cut slope to the right of the view. This view also includes a panoramic background of the distant hills and development at the base and top of the closest slopes. The overall visual quality of the view is considered moderately high with high vividness (due to the panoramic views outward), moderate intactness, and moderately high unity.

Project Features: From this viewpoint, the new flyover will touch down in the midground, and the bridge will sweep to the right at the base of the hill backdrop. The existing roadway will appear wider because the NB and SB lanes will be pushed away from the center of the freeway to accommodate the new ramp lanes connecting to the center of the current alignment. The toe of existing cut slopes will be removed to accommodate the new roadway alignments, and a retaining wall will be added.

Changes to Visual Character: The addition of the new flyover structure, while noticeable in the mid-ground, will not dominate this view because it will sit low against the hillside backdrop. The on-corridor views will include more paving than the existing view, with the NB and SB lanes pushed outward and the new ramp touching down in the center. The retaining walls will be the biggest change to the visual environment, creating a hard surface where currently there are sparsely vegetated slopes.

Anticipated Viewer Response: Freeway viewers, especially the frequent traveler on SR-71, will be sensitive to the changes created by the bridge and retaining walls. The wall and the additional paving area of the road will likely be the elements that are most noted. The bridge, in this view, will not affect the panoramic view of the hillside across the valley from this viewpoint.

Resulting Visual Impact: The visual impact of the on-corridor views will likely decrease due to the additional hard surfaces created by the project, including roadway paving and retaining walls, which will be very noticeable to the on-corridor viewer; however, the visual quality of the view out from the corridor will not expected to change significantly. The visual quality of the on-corridor views will decrease with moderately low intactness and moderate unity. However, vividness will remain high.

Landscape Unit 6 – SR-91 Landscape Unit:

Orientation: This photograph (Figure 4-13) is taken from the perspective of the WB driver on SR-91 looking west.

Existing Visual Character/Quality: The existing visual character of the corridor is typical for that of a freeway. The most prominent element in this view includes the roadway paving, median barrier, and signage. Because the roadway slopes downward to a low point in the landscape and then up to a ridge on the other side of the valley, drivers have a panoramic view from the road of the valley and the surrounding hills. The overall visual quality of the view is moderately high, with moderately high vividness (due to the views out from the corridor), and with moderate intactness and moderately high unity.



Figure 4-11:
Open Space Landscape Unit with Mitigation at 5 Years Post-Completion
(northwest of SR 91/71 interchange looking south)

This page intentionally left blank.

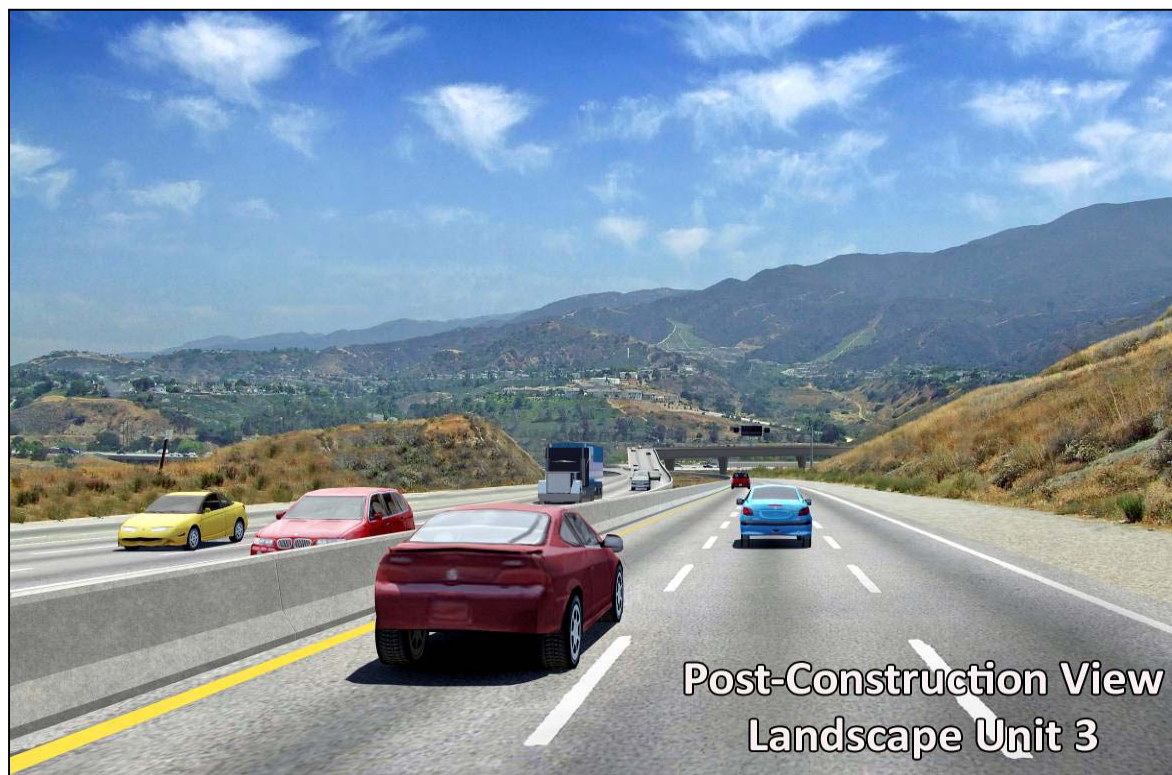


Figure 4-12:
SR-71 Landscape Unit with Mitigation at 5 Years Post-Completion
(North of project traveling southbound on SR-71)

This page intentionally left blank.

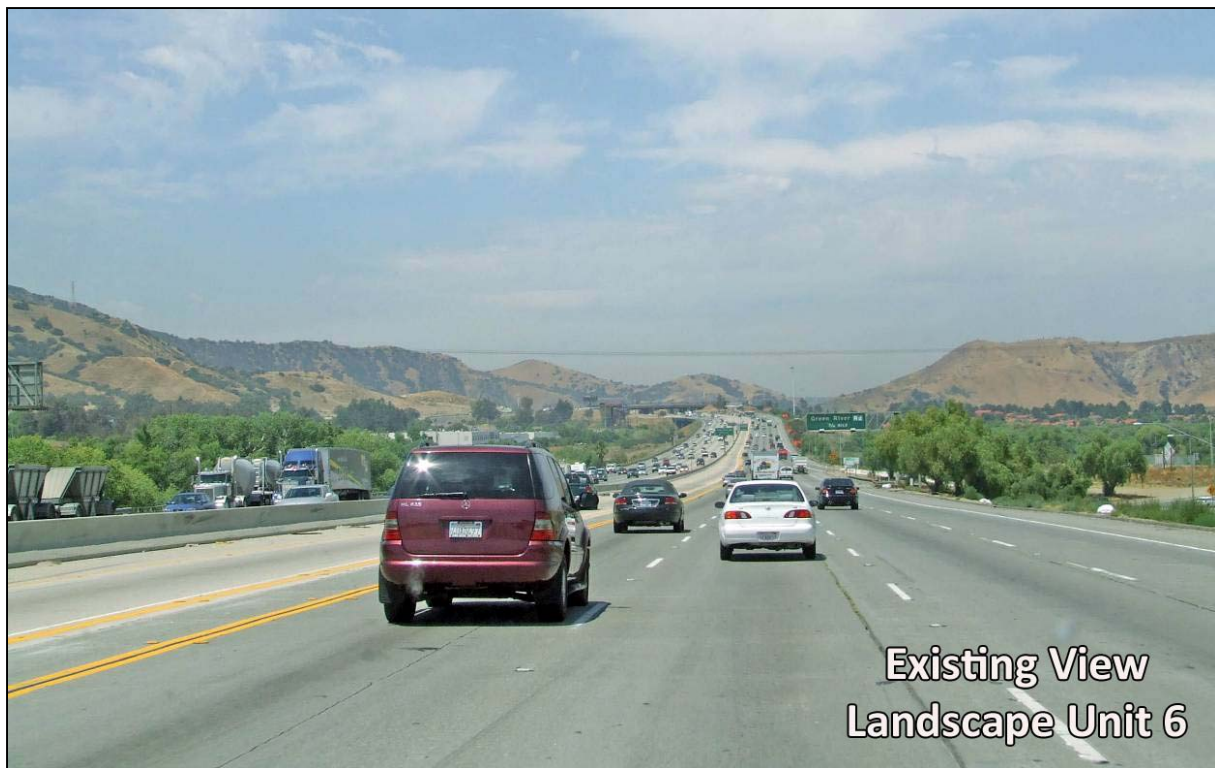


Figure 4-13:
SR-91 Landscape Unit with mitigation at 5 years post-completion
(East of project traveling westbound on SR-91)

This page intentionally left blank.

Project Features: The dominant project feature within this view will be the new flyover structure, which will be seen as a mid- to background view from this viewpoint. The new EB on-ramp from the Green River Road interchange will likely be obscured by the new bridge.

Changes to Visual Character: The greatest change to the visual environment will be the inclusion of the new bridge. The height of the bridge will place it below the top of the hills in the background of the view, so it should not have a substantial impact on the views out from the corridor.

Anticipated Viewer Response: Freeway viewers, especially the frequent traveler on SR-91, will be sensitive to the changes created by the bridge. However, from this viewpoint the bridge will not affect the panoramic view of the hillside across the valley for freeway viewers.

Resulting Visual Impact: While the addition of the flyover will be a noticeable addition to the current view, the new bridge will not alter the existing moderately high visual quality. Vividness and unity will remain moderately high, and intactness will remain moderate.

4.7.2 Onsite Alternative

The proposed Onsite Alternative consists of conducting the construction of a proposed direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71, with six proposed bridge footings constructed on USACE-managed lands.

4.7.3 No Action Alternative

Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands.

4.7.4 Potential Aesthetic Impacts

4.7.4.1 Onsite Alternative

The construction phase of the project will result in temporary visual impacts. The presence of construction vehicles and equipment will temporarily degrade the visual quality of USACE-managed parcels and the project site. This impact is temporary, will cease once construction is complete, and is not considered to be a significant adverse effect.

It is anticipated that the Onsite Alternative will 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 USACE parcels than in others. Mitigation measures as detailed in Appendix B are recommended to avoid and minimize these affects to greatest extent practicable. With their implementation, the visual impacts of the project will be reduced and will not result in a substantial adverse change in overall visual quality for the area.

Specific changes to the visual environment for each landscape unit on USACE-managed parcels are discussed below:

Open Space Landscape Unit:

Within the Open Space Landscape Unit, the changes associated with the new flyover structure will 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 will be prominent in the mid- to foreground within this area of USACE parcels.

Few people are located in the landscape unit; however, a proposed trail along the Santa Ana River that will ultimately traverse this area, which may increase potential viewers. There appear to be no trails associated with Chino Hills State Park that will 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 will be prominent in the mid- to foreground views, it is unlikely to have a substantial visual impact due to the small number of

potential viewers within the unit. Also, 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.

SR-71 Landscape Unit:

For the SR-71 Landscape Unit, the most visually prominent feature of the Proposed Action will be new retaining walls on NB and SB sides of the freeway. The walls along the SB side of the freeway will be the largest, with an anticipated maximum height of 20 ft.

The new flyover structure will also be visually prominent in this landscape unit. For SB travelers, the structure will be seen in the mid- to foreground as while passing under the bridge. The NB travelers will approach the structure from the other side (the outside curve of the bridge rather than the inside) and will have a more limited view of the flyover than those traveling SB. The improvements along the EB Green River Road on-ramp to SR-91 will likely be less noticeable in this landscape unit compared to other units.

Because many of the project elements already exist within the SR-71 corridor, it is unlikely that the freeway users will be sensitive to the addition of a new bridge within the interchange. Furthermore, the new flyover structure will be a mid-ground element amongst the existing backdrop of the developed and undeveloped hillside land to the south. The bridge is not anticipated to obscure any scenic vistas. Instead, it is expected to blend into the lines and textures created by the development patterns of the hillsides on the opposite side of the valley.

SR-91 Landscape Unit:

The new flyover structure will be the most prominent feature of the project in the SR-91 Landscape Unit. Because the flyover is located at a low point in the landscape, the EB and WB traffic on SR-91 will have views of the structure. The flyover will move from background to foreground as drivers approach it, and it will be at a visual low point in the landscape to travelers on the freeway. Such flyovers are common at freeway-to-freeway interchanges, so the addition of the new structure will not be anticipated to substantially alter the existing visual quality or character for the SR-91 traveler. Therefore, the Onsite Alternative is not expected to change the overall visual quality of the SR-91 Landscape Unit.

4.7.4.2 No Action Alternative

The No Action Alternative will have no impacts on aesthetics. Under the No Action Alternative, the construction of a flyover bridge connector structure with six proposed bridge footing columns within USACE property would not be conducted. Potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the Proposed Action.

4.7.5 Avoidance/Minimization Measures

4.7.5.1 Onsite Alternative

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

4.7.5.2 No Action Alternative

The No Action Alternative will have no impacts on aesthetics. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge columns within USACE property, would not be constructed. As a result, potential impacts associated with these activities would not occur on USACE-managed lands. Therefore, avoidance and minimization measures would not be required.

4.7.6 Significance of Impacts

4.7.6.1 Onsite Alternative

The Proposed Action is not anticipated to produce significant effects, permanent or temporary, to aesthetics within the project area.

4.7.6.2 No Action Alternative

The No Action Alternative will have no impacts on aesthetics. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge columns within USACE property, would not be constructed. Therefore, potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the proposed project.

4.8 Noise

4.8.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment to noise were derived from the reports listed below:

- Caltrans. June 2011. *SR 91 and SR 71 Interchange Improvement Project Initial Study and Mitigated Negative Declaration*, City of Corona, Riverside County, California.
- Caltrans. October 2010. *SR 91 and SR 71 Interchange Improvement Project Noise Study Report*, City of Corona, Riverside County, California.

The above-mentioned reports analyzed potential noise impacts within the general location of the proposed Onsite Alternative; however, the reports prepared for the SR-91/SR-71 Interchange Improvement Project do not specifically analyze the potential noise impacts related to the Onsite Alternative. Information and data from the aforementioned reports were utilized to independently analyze and determine the impacts for the proposed Onsite Alternative.

Existing noise levels within the vicinity of the Onsite Alternative consist primarily of traffic noise from the SR-91 and SR-71 roadways and from nearby train tracks, residential, recreational, commercial, retail, and industrial land uses. 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 during the peak hour range from 61 to 73 dBA.

Noise Standards

NEPA and CEQA provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a project will have a noise impact. If a project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless such measures are not feasible.

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA (and the Department, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact will occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for

residences (67 A-weighted decibels [dBA]) is lower than the NAC for commercial areas (72 dBA). Table 4-14 lists the NAC for use in the NEPA-23 CFR 772 analysis.

Table 4-14: Noise Abatement Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level, dBA $L_{eq}(h)$	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above.
D	–	Undeveloped lands.
E	52 Interior	Residence, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: 23 CFR Part 772, 2004.

In accordance with the Department's *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, August 2006*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12-dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that will likely be incorporated in the project.

The Department's *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5-dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include resident's acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, newly constructed development versus development pre-dating 1978, and the cost per benefited residence.

4.8.2 Onsite Alternative

The proposed Onsite Alternative consists of conducting the construction of a proposed direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71, with six proposed bridge footings constructed on USACE-managed lands.

4.8.3 No Action Alternative

The No Action Alternative would not produce noise-related impacts. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands. Potential impacts associated with these activities would not occur. The No Action Alternative would not meet the purpose and need of the proposed project.

4.8.4 Potential Noise Impacts

4.8.4.1 Onsite Alternative

Temporary Impacts – Construction Equipment Noise

Temporary noise impacts will be related to construction activities. Noise at the construction sites, including USACE-managed land, will be intermittent with varying intensity. The degree of construction noise will also vary depending on the location and type of construction activities. Long-term noise exposure descriptors will be difficult to quantify because of the intermittent nature of construction noise. Highway construction will be accomplished in several different phases.

During the construction phases of the project, 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 is regulated by Caltrans' Standard Specifications Section 14-8.02, "Noise Control" and also by Standard Special Provision S5-310. 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 will be edited specifically for this project during the PS&E phase.

Table 4-15 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 ft. Noise produced by construction equipment will be reduced over distance at a rate of approximately 6 dB per doubling of distance. No adverse noise impacts from construction are anticipated because construction will be conducted in accordance with Caltrans' Standard Specifications and will be short term, intermittent, and dominated by local traffic noise. Temporary adverse effects related to construction noise on USACE-managed land are not anticipated and measures are proposed to minimize construction noise.

Permanent Impacts

Based on the result of project noise analysis, predicted noise levels will approach or exceed the NAC. The noise abatement analysis for each receptor is described in detail below. Locations of proposed noise walls are shown in Figures 4-14 through 4-18. With the Onsite Alternative, the traffic noise modeling results indicate that future predicted design year traffic $L_{eq(h)}$ at Receivers R13 through R16, which represent seven single-family residences on the north side of SR 91, will be 66 dBA. When combined with rail

Table 4-15: 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.

noise, there will be no significant increase of the future design year noise level. Because the predicted noise level approaches the NAC of 67 dBA at these residences, traffic noise abatement must be

considered. There is an existing 4-ft to 8-ft-high private property wall in this area, and some of the houses are depressed. Detailed modeling analysis was conducted for a noise barrier, Soundwall S63, as shown in Table 4-16. This noise barrier will be located on private property just outside of the existing wall of the back-yard areas of these residences. Barrier heights in the range of 6 ft to 16 ft were evaluated in 2-ft increments. Table 4-16 summarizes the results of the barrier analysis for each receiver in this area. As shown in Table 4-16, barrier heights of up to 16 ft were investigated, but they will not achieve the Department's required 5-dB reduction; therefore, a barrier at this location will not be justified or feasible.

Traffic noise levels at Receivers R21, R22, and R23, which represent five single-family residences on the south side of SR 91, predicted $L_{eq(h)}$ for the future design year will range from 69 to 71 dBA. Two houses identified with Receptors R20 and R20A have existing glass walls, and their frequent outdoor use areas are not impacted by the traffic noise. When combined with rail noise, there will be an increase of zero to 1 dB in the future design year noise level. The results also indicate a predicted increase of zero to 2 dB between the existing conditions and the future design year conditions. Because the predicted noise level exceeds the NAC of 67 dBA at these residences, traffic noise abatement must be considered. Detailed modeling analysis was conducted for a noise barrier, Soundwall S98. This noise barrier will be located on private property in the back-yard areas of these residences. Barrier heights in the range of 6 ft to 16 ft were evaluated in 2-ft increments.

Traffic noise levels at Receivers R24 through R30, which represent ten single-family residences on the south side of SR 91, predicted $L_{eq(h)}$ for the future design year will range from 67 to 72 dBA. When combined with rail noise, there will be an increase of zero to 1 dB in the future design year noise level. The results also indicate a predicted increase of 2 to 3 dB between the existing conditions and the future design year. Because the predicted noise level exceeds the NAC of 67 dBA at these residences, traffic noise abatement must be considered. Detailed modeling analysis was conducted for a noise barrier, Soundwall S110. This noise barrier will be located on private property in the back-yard areas of these residences. Barrier heights in the range of 6 ft to 16 ft were evaluated in 2-ft increments.

Traffic noise levels at Receivers R32 through R38, which represent nine single-family residences on the south side of SR 91, predicted $L_{eq(h)}$ for the future design year will range from 67 to 71 dBA. When combined with rail noise, there will be an increase of zero to 1 dB in the future design year noise level. The results also indicate a predicted increase of zero to 1 dB between the existing conditions and the future design year. Because the predicted noise level exceeds the NAC of 67 dBA at these residences, traffic noise abatement must be considered. Detailed modeling analysis was conducted for a noise barrier, Soundwall S114. This noise barrier will be located on private property in the back-yard areas of these residences. Barrier heights in the range of 6 ft to 16 ft were evaluated in 2-ft increments.

There are three areas (R17A, R18, and R19) containing a recreational land use, a religious facility (future development), and an adult day health-care facility that will be impacted by the project, but standard noise abatement techniques were not identified. The receiver locations for these areas and the reason(s) for feasible abatement were not identified.

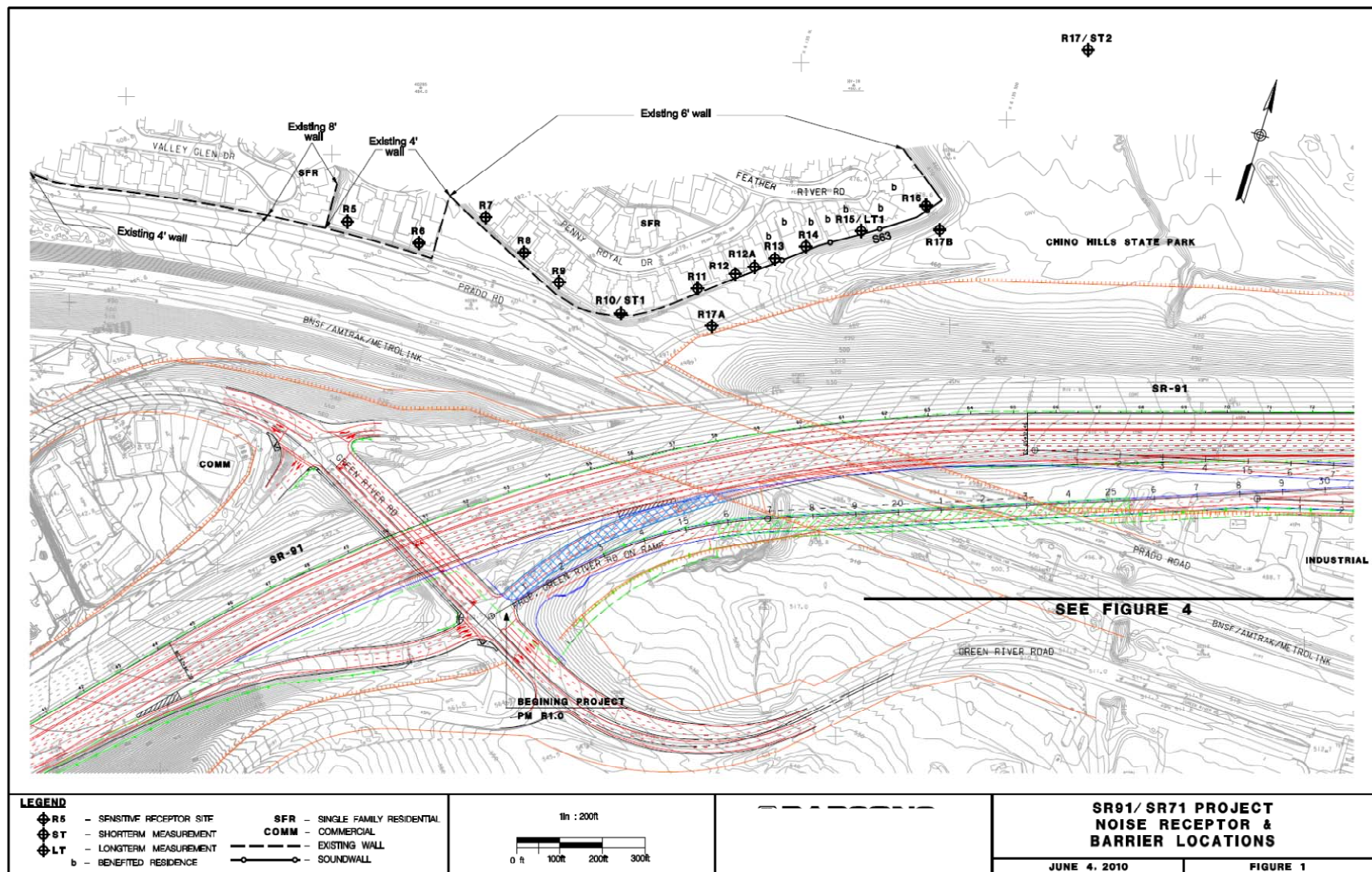


Figure 4-14:
Noise Receptor and Barrier Locations

This page intentionally left blank.

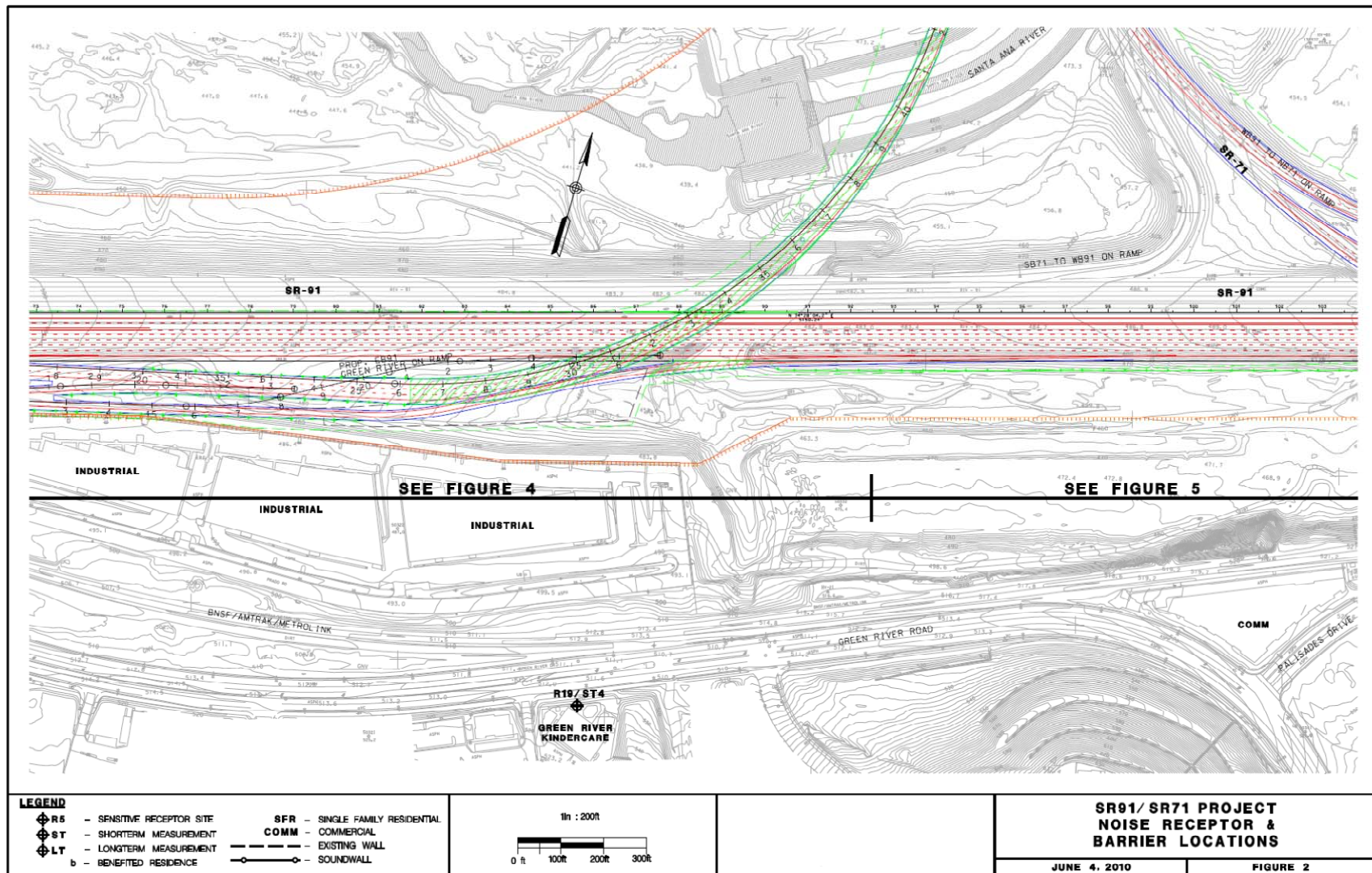


Figure 4-15:
Noise Receptor and Barrier Locations

This page intentionally left blank.

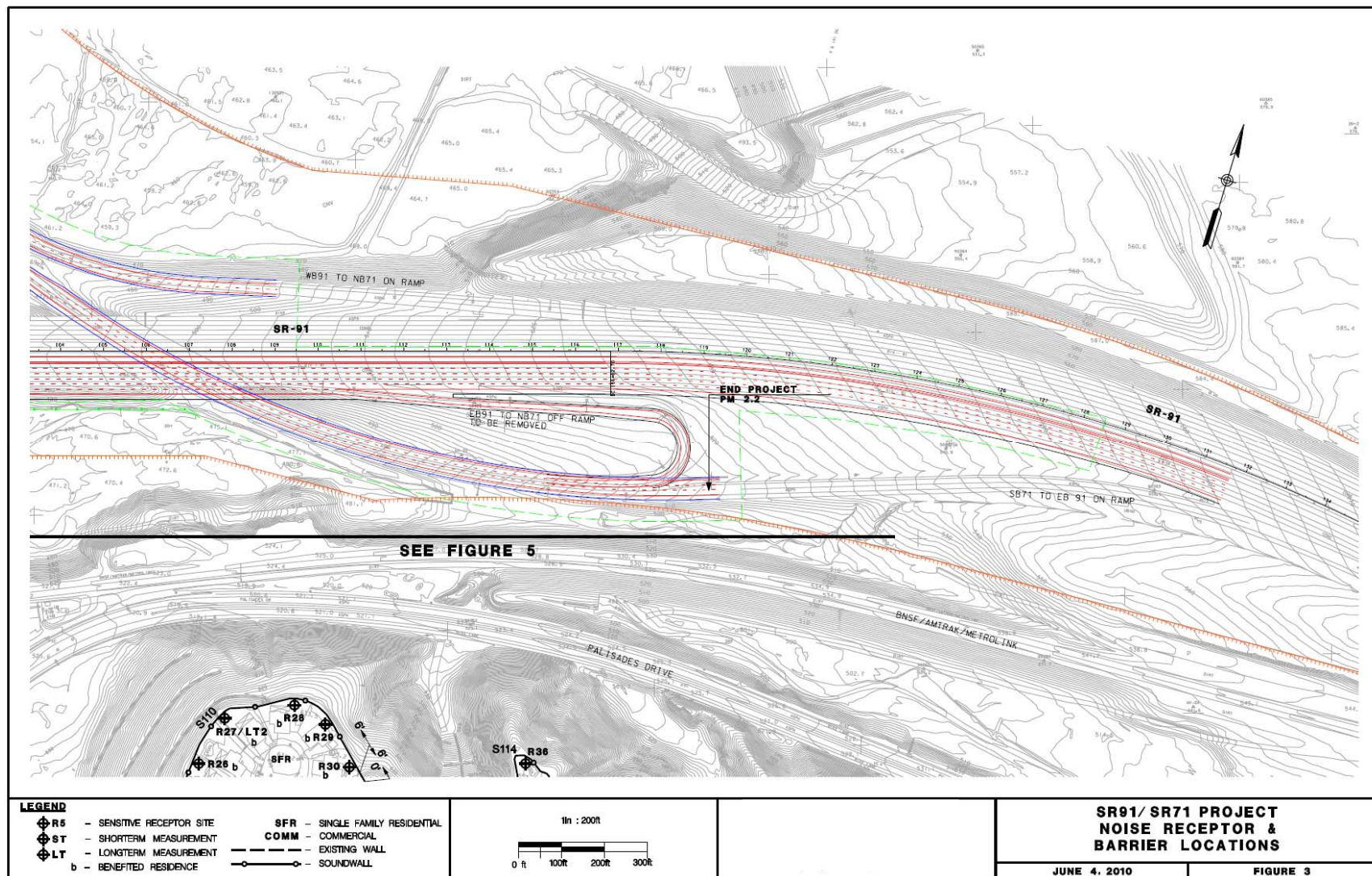


Figure 4-16:
Noise Receptor and Barrier Locations

This page intentionally left blank.

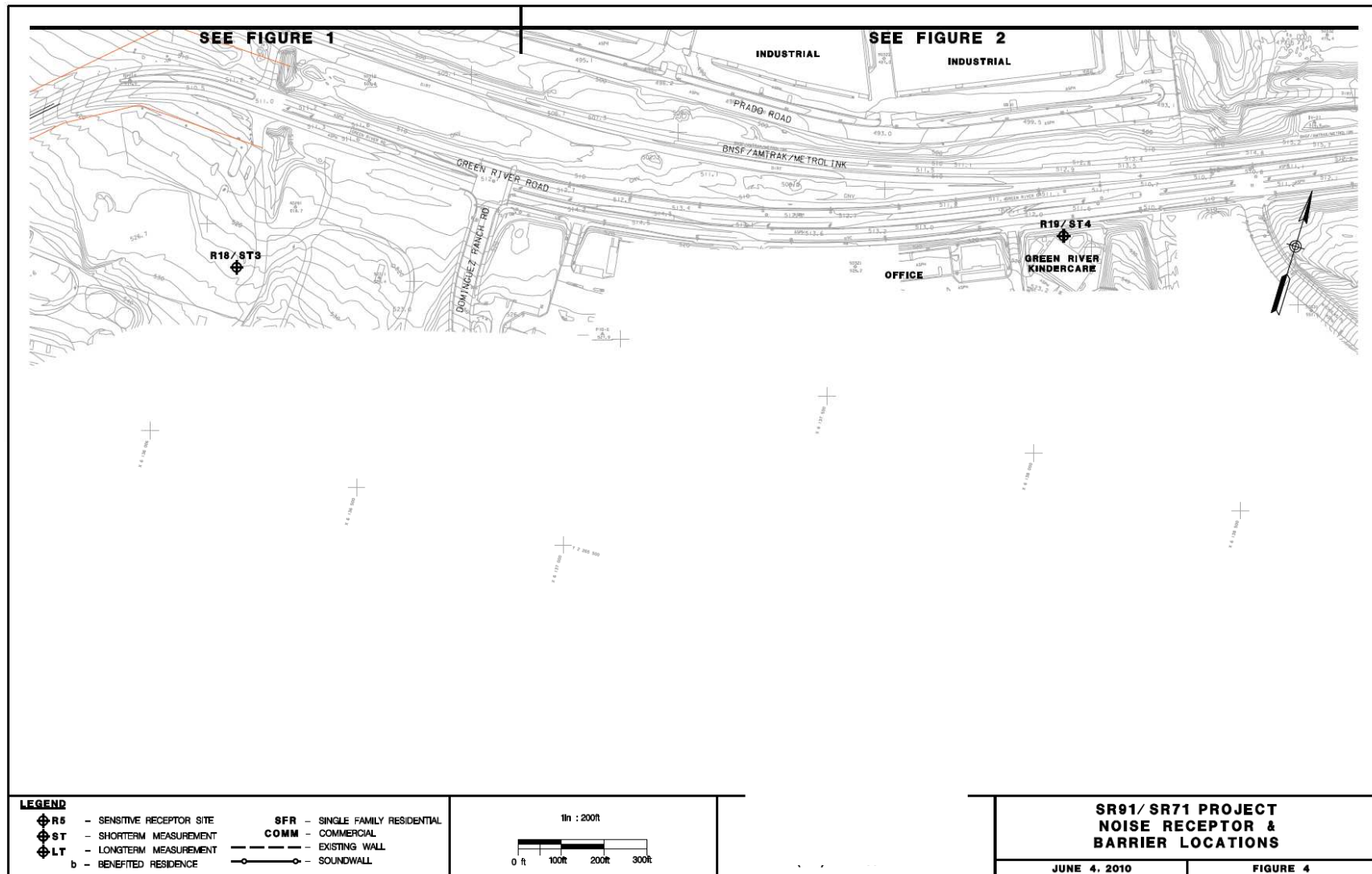


Figure 4-17:
Noise Receptor and Barrier Locations

This page intentionally left blank.

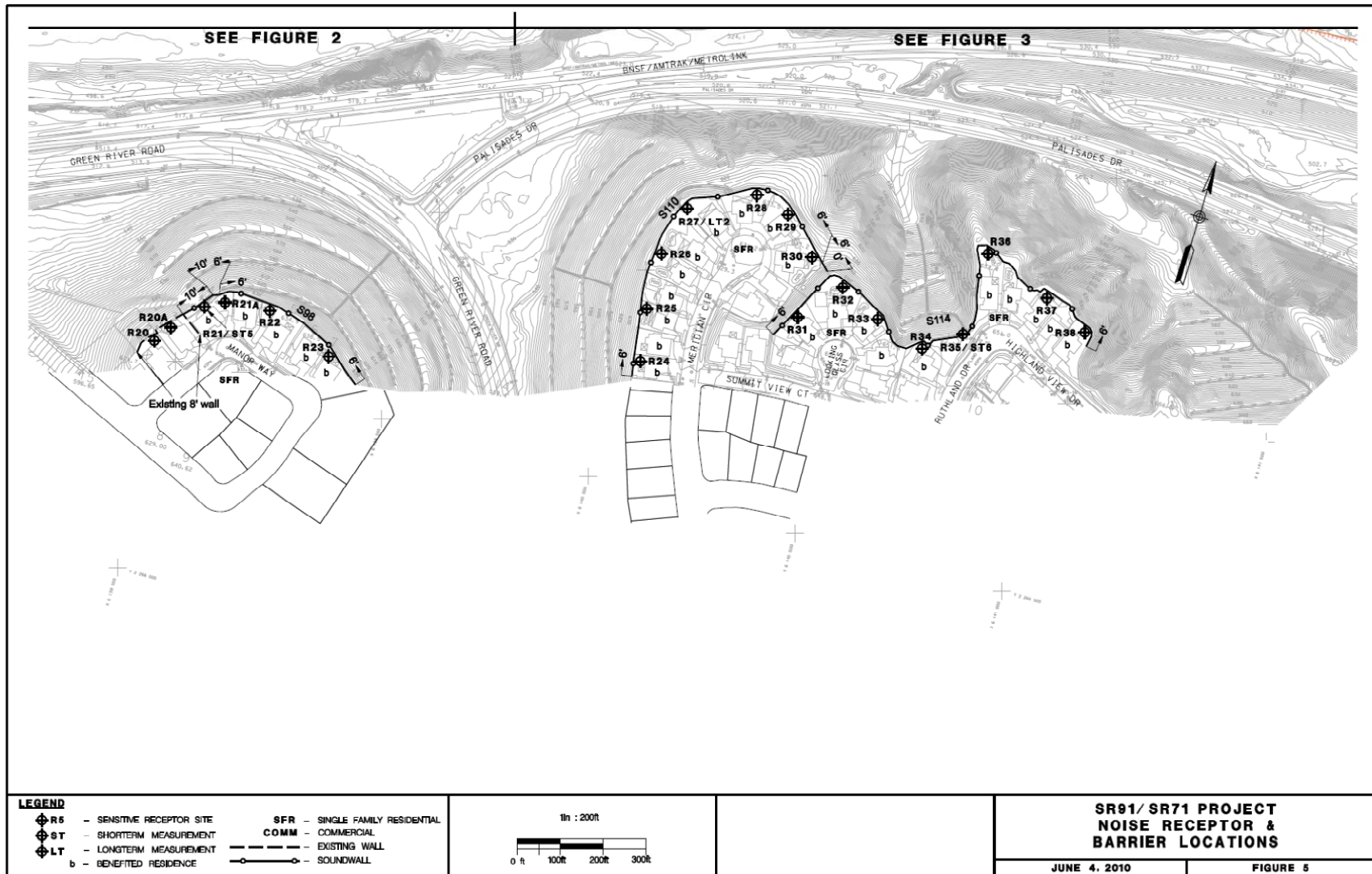


Figure 4-18:
Noise Receptor and Barrier Locations

This page intentionally left blank.

Table 4-16: Roadway Traffic and Train Noise Levels

Receiver I.D.	Barrier ID. / Location / Figure No.	Land Use ²	Number of Dwelling Units	Existing Noise Level Leq(h), dBA ^{1,3}	Design Year Train Noise Level without Barrier Leq(h), dBA	SR-91 / SR-71 Interchange Future Worst Hour Noise Levels - Leq(h), dBA ^{1,6}																										
						Design Year Traffic Noise Level without Project Leq(h), dBA ¹	Design Year Train + Traffic Noise Level without Project Leq(h), dBA ¹	Design Year Traffic Noise Level with Project Leq(h), dBA ¹	Design Year Train + Traffic Noise Level with Project Leq(h), dBA ¹	Design Year Traffic Noise Level without Project Minus Existing Conditions Leq(h), dBA	Design Year Traffic Noise Level with Project minus No Project Conditions Leq(h), dBA	Design Year Train + Traffic Noise Level with Project minus No Project Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type ⁴	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR)																	
															6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
															Train + Traffic Noise Leq(h)	I.L.	NBR	Train + Traffic Noise Leq(h)	I.L.	NBR	Train + Traffic Noise Leq(h)	I.L.	NBR	Train + Traffic Noise Leq(h)	I.L.	NBR	Train + Traffic Noise Leq(h)	I.L.	NBR	Train + Traffic Noise Leq(h)	I.L.	NBR
R 5 ^W	--	SFR	2	54 ^{E,7}	64	60	66	60	66	6	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 6 ^W	--	SFR	3	56 ^{E,7}	65	61	66	61	66	5	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 7 ^W	--	SFR	3	58 ^{E,7}	62	62	65	62	65	4	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 8 ^W	--	SFR	3	58 ^{E,7}	63	62	66	63	66	4	1	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 9 ^W	--	SFR	2	58 ^{E,7}	64	62	66	62	66	4	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 10 ^W	--	SFR	3	61 ^{M,ST1,7}	62	65	67	65	67	4	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 11 ^W	--	SFR	3	58 ^{E,7}	58	62	64	62	64	4	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 12 ^W	--	SFR	2	66 ^E	57	65	66	65	66	-1	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 12A ^W	--	SFR	1	62 ^E	56	62	63	62	63	0	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 13 ^W	S63 / Private	SFR	1	67 ^E	55	66	66	66	66	-1	0	0	B (67)	A/E	66	0	0	62 ^T	4	0	61 ^R	5	1	60	6	1	60	6	1	60		
R 14 ^{W,C}	Property /	SFR	2	66 ^E	54	66	66	66	66	0	0	0	B (67)	A/E	66	0	0	61 ^T	5	2	58 ^{R,5}	8	2	56	10	2	55	11	2	54		
R 15 ^W	Fig. 1	SFR	2	67 ^{M,LT1}	52	66	66	66	66	-1	0	0	B (67)	A/E	66	0	0	60 ^T	6	2	58 ^{R,5}	8	2	55	11	2	54	12	2	53		
R 16 ^W	--	SFR	2	66 ^E	52	66	66	66	66	0	0	0	B (67)	A/E	66	0	0	62 ^T	4	0	60 ^R	6	2	57	9	2	56	10	2	55		
R 17A	--	REC	1	69 ^E	62	69	69	69	69	0	0	0	B (67)	A/E	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 17B	--	REC	1	65 ^E	52	65	65	65	65	0	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 17	--	REC	1	63 ^{M,ST2}	0	63	63	63	63	0	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		

Notes:

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.

2 - Land Use: SFR - single-family residence; REC - recreational/park; RLG - religious facility; DHC - day health care facility

3 - M - Measured noise level; STxx or LTxx - measurement site number; CAL - Calibration site; E - Estimated from No-Build alternative and measurement sites.

4 - S = Future noise conditions result in substantial increase (12 dBA or more); A/E = Future noise conditions approach or exceed Noise Abatement Criteria.

5 - Barrier height is needed to meet requirements at adjacent receptors.

6 - Street traffic noise from the freeway only; other local traffic noise sources are not included. Train noise is from BNSF, Amtrak, and Metrolink operations and are included where described in table headings.

7 - Existing Noise Level does not include train noise on this group of receptors since no train activity occurred during the short-term measurement.

R - Minimum height to meet feasibility requirements of the Caltrans' Noise Abatement Criteria.

T - Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.

C - Critical design receptor.

W - Includes the benefits of an existing property wall.

Source: Parsons 201-.

Table 4-16: Roadway Traffic and Train Noise Levels (Cont'd)

Receiver I.D.	Barrier I.D. / Location / Figure No.	Land Use ²	Number of Dwelling Units	Existing Noise Level Leq(h), dBA ^{1,3}	Design Year Train Noise Level without Barrier Leq(h), dBA	SR-91 / SR-71 Interchange Future Worst Hour Noise Levels - Leq(h), dBA ^{1,6}																										
						Design Year Traffic Noise Level without Project Leq(h), dBA ¹	Design Year Train + Traffic Noise Level without Project Leq(h), dBA ¹	Design Year Traffic Noise Level with Project Leq(h), dBA ¹	Design Year Train + Traffic Noise Level with Project Leq(h), dBA ¹	Design Year Traffic Noise Level without Project Minus Existing Conditions Leq(h), dBA	Design Year Traffic Noise Level with Project minus No Project Conditions Leq(h), dBA	Design Year Train + Traffic Noise Level with Project minus No Project Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type ⁴	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR)																	
															6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
															Train + Traffic Noise Leq(h)	I.L.	NBR	Train + Traffic Noise Leq(h)	I.L.	NBR	Train + Traffic Noise Leq(h)	I.L.	NBR	Train + Traffic Noise Leq(h)	I.L.	NBR	Train + Traffic Noise Leq(h)	I.L.	NBR	Train + Traffic Noise Leq(h)	I.L.	NBR
R 18	-	RLG	1	64 ^{M,ST3}	59	67	67	68	68	3	1	1	B (67)	A/E	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 19	-	DHC	1	73 ^{M,ST4}	67	73	74	73	74	0	0	0	B (67)	A/E	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 20 ^W	-	SFR	1	58 ^E	49	59	59	60	60	1	1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 20A ^W	-	SFR	1	59 ^E	45	60	60	61	61	1	1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 21	S98 / Private Property / Fig. 5	SFR	1	70 ^{M,ST5}	61	70	70	71	71	0	1	1	B (67)	A/E	70	1	0	69 ^T	2	0	63 ^R	8	1	59	12	1	57	14	1	56	15	1
R 21A ^C		SFR	0	69 ^E	61	70	71	71	71	1	1	0	B (67)	A/E	63 ^{R,T}	8	0	62	9	0	59	12	0	57	14	0	56	15	0	55	16	0
R 22		SFR	2	69 ^E	60	70	70	70	71	1	0	1	B (67)	A/E	62 ^{R,T}	9	2	60	11	2	58	13	2	56	15	2	56	15	2	55	16	2
R 23		SFR	2	69 ^E	59	69	69	69	69	0	0	0	B (67)	A/E	62 ^{R,T}	7	2	59	10	2	58	11	2	57	12	2	56	13	2	55	14	2
R 24	S110 / Private Property / Fig. 5	SFR	2	64 ^E	58	66	67	67	67	2	1	0	B (67)	A/E	59 ^{R,T}	8	2	57	10	2	56	11	2	55	12	2	55	12	2	54	13	2
R 25		SFR	2	65 ^E	59	67	67	67	68	2	0	1	B (67)	A/E	59 ^{R,T}	9	2	58	10	2	56	12	2	56	12	2	55	13	2	54	14	2
R 26		SFR	2	67 ^E	61	68	69	69	69	1	1	0	B (67)	A/E	60 ^{R,T}	9	2	58	11	2	57	12	2	56	13	2	56	13	2	55	14	2
R 27		SFR	1	70 ^{M,LT2}	62	72	72	72	72	2	0	0	B (67)	A/E	62 ^{R,T}	10	1	60	12	1	58	14	1	57	15	1	56	16	1	55	17	1
R 28 ^C	S114 / Private Property / Fig. 5	SFR	1	70 ^E	63	72	72	72	73	2	0	1	B (67)	A/E	63 ^{R,T}	10	1	61	12	1	59	14	1	58	15	1	57	16	1	57	16	1
R 29		SFR	1	69 ^E	62	70	71	70	71	1	0	0	B (67)	A/E	62 ^{R,T}	9	1	60	11	1	58	13	1	57	14	1	56	15	1	56	15	1
R 30		SFR	1	67 ^E	60	69	69	69	69	2	0	0	B (67)	A/E	60 ^{R,T}	9	1	58	11	1	57	12	1	56	13	1	55	14	1	55	14	1
R 31		S114 / Private Property / Fig. 5	SFR	1	62 ^E	58	64	65	64	65	2	0	0	B (67)	NONE	57 ^{R,5}	8	1	55	10	1	54	11	1	53	12	1	52	13	1	51	14
R 32	SFR		1	69 ^E	59	69	70	69	70	0	0	0	B (67)	A/E	60 ^{R,T}	10	1	58	12	1	57	13	1	55	15	1	54	16	1	53	17	1
R 33	SFR		2	68 ^E	58	68	68	68	68	0	0	0	B (67)	A/E	60 ^{R,T}	8	2	57	11	2	56	12	2	55	13	2	54	14	2	53	15	2
R 34	SFR		1	67 ^E	57	67	67	67	67	0	0	0	B (67)	A/E	60 ^{R,T}	7	1	57	10	1	56	11	1	55	12	1	54	13	1	54	13	1
R 35 [*]	SFR	--	--	68 ^{M,ST6}	58	67	67	67	67	-1	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 36 ^C		SFR	2	71 ^E	60	71	71	71	71	0	0	0	B (67)	A/E	60 ^{R,T}	11	2	59	12	2	57	14	2	56	15	2	55	16	2	54	17	2
R 37		SFR	1	70 ^E	59	70	70	70	70	0	0	0	B (67)	A/E	61 ^{R,T}	9	1	58	12	1	57	13	1	55	15	1	54	16	1	53	17	1
R 38		SFR	2	69 ^E	58	69	69	69	69	0	0	0	B (67)	A/E	60 ^{R,T}	9	2	57	12	2	56	13	2	55	14	2	54	15	2	53	16	2

Notes:

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.

2 - Land Use: SFR - single-family residence; REC - recreational/park; RLG - religious facility; DHC - day health care facility

3 - M - Measured noise level; STxx or LTxx - measurement site number; CAL - Calibration site; E - Estimated from No-Build alternative and measurement sites.

4 - S = Future noise conditions result in substantial increase (12 dBA or more); A/E = Future noise conditions approach or exceed Noise Abatement Criteria.

5 - Barrier height is needed to meet requirements at adjacent receptors.

6 - Street traffic noise from the freeway only; other local traffic noise sources are not included. Train noise is from BNSF, Amtrak, and Metrolink operations and are included where described in table headings.

R - Minimum height to meet feasibility requirements of the Caltrans' Noise Abatement Criteria.

T - Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.

C - Critical receptor.

W - Includes the benefits of an existing property wall.

* - This site was chosen as monitoring purpose only. No outdoor use area at this site; however, this site is representative of nearby outdoor use areas.

Source: Parsons 2010.

Summary of Preliminary Noise Abatement Decision Report

The Final Noise Study Report analyzed noise barriers with heights from 6 ft to 16 ft to determine the feasibility of noise abatement. The results of the analysis identified four new soundwalls that are feasible and have a total combined length of approximately 3,050 ft. The soundwalls will provide feasible noise abatement at the outdoor use areas of 32 single-family residences. The NADR for the project documents preliminary noise abatement decision based on acoustical and no acoustical feasibility factors and the relationship between noise abatement allowances and engineer's cost estimate. The NADR analyzed the reasonability of the soundwall by comparing the noise abatement allowances and the engineer's cost estimate.

The wall construction cost estimates are based on masonry, as well as Plexiglas/masonry soundwall construction in accordance with standard plans and specifications. Cost estimates are derived from the Caltrans Cost Database (CCD) (Caltrans 2008), which calculates an average unit cost of construction-related items from recent State transportation projects. Cost calculations for soundwalls include the cost of the wall, piles, and earthwork. The final cost estimate includes a 10 percent contingency and a 5 percent escalation for each year until anticipated construction begins.

Table 4-17 summarizes key information for the preliminary abatement decision and shows that the estimated abatement cost exceeds the associated cost allowance for all the walls using Plexiglas/masonry construction, but it is reasonable for most of the walls with masonry construction. The preliminary noise abatement decision presented in this report is based on preliminary project alignments and profiles, which may be subject to change. As such, the physical characteristics of noise abatement described herein also may be subject to change. If pertinent parameters change substantially during the final project design, the preliminary noise abatement decision may be changed to include abatement in the final project design. A final decision on whether and how to construct noise abatement will be made upon completion of the project design.

Based on the information that was summarized in the NADR, soundwalls that are constructed with regular masonry block were found to be reasonable and feasible; however, due to the visual impact of the masonry block soundwall for the view homes south of SR 91, masonry with Plexiglas soundwalls were considered in the NADR. As indicated in Table 4-17, all of the masonry with Plexiglas soundwalls have been found to be feasible but not reasonable for the project.

According to 23 CFR 772, the regulation requires the identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project. Input received from affected property owners and the public through the environmental review process is also considered in the noise abatement decision.

The NADR determined four masonry soundwalls located on private property at S63, S98, S110, and S114 (previously shown in Figures 4-14 through 4-18) to be a reasonable and feasible noise abatement measure, which required the Department to consult with these owners for comment and opinion on whether soundwalls on their property will be built as part of the project.

The Department's Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects (2006), states "Noise abatement will not be provided on private property unless 100 percent of the owners of the property on which the abatement will be located want it." Construction of the soundwalls requires that all of the home owners located along the proposed contiguous soundwall agree to such an action.

Table 4-17: Summary of Abatement Key Information

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance (\$)	Masonry Estimated Construction Cost (\$)	Cost Less than Allowance?	Plexiglas/ Masonry Estimated Construction Cost (\$)	Cost Less than Allowance?
S63	6	No	0	NA	NA	NA	NA	NA
	8	Yes	4	\$152,000	\$143,069	Yes	\$317,252	No
	10	Yes	7	\$280,000	\$165,319	Yes	\$383,047	No
	12	Yes	7	\$294,000	\$189,060	Yes	\$450,334	No
	14	Yes	7	\$294,000	\$211,391	Yes	\$516,210	No
	16	Yes	7	\$308,000	\$233,866	Yes	\$582,231	No
S98	6	Yes	4	\$176,000	\$120,611	Yes	\$272,416	No
	8	Yes	4	\$176,000	\$146,358	Yes	\$348,764	No
	10	Yes	5	\$230,000	\$172,105	Yes	\$425,113	No
	12	Yes	5	\$230,000	\$199,583	Yes	\$503,193	No
	14	Yes	5	\$230,000	\$225,533	Yes	\$579,744	No
	16	Yes	5	\$230,000	\$251,614	No	\$656,426	No
S110	6	Yes	10	\$460,000	\$210,708	Yes	\$478,937	No
	8	Yes	10	\$480,000	\$255,685	Yes	\$613,324	No
	10	Yes	10	\$480,000	\$300,663	Yes	\$747,711	No
	12	Yes	10	\$480,000	\$348,700	Yes	\$885,158	No
	14	Yes	10	\$480,000	\$394,551	Yes	\$1,020,419	No
	16	Yes	10	\$480,000	\$440,463	Yes	\$1,155,739	No
S114	6	Yes	10	\$440,000	\$288,635	Yes	\$657,563	No
	8	Yes	10	\$460,000	\$350,246	Yes	\$842,150	No
	10	Yes	10	\$460,000	\$411,857	Yes	\$1,026,737	No
	12	Yes	10	\$460,000	\$477,677	No	\$1,215,533	No
	14	Yes	10	\$460,000	\$540,741	No	\$1,401,573	No
	16	Yes	10	\$460,000	\$603,805	No	\$1,587,613	No

Source: Parsons 2009.

On December 2, 2011, a Sound Barrier Survey was mailed to all homeowners and/or residences where potential masonry soundwalls will be considered. The purpose of the Sound Barrier Survey was to inform the property owner, obtain a vote, and solicit comments about the proposed soundwall at their property. The draft environmental document and an invitation to attend the public meeting on December 9, 2010, were also mailed to provide information about the project and to allow property owners an opportunity to speak to project staff.

After reviewing the completed Sound Barrier Surveys from the affected property owners, it was determined that the proposed soundwalls at S63, S98, S110, and S114 will not be constructed because the Sound Barrier Survey results did not show the required 100 percent consensus for the soundwalls.

The consideration of noise abatement at the proposed locations is due to the predicted future traffic noise levels. As discussed previously in Section 2.2.7.1, potential noise abatement measures must be considered when a noise impact occurs. A noise impact is defined as when the future traffic noise level with the project results in a substantial increase in noise level (defined by Caltrans as a 12-dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC of 67 dBA. The affected residents are anticipated to generally experience a zero to 1-dBA increase in noise levels for future conditions, which is far below the noise impact level criteria increase of 12-dBA; however, noise abatement was considered because traffic noise levels approached or exceeded 67 dBA, the NAC for residences.

4.8.4.2 No Action Alternative

The No Action Alternative would not result in any construction activities; therefore, no temporary noise impacts would occur in the project area.

Furthermore, the No Action Alternative would not produce permanent noise-related impacts. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands. Potential noise impacts associated with these activities would not occur and existing noise levels would not increase; therefore, the No Action Alternative would have no adverse impacts related to noise. The No Action Alternative would not meet the purpose and need of the proposed project.

4.8.5 Avoidance/Minimization Measures

4.8.5.1 Onsite Alternative

Construction will 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.

4.8.5.2 No Action Alternative

The No Action Alternative would not produce noise-related impacts. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands. Potential impacts associated with these activities would not occur. Therefore, avoidance/minimization measures would not be required. The No Action Alternative would not meet the purpose and need of the proposed project.

4.8.6 Significance of Impacts

4.8.6.1 Onsite Alternative

With the implementation of minimization measures and accordance with applicable Caltrans' Standard Specifications, the proposed Onsite Alternative is not anticipated to produce significant temporary noise

impacts due to associated construction activities – with regard to temporary noise impacts on USACE-managed land.

With regard to permanent noise impacts on USACE-managed land, residential land uses, in addition to other land uses sensitive to noise impacts, do not exist on USACE-managed lands at Prado Basin. The area mainly consists of open space, a federal flood control facility, and government property. With the absence of residential uses and other sensitive receptors on USACE-managed land, permanent noise impacts are not anticipated to adversely affect sensitive receptor populations as a result of the proposed Onsite Alternative. In terms of noise impacts, the Onsite Alternative will not produce adverse effects on parks and recreational facilities associated with this area, including Chino Hills State Park.

Additionally, although noise abatement measures such as soundwalls were proposed to address permanent noise impacts on nearby residences outside of USACE-managed land, four proposed soundwalls will not be constructed because survey results did not return the required 100% consensus rate necessary to construct the soundwalls. Although these soundwalls were determined to be a reasonable and feasible noise abatement measure, without consensus of all private property owners affected by the soundwalls, soundwalls cannot be constructed. Therefore, without these four soundwalls at the proposed locations, affected residences may potentially be affected by future traffic noise levels. Overall however, affected residents are anticipated to generally experience a zero to 1-dBA increase in noise levels for future conditions, which is far below the noise impacts level criteria of 12-dBA. However, noise abatement was considered because traffic noise levels approached or exceeded 67-dBA, the NAC for residences. Therefore, this noise impact is the only one with potential for permanent noise impacts as a result of project implementation; even with the proposal of a reasonable and feasible noise abatement measure.

4.8.6.2 No Action Alternative

The No Action Alternative would not produce noise-related impacts. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands. Potential impacts associated with these activities would not occur. The No Action Alternative would not meet the purpose and need of the proposed project.

4.9 Recreation Resources

4.9.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment for recreational resources were derived from the report listed below:

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

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 project alternatives. One publicly owned park (Chino Hills State Park [CHSP]) located west of the project is identified as a Section 4(f) and 6(f) resource. CHSP is located west of USACE managed-lands and north of 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.

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

4.9.2 Onsite Alternative

The proposed Onsite Alternative consists of constructing a flyover bridge structure from eastbound SR-91 to northbound SR-71, with six proposed bridge footings constructed on USACE-managed lands.

4.9.3 No Action Alternative

Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands.

4.9.4 Potential Recreation Resource Impacts

4.9.4.1 Onsite Alternative

CHSP is located west of the project area, adjacent to both USACE parcels and will not be permanently affected by construction of the Onsite Alternative. Although some minor permanent and temporary construction easements will be required immediately adjacent to CHSP, these acquisitions will not affect the recreational use of CHSP. Construction impacts at CHSP are expected to temporarily disturb 3.84 acres and will be short term as the slopes for the proposed project are built. After construction, the area within CHSP will 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. With implementation of minimization measures, potential adverse effects to recreational resources within CHSP are not anticipated.

Construction activities will avoid parks and recreational areas to greatest extent feasible, and would not affect access to and from CHSP. Potential impacts to recreational facilities are not expected.

4.9.4.2 No Action Alternative

The No Action Alternative will have no impacts on recreational resources. Under the No Action Alternative, the construction of a flyover bridge connector structure with six proposed bridge footing columns within USACE property would not be conducted. Potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the Proposed Action.

4.9.5 Avoidance/Minimization Measures

4.9.5.1 Onsite Alternative

Construction activities and permanent features of the flyover bridge connector structure and bridge footing columns completely avoid parks and recreational areas, with the exception of CHSP as discussed above. The project would not have permanent adverse effects on CHSP as a Section 6(f) resource. No avoidance/minimization measures are required.

4.9.5.2 No Action Alternative

The No Action Alternative will have no impacts on cultural resources. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge columns within USACE property, would not be constructed. As a result, potential impacts associated with these activities would not occur on USACE-managed lands. Therefore, avoidance and minimization measures would not be required.

4.9.6 Significance of Impacts

4.9.6.1 Onsite Alternative

Because recreational resources are outside of the Onsite Alternative area and project activities would not affect the public outdoor recreational use of CHSP or any other recreational facilities, construction of the Onsite Alternative is not anticipated to affect recreational resources.

4.9.6.2 No Action Alternative

The No Action Alternative will have no impacts on recreational resources. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge columns within USACE property, would not be constructed. Therefore, potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the proposed project.

4.10 Health and Safety

4.10.1 Description of Resource and Baseline Conditions

Baseline conditions and impact assessment to health and safety were derived from the reports listed below:

- Caltrans. June 2011. *SR 91 and SR 71 Interchange Improvement Project Initial Study and Mitigated Negative Declaration*, City of Corona, Riverside County, California.
- Caltrans. August 2010. *SR 91 and SR 71 Interchange Improvement Project Initial Site Assessment Phase 1*, City of Corona, Riverside County, California.

Emergency Services

Emergency services, such as police and fire departments near the project area, are listed in Table 4-18. These services are from the county jurisdictions of Riverside, San Bernardino, and Orange County and the city jurisdictions of Corona, Anaheim, and Brea.

Hazardous Waste and Materials

Recognized Environmental Conditions:

The SR 91/71 Interchange Improvement Project Initial Site Assessment (ISA) was completed November 2008. The ISA was conducted to identify Recognized Environmental Conditions (RECs) at the project site. 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 project location. Based on the site reconnaissance, five types of RECs were identified as follows.

First, miscellaneous hazardous materials were spilled near the project location in the past. Although all hazardous materials have been cleaned up, it is still considered an REC for the project. Second, polychlorinated biphenyl (PCB)-containing liquids in pole-top transformers may be present along the project location. Also, 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.

Table 4-18: 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.

Known or Suspected Hazardous Material Contamination:

Three sites from the RCRA Information System Sites/Quantity Generators (RCRA GEN) database are within the 0.5-mile distance from the project location, including USACE parcels. 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 project location. None are located on USACE-managed parcels.

Two sites from the Emergency Response Notification System (ERNS) database are within the 0.5-mile search distance from the project location. In 1991, 130 gallons of an oxidizing acid was 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 project location; however, neither is on USACE-managed parcels.

Two State/Tribal Leaking Underground Storage Tank (LUST) sites were identified within the 0.5-mile search distance from the project location. 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 project footprint or USACE-managed parcels, and there were no migrating hazardous substances moving toward the project footprint. 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 project footprint and USACE-managed parcels. Neither site constitutes an REC for the project location.

4.10.2 Onsite Alternative

The proposed Onsite Alternative consists of conducting the construction of a proposed direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71, with six proposed bridge footings constructed on USACE-managed lands.

4.10.3 No Action Alternative

Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands.

4.10.4 Potential Health and Safety Impacts**4.10.4.1 Onsite Alternative***Emergency Services:*

In the short-term, Construction of the project may result in temporary outages of certain utilities. These outages will result in minor inconveniences to the surrounding communities. The project may also result in some disruption to emergency services serving and travelling through USACE parcels, due to detours and closures from project construction.

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 project 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) will respond from stations located in San Bernardino and will 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) will respond from stations located in the cities of Corona and Norco, as shown above in Table 4-18. Those responders will 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 the City of 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 project 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 build alternative are as follows:

Miscellaneous hazardous materials: Hazardous materials were historically spilled and found on and near the project location. 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 project will 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 project location. As a result, the pole-top transformers will 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 91/71 project limits. Based on the previous data, current project scope, and other ongoing projects in the area, it is not likely that construction of the proposed interchange will encounter any asbestos-containing material. However, if ACM materials are disturbed during construction activities, the materials will be managed in accordance with Cal OSHA regulations (Title 8, CCR, Section 1529).

LBP: Paint used in the lane striping, which might be removed as part of the proposed project, may contain LBP. As a result, paint will 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 aerially deposited lead (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 will be managed properly by including the Caltrans Standard Specification SSP S5- 740 Aerially Deposited Lead or equivalent specification in the project plans.

4.10.4.2 No Action Alternative

The No Action Alternative will have no impacts on health and safety. Under the No Action Alternative, the construction of a flyover bridge connector structure with six proposed bridge footing columns within USACE property would not be conducted. Potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the Proposed Action.

4.10.5 Avoidance/Minimization Measures

4.10.5.1 Onsite Alternative

Emergency Services:

Although major disruption to emergency services during construction of the proposed project is not anticipated, measures will be taken in the transportation management plan to avoid and minimize disruption. Measures to minimize potential impacts from project construction are described in Appendix B.

Hazardous Waste and Materials:

Although impacts are not expected, a number of measures will be implemented during project construction to avoid and minimize the chance of exposure to hazardous waste and materials. These measures are described in Appendix B.

4.10.5.2 No Action Alternative

The No Action Alternative will have no impacts on health and safety. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge columns within USACE property, would not be constructed. As a result, potential impacts associated with these activities would not occur on USACE-managed lands. Therefore, avoidance and minimization measures would not be required.

4.10.6 Significance of Impacts

4.10.6.1 Onsite Alternative

With the implementation of minimization measures, effects on health and safety are not anticipated to result from construction of the proposed interchange. There would be no significant effects, permanent or temporary, to health and safety if avoidance and minimization measures are implemented, as described in Appendix B.

4.10.6.2 No Action Alternative

The No Action Alternative will have no impacts on health and safety. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge columns within USACE property, would not be constructed. Therefore, potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the proposed project.

4.11 Flood Risk Management

4.11.1 Description of Resource and Baseline Conditions

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

- Lower river channel modification for flood control 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 Proposed Action, flood risk management facilities of the Santa Ana Mainstem Project within the Prado Basin includes Prado Dam, the Santa Ana River Outlet Channel, the spillway channel, the wastewater treatment dike, and the Temescal Creek dike.

Within the project 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 of flooding 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 Proposed Action 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 will 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 project area is not within a regulatory floodway.

4.11.2 Onsite Alternative

The proposed Onsite Alternative consists of conducting the construction of a proposed direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71, with six proposed bridge footings constructed on USACE-managed lands.

4.11.3 No Action Alternative

Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands.

4.11.4 Potential Flood Risk Management Impacts

4.11.4.1 Onsite Alternative

The proposed Onsite Alternative will require equipment storage and access through the floodplain on USACE parcels. Some of these temporary construction activities would occur in and around the Santa Ana River. These construction activities will not result in effects to the floodplain because construction will be short term, and the area will be restored to its natural state after the project is constructed. To further reduce potential temporary effects to the floodplain, the project will implement stormwater best practices as identified in Appendix B.

No direct or indirect impacts on existing federal flood control projects are expected because the project will implement minimization measures during excavation activities within federal flood control facilities and restore disturbed areas to pre-project conditions.

4.11.4.2 No Action Alternative

Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands.

4.11.5 Avoidance/Minimization Measures

4.11.5.1 Onsite Alternative

As described in Appendix B, minimization measure will be implemented to avoid potential effects to flood control facilities.

4.11.5.2 No Action Alternative

The No Action Alternative will have no impacts on flood risk. Under the No Action Alternative, land surveys, utility field investigations, geotechnical field investigations, and biological surveys would not be conducted on USACE-managed lands. Potential impacts associated with these activities would not occur.

4.11.6 Significance of Impacts

4.11.6.1 Onsite Alternative

The Proposed Action activities are not anticipated to produce significant effects, permanent or temporary, to flood control facilities within the project area.

4.11.6.2 No Action Alternative

The No Action Alternative will have no impacts on flood risk. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge columns within USACE property, would not be constructed. Therefore, potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the proposed project.

4.12 Socioeconomics and Environmental Justice

4.12.1 Description of Resource and Baseline Conditions

The USACE parcels and project site on which the Proposed Action will be constructed consist of open space, a federal flood control facility, and government property. The project site does not support a population, provide housing or provide 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 USACE property to develop to other land uses that could affect socioeconomics and environmental justice within the area.

4.12.2 Onsite Alternative

The proposed Onsite Alternative consists of conducting the construction of a proposed direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71, with six proposed bridge footings constructed on USACE-managed lands.

4.12.3 No Action Alternative

Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands.

4.12.4 Potential Socioeconomic Impacts

4.12.4.1 Onsite Alternative

Construction locations and permanent improvements on USACE-managed parcels are not within residential, industrial, and/or commercial uses and do not support a population. Land uses within the project area consist of open space and a flood control facility. Because of the absence of a population within USACE parcels, there would be no effects to socioeconomic and environmental justice

populations. Furthermore, no minority or low-income populations will be adversely affected by the project.

Under the Onsite Alternative, construction activities will 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 study area or on USACE parcels.

Construction activities associated with the Onsite Alternative will not conflict with applicable land use plans, policies, or regulations of local or regional agencies. These activities will be temporary in nature and will 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 will not include activities that will 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 will be implemented during project construction and will address construction-related impacts to area land uses.

Under the Onsite Alternative, construction of the proposed interchange will 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 study area. As noted previously, construction activities will occur almost entirely within the existing SR-91 and SR-71 ROW. Although some minor permanent and temporary construction easements will be required immediately adjacent to these freeways, these acquisitions will 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.

4.12.4.2 *No Action Alternative*

The No Action Alternative will have no impacts on local socioeconomic or environmental justice resources. Under the No Action Alternative, the construction of a flyover bridge connector structure with six proposed bridge footing columns within USACE property would not be conducted. Potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the Proposed Action.

4.12.5 *Avoidance/Minimization Measures*

4.12.5.1 *Onsite Alternative*

No avoidance, minimization, and mitigation measures are proposed because the project is consistent with existing and proposed land uses, and will have no significant effects on socioeconomic or environmental justice resources.

4.12.5.2 *No Action Alternative*

Under the No Action Alternative, construction of the proposed Interchange Project would not be conducted on USACE parcels. No minimization measures would be required.

4.12.6 *Significance of Impacts*

4.12.6.1 *Onsite Alternative*

The proposed field investigation activities are anticipated to have no effect on socioeconomic or environmental justice resources within USACE parcels or the project vicinity.

4.12.6.2 No Action Alternative

The No Action Alternative will have no impact on socioeconomic or environmental justice resources. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to SR-71, with six proposed bridge columns within USACE property, would not be constructed. Therefore, potential impacts associated with these activities would not occur on USACE-managed lands. However, the No Action Alternative would not meet the purpose and need of the proposed project.

4.13 Traffic and Transportation

4.13.1 Description of Resource and Baseline Conditions

The site of the Onsite Alternative consists of open space, a federal flood control facility, and government property. The area within USACE property does not provide roadway facilities that are part of the local or regional traffic circulation network; however, the project site does have maintenance and emergency access to SR-71, located approximately 0.5-mile north of SR-91.

4.13.2 Onsite Alternative

The proposed Onsite Alternative consists of conducting the construction of a proposed direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71, with six proposed bridge footings constructed on USACE-managed lands – as part of the SR-91/SR-71 Interchange Improvement Project.

4.13.3 No Action Alternative

The No Action Alternative would not produce traffic and transportation-related impacts. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands. Potential impacts associated with these activities would not occur. The No Action Alternative would not meet the purpose and need of the proposed project.

4.13.4 Potential Traffic Impacts

4.13.4.1 Onsite Alternative

The area within USACE property does not provide roadway facilities that are part of the local or regional traffic circulation network. An access road to SR-71 is located approximately 0.5-mile north of SR-91. Equipment staging areas are located outside the existing access roadway and transportation facilities.

Because the proposed Onsite Alternative activities would be conducted outside existing roadways, the proposed Onsite Alternative is not anticipated to alter existing traffic circulation or worsen traffic conditions. Mobilization of equipment will occur within USACE property, which does 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 will be temporary, and permanent impacts would not occur as the project site does not contain public roadways. The Onsite Alternative would be conducted in open space, away from local and regional roadways. Therefore, no impacts to traffic and circulation are anticipated.

With regard to potential impacts on traffic and circulation outside of USACE-managed land, the project is likely to cause temporary traffic delays and inconveniences during construction; however, these delays will be relatively brief. In addition, based on the preliminary construction staging plan, construction of the project will not require any detours or prolonged local street, ramps, or mainline closures. With preparation and implementation of a TMP, impacts during construction can be minimized. Furthermore, during the design phase of the project, RCTC will coordinate with USACE on the development of the

TMP to ensure access is maintained to Prado Dam during construction of the project. The results of the traffic analysis indicate that impacts are not anticipated to traffic and transportation facilities as a result of the project; as the project is designed to improve traffic operations on SR-91 and SR-71 by increasing capacity within the SR-91/SR-71 interchange.

Furthermore, new pedestrian, transit, or other types of facilities are not allowed within the project area; therefore, the Americans with Disabilities Act (ADA) Standards for Accessible Design (28 CFR Part 36) do not apply. In addition, ramp or freeway closures will not interrupt bicycle access along the proposed Santa Ana River trail or along Green River Road. It is unlikely that the project will impact bicycle facilities, such as the existing Class II Bike Lane along Green River Road, or pedestrian access, such as the pedestrian facility along the west side of the Green River Road overcrossing.

4.13.4.2 No Action Alternative

The No Action Alternative will have no impacts on traffic and circulation. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands. Potential impacts associated with these activities would not occur. The No Action Alternative would not meet the purpose and need of the proposed project.

4.13.5 Avoidance/Minimization Measures

4.13.5.1 Onsite Alternative

No avoidance or minimization measures are required because impacts on traffic and circulation within USACE-managed land are not anticipated due to the absence of public roadways at the project site. Impacts on traffic and circulation outside of USACE-managed land during construction are also not anticipated as the preparation and implementation of a TMP will minimize impacts during construction. In addition, impacts are not anticipated on traffic and transportation facilities as a result of the project, as the project is designed to improve traffic operations on SR-91 and SR-71 by increasing capacity within the SR-91/SR-71 interchange.

Therefore, to minimize potential impacts resulting from construction (temporary) impacts and operational (permanent) impacts, as discussed in Sections 4.13.4.1 and 4.13.6.1, prior to project construction, a 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 (COZEED), and public awareness campaign. Also, 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. As a result, measures TC-1 and TC-2, which are included in Appendix B, should be implemented to facilitate the minimization of impacts on traffic and circulation outside of USACE-managed land.

4.13.5.2 No Action Alternative

The No Action Alternative will have no impacts on traffic and circulation. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands. Potential impacts associated with these activities would not occur. The No Action Alternative would not meet the purpose and need of the proposed project.

4.13.6 Significance of Impacts

4.13.6.1 Onsite Alternative

Construction activities and operation of the Onsite Alternative will not affect traffic and circulation within the project site on USACE-managed lands.

To address potential impacts to traffic and circulation outside of USACE-managed land, a Transportation Management Plan (TMP) will be developed prior to project construction and will be implemented during construction to ensure traffic safety, reduce accident hazards, minimize construction-related traffic congestion, identify detour routes, and minimize driver and pedestrian inconvenience. The plan must include appropriate signage, identification of alternate/detour routes, and a public awareness campaign. Furthermore, a Congestion Management Program (CMP) will also be prepared prior to project construction that describes congestion management activities pertaining to onsite and offsite street circulation, planned haul routes, and anticipated temporary traffic lane closures. With the implementation of these plans, adverse impacts on traffic and circulation, on and off USACE-managed land, are not anticipated as a result of implementing the Onsite Alternative.

4.13.6.2 No Action Alternative

The No Action Alternative will have no impacts on traffic and circulation. Under the No Action Alternative, a direct flyover bridge connector structure from eastbound SR-91 to northbound SR-71 would not be constructed as part of the proposed future SR-91/SR-71 Interchange Improvement Project on USACE-managed lands. Potential impacts associated with these activities would not occur. The No Action Alternative would not meet the purpose and need of the proposed project.

4.14 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 *Code of Federal Regulations* [CFR] 1508.7). Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time (40 CFR 1508.7). CEQA’s guidance for considering cumulative effects states that 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” (CEQA 1997).

Table 4-19 summarizes the related past, present, and reasonably foreseeable projects that have or could impact the environmental resources within the project area.

4.14.1 Past

The project site is in an area that has experienced an increase in growth. The cities of Corona, Norco, Chino, and Chino Hills have increased in population, resulting in urbanization, increased traffic, and increased demands on water and land resources. As a result of the growth and to minimize the potential for downstream flooding, USACE has upgraded Prado Dam and the downstream flood control facilities. Construction of the flood control facilities, surrounding developments, and improved transportation facilities has contributed to the cumulative environmental impacts to the area. In addition, operation and maintenance activities of transportation and flood control facilities contribute to additional environmental impacts to resources; however, with the improved flood control facilities and access on the USACE property, the project site currently provides more functionality when compared to the conditions of the site prior to implementation of the USACE mainstem project.

Cumulative impacts from the related projects that have already been completed have affected water quality, water resources, air quality, noise, and the biological environment. Development within and around the project site has increased the introduction of invasive species, pollutants, and human disturbance within the natural areas of the project site.

Table 4-19: Related Projects

Name	Jurisdiction	Proposed Activity	Status
SR-91 EB Lane Addition Project between SR-241 and SR-71	Caltrans	One additional EB general purpose (GP) lane on SR-91 between SR-241 and SR-71.	Completed in 2011.
New Westbound (WB) and EB Lane Additions SR-55 to SR-241	Caltrans	One additional GP lane in each direction on SR-91 between SR-55 and SR-241.	Anticipated to be completed by 2015.
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 GP lane to an HOT lane; Addition of a GP lane between SR-241 and SR-71; Improvements to the SR-91 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.	Anticipated to be completed by 2015 or 2035.
SR-71 Widening and Corridor A	Caltrans	SR-71 Widening: Extension of the six-lane SR-71 freeway south for approximately 3 miles from its current terminus at the San Bernardino County line to SR-91. Corridor A: A proposed 4-lane toll facility parallel to SR-91 between SR-241 and I-15.	Construction is anticipated between 2015-2035.
USACE Santa Ana River Interceptor Line Realignment	USACE	Santa Ana River Interceptor Line repair and partial realignment of the pipeline.	In construction. Construction to be completed by July 2013.
USACE Santa Ana River Mainstem Project Reach 9 Phase IIA and IIB	USACE	Provide improvements to the USACE flood control system by realigning the Santa Ana River and constructing bank protection for adjacent developments.	Phase IIA: In construction Phase IIB: Construction anticipated to be completed by October 2012.
USACE Santa Ana River Flood Control Project Auxiliary Dike and Floodwall	USACE	Auxiliary dike and floodwall will provide additional flood protection for the Santa Ana River mainstem project and protect the SR-91 freeway corridor from flooding.	In construction. Construction anticipated to be completed by December 2012.
Commercial Development (APN 101140004)	Corona	Commercial Development (2.5 acres) adjacent to WB SR-91, located approximately 1,500 feet east of the Green River Road overcrossing.	Application submitted in 2004, but no activity or proposed completion date identified.
APN 101040004	County of Riverside	5 Oil Production Wells along SR-71.	Unknown.
APN 101040007	County of Riverside	Surface Mining along SR-71.	Unknown.
APN 101050004	County of Riverside	3 Oil Production Wells along SR-71.	Unknown.

4.14.2 Present

The existing USACE property and flood control facility will continue to be operational with implementation of the proposed Onsite Alternative and ongoing projects. The proposed action may add to the cumulative effects from ongoing construction activities adjacent to the site, including the USACE Reach 9 Phase IIA bank protection project. Cumulatively, the biological and water resources within the project area may be most affected in the short term; however, effects from implementing the Onsite Alternative would be negligible when compared to the large-scale projects occurring concurrently.

4.14.3 Future

The USACE property and flood control facility will continue to be operational in the future even with implementation of the proposed Onsite Alternative and related projects. With implementation of all of the related projects, the biological environment and water resources will be affected; however, each project will include minimization and compensatory measures to maintain the integrity of the existing environment. Implementation of the proposed action will not have significant effects, nor will it contribute heavily to the cumulative effects to resources within the project area.

5.0 APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

The draft EA fulfills the requirements of NEPA and other pertinent laws and regulations discussed below.

5.1 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. This Proposed Action is in compliance with NEPA.

5.2 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 Proposed Action would not involve modification of a body of water; therefore, formal coordination and preparation of a Coordination Act Report is not required.

5.3 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. Due to the disturbed, park-like landscape of the proposed location, no impacts to listed or proposed species are expected. This Proposed Action would be in compliance with the ESA.

5.4 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. This Proposed Action would be in compliance with the MBTA.

5.5 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 nationwide permits 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 United States, only the least environmentally damaging practicable alternative (LEDPA) can be permitted. The Proposed Action does not involve discharge of dredged or fill material in waters of the United States; therefore, a Section 404(b)(1) permit is not required.

For the same reason, the project does not require State Water Quality Certification under CWA Section 401. The project would not require a Storm Water Pollution Prevention Plan (SWPPP) under the NPDES under CWA Section 402. This Proposed Action is in compliance with the CWA.

5.6 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 O₃ 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 State Implementation Plan (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 Proposed Action are below the General Conformity Rule *de minimis* emission thresholds, the Proposed Action would be exempt from performing a comprehensive air quality conformity analysis and would be considered to be in conformance with the SIP.

The Proposed Action would not have a significant impact on air quality. 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. Although there would be an increase in vehicle use, it would be temporary (1-day in duration) and emissions are expected to be minimal and below the *de minimis* thresholds and thus would not violate national or state standards. As a result, the Proposed Action would have no long-term impacts on local or regional air quality.

Therefore, this Proposed Action conforms to the Federal CAA as amended in 1990 and as required. This Proposed Action is in compliance with the CAA.

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

Noise generated by any activity and 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 the Proposed Action, the Proposed Action is in compliance with the Noise Control Act.

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

The proposed project is in compliance with Section 106 of the National Historic Preservation Act, as implemented by 36 CFR 800. The Proposed Action would not impact cultural resources

5.9 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 archeological data, including relics and specimens that might otherwise be irreparably lost or destroyed. The Proposed Action is in compliance with ARPA because it is not anticipated that buried or other cultural resources will be affected by the project.

5.10 Uniform Fire Code

The Uniform Fire Code (UFC) contains provisions regarding the storage and handling of hazardous materials. These provisions are contained in Articles 79 and 80, most recently revised in 1997 (UFC, 1997). These articles contain minimum setback requirements for storage of materials. The Proposed Action would be in compliance with the UFC.

5.11 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 Resource Conservation and Recovery Act (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 the 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. The proposed action is in compliance with this Act because no such CERCLA substances are involved with, or are locally stored for, the project's activities.

5.12 National Flood Insurance Program

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

5.13 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. The Proposed Action would be temporary in nature, and normal park use would resume within 48 hours, in accordance with USACE's Special Events Policy.

5.14 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 will best meet the present and future needs of the American people. The Proposed Action would provide recreation and cultural opportunities to the public, thus meeting the intent of the Act.

5.15 Americans with Disabilities Act of 1990, as amended (42 USC 126, *et seq.*)

The Americans with Disabilities Act (ADA) prohibits public entities, defined as any state or local government, or division thereof, from excluding any individual with a disability from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity. A "qualified individual with a disability" is an individual with a disability who, with or without reasonable modifications to rules, policies, or practices, the removal of architectural, communication, or transportation barriers, or the provision of auxiliary aids and services, meets the essential eligibility requirements for the receipt of services or the participation in programs or activities provided by a public entity. By providing the appropriate number of universal access (UA) parking spaces, by having the appropriate number of UA "porta-potties" available, and in other ways making the project accessible, the project would be in compliance with the ADA.

5.16 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 will provide leadership, take action to reduce the risk of flood loss, and minimize the impact of floods on human safety, health, and welfare. Agencies will 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 will ensure planning and budget requests reflect consideration of flood hazards and floodplain management. This project would not impact floodplain management or add to excessive floodplain development.

5.17 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 to minimize pollution impacts during the Proposed Action would meet the standards of this order.

5.18 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 implementation of the Proposed Action. The Proposed Action is in compliance with this order.

This page intentionally left blank.

6.0 PREPARERS

Consultant (Parsons Corporation)

Stephanie Blanco, AICP – Principal Environmental Planner

James Santos – Environmental Planner

Julio Rodriguez – Associate Planner

Sean Noonan – Associate Planner

This page intentionally left blank.

7.0 SUMMARY OF MITIGATION MEASURES OF THE PROPOSED ACTION AND OF ALTERNATIVES

Applicable mitigation/minimization measures outlined in the SR-91/SR-71 Interchange Improvement Project environmental document will be applied to address potential impacts associated with the proposed Onsite Alternative. Mitigation/minimization measures are provided in Appendix B.

This page intentionally left blank.

8.0 AGENCY COORDINATION

USACE has coordinated with RCTC extensively regarding the scope and schedule of the proposed 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 SR-91/SR-71 Interchange Improvement Project. As a result of the coordination, minimization and compensatory measures have been incorporated into the project and can be applied to the proposed Onsite Alternative. Additional coordination with the regulatory agencies may be necessary to verify effects during the implementation of the proposed Onsite Alternative.

This page intentionally left blank.

9.0 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, no responses to comments were made in regard to the Draft EA, and are thus not addressed in the Final EA.

This page intentionally left blank.

10.0 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.

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.

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

RWQCB. 2008. Basin Plan. February.

Air Quality

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

CARB, 2008.

CARB. 2009. <http://www.arb.ca.gov/adam/>.

CARB 2010.

CEC. 2006.

EPA. 2007.

EPA. 2009. <http://www.epa.gov/air/data/>.

SCAQMD 2007.

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, 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.

11.0 RECOMMENDATION

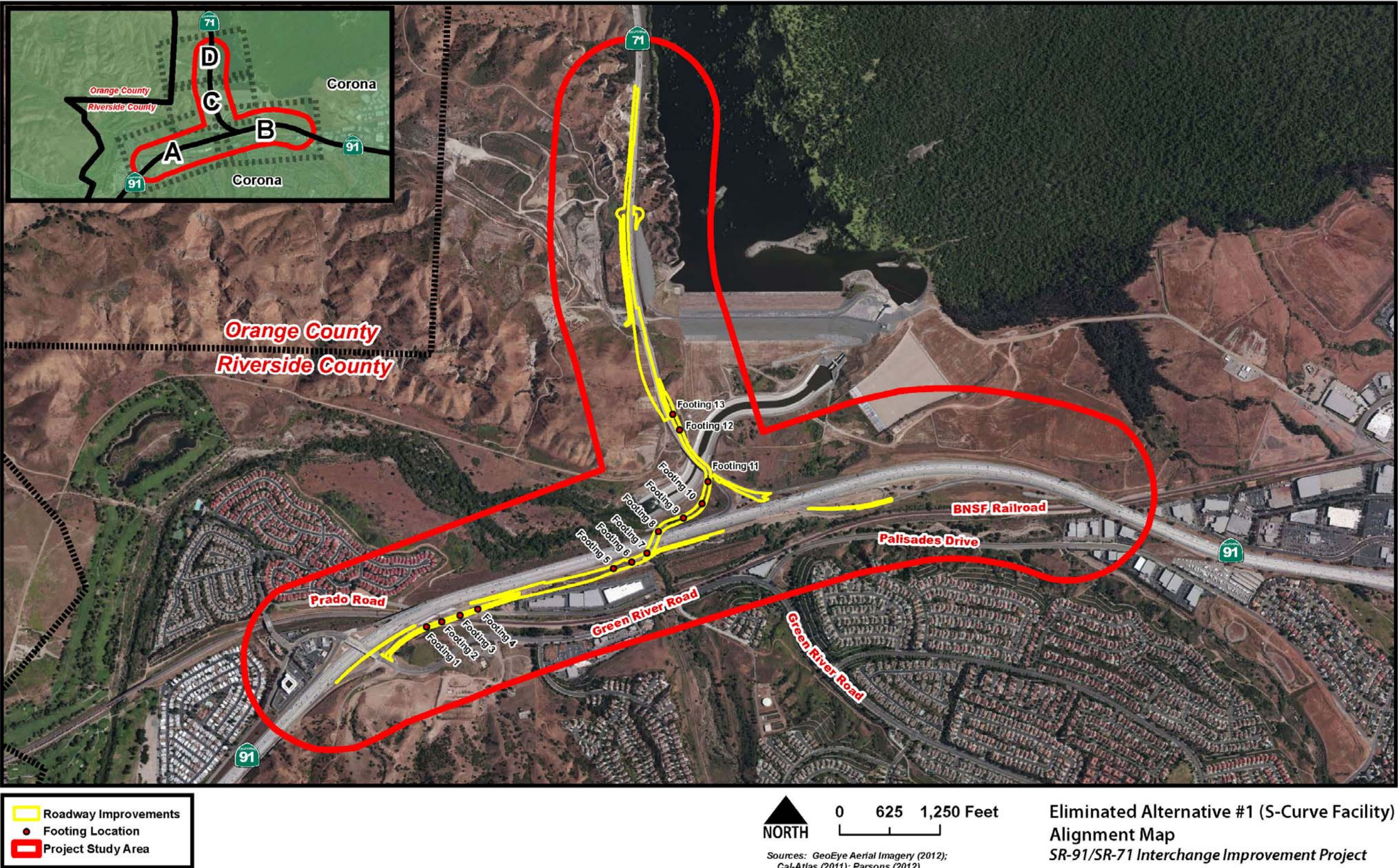
The Asset Management Division recommends that no significant impacts have been identified with respect to the Proposed Action.

☐ EIS

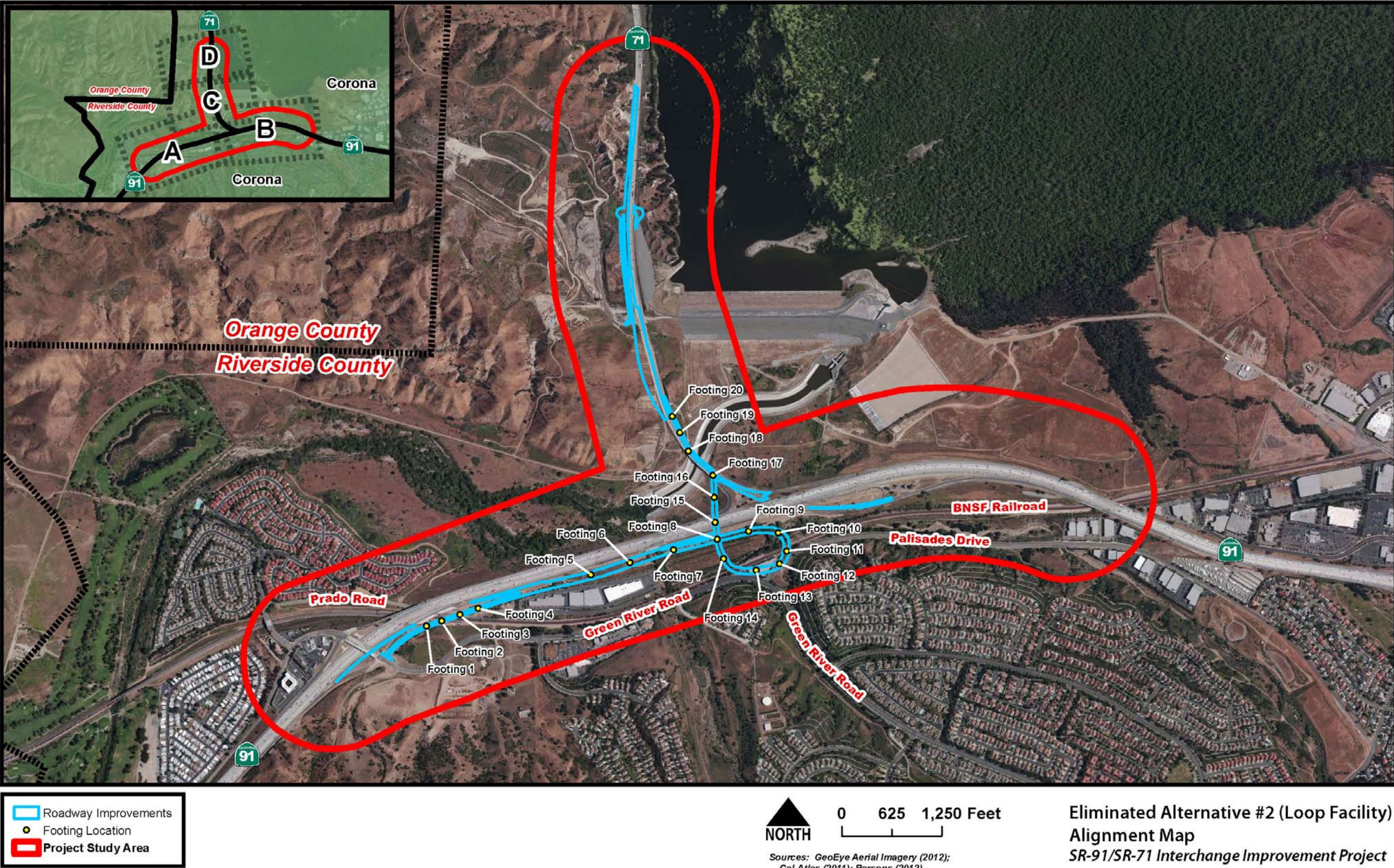
☐ FONSI

This page intentionally left blank.

APPENDIX A ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION ALIGNMENT MAPS



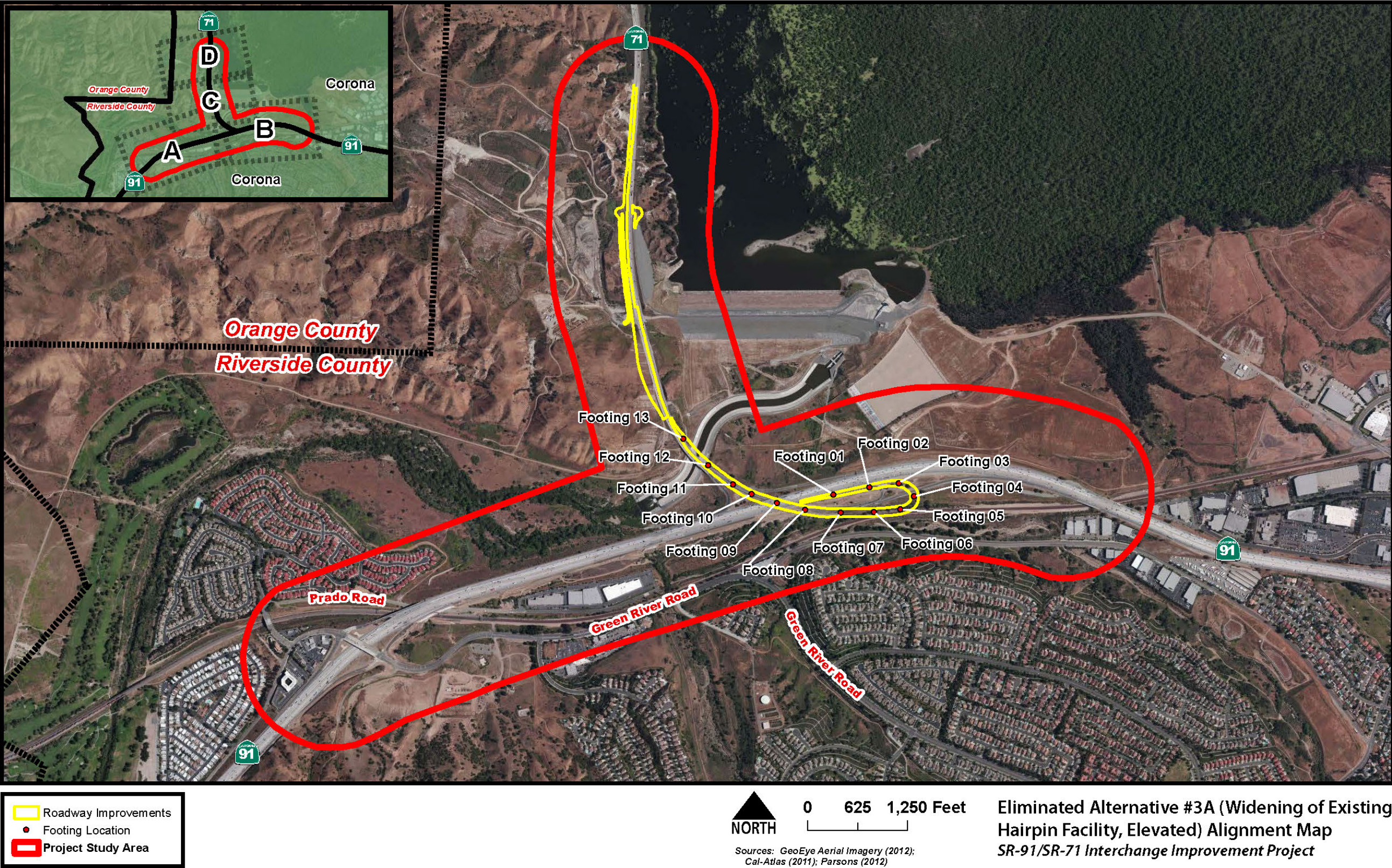
This page intentionally left blank.



This page intentionally left blank.



This page intentionally left blank.



This page intentionally left blank.

APPENDIX B MINIMIZATION AND MITIGATION MEASURES

The minimization measures indicated in this table were derived from the 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 will 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	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	
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; 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	
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	
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	Caltrans (during final design)	Conformance with Caltrans Standard Specifications Section 19 is		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	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 Standard Specifications. Actual depths and extend of toe-of-fill keyways will be determined during site-specific investigations.		required during final design.			
GEO-6	Import soils shall have the minimum characteristics: <ul style="list-style-type: none"> • 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	
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	
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		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase (if required).	Task Completed (Sign and Date)	Commitment Source	Comments
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; 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 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:	Contractor (during construction)/ Resident Engineer	The Contractor shall conform and implement site BMPs prior to and during construction activities.		IS; CWA 402	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	<ul style="list-style-type: none"> – Effluent Standards – Good Site Management “Housekeeping” – Non-Stormwater Management – Sediment Controls – Run-on and Runoff Controls – Inspection, Maintenance, and Repair <p>Risk Level 1 Monitoring and Reporting Requirements specific implementation details regarding these requirements are found in Attachment C of the <i>NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009-DWQ</i> (September 2009).</p>					
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; 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; 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	Contractor (during construction)/ Resident Engineer	Implement Recommendations during construction.		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	contain all vehicle loads and avoid 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; 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: <ul style="list-style-type: none"> • 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 	RCTC/ Caltrans (Oversight) (during final design). Contractor/ Resident Engineer (during construction)	Implement BMPs during construction.		IS; CWA 402	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	design. • Treatment BMPs – The applicability of all nine Caltrans-approved Treatment BMPs were analyzed as part of this project. This category of BMPs includes 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 Game (CDFG) 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; CDFG 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 (NOX) emissions. 1. In addition to SCAQMD Rule 403 requirements,	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	Comments
	<p>apply water to all excavation/grading activity areas as necessary to remain visibly moist during active operations.</p> <p>2. Apply nontoxic soil stabilizers, as needed, to reduce offsite transport of fugitive dust from unpaved staging areas and unpaved road surfaces.</p> <p>3. Properly tune and maintain construction equipment 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.</p> <p>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.</p> <p>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).</p> <p>6. Active construction areas shall be watered regularly to control dust and minimize impacts to adjacent vegetation.</p> <p>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.</p>					
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	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
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	
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	
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	
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 <i>Water Resources and Water Quality Technical Report</i>	Caltrans (during final design)/ Contractor (during construction)	Incorporate measures prior to construction.		Western Riverside County MSHCP; IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	(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.					
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	
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	
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	
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	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
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	
WETLANDS AND OTHER WATERS						
BIO-10	If jurisdiction is confirmed by USACE, RWQCB, and CDFG, 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 CDFG pursuant to Section 1600 of the California Fish and Game Code.	Caltrans/ RCTC (during final design)	Obtain Section 404 permit, Section 401 certification, and Section 1600 agreement during final design.		CWA 404; CWA 401; CDFG 1600	
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; 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	
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	Caltrans (during final design)	Construction staging areas will be delineated prior to		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	occur entirely within Department ROW or temporary construction easements and will be clearly marked.	Resident Engineer/ Contractor (during construction)	construction. Construction activities should only occur within these limits.			
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	
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	
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	RCTC to conduct habitat assessment/ focused surveys, and update JPR and DBESP (if	Conduct habitat assessment during final design phase. Habitat assessment must be conducted during the blooming season for each plant species.			

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	<p>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.</p> <ul style="list-style-type: none"> • 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 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. 	necessary); Caltrans to reinitiate Section 7 consultation (if required)				
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	
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	Caltrans (during final design); Resident Engineer (during	Wildlife fencing should be implemented during construction; if fencing is removed, a biological monitor		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	<p>construction. For Proposed Constrained Linkage (PCL) 1 and PCL 2, the following measures shall be implemented to improve wildlife connectivity:</p> <ul style="list-style-type: none"> • 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 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. 	construction)	is required during construction.			
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	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		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	Canyon area will be submitted to the wildlife agencies for review and approval.		activities.			
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	
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: <ul style="list-style-type: none"> • 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 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. 	Resident Engineer/ Contractor (during construction)	Sediment and erosion control measures will be implemented during construction.		IS	
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	Resident Engineer/ Contractor	Equipment storage, fueling, and staging areas will be sited on		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	other sensitive habitat types.	(during construction)	non-sensitive upland habitat during construction.			
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	
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	
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	
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 project site. 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	
BIO-	Waste, dirt, rubble, or trash shall not be deposited in the Conservation Area or on native habitat. No	Resident Engineer/	Implement recommendation		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
27	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.	Contractor (during construction)	during construction.			
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	
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 found to be occupied, then a sufficient buffer, in consultation with CDFG, 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 CDFG.	Resident Engineer/ Contractor (during construction)	A biological monitor should be present at the construction site during construction.		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
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 preconstructi on 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	
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 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	Caltrans/ Resident Engineer	Implement measure during design phase.		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	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	
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	
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 (<i>Arundo donax</i>) or salt cedar (<i>Tamarix</i> 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	
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	Caltrans (during final design)	Implement measure during final design.		Western Riverside County MSHCP; IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	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.					
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	
BIO-37	Implementation of the BMPs discussed in Section 5.2.5 of the <i>SR 91 and SR 71 Interchange Improvement Project Habitat Assessment and MSHCP Consistency Analysis Report</i> (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)	
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			
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	Caltrans/ Contractor (during	Implement recommendation during construction			

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	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.	construction)				
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	
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	
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	
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	Paleontological monitor will recover fossils during construction.		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
		construction)				
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 cataloged during the monitoring and salvage portion of the mitigation program.		IS	
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	
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	
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	
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	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
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	
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	
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	
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	
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	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
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	
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	
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	
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	
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	Resident Engineer/ Contractor	Noise control provisions will be implemented during construction.		IS; Caltrans SSPs	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	<p>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 ft 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:</p> <ul style="list-style-type: none"> • Service traffic control facilities • Service construction equipment <p><i>Noise Monitoring</i> 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 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</p>	(during construction)				

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	monitoring.					
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; Caltrans SSPs	
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; 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; 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; 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; 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	Contractor (during construction)	Implement noise abatement measures during construction.		IS; Caltrans SSPs	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	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.					
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	
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	
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	
HW-2	Pole-top transformers with PCB containing liquids shall be properly managed if they are to be removed	Resident Engineer/	Removal and relocation of PCB		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	or relocated.	Contractor (during construction)	containing transformers should be properly managed during construction.			
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 with 40 CFR (<i>Code of Federal Regulations</i>) 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.	Caltrans (during PA/ED) Resident Engineer/ Contractor (during construction)	Survey and assessment of ACM materials will be conducted during 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.		IS	
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	
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 (ft) 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	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
		construction)				
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	
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	
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	
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.	Caltrans (during final design)/ Resident	Public utility lines, pipes, and cables that will be replaced or relocated should		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	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.	Engineer (during construction)	be incorporated during final design. During construction, arrangements must be made to avoid disruption in utility services.			
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	
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	
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	
U/ES-7	To minimize the risk of wildfire during construction,	Caltrans/	Implement during		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	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 project site and Santa Ana River watershed area will be provided.	RCTC/ Contractor	construction.			
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			
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	
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	
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		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
			construction.			
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	
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	
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	
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	
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	
TC-2	During the design phase, RCTC will coordinate with	Caltrans	Coordination with		IS	

No.	Description of Commitment	Responsible Party/ Monitor	Timing/Phase	Task Completed (Sign and Date)	Commitment Source	Comments
	the City of Corona, United States Army Corps of Engineers (USACE), and other affected parties to ensure that access to their jurisdictions or properties will be maintained during construction.	(during final design) Resident Engineer/ Contractor (prior to and during construction)	City and USACE will be conducted during PS&E. The construction management plan shall be followed during construction.			

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



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011



In Reply Refer To:
FWS-WRIV-09B0057-11F0421

JUN 22 2011

Mr. Aaron Burton
Senior Environmental Planner
California Department of Transportation
District 8
Environmental Planning (MS 1163)
464 West 4th Street, 6th Floor
San Bernardino, California 92401-1400

Attention: Scott Quinncell, Associate Environmental Planner (File No. D-08-Riv-91/71
Interchange-EA 0F5410)

Subject: Formal Section 7 Consultation for State Route 91 and State Route 71 Interchange
Improvement Project, City of Corona, Riverside County, California

Dear Mr. Burton:

This document transmits our biological opinion based on our review of the proposed State Route (SR) 91 and SR 71 Interchange Improvement Project (Project), and its potential effects on the federally endangered least Bell's vireo (*Vireo bellii pusillus*, "vireo") and federally threatened coastal California gnatcatcher (*Poliophtila californica californica*, "gnatcatcher"), in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*). The proposed Project is receiving Federal funding through the Federal Highway Administration (FHWA), and Caltrans has assumed FIIWA's responsibilities under the Act for this consultation in accordance with Section 6005 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) 2005, as described in the National Environmental Policy Act, Delegation Pilot Program Memorandum of Understanding between FIIWA and Caltrans (effective July 1, 2007) and codified in 23 U.S.C. 327(a)(2)(A). We initiated formal consultation on March 28, 2011, the date we received your request. You have determined the proposed Project may affect and is likely to adversely affect vireo and gnatcatcher.

On June 22, 2004, we issued a section 10(a)(1)(B) permit for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP establishes a multiple species conservation program to minimize and mitigate habitat loss and the incidental take of covered species in association with activities covered under the permit. The proposed Project is located within the plan area boundary of the MSHCP and is considered a covered activity under that plan.



USFWS Biological Opinion

As a permittee under the MSHCP, Caltrans received incidental take authorization for vireo and gnatcatcher for the proposed Project through their section 10(a)(1)(B) permit for that plan. For us to extend the take coverage already provided to Caltrans to Caltrans acting as the FHWA designee, the proposed action must be consistent with the MSHCP and its associated implementation agreement and permit.

This biological opinion is based on information provided in the (1) *Natural Environment Study SR 91 and SR 71 Interchange Improvement Project SR-91-PM R0.6/R2.6; SR-71-PM 1.6/3.0 City of Corona, Riverside County, CA* (NES) (June 2010); (2) *Western Riverside County Regional Conservation Authority (RCA) Joint Project Review (JPR) # 10-07-19-02* (May 2011); (3) *Habitat Assessment and MSHCP Consistency Analysis for the SR 91 and SR 71 Interchange Improvement Project City of Corona, Riverside County, California* (June 2010); (4) *SR 91 and SR 71 Interchange Improvement Project Habitat Assessment* (March 2011); and (5) other information available in our files. The complete project file addressing this consultation is maintained at the Carlsbad Fish and Wildlife Office (CFWO).

The Biological Study Area (BSA) for the proposed Project includes an approximate 341-hectare (ha) [842-acre (ac)] area located in the vicinity of the junction of SR 91 and SR 71 (91/71), north of the Cleveland National Forest and east of Chino Hills State Park. Included within the 341-ha (842-ac) BSA is a 40-ha (99-ac) project impact area where project construction will occur. The BSA falls within Subunit 1 (Santa Ana River/Santa Ana Mountains) and Subunit 2 (Prado Basin) of the Temescal Canyon Area Plan of the MSHCP. In Subunit 1, the BSA occurs within independent Criteria Cells 1702, 1704, and 1706. In Subunit 2, the BSA occurs within Criteria Cells 1426 of Cell Group A, 1520 and 1612 of Cell Group B, and within independent Criteria Cell 1616. Portions of the BSA also fall within Existing Core A, Proposed Constrained Linkage (PCL) 1, and PCL 2.

Implementation of the proposed Project will result in the construction of a new two-lane direct flyover connector (bridge) from eastbound SR 91 to northbound SR 71. Construction of the flyover connector would also include abutments, columns, and associated footings. The flyover connector would have two 4-meter (m) [12-foot (ft)] wide lanes and 3-m (10-ft) wide shoulders. In addition to the two main connector lanes, the flyover structure would carry an outside auxiliary lane extending along the connector from the Green River Road on-ramp. The flyover connector ramp would begin on eastbound SR 91, east of the existing Green River Road interchange, and would span SR 91, the Santa Ana River, and the southbound lanes of SR 71. Additionally, the Green River Road eastbound on-ramp would be reconstructed, SR 71 would be realigned, and access to properties would be relocated. Other project features include drainage improvements, signage, and retaining walls. Refer to Table 1 below for a summary of proposed Project related impacts to native plant communities.

Table 1 - Native Vegetation Impacts

Plant Communities	Permanent Impact (Acres)	Temp. Impact (Acres)
Coastal Sage Scrub	6.60	8.78
Coastal Sage-Chaparral Scrub	4.00	2.23
Mule Fat Scrub	0.04	0.15
Non-Native Grassland	2.24	13.50
Oak Woodland	0.36	1.06
Salt Brush Scrub	0.00	0.89
Southern Cottonwood Willow Riparian Forest	0.16	1.85
Total Impacts	13.4	28.46

In addition to the BSA occurring within MSHCP Criteria Areas, and PCLs 1 and 2, the BSA overlaps with Narrow Endemic Plant Species Survey Area 7 and Additional Species Survey area for burrowing owl (*Athene cunicularia hypugaea*). As currently designed, the proposed Project will be contained within the least environmentally sensitive location feasible and demonstrates consistency with the biological goals and objectives as set forth in Section 7.5.1 of the MSHCP. Section 7.5 of the MSHCP addresses the Guidelines for Facilities within the Criteria Area and Public/Quasi Public (PQP) Lands. 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. Additionally, to offset the permanent loss of 0.40 ha (1.0 ac) of MSHCP PQP Lands, Riverside County Transportation Commission (RCTC) will commit to purchasing 0.40 ha (1.0 ac) of land and relinquishing it to the RCA for long-term conservation, consistent with the requirements of the MSHCP.

The proposed Project alignment crosses areas that were contemplated for conservation associated with PCL 1 and PCL 2. The proposed Project will maintain culverts and connections under the roadway, thereby continuing the ability of some wildlife to move through the proposed Project area. RCTC (the Project applicant), in discussions with the RCA and Wildlife Agencies, has acknowledged there is a need to address connectivity issues with PCL 1 in an alternate location. They have also acknowledged committing to enhancing PCL 2 as a viable wildlife corridor. For PCL 1, the proposed 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 native vegetation; for PCL 2, the proposed 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 pages 11–12 of the Wildlife Corridor Analysis Report). Since the proposed 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 proposed Project is located in Narrow Endemic Plant Species Survey Area 7. In accordance with the Protection of Narrow Endemic Plant Species, a habitat assessment was conducted for three narrow endemic plant species, *Ambrosia pumila* (San Diego ambrosia), *Phacelia stellaris* (Brand's phacelia), and *Satureja chandleri* (San Miguel savory). None of these narrow endemic plant species were observed during the habitat assessments. Blooming period surveys for these plants were conducted for the SR 91 Corridor Improvement Project (CIP) and none were detected. However, the northern-most part of the proposed Project area was not surveyed during the blooming period for these plants. To ensure no direct impacts to the Brand's phacelia, San Diego ambrosia, and San Miguel savory during construction of the proposed Project, the following measures will be incorporated into the proposed Project to protect narrow endemic plant species:

- Prior to construction, a habitat assessment, and as required, focused surveys for the San Diego ambrosia, Brand's phacelia, and San Miguel savory will be conducted during the appropriate blooming season. Subsequent to surveys, the RCTC will update the information in the JPR and a Determination of Biologically Equivalent or Superior Preservation (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 on-site during the surveys, Caltrans will reinitiate section 7 consultation with the Service to amend the biological opinion. 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 would be implemented.
 - On-site conservation of San Diego ambrosia, Brand's phacelia, and San Miguel savory through avoidance and designation of environmentally sensitive areas.
 - Translocation of San Diego ambrosia, Brand's phacelia, and San Miguel savory individuals outside of the proposed Project right of way 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.

With the avoidance and minimization measures documented above, we concur that the proposed Project is consistent with the MSHCP Protection of Narrow Endemic Plant Species policy of the MSHCP for narrow endemic plant species.

In accordance with the Additional Survey Needs and Procedures policy of the MSHCP, focused burrowing owl surveys conducted by LSA in November and December 2008 and March, April, and May 2009 for the SR 91 CIP resulted in negative findings of burrowing owl within and adjacent to the project site. To avoid impacts to burrowing owl that may occur in the northwestern portion of the proposed Project, a preconstruction burrowing owl clearance survey will be conducted within 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. 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 Wildlife Agencies. With the avoidance and minimization measures documented above, we concur that the proposed Project is consistent with the MSHCP Additional Survey Needs and Procedures policy of the MSHCP for the burrowing owl.

To address the loss of MSHCP Riparian/Riverine resources, a DBESP was prepared. The proposed Project area supports 13.2 ha (32.7 ac) of riverine/riparian habitat in 13 distinct areas that generally occur in the southern portions of the proposed Project area adjacent to the Santa Ana River and associated tributaries—Fresno Canyon Wash and Wardlow Wash—and within the northern extent of the proposed Project site west of SR 71. Proposed Project construction and operation will permanently impact 0.11 ha (0.28 ac) and temporarily impact 1.32 ha (3.25 ac) of those riverine and riparian areas. The Project proposes to offset its permanent impacts at a 3:1 ratio by performing off-site enhancement through one of three options: purchasing credits in the Santa Ana Watershed for *Arundo donax* (arundo) or *Tamarix* spp. (salt cedar) removal; restoration within Chino Hills State Park; or restoration on the Green River Golf Course. To offset temporary impacts to riparian and riverine resources, the RCTC will restore the impacted area to pre-project conditions. Additionally, since the riparian areas in the project area are known to support occupied vireo habitat, the RCTC will avoid the nesting season (March 1 to June 30) with all construction activities. This will ensure that no vireo are directly or indirectly impacted by the project. Should construction be needed within the nesting season, the Permittee shall notify the RCA and Wildlife Agencies. Since the proposed Project will 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.

To avoid impacts to other migratory birds consistent with MSHCP 10(a)(1)(B) permit condition 5, vegetation removal will be performed outside of the March 1 to September 15 bird breeding season. If work must occur during the breeding season, a preconstruction nesting survey will be conducted in suitable habitat by a qualified ornithologist within 21 days prior to ground disturbing activities. If active raptor or migratory bird nests are detected, project activities may be temporarily curtailed or halted until California Department of Fish and Game (CDFG) and the CFWO are contacted and consulted. If surveys indicate that migratory bird or raptor nests are found in the survey area identified above, a no-disturbance buffer shall be established around the site to avoid disturbance or destruction of the nest site until after the breeding season or after a qualified ornithologist determines that the young have fledged (usually late June to mid-July). The extent of these buffers shall be determined by the ornithologist, in coordination with Caltrans, CFWO, and CDFG, and will depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species. 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 the ornithologist).

Based on our review of the information provided to us, we have determined that the proposed Project is consistent with relevant MSHCP policies and procedures. The status of vireo and the gnatcatcher and the effects of implementing the MSHCP were previously addressed in our biological opinion for the MSHCP dated June 22, 2004. In the biological opinion for the MSHCP, we concluded that the level of anticipated take in the plan area for the MSHCP was not likely to result in jeopardy to vireo

Mr. Aaron Burton (FWS-WRIV-09B0057-11F0421)

6

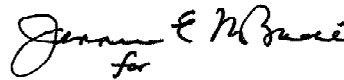
or gnatcatcher. Given that the proposed Project is consistent with the MSHCP, we do not anticipate any adverse effects to vireo or gnatcatcher that were not previously evaluated in the biological opinion for the MSHCP. No incidental take of vireo or gnatcatcher beyond that anticipated in the biological opinion for the MSHCP will occur. Therefore, it is our conclusion that implementation of the proposed project will not result in jeopardy to vireo or gnatcatcher.

By this consultation, we are extending to Caltrans, in accordance with their Federal responsibilities assumed under Section 6005 of SAFETEA-LU, the take coverage for vireo and gnatcatcher provided to permittees under the incidental take permit for the MSHCP. Extension of take coverage to Caltrans, acting as the Federal designee (as described above), under the MSHCP is limited to the proposed Project as described above.

This concludes formal consultation on the proposed action. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the proposed Project that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat is designated that may be affected by the proposed Project. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this biological opinion, please contact Felicia Sirchia of this office at (760) 777-0163.

Sincerely,

A handwritten signature in black ink, appearing to read "Kennon A. Corey", with the word "for" written below it.

Kennon A. Corey
Assistant Field Supervisor

cc:
Leslie MacNair, CDFG, Ontario, California

APPENDIX D WILDLIFE SPECIES COMPENDIA

FAUNA COMPENDIUM

Birds

Apodidae

Aeronautes saxatalis

Aegithalidae

Psaltiriparus minimus

Columbidae

Zenaida macroura

Emberizidae

Pipilo crissalis

Melospiza melodia

Fringilidae

Carpodacus mexicanus

Parulidae

Dendroica petechia

Picidae

Picoides nuttallii

Timaliidae

Chamaea fasciata

Trochilidae

Calypte anna

Troglodytidae

Thryomanes bewickii

Tyrannidae

Sayornis nigricans

Swifts

white-throated swift

Bushtits

bushtit

Pigeons and Doves

mourning dove

Warblers, Sparrows, etc.

California towhee

song sparrow

Finches

house finch

New World Warblers

yellow warbler

Woodpeckers

Nuttall's woodpecker

Old World Babblers

wrentit

Hummingbirds

Anna's hummingbird

Wrens

Bewick's wren

Flycatchers

black phoebe

Mammals

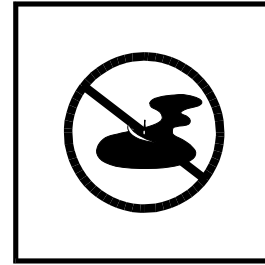
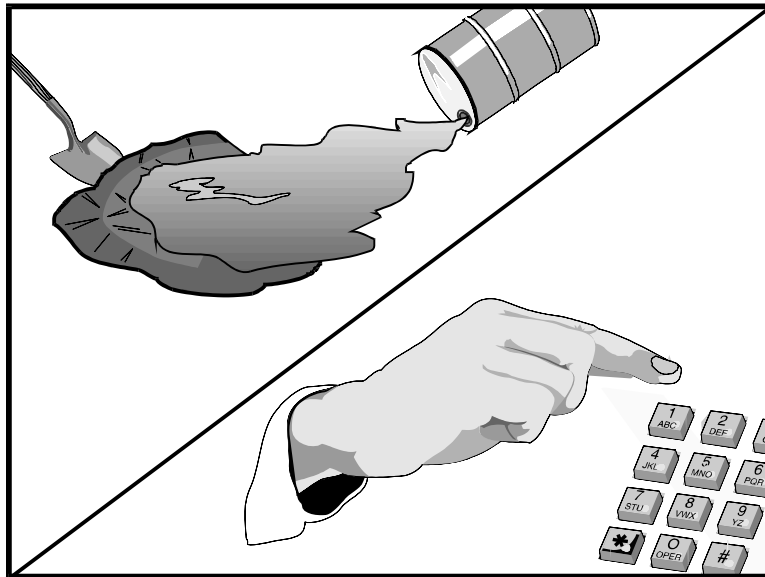
Leporidae

Sylvilagus audubonii

Hares and Rabbits

desert cottontail

APPENDIX E CALTRANS SPILL PREVENTION BMP WM-04



Standard Symbol

BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

Definition and Purpose

These procedures and practices are implemented to prevent and control spills in a manner that minimizes or prevents the discharge of spilled material to the drainage system or watercourses.

Appropriate Application

This best management practice (BMP) applies to all construction projects. Spill control procedures are implemented anytime chemicals and/or hazardous substances are stored. Substances may include, but are not limited to:

- Soil stabilizers/binders.
- Dust Palliatives.
- Herbicides.
- Growth inhibitors.
- Fertilizers.
- Deicing/anti-icing chemicals.
- Fuels.
- Lubricants.
- Other petroleum distillates.

To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes shall be contained and cleaned up immediately.

Limitations ■ This BMP only applies to spills caused by the contractor.

- Procedures and practices presented in this BMP are general. Contractor shall identify appropriate practices for the specific materials used or stored on-site.

Standards and Specifications

- To the extent that it doesn't compromise clean up activities, spills shall be covered and protected from storm water run-on during rainfall.
- Spills shall not be buried or washed with water.
- Used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose shall be stored and disposed of in conformance with the special provisions.
- Water used for cleaning and decontamination shall not be allowed to enter storm drains or watercourses and shall be collected and disposed of in accordance with BMP WM-10, "Liquid Waste Management."
- Water overflow or minor water spillage shall be contained and shall not be allowed to discharge into drainage facilities or watercourses.
- Proper storage, clean-up and spill reporting instruction for hazardous materials stored or used on the project site shall be posted at all times in an open, conspicuous and accessible location.
- Waste storage areas shall be kept clean, well organized and equipped with ample clean-up supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers and liners shall be repaired or replaced as needed to maintain proper function.

Education

- Educate employees and subcontractors on what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- The Contractor's Water Pollution Control Manager (WPCM) shall oversee and enforce proper spill prevention and control measures.

Cleanup and Storage Procedures

■ Minor Spills

- Minor spills typically involve small quantities of oil, gasoline, paint, etc., which can be controlled by the first responder at the discovery of the spill.
- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Remove the absorbent materials promptly and dispose of properly.
- The practice commonly followed for a minor spill is:
 - Contain the spread of the spill.
 - Recover spilled materials.
 - Clean the contaminated area and/or properly dispose of contaminated materials.

■ Semi-Significant Spills

- Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.
- Clean up spills immediately:
 - Notify the project foreman immediately. The foreman shall notify the Resident Engineer (RE).
 - Contain spread of the spill.
 - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
 - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
 - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

■ Significant/Hazardous Spills

- For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps shall be taken:
 - Notify the RE immediately and follow up with a written report.
 - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
 - Notify the Governor's Office of Emergency Services Warning Center, (805) 852-7550.
 - For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 119, and 302, the contractor shall notify the National Response Center at (800) 424-8802.
 - Notification shall first be made by telephone and followed up with a written report.
 - The services of a spills contractor or a Haz-Mat team shall be obtained immediately. Construction personnel shall not attempt to clean up the spill until the appropriate and qualified staff have arrived at the job site.
 - Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, RWQCB, etc.

Maintenance and Inspection

- Verify weekly that spill control clean up materials are located near material storage, unloading, and use areas.
- Update spill prevention and control plans and stock appropriate clean-up materials whenever changes occur in the types of chemicals used or stored onsite.